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Waybill #16208827854
May 17, 2006

Ms. Almerinda Silva
United States Environmental Protection Agency
Region I
1 Congress Street
Suite 1100 (HBT)
Boston, MA 02114-2023

RE: **Supplemental Remedial Investigation Report – Revision 1**
Old Southington Landfill Superfund Project
Kleinfelder Project #69161, Task 3.0

Dear Ms. Silva:

Kleinfelder, Inc. submits, on behalf of the Performing Settling Defendants (PSDs), the enclosed Supplemental Remedial Investigation Report (SRI) – Revision 1 for the Old Southington Landfill Superfund Site. This revised report takes into consideration EPA Draft Comments dated May 2005 and discussions at subsequent meetings and on conference calls. This revision updates the SRI to include quarterly groundwater monitoring analytical data through September 2005 and hydrologic data through December 2005. This revision also includes discussion of and data from additional field work completed in October and November 2005.

If you have questions concerning this report, please contact me at 1-800-522-8740 x237.

Respectfully submitted,
Kleinfelder, Inc.

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SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT

Vol. 1 of 2: Text, Figures, Tables, & Appendices

Old Southington Landfill Superfund Site

Prepared on behalf of:

The Settling Defendants for the Old Southington Landfill Superfund Site

Prepared for:

U.S. Environmental Protection Agency
Region I
Boston, Massachusetts

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E.0 EXECUTIVE SUMMARY

This document provides the findings of supplemental groundwater investigations (SGI) completed since the completion of the Remedial Investigation/Feasibility Study (RI/FS), dated December 10, 1993 (ESE, 1993). The work described in this report was completed pursuant to the June 1998 Consent Decree for the Site, as described in Attachment A to the Statement of Work (SOW), as well as subsequent agreements between the Performing Settling Defendants (PSDs), United States Environmental Protection Agency, Region I (EPA), and CT Department of Environmental Protection (CT DEP). The SGI began in spring 1999 and as described in Section 2, since that time:

- Eighty (80) new groundwater sampling points have been installed at 48 locations;
- Two Study Area-wide hydraulic surveys have been completed;
- More then 800 groundwater samples have been collected for laboratory analyses;
- Two additional groundwater receptor studies have been completed;
- Three additional Black Pond surface water and sediment sampling events have been completed;
- Three (3) extensive microwell surveys have been conducted; and
- Twenty (20) groundwater sampling events have been completed.

As discussed in this Supplemental RI Report and summarized in the Study Area Conceptual Model (Section 6):

E.1 Groundwater Flow

- The SGI confirms the groundwater flow pathways described in the RI and extends the delineation of groundwater flow west to the Quinnipiac River Basin;
- General groundwater flow follows the bedrock topography, flowing along a west-northwest trending bedrock trough; the impact of the bedrock topography is greatest on the groundwater flow in the deeper portions of the aquifer (Sections 3.2.2 and 3.3.2);
- The bedrock surface rises in the western part of the Study Area, pinching out the overburden groundwater aquifer west of the Quinnipiac River (Section 3.2.2);

E.2 Plume Delineation

- As detailed in the RI, contaminants from the waste mass in the Southern Portion of the Site almost immediately flow down into the medium to deep portions of the aquifer, below the Landfill, due to significant differences in the permeability of the waste mass versus the very permeable sand and gravel aquifer, and are then transported at depth west by regional groundwater flow (Section 3.3.2);

- Contaminants in shallow groundwater immediately west of the Site (e.g., G304A; the slug issue at G302A (Section 3.3.2.1)) also migrate into the lower portion of the aquifer; this is likely due to the large groundwater recharge areas west of Old Turnpike Road overlying the full north-south extent of the contaminant plume;

- Vertical hydraulic gradients west of the Site are generally flat with some minor upward and downward variation depending upon location; therefore, the contaminant plume remains in the middle or deep portion of the aquifer as it moves west/northwest (Section 3.3.2.2);

- The groundwater contaminant plume is bounded on the north by well GZ12D and south by well GZ14D; the north-south boundaries of the plume are consistent with the position of the bedrock trough, the impact of which on the plume is significant because the plume is located in the deeper portion of the aquifer;

- The groundwater contaminant plume intersects the Quinnipiac River Basin in the vicinity of G310 and the groundwater plume has been delineated to its western most downgradient point prior to the Quinnipiac River (G310S, A, B, and C; SDW-6; SDW-7, and SDW-8) (Section 3.3.2.1);

- Bedrock topography west of the Quinnipiac River ensures that groundwater cannot move significantly west of the River but must remain in the Quinnipiac River Basin, ultimately moving south with regional basin flow and/or discharging to the Quinnipiac River (Section 3.3.3.3);

E.3 Constituents of Concern in the Plume

- The primary constituents of concern (COC) in the contaminant plume are TCE and its related daughter products (1,2-DCE and vinyl chloride); other volatile organic compounds (VOC), when detected, are within the footprint of the TCE plume and are measured at concentrations considerably lower than TCE-related VOC (Section 4.1.1);

- No Semi-volatile organic compounds (SVOC) plume is emanating from the Site. SVOC have only been detected sporadically throughout the Study Area at trace concentrations (Section 4.1.2);

- No metals plume is emanating from the Site; metals have been detected sporadically downgradient of the Site (Section 4.1.3) ;

- MTBE has been measured sporadically at high concentrations at wells within the footprint of the salvage yard west of the Site; the detections of MTBE are unrelated to the Site and likely are the result of gasoline disposal practices at the salvage yard (Section 4.1.1.4);

- Following the removal of materials from SSDA1 for placement in the lined cell beneath the cap, a slug of TCE-related VOC was detected at G302A; this slug has subsequently been tracked in the lower portions of the aquifer to GZ12M and to SDW-9C, and is following a flowpath consistent with the northern boundary of the bedrock trough (Section 3.3.2.1), as it flows to its likely discharge in the Quinnipiac River Basin;

- Analytical results for surface water and sediment samples collected during the SGI are similar in concentrations to the data collected during the RI and used for the ecological and human health risk assessments; the data collected during the SGI for surface water and sediment confirm the findings of the RI risk assessments (Section 4.2);

E.4 Comparison to Regulatory Criteria

- Groundwater within the Study Area and the area between the Site and the Quinnipiac River is assigned a "GB" classification under the Connecticut Department of Environmental Protection's (CT DEP) Water Quality Standards;

- The primary groundwater ARAR for the Study Area is the volatilization criteria of the CT DEP Remediation Standards Regulations (RSRs) (Section 6.6);

- Groundwater does not discharge to a surface water except at the Quinnipiac River; COC concentrations close to the point of discharge to the Quinnipiac River do not exceed the SWPC;

- Exceedances by COC of the RSR volatilization criteria have only occurred at five wells, G302A, G303A, G304A, G314A, and SDW3, during the last four quarters (December 2004, March 2005, June 2005, and September 2005); all of these wells are located on commercial property and, using the proposed volatilization criteria, only G304A exceeds an industrial/commercial volatilization criteria (vinyl chloride); G314A and SDW4 are not impacted by the Landfill and VOC detected there are the result of historic activities on the property on which the G314 well cluster resides (Sections 3.3.2.1 and 4.1.1.1); and

- Groundwater use studies have been completed throughout the Study Area: from east of the Site (Section 2.1.10), west to the Qunnipiac River and north of the Site to Main Street and Maple Street and south to Mulberry Street (Section 1.2.1.2), and west of the Quinnipiac to Canal Street (Phase 2A; Section 2.1.5 of SRI). The groundwater use studies have confirmed that public drinking water is available in the entire Study Area and that groundwater is not, and may not be, used for drinking water within this area.

1.0 INTRODUCTION

1.1 Purpose

This document provides the findings of supplemental groundwater investigations completed since the completion of the Remedial Investigation/Feasibility Study (RI/FS), dated December 10, 1993 (ESE, 1993). The work described in this report was completed pursuant to the June 1998 Consent Decree for the Site, as described in Attachment A to the Statement of Work (SOW), as well as subsequent agreements between the Performing Settling Defendants (PSDs), United States Environmental Protection Agency, Region I (EPA), and CT Department of Environmental Protection (CT DEP).

1.2 Background

The Old Southington Landfill Superfund Site (the Site) encompasses approximately thirteen acres on the east side of Old Turnpike Road in Southington, Connecticut (see Plate 1). The site is located approximately 3,100 feet to the east of the Quinnipiac River. Black Pond, which abuts the Site and is used for recreation and fishing, has not been significantly impacted by the site contaminants.

During the period from about 1920 to 1967, portions of the former landfill were used for disposal of waste materials by local residents and area businesses. Based upon historical information, RI data, and difference in ownership between the northern and southern portion of the Site, it is clear that the northern and southern portions were used for distinct and separate purposes. The northern portion of the Site was a "stump dump" that was used for the disposal of wood and construction debris. The southern portion of the Site was used throughout the history of operation of the landfill for the co-disposal of municipal and industrial waste. Historical information, interviews with current and past Town employees, and information contained in public documents on disposal practices indicate that for a short period of time (1964-1967) two areas (SSDA 1 and SSDA 2) in the southern portion of the Study Site (see Plate 1) were used for disposal of semi-solid industrial wastes. Closure of the former landfill and the northern portion of the Study Site was completed shortly after it ceased operating in 1967 and included compaction, cover with two feet of clean fill, and seeding for erosion control. Between 1973 and 1980, the landfill was subdivided and sold for residential and commercial development. Several residential and commercial structures were built on the Site and on adjacent areas.

The former landfill is located approximately 700 feet southeast of the former municipal Well No. 5, which was installed in 1965 by the Town of Southington Water Department as a public water supply. The Connecticut Department of Public Health and Addiction Services (then the Department of Health Services) sampled Southington Production Well No. 5, located west and north of the Site, on several occasions between December 1978 and March 1979. Analyses of the water samples collected indicated the presence of chlorinated volatile organic compounds (VOC). As a result of the detection of 1,1,1-trichloroethane (TCA) at levels that exceeded State standards, Well No. 5 was closed in August 1979. The well has permanently been closed.

In February 1980, EPA authorized a hydrogeologic investigation aimed at defining the nature and extent of contamination in groundwater in the area around Well No. 5. Analysis of groundwater samples collected from two monitoring wells installed between the Study Site and Well No. 5 indicated the presence of VOC (Warzyn Engineering, Inc., 1980). In November 1980, the Connecticut Department of Environmental Protection (CT DEP) collected soil samples from a manhole excavation within the industrial park located on land that had previously been part of the landfill. Analysis of the soil samples indicated the presence of chlorinated and non-chlorinated VOC.

Based on the above findings and a hazard ranking performed in 1982, EPA, on September 8, 1983, proposed that the Old Turnpike Landfill be placed on the National Priorities List (NPL), pursuant to Section 105(8)(b) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 2 U.S.C. § 9605(8)(b). On September 21, 1984, the Old Turnpike Landfill was listed on the NPL as the Old Southington Landfill Superfund Site. On September 29, 1987, potentially responsible parties (PRPs) voluntarily entered into an Administrative Order on Consent (Order) with EPA. In conformance with CERCLA, the Order sets forth the requirements for the preparation and performance of a Remedial Investigation and Feasibility Study (RI/FS). Work plans were submitted and approved by EPA, as required, for each phase of the RI/FS.

A Record of Decision (ROD) was signed in September 1994. The ROD required relocation of residences and businesses, relocation of SSDA1 materials into a lined cell beneath the cap, placement of a cap on the Landfill, and continued groundwater investigations (supplemental Groundwater Investigations). Construction of an impermeable synthetic cap over the landfill was completed in the fall of 2001.

1.2.1 Remedial Investigation/Feasibility Study

The RI/FS Report was finalized on December 10, 1993, and included the RI, a human health risk assessment, an ecological risk assessment, and feasibility study. This report presented of the findings based on data obtained over a six-year period.

1.2.1.1 Remedial Investigation

The major findings of the RI included:

- *Delineation of Study Site Boundary*—Information obtained from interviews, historical information for aerial photographs, and installation of over 90 soil borings and 75 soil samples were used to define the study site. The Study site (as defined in the RI) is bounded on the west by Old Turnpike Road, on the east by Black Pond, on the north by Rejean Road, and south to the property formerly occupied by Solomon Casket.
- *Air Quality*—A comprehensive field monitoring survey, two soil gas surveys, a comprehensive survey for combustible gases at 11 locations, collection and laboratory analysis of numerous soil gas samples, air quality modeling and a risk assessment to estimate potential risks associated with the transport of airborne contaminants to indoor or outdoor receptors was conducted during the RI. The RI/FS concluded that no significant risk to human health would be expected relative to toxic air pollutants.

- *Nature and Distribution of Materials within the Study Site*—The RI concluded that the northern portion of the Study Site is generally underlain by a thin layer (less than 10 ft) of wood and ash and timber fill consisting of black sand with wood ash, wood, wood cinders, and trace amounts of glass and metal debris, as well as demolition debris consisting of wood, glass, brick, and asphalt, consistent with its historical use as a "stump dump". The southern portion of the Study Site is primarily underlain by approximately 11 to 23 feet of solid waste fill consisting predominantly of a multicolored sand matrix with variable proportions of paper, glass, plastic, metal, metal shavings, cloth, industrial wastes, and other typical municipal solid waste materials. The solid waste is covered with one to four feet of granular fill. Groundwater was encountered at depths of four to 28 feet below the ground surface. The average depth to groundwater was approximately 10 feet. Two semi-solid disposal areas (SSDA 1 and SSDA 2) that were used for disposal of semi-solid wastes from approximately 1964 to 1967, were identified based on interviews, document reviews, geophysical testing and test borings.
    - Two areas of discrete materials that contained elevated levels of VOC were found at SSDA 1, but the majority of waste within SSDA 1 was similar in type of contaminants and concentrations to the remainder of the southern portion [In EPA's Addendum to the Remedial Investigation and Feasibility Study (December 2003), dated May 1994, EPA disagreed with the conclusion in the RI. EPA stated that "The overall discussion of the semi-solid disposal areas (SSDAs), and in particular SSDA1, fails to adequately present their potential importance to the landfill contamination… The presence of discrete chemical waste phases which are likely to be of industrial origin have only been found in SSDA1. Therefore, textual discussions which imply SSDA1 is no different from the rest of the landfill do not adequately address the chemical and physical character of this area." As part of the Interim Remedial Action in 2000, as required in the ROD, SSDA1 was removed and placed into a lined cell, during which drums were observed in SSDA1].
    - SSDA 2 contained solid waste similar in materials and appearance to the waste discovered throughout the southern portion of the Study Site; levels of contaminants detected in SDDA 2 are similar to levels detected elsewhere in the landfill. The SSDA waste materials were above the water table.
- *Distribution of Contaminants in Soils*—Polynuclear aromatic hydrocarbons (PAH), a by-product of wood burning, were the primary constituents of concern (COC) present in surface and subsurface soils in the northern portion (stump dump). No VOCs were identified in surface soils in the northern portion. Only isolated, low level concentrations of VOC were detected in surface soils in the southern portion. PAH, PCB and metals (at concentrations greater than background) were detected in surface soil near some of the buildings in the southern portion. These measurements could be the result of existing industrial activities or mixing of subsurface soils with cover material during closure. VOCs, the predominant COC, were detected in subsurface soil samples throughout the southern portion of the Study Site, semi-volatile organic compounds (SVOC), pesticides and PCB were detected sporadically in subsurface soils from the southern portion. Although various metals were detected slightly above background, the distribution was random and not indicative of significant metals disposal activities.

- *Hydrogeology Within the Study Area*—The unconsolidated deposits in the Study Area form an unconfined aquifer. In the southern portion of the Study Site, large vertical hydraulic gradients (which are approximately ten times greater than the horizontal gradient) are associated with neighboring wetlands and ponding of surface water runoff in local depressions during rainfall events, significant groundwater recharge from Black Pond, and low-permeability waste debris in the Landfill. These factors promote vertical drainage into the more permeable aquifer soils. Horizontal groundwater flow is generally east to west in the Study Area.
- *Nature and Distribution of Contaminants in Groundwater*—VOCs are the primary contaminants measured in groundwater and metals to a much lesser extent. SVOC, pesticides and PCB were rarely detected and when detected were at levels slightly above the detection limit during the RI. No VOC were detected in groundwater downgradient from the northern portion of the Landfill, which is consistent with the types of materials deposited there. The north-south dimension of the contaminant plume downgradient of the southern portion of the Study Site indicates that contaminants introduced into groundwater are not from any single, isolated source area. The primary VOCs are chlorinated ethenes and petroleum related VOC (benzene, toluene, and xylenes), while other VOCs are infrequently detected at low levels. Metals were detected in excess of maximum contaminant levels (MCLs) in both background and downgradient wells during the RI, indicating natural conditions.

1.2.1.2 Groundwater Receptors Study

As part of the RI, a groundwater receptors study was conducted between the Study Site and the Quinnipiac River to determine whether any properties were not serviced by the Town of Southington Water Department. The survey area was bounded on the east by Old Turnpike Road, beginning at the intersection with Carter Lane and extending south to the intersection with Mulberry Street. The southern boundary extended west on Mulberry Street (but included a portion of Mulberry Street east of Old Turnpike Road) to South Main Street. The western boundary paralleled the Quinnipiac River north on South Main Street to the intersection of West Main Street and Main Street. The northern survey boundary extended east on Main Street to the intersection with Maple Street. With one exception, all developed properties were on Town water supply. One home, located at 117 Crescent Avenue, was serviced by a private drinking water well installed in 1957, prior to Town regulations requiring connection to Town water. The home was subsequently connected to Town water and the private well was taken out of service (ESE, 1993).

1.2.1.3 Ecological Risk Assessment

An ecological risk assessment (ERA) was also conducted during the RI and is included as Volumes 2A and 2B of the Remedial Investigation/Feasibility Study, dated December 3, 1993. The ERA included the delineation of existing wetlands and an evaluation of the social significance, effectiveness, and viability of the wetlands (Wet II), as well as an evaluation of potential impacts to aquatic and terrestrial wildlife. The ERA relied upon previous ecological field assessments and surface water and sediment analytical data collected during the RI and concluded that potential risks to aquatic or terrestrial wildlife are generally minimal, and limited to specific, isolated locations.

The ERA resulted in the following findings:

- Surface water is not adversely impacted by chemical stressors identified at the Study Site and is not a significant risk to environmental receptors;

- Sediments are not adversely impacted by metals identified at the Study Site. Sediments in sampling locations SED-5, SED-6, and SED-8 have been somewhat impacted by PAH and chlordane. However, it is unlikely that a risk exists to environmental receptors because of the lack of bioavailability of these compounds at the concentrations detected.

- Surface soils in the Study Site are impacted by SVOC primarily PAH. There may be an increased risk to terrestrial receptors in areas where PAH concentrations in surface soil exceed background concentrations.

The risk from surface soils has been eliminated with the placement of the cap. As discussed in Section 4.2, surface water and sediment samples have been collected during the SGI. The results are similar and in many cases have a decrease in concentrations in the SGI samples as compared to the RI samples used for the ecological health risk assessment.

1.2.1.4 Human Health Risk Assessment

A human health risk assessment (HRA) was performed as part of the RI to determine the level of human health risk posed by the Site and is included as Volumes 2A and 2B of the Remedial Investigation/Feasibility Study, dated December 3, 1993. The risk evaluation assumed that capping of the Study Site would be the presumptive remedy. In summary, the results of this risk assessment indicate that there are no serious potential health threats to the on-site workers, either indoors or outdoors, nor to the wader or swimmer. Elevated cancer risks have been calculated for the on-site resident, due mainly to exposures to potentially carcinogenic PAH in surface soil in its present condition. An analysis of the hypothetical future use of groundwater as drinking water has demonstrated that potential health risks would be associated with this exposure pathway primarily as a result of chlorinated VOC.

Estimated health risks associated with potential exposure pathways (other than direct exposure to subsurface soil) are summarized below:

	Non-Cancer Risks (EPA target value is Hazard Index <1)		**Carcinogenic Risks (EPA target value is 1 in 1,000,000 to 1 in 10,000)**	
Receptor/Exposure Pathway(s)	**Average Case**	**Conservative Maximum Case**	**Average Case**	**Conservative Maximum Case**
On-site resident in northern portion exposed to surface soil via incidental ingestion, dermal contact, inhalation of indoor and/or outdoor air	0.53	0.70	4 in 100,000	**1.4 in 10,000**
On-site outdoor worker in southern portion exposed to surface soil via incidental ingestion, dermal contact and inhalation of outdoor air	0.028	0.052	2 in 100,000	7 in 100,000

Receptor/Exposure Pathway(s)	Non-Cancer Risks (EPA target value is Hazard Index <1)		Carcinogenic Risks (EPA target value is 1 in 1,000,000 to 1 in 10,000)	
	Average Case	Conservative Maximum Case	Average Case	Conservative Maximum Case
On-site indoor worker in southern portion exposed via inhalation of contaminants in indoor air	0.00025	0.0016	6 in 1,000,000	2 in 100,000
Swimmer in Black Pond exposed to surface water via incidental ingestion and dermal contact and sediment via dermal contact	0.04	0.16	2 in 1,000,000	5 in 1,000,000
On-site wader in wetland area exposed to surface water via dermal contact and sediment via dermal contact and incidental ingestion	0.034	0.11	4 in 100,000	**1.1 in 10,000**
Off-site wader in wetland area exposed to surface water via dermal contact and sediment via dermal contact and incidental ingestion	0.009	0.024	1 in 100,000	3 in 100,000
Future hypothetical off-site resident exposed via ingestion of groundwater used as drinking water	**63**	**1420**	**3 in 1,000**	**1 in 10**

Risks that exceed EPA's target risk range are highlighted in bold.

The first three exposure pathways shown on the above table have been eliminated by placement of the cap, as a result of the ROD for OU-1. The groundwater beneath the Study Area is classified by CT DEP as a GB area. Groundwater use for drinking is precluded by the Town in all areas of the Study Area. Groundwater receptor studies have been completed for the entire Study Area and confirmed that no drinking water wells are being used. Therefore, the exposure pathway for ingestion of groundwater used as drinking water has also been eliminated. The remaining exposure pathways are related to surface water and sediment.

As discussed in Section 4.2, surface water and sediment samples have been collected during the SGI. The results are similar and in many cases have a decrease in concentrations in the SGI samples as compared to the RI samples used for the RI human health risk assessment.

1.2.1.5 Feasibility Study

The FS process provides for the development and evaluation of potential remedial alternatives that may be applicable for remediation of a given site. The following remedial action objectives were identified during the RI/FS:

- Prevent direct contact with, and ingestion of soils or waste that pose a potential risk in exceedance of EPA's target risk range;
- Prevent ingestion of groundwater contamination in excess of relevant and appropriate regulatory standards and/or at concentrations greater than EPA's target risk range.

A multi-step screening process was used to identify general response measures and remediation technologies. These technologies were then combined into possible remedial alternatives. The following remedial alternatives were evaluated in detail:

- Alternative SC1—No Action
- Alternative SC2—Cap Study Site/No Action for Groundwater
  - Alternative SC2a: Soil Cap on Northern Portion/Composite-Barrier Cap on Southern Portion
  - Alternative SC2b: Single-Barrier Cap on Northern Portion/Composite-Barrier Cap on Southern Portion
- Alternative SC3—Cap Study Site[1]/Upper Aquifer Groundwater Extraction at Study Site Boundary
- Alternative SC4—Cap Study Site[1]/Upper Aquifer Groundwater Extraction With Southern Portion of Study Site
- Alternative SC5—Cap Study Site[1]/Full Aquifer Groundwater Extraction at Study Site[2]
- Alternative SC6—Cap Study Site[1]/Excavated Discrete Material within SSDA1 and Consolidate in Lined Cell Beneath Cap[3]
- Alternative SC7—Cap Study Site[1]/Excavate Discrete Material within SSDA 1 and Incinerate Off-Site
- Alternative MM1—Downgradient Groundwater Extraction[4]

The detailed analysis consisted of as assessment of individual alternatives against seven of the nine criteria described in the NCP[5], including:

- Overall protection of human health and the environment;
- Compliance with ARARs;
- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility and volume through treatment;
- Short-term effectiveness;
- Implementability; and
- Cost

1.2.2 Record of Decision

The Record of Decision (ROD) was signed in September 1994. The ROD required placement of a cap on the Landfill and continued groundwater investigations.

[1] Evaluated with a soil cap and a single-barrier cap on the northern portion.
[2] Evaluated with and without an upgradient groundwater extraction system.
[3] May be combined with Alternatives SC2 through SC5.
[4] May be combined with source control Alternatives SC2, SC3, SC4, SC6 or SC7.
[5] The two remaining criteria (state and community acceptance) were evaluated by EPA following public comment.

The SOW set forth the requirements for completing the remedial design/remedial action (RD/RA) including:

- Caps on the north and south portions of the Landfill;
- Replacement of SSDA 1 into a lined cell beneath the southern portion cap; and
- Associated activities related to the cap and control of landfill gases.

The RD/RA Statement of Work (SOW) also included monitoring requirements related to the effectiveness of the caps.

Attachment A to the SOW sets forth the statement of work for the Supplemental Groundwater Investigation and Amended Feasibility Study (SGI/AFS). Attachment A called for:

- Additional groundwater investigations downgradient of the Landfill;
- Placement of bedrock wells on-site; and
- Collection of data sufficient to complete an AFS and amended risk assessments, as needed.

According to the SOW, EPA would decide when sufficient groundwater data have been collected, following the placement of the cap, for proceeding with the AFS.

The SOW, with Attachment A, was approved by EPA and CT DEP in late 1997. The SOW is an appendix to the Consent Decree for the Site, which became final in June 1998.

1.2.3 Landfill Cap

The landfill has been covered with an impermeable cap which provides a barrier to the subsurface soils in the landfill. The interim remedy specified in the September 1994 Record of Decision consisted of:

- Constructing a synthetic cap over the landfill to prevent human contact with contaminated subsurface soils, stop rainwater infiltration through the soil to the groundwater, and allow for the containment and collection of landfill gas;
- Excavating and consolidating a highly contaminated area “hot spot” in a lined cell underneath the landfill cap;
- Removing all buildings from the landfill;
- Installing a soil gas collection/treatment system; and
- Performing long-term monitoring of groundwater and soil gas.

In addition to the activities listed above, some contamination which was found along the southwestern shore of Black Pond was excavated and buried underneath the landfill cap during the construction activities.

The interim remedy design was completed in April 2000. Construction of the interim remedy started in the spring of 2000 and was completed in the fall of 2001.

1.2.4 Groundwater Classification

Plate 2 shows the current groundwater classification boundaries in the Study Area. The Study Area is classified as GB. Designated uses for Class GB groundwater include: industrial process water and cooling waters; base-flow for hydraulically-connected surface water bodies; presumed not suitable for human consumption without treatment.

1.3 Report Organization

This report is organized into seven (7) sections. Section 2 details the work completed to-date for the Supplemental Groundwater Investigations (SGI). Section 3 discusses the physical characteristics of the Study Area. Section 4 discusses the results of the SGI and details the nature and extent of contamination within the Study Area. Section 5 discusses fate and transport of contaminants of concern. Section 6 provides a conceptual model for the Study Area based on the data and information provided in Sections 1-5. Section 7 provides a list of references used throughout the report.

2.0 SUPPLEMENTAL GROUNDWATER INVESTIGATIONS

The requirements in Attachment A of the SOW for SGI/AFS monitoring activities include the following:

- Bedrock Groundwater Investigation;
- Phase 1A and Phase 1B SGI;
- Phase 2A SGI;
- Phase 2B SGI, if needed, based on results of Phase 2A;
- Semi-Annual Long-Term Monitoring;
- Amended Human Health and Ecological Risk Assessments (if needed);
- Post-Screening Field Investigations (if needed); and
- Amended Feasibility Study.

The Bedrock Groundwater Investigation, Phase 1A and Phase 1B SGI, and Phase 2A SGI have been completed and reports submitted to EPA and CT DEP.

The Semi-Annual Long-Term Monitoring began in May 2000 and additional monitoring rounds were completed in September and March of each year, through 2003 pursuant to the Semi-Annual Long-Term Monitoring Work Plan approved by EPA on May 1, 2000. Quarterly monitoring began in September 2003.

The following sections provide:

- a chronological discussion of workplans prepared for various SGI activities, of the details of investigations, and of reports provided to EPA and CT DEP during the SGI;
- details on borings and monitoring well installations;
- details on groundwater sampling and analyses; and
- surface water and sediment sampling and analysis.

Results from one-time preliminary investigations completed to guide development of workplans (such as the microwell surveys) or to provide data for a specific localized issue (such as the bedrock investigation beneath the SSDAs) are discussed in Section 2.1. Hydrogeological results and interpretations, groundwater sampling and analysis results, and surface water/sediment sampling and analysis results are discussed in Sections 3 and 4.

2.1 SGI Workplans, Investigations, and Reports

The following subsections describe in detail the work done for each work plan and investigation for all completed activities associated with the SGI. The discussions are in chronological order, although in some cases different activities were conducted at the same time. For example, the Long-Term Monitoring overlaps with subsequent investigations, and has been expanded since it was initiated in May 2000.

2.1.1 Bedrock Groundwater Investigation

Section IV.A. of Attachment A of the SOW required a limited bedrock groundwater investigation to include two bedrock wells in the vicinity of the R.V. & Sons building (SSDA1) and two bedrock wells in the vicinity of the Parks & Recreation building (SSDA2). The wells were to be sampled twice for TCL VOC, once immediately after installation and once 4 to 6 months later. If VOC results for the wells indicated the presence of NAPL, two additional bedrock wells were to be installed across Old Turnpike Road.

The Bedrock Groundwater Investigation Work Plan was submitted to EPA and CT DEP on September 27, 1999. The modifications were approved by EPA by letter on November 29, 1999.

Four bedrock wells (BR-101 through BR-104) were installed in December 1999 and the first round of bedrock groundwater samples were collected on January 4 and 5, 2000. The bedrock installation and data report were submitted to EPA on April 11, 2000.

Concentrations of Constituents of Concern (COC) at the Site were not detected, except for an estimated concentration below the detection limit of 0.3 ug/L of TCE in the replicate sample at BR-102. The data clearly demonstrated that VOC are not present in bedrock. Further, the data confirmed the conclusions in the Remedial Investigation Report that DNAPL is not present in bedrock or on the bedrock surface.

The second round of bedrock groundwater samples were collected on May 3 and 4, 2000. The Data Report was submitted to EPA on September 6, 2000. The round 2 data confirmed the results of Round 1, e.g. that VOC are not present in bedrock and, therefore, that DNAPL is not present in bedrock or on the bedrock surface.

Based on the data demonstrating the absence of VOC in the on-site bedrock wells, pursuant to the provisions of Attachment A of the SOW, the primary objective had been met and no further bedrock groundwater work was required.

2.1.2 SGI Work Plan

The SGI Work Plan was submitted to EPA on August 28, 1998 and included the following tasks:

- Phase 1A goals included an updated baseline map; installation of ten temporary small diameter wells in the deep portion (80 to 150 feet) of the aquifer; installation of three surface water gauging stations in the Quinnipiac River; one round of water level measurements; and survey of the new locations. This work was conducted to determine groundwater flow directions downgradient of G308 and G309.

- Phase 1B goals included the installation of temporary small diameter wells at medium and deep depths along four to five transects oriented perpendicular to the groundwater flow path defined in Phase 1A; collection of groundwater samples from each temporary small diameter well on the day installed with VOC analysis (24-hour turnaround time) to guide the installation of additional wells; one round of water level measurements; collection of baseline groundwater samples from 17 existing wells, for TCL VOC analysis, with 6 wells sampled for natural attenuation parameters. This work was conducted to further define groundwater flow directions and to characterize VOC distribution (VOC were determined to be the best indicator parameters for plume characterization) within the defined flow path.

- Phases 2A and 2B: The scope of work for these phases was required to be generated after completion of Phases 1A and 1B.

On January 11, 1999, EPA sent an approval letter for the SGI Work Plan, stating that the Work Plan was responsive to the Agencies' comments.

2.1.3 Phase 1A SGI

Pursuant to the SGI Work Plan, Phase 1A was conducted during February 1999. The primary focus of Phase 1A was to define the groundwater flow path in the lower portion of the overburden aquifer. The assumptions behind the design of Phase 1A were that groundwater flow from the Landfill would consist of a narrow, defined flow path moving west from existing well locations 308 and 309 and that the plume would gradually turn south-southwest as it neared the Quinnipiac River.

Eleven microwells were installed at 10 locations (Plate 1 - M-1 through M-10). The microwells were screened to depths ranging from approximately 75 ft to 95 ft (within the anticipated bottom half of the aquifer), allowed to stabilize for not less than 48 hours, and water levels were measured. Water level measurements were also taken from eight existing groundwater monitoring wells and three stream gauges installed in the Quinnipiac River on February 16, 1999. On February 16 and 17, 1999, all microwells installed during the Phase 1A field program were abandoned by grouting from the bottom to the top of riser pipe. The work performed demonstrated that groundwater flow is westerly from existing wells 308 and 309, with a slight north-northwest component. No southerly component of flow was identified, contrary to what had been assumed when Phase 1A was designed.

The Phase 1A Data Report was submitted to EPA on March 4, 1999 and included a recommendation to eliminate Phase 1B and move on to Phase 2A, incorporating the baseline monitoring portion of Phase 1B into Phase 2A, because the groundwater flow path is west/northwest to the River, with no southerly component. Therefore, reasonable downgradient well locations could be selected without the need for Phase 1B. However, if the flow path had turned southward as it neared the Quinnipiac River, the potential area where the plume edge could be located would have been extensive, and the Phase 1B data would then have been necessary to focus in on the plume and help in locating permanent well clusters.

A meeting between the PSDs, EPA, and CT DEP was held on March 18, 1999 to discuss issues and propose well locations for monitoring wells in lieu of Phase 1B. However, in a letter dated April 6, 1999, EPA expressed concern on behalf of both EPA and CT DEP regarding the elimination of additional microwells. This letter also included nine additional considerations for design of a modified Phase 1B investigation, as follows:

- Need characterization of VOC plume--microwells provide many data points;
- Would lose beneficial hydrogeology data;
- Aquifer depth may require three-well clusters;
- The proposed well locations may be too far apart and could allow a plume to be missed;
- Need clarification on use of hydraulic data in the selection of wells and depths;
- Phase 1A indicates there may be a northwestward flow component and proposed well locations may not address this;
- SGI Work Plan indicates that Phase 1B will include maps and discussion of VOCs; (how will this now be accomplished?);
- Phase 2 Report is to have an evaluation of natural attenuation (will it still?); and
- The proposed Main Street well locations may impact the type of institutional controls that can be utilized at the site.

2.1.4 Phase 1B SGI

As stated previously, the objectives of the Phase 1B SGI were to further define the groundwater flow path and to characterize the distribution of VOC within the defined groundwater flow path. Based on the comments from EPA and CT DEP, the PSDs submitted an Addendum to the SGI Work Plan on April 21, 1999 indicating that the PSDs would continue with Phase 1B, but slightly modified to meet EPA and CT DEP concerns. The proposed modifications included:

- Two microwells would be installed at each of eight defined locations;
- Water level measurements and sampling for VOC would be performed for each microwell in conjunction with the baseline groundwater monitoring of existing wells; and
- All other aspects of the Phase 1B as defined in the SGI Work Plan would remain the same.

Based on requests from EPA and CT DEP, on May 7, 1999, the PSDs submitted an Amendment to the Addendum agreeing to install three microwells at each of the eight locations, with specific instructions as to determining the depth of each microwell.

Phase 1B of the SGI was conducted during June 1999, pursuant to the SGI Work Plan, the Addendum, and the Amendment to the Addendum. A total of 23 microwells were installed at eight locations (Plate 1 - M-11 through M-18) between June 10 and 17, 1999 and sampled between June 22 and 25, 1999. Sixteen existing monitoring wells were also sampled between June 15 and 21, 1999, using low flow sampling techniques. All groundwater samples were analyzed for VOCs. In addition, eight monitoring wells were sampled for selected natural attenuation parameters to evaluate the evidence for on-going natural attenuation. Finally, a complete round of water level measurements were collected on June 24, 1999, from the 23 Phase 1B microwells, three existing stream gauges, and 33 groundwater monitoring wells.

The Phase 1B investigation concluded that groundwater flow in the aquifer generally follows a west/northwest trend, confirming the flow pattern identified in the Phase 1A investigation. Analytical results of the June 1999 groundwater sampling indicated that VOC detected downgradient of the Site in existing monitoring wells are consistent with those detected during the last round of groundwater samples (collected in January 1993). Considering the combined groundwater VOC data and Phase 1B microwell data, the Phase 1B investigation concluded that the VOC distribution is confined to the deeper portions of the aquifer in a narrow westward path toward the Quinnipiac River. The width of the plume in 1999 was accurately delineated by non-detects or trace level VOC in microwells along both the northern and southern east-west transects. The Phase 1B Data Report was submitted to EPA on September 13, 1999. Analytical results for M11 through M18 are provided in Table 1.

2.1.5 Phase 2A Work Plan

The primary objectives of the Phase 2 SGI were to ensure that sufficient data were collected to develop the Amended Feasibility Study and to determine whether media other than groundwater were impacted by the groundwater plume. Meetings were held with EPA and CT DEP on September 21, 1999 and October 20, 1999 to discuss the Phase 1B Data Report and proposed Phase 2A investigations. The Phase 2A Work Plan submitted to EPA on November 18, 1999, addressing EPA and CT DEP concerns. The Work Plan included:

- Installation of a three-well cluster at downgradient edge of plume (G310A, B, and C); and
- Groundwater receptor study along Canal Street on the west side of the Quinnipiac River; and, Phase 2A Report.

Comments were received from EPA and CT DEP on February 11, 2000 and discussed by telephone during a conference call with EPA and CT DEP on February 11, 2000. The revised Phase 2A Work Plan, addressing EPA and CT DEP comments, was submitted to EPA on February 28, 2000 and included minor edits and changes to the Phase 2A Report, as follows:

- An Interim Phase 2A Report that would describe the procedures followed and results of the wells and the receptor study; and
- A Final Phase 2A Report that would address remaining issues in the SOW, such as ecological impacts and impacts to other media, once additional data requested by EPA and CT DEP had been collected.

Verbal comments on the Revised Phase 2A Work Plan were received during a March 8, 2000 conference call with EPA and CT DEP. A fax of written comments from the CT DEP (letter to EPA dated February 24, 2000) and comments from EPA dated March 10, 2000, were received by the PSDs on March 10, 2000. A Revised Phase 2A Work Plan, Version 2, addressing EPA and CT DEP comments, was submitted on March 17, 2000 and added a three-well background cluster east of Black Pond (G311A, B, and C), at EPA's request. EPA approved the Revised Phase 2A Work Plan, Version 2, by letter on April 14, 2000.

2.1.6 Phase 2A SGI

The primary objectives of the Phase 2A SGI were to ensure that sufficient data were collected to develop the Amended Feasibility Study and to determine whether media other than groundwater were impacted by the groundwater plume. Per the requirements of the Phase 2A Work Plan, the groundwater receptor study was conducted on March 16 and 17, 2000, and two 3-well clusters (G310 and G311) were installed during April 2000.

An Interim Phase 2A Report was submitted to EPA on August 9, 2000. The groundwater receptors study was conducted in March 2001 to verify water usage of properties located along Canal Street and Atwater Street, situated west of the Quinnipiac River between the Quinnipiac River and Interstate Highway 84. A total of 28 parcels were identified within the subject area. The properties consisted of industrial, commercial, residential, and undeveloped/vacant lots. All developed properties in the subject area were connected to the Southington public water system. No private water supply wells were identified in the subject area.

Boring logs, results of boring soil testing, and well installation diagrams were also provided in the Interim Report.

Groundwater data were collected in May 2000 and September 2000. These data were provided to EPA and CT DEP as part of the May 2000 Semi-Annual Long-Term Monitoring Program Data Report and the September 2000 Semi-Annual Long-Term Monitoring Program Data Report, respectively.

The Final Phase 2A Report was submitted to EPA on April 27, 2001, and included the following assessments:

- Summary of hydrogeology across the Study Area, including data from the RI and all SGI work to-date;
- Summary of COC transport, including VOC, SVOC, and metals;
- Metals COC transport assessment included potential site-specific metals travel distances and a very conservative, worst case, assessment of the amount of metals potentially discharging to wetlands based on metals concentrations measured in the wells along Old Turnpike Road;
- Comparison of VOC, SVOC, and metals concentrations to regulatory criteria;
- Graphical presentation of metals trends in groundwater along five east-west transects;
- Refined Conceptual Model for the Study Area, using SGI data to update the RI Conceptual Model downgradient to the River; and
- A point-by-point comparison of the Phase 2A findings with the Phase 2A objectives in the SOW.

The Final Phase 2A Report concluded that the SOW objectives had been met and that receptors or media other than groundwater are not impacted by the groundwater plume. The report concluded that a Phase 2B investigation was not required.

2.1.7 Semi-Annual Long-Term Monitoring Work Plan

As specified in the SOW, semi-annual long-term monitoring of downgradient groundwater is required until EPA decides sufficient data have been collected since the cap was installed to develop an Amended Feasibility Study and, if needed, Amended Ecological and Human Health Risk Assessments. The Semi-Annual Long-Term Monitoring Work Plan was submitted to EPA on November 18, 1999. This Work Plan incorporated comments from the EPA and CT DEP on the Phase 1B Data Report, discussions with EPA and CT DEP, and meetings on September 21, 1999 and October 20, 1999. The Work Plan included the following tasks:

- Water level measurements at all wells and microwells tested;
- Groundwater samples for VOC at 15 wells (G304A and B, G308B and C, G309B and C; G310A, B, and C, GZ2, GZ3, GZ12M and D, and GZ14M and D) and 8 microwells (M11S, M12S, M and D, M16S and D, and M18M and D); and
- Natural attenuation parameters to be sampled at 5 wells (G304A, G308C, G309B and C, and GZ14D) and 4 microwells (M12M and D, and M17M and D).

Following a conference call on February 11, 2000 and a meeting on February 25, 2000, EPA provided a letter on February 28, 2000, detailing the agreements made at the meeting. The PSDs responded to the February 28, 2000 EPA letter on March 7, 2000 and agreed to implement EPA and CT DEP requests, as follows:

- Sample nine wells (G302A, B, and C, G303A, B, and C, and G304A, B, C) twice during 2000 for VOC, SVOC, PCB, metals, alkalinity, ammonia, chloride, and total sulfates;
- Inspect wells G301 and G307;
- Sample G301, G305, and G307 for VOC, SVOC, PCB, metals, alkalinity, ammonia, chloride, and total sulfates once prior to abandonment for the cap;
- Install a deep well at the GZ-1 location; and
- Sample GZ-1 wells for VOC, SVOC, PCB, metals, alkalinity, ammonia, chloride, and total sulfates twice during 2000.

A conference call was held on March 8, 2000 and comments were received from CT DEP and EPA on March 10, 2000 (combined letter with comments on Phase 2A Work Plan and the Semi-Annual Long-Term Monitoring Work Plan). A Revised Semi-Annual Long-Term Monitoring Program Work Plan, addressing EPA and CT DEP comments, was submitted to EPA on March 30, 2000. The Revised Work Plan incorporated the additions noted in the March 7, 2000 letter, with the exception that G311 wells would be installed and tested instead of the GZ-1 wells mentioned in the March 7, 2000 letter. The PSDs received comments from EPA and CT DEP on April 24, 2000 and a conference call was held on April 25, 2000 with EPA, CT DEP, and the PSDs.

A Semi-Annual Long-Term Monitoring Program Work Plan - Revision 2, addressing EPA and CT DEP comments, was submitted to EPA on April 25, 2000 and included the following additions:

- Wells G308A and G309A were added for VOC sampling;
- G304A&B were added for SVOC, PCB, metals, alkalinity, ammonia, chloride, and total sulfates sampling to be conducted twice during 2000.

The Semi-Annual Long-Term Monitoring Program Work Plan - Revision 2 was approved by EPA by letter dated May 1, 2000. In May 2000, a total of 30 wells and 10 microwells were sampled for VOC for the SGI.

The PSDs submitted, at EPA's request, a Semi-Annual Long-Term Monitoring Program Work Plan - Revision 3 to EPA on September 6, 2001, noting that the two rounds of surface water and sediment samples collected for the O&M Plan would be collected pursuant to the existing QAPP for the Semi-Annual Long-Term Monitoring Program. The first round surface water and sediment samples were to be collected during the September 2001 sampling round and the second round were to be collected one year following acceptance of the vegetative cover on the landfill.

2.1.8 Scope of Work for Additional Field Investigations

Based on discussions with EPA and CT DEP at a meeting on June 25, 2003 and a memo to file from CT DEP, the PSDs developed a scope of work for additional well installations and additional monitoring. The Scope of Work for Additional Field Investigations was submitted to EPA and CT DEP on July 29, 2003 and modified in accordance with EPA comments dated September 24, 2003 (and further clarified in a letter from EPA dated January 10, 2004). The scope of work included:

- Results of a vertical profiling study at six locations: G312, G313, G314, G315 (this location was next to GZ13S, M, and D), G317 and G318. The data were used to help locate screen depths for new wells;
- Installation of 19 new wells: G310S; G312A, B, and C; G313A and C; G314A, B, and C; G315A, B, and C (to replace damaged microwells M12S, M, and D); G316A; G317A, B, and C; and G318A, B, and C. The new wells were installed during September 2003;
- Inclusion into the monitoring program of 12 existing wells (G302B and C; G303B and C; G304C; GZ5S; GZ14S; GZ13S, M, and D; GZ17M and D);
- VOC and metals analysis at all wells;
- SVOC analysis at 14 selected wells (G310S, A, B, and C; G311A, B, and C; GZ17M and D; G312A, B, and C; G313A and C) for 4 rounds;
- Natural attenuation parameters at 24 selected wells (G304A, G308C, G309B and C, G310S, A, B, and C, G311A and C, GZ5S and M, GZ14D, GZ17M and D, G312A, B, and C, G313A and C, G315B and C, and G317B and C).
- Quarterly groundwater sampling for VOCs, SVOCs and TAL metals, and semi-annual monitoring for natural attenuation parameters;
- Groundwater receptors study in the neighborhood east of the Landfill.

The Scope of Work for Additional Field Investigations was approved by EPA by letter dated January 10, 2004.

2.1.9 New Wells Installation Report

The New Wells Installation Report was submitted to EPA on February 4, 2004. This report detailed the well installation for the 19 new wells (Plate 1: G310S; G312A, B, and C; G313A and C; G314A, B, and C; G315A, B, and C; G316A; G317A, B, and C; and G318A, B, and C). The report included the monitoring well construction details, TOC and grain size analyses, boring logs, and well construction diagrams. The new wells were installed during September 2003.

2.1.10 Groundwater Receptor Study – East of Site

The groundwater receptor study for areas east of the Site was conducted in accordance with the Scope of Work for Additional Field Investigations, as amended by subsequent discussions with the EPA and CT DEP. Included in this study were all properties located along the following streets:

- Pondview Drive
- Lawncrest Drive
- Meadow Lane
- Quaker Lane
- Pinecrest Drive
- Birchcrest Drive
- Hemlock Drive, and
- Laurel Street.

Two hundred and fifty one (251) parcels were identified within the subject area, all of which are residentially maintained. A review of the Southington Water Department records confirmed that all 251 lots located within the subject area are connected to the public water supply system. The report was submitted to EPA on February 23, 2004.

2.1.11 Scope of Work for Additional Field Investigations – Phase 2

Following the June 2, 2004 meeting held at EPA Region 1, the PSDs submitted a scope of work for additional field investigations to be completed as part of the on-going SGI. Comments from EPA and CT DEP were sent to the PSDs on June 21, 2004. The PSDs responded to EPA and CT DEP comments in a letter dated July 6, 2004. Additional comments from CT DEP on July 15, 2004, and from EPA on July 19, 2004 were discussed in two conference calls with EPA, CT DEP and the PSDs; one on July 19, 2004 and the second one on July 21, 2004. The final Scope of Work included:

- Installation of six microwells (M19-M24) down gradient of GZ12 to determine the location of the TCE-related VOC slug down gradient of GZ12M, followed by the installation of a small diameter well nest (SDW9A, B, and C) based on the findings of the microwell survey.
- Installation of one shallow small diameter well (SDW2) at GZ12 to determine whether the TCE-related OVC slug is present in the shallow part of the aquifer;

- Installation of four shallow SDW wells (SDW1, 3, 4, and 5) in the vicinity of G314 to determine the presence, if any, of vinyl chloride downgradient of G314;
- Installation of three shallow SDW wells (SDW6, 7, and 8) between G310 and the Quinnipiac River to characterize the shallow groundwater quality between G310 and the river;
- Preliminary sampling of SDW wells for VOCs in August 2004;
- At a minimum all SDW wells (SDW 1 through 9) would be sampled for VOCs during the September 2004 sampling event, and
- Surface water and sediment sampling for TCL VOCs and SVOCs and TAL metals.

The PSDs submitted the results of the microwell survey to EPA on August 16, 2004, and proposed to install a shallow, medium and deep SDW well cluster down gradient of GZ12 (SDW 9A, B, and C). Based on EPA's comments dated August 20, 2004, the PSDs agreed to adjust the proposed location and screen depths to address EPA's concerns. Analytical results for M19 through M24 are provided on Table 1.

A meeting between the PSDs and CT DEP was held on September 13, 2004 to discuss CT DEP's concerns with Black Pond. Based on those discussions, the PSDs agreed to install a shallow and medium SDW well nest (SDW 10A and B) just south of Black Pond in order to obtain additional hydrologic data to better evaluate the hydrologic connection between Black Pond and the landfill. The PSDs also agreed to continue periodic monitoring of water levels in the unnamed stream and nearby shallow wells as discussed.

2.1.12 Report on the Installation of Small Diameter Wells and Initial Groundwater VOC Analytical Results

A letter report from the PSDs was submitted to EPA on September 21, 2004. This report included the well installation construction details and the VOC sampling results for SDW1 through 5 and SDW 7 and 8. SDW 6 and 9A, B, and C were installed during the week of September 13, 2004, and therefore could not be sampled in August 2004. The locations of the SDWs are shown on Plate 1.

2.1.13 Fall 2005 Field Investigations

The PSDs submitted a Fall 2005 Field Investigation Work Plan to EPA and CT DEP on September 30, 2005. The field investigations were designed to better define the extent of shallow VOC within Chuck & Eddies and the radio station property, to assist if the placement of compliance wells for ELURs in compliance with the CT DEP RSRs volatilization criteria. Three phases of groundwater sampling using geoprobe microwells were completed, as follows:

- Phase 1: Groundwater samples from microwell points M26 through M43 were collected October 10 to October 12, 2005. Groundwater samples were submitted to Averill Labs for 48 hour TAT for VOC by EPA 8260B. A report was submitted to EPA and CT DEP, via electronic mail, on October 17, 2005.

- Phase 2: Based on the results from the Phase 1 sampling, groundwater samples from microwell points M44 through M62 were collected October 27 and 28, 2005. Groundwater samples were submitted to Averill Labs for 48 hour TAT for VOC by EPA 8260B. A report was submitted to EPA and CT DEP, via electronic mail, on November 3, 2005.

- Phase 3: Based on the results from the Phase 2 sampling, groundwater samples from microwell points M63 through M77 were collected November 10 and 11, 2005. Groundwater samples were submitted to Averill Labs for 48 hour TAT for VOC by EPA 8260B. A report was submitted to EPA and CT DEP, via electronic mail, on November 16, 2005.

- Phase 4: Based on the results from the Phase 3 sampling, four borings and three piezometers were installed on November 22, 2005. The borings were installed to better understand the presence of a semi-confining layer or clay layer encountered at four microwell points during Phase 3. Groundwater samples were collected from the three piezometers. Groundwater samples were submitted to Averill Labs for 48 hour TAT for VOC by EPA 8260B. A report was submitted to EPA and CT DEP on January 26, 2006.

The locations of M26 through M77 are shown on Figure 15. Analytical results for microwells M26 through M77, and for PZ1, 2, and 3, are included on Table 1. Boring logs are included in Appendix A. Installation reports for the three piezometers are included in Appendix B.

2.2 Subsurface Borings and Monitoring Well Installation

MACTEC has installed 25 monitoring wells and 13 small diameter wells during the SGI. Plate 1 shows the locations of the all monitoring wells. The following subsections provide detail on installation of the new wells.

2.2.1 Phase 2A Well Installations

In April 2000, two three-well clusters of monitoring wells were installed as part of the Phase 2A investigations. Wells G310A, B, and C were installed at the downgradient edge of the groundwater plume.[6] Wells G311A, B, and C were installed east of Black Pond as background wells.

Drilling activities associated with the installation of the G310 well cluster were initiated on April 11, 2000 by Connecticut Test Borings, Inc. (Seymour, CT). The location of the G310 cluster was drilled in the proximity of the M-17 microwells, which were installed during Phase 1B. Using a truck-mounted drill rig, 4.75-inch hollow-stem augers were advanced below the ground surface, with split-spoon soil samples collected at 10-foot sampling intervals. The soil samples were collected to document the soil type and for the collection of samples for laboratory analyses for total organic carbon (TOC) and grain size. The results of the TOC analyses are discussed in Appendix A and summarized in Table 1 of the Interim Phase 2A Report. The grain size results are attached in Appendix B of the Interim Phase 2A Report.

[6] As with wells installed during the RI by MACTEC, the letter designation denotes the portion of the aquifer: A – shallow; B – mid-depth; C – deep.

Drilling of the deep boring/monitoring well (G-310C) was conducted first to evaluate the depth to bedrock and to determine the screen depths of the monitoring wells to be installed. Overburden soils consist of a fine red sand from depths of 0-70 feet below ground surface (bgs). A silt unit was encountered at a depth of 72-90 feet bgs, and the presence of till was determined at a depth of 90-110 feet bgs. Auger refusal was encountered at a depth of 110.25 feet. Three-inch steel casing was inserted into the hollow-stem augers for coring purposes to confirm the presence of bedrock, and a five-foot rock core was then completed into the bedrock surface. Examination of the rock core upon retrieval indicated the presence of competent bedrock, consisting of a fine to medium grained sandstone.

Upon completion of the deep test boring and evaluation of the geologic conditions encountered at location G310, discussions between MACTEC, EPA, and CT DEP were conducted to determine the well screen interval depths for the three groundwater monitoring wells to be installed at this cluster. It was agreed that the well screen depth for the deep monitoring well (G310C) be set at 85-95 feet bgs, which correlated with silt and till geologic units overlying the bedrock surface. The well screen depth of the intermediate well (G310B) was set at 62-72 feet bgs to correlate with a sand unit overlying a dense silt. The well screen depth of the shallow well (G310A) was set at 35-45 feet bgs, approximately 15 feet below the existing water table. All three monitoring wells were completed with the installation of schedule 40 PVC well screen and riser pipe, with standard well screen sand packs, bentonite seals, and grout construction. Each well was completed with a flush-mount roadway box, cemented at the ground surface. All drill cuttings from the monitoring well installations were transferred to the Old Southington Landfill and spread onto the ground surface at a location within the limits of the final cap design.

Drilling activities associated with the installation of the G311 monitoring well cluster were initiated on April 17, 2000. The G311 cluster was installed at a location east of the Landfill for the purpose of assessing cap effectiveness upgradient of the final landfill cap. As was performed at the G310 cluster location, the deep test boring/monitoring well was installed first to determine the geologic conditions and the depth to the bedrock surface at this location. Soil samples were collected at 10-foot intervals to evaluate the soil type and for the collection of TOC and grain size samples (see Table 1 and Appendices A and B of the Interim Phase 2A Report).

Overburden soils at the deep boring location (G311C) consisted of fine red sands from depths of 0-90 feet bgs. A till unit was encountered at a depth of 90-105 feet bgs, with auger refusal at 105 feet bgs. Three-inch steel casing was inserted into the hollow-stem augers for coring purposes to confirm bedrock and obtain a five-foot core. Examination of the rock core upon retrieval indicated competent bedrock consisting of a fine to medium grained sandstone.

Upon completion of the deep boring and evaluation of the geologic conditions encountered at the G311 location, discussions between MACTEC, EPA, and the State of Connecticut were conducted to determine the well screen interval depths for the three groundwater monitoring wells to be installed at this cluster. The well screen depth for the deep monitoring well (G311C) was set at 90-100 feet bgs, which correlated with the till unit overlying the bedrock surface. The well screen of the intermediate monitoring well (G311B) was set from 55-65 feet bgs into the sand unit. The well screen of the shallow well (G311A) was set from 20-30 feet bgs, approximately 10-15 feet below the existing water table. All three monitoring wells were completed with PVC screen and riser pipe, with standard well construction details. Each well was completed with a locking protective steel casing extending approximately two feet above the ground surface. All drill cuttings from the monitoring well installations were transferred to the Landfill and spread onto the ground surface at the same location as the G310 drill cuttings.

Following a well stabilization period, each well was developed by overpumping to remove any remaining fine grained sands and drilling water used during the construction of the wells and to facilitate groundwater in the formation to readily enter the well screens. A centrifugal pump and dedicated tubing was used for the development of wells G310A, G310B, G311A, and G311B. Due to the poor yield of wells G310C and G311C, inertial bailing methods were used on these two wells with dedicated tubing fitted with check valves. Water quality readings, including turbidity, temperature, pH, and specific conductance, were periodically recorded during the pumping process. Pumping was continued on each well until the field parameters stabilized to less than 10% between readings and the turbidity was below 25 NTU. However, due to the high turbidity of the purge water from wells G310C and G311C, the goal of 25 NTU's was not achieved. All purge water generated during the well development activities was contained into 55-gallon drums and later transferred to a 600-gallon storage tank, pending off-site disposal.

The six new monitoring wells were surveyed by KWP Associates, a surveyor licensed and registered in the State of Connecticut.

Boring logs for the deep borings G310C and G311Care provided in Appendix A. Table 2 provides the construction details for all the installed monitoring wells. Well installation reports for each new well are provided in Appendix B.

2.2.2 Additional Well Installations- September 2003

During September 2003, 19 additional monitoring wells were installed at eight (8) locations. Well G310S was installed to bridge the water table at the G310 well cluster location. Wells G312A, B, and C were installed at the southern edge of the plume, along Old Turnpike Road. Wells G313A and C were installed at the GZ17 cluster location to provide a well at the groundwater interface (G313A) and at the bedrock interface (G313C). Wells G314A, B, and C were installed at the northern end of the Study Area along Old Turnpike Road near the location of previous well location LW-15, which were destroyed following the RI during improvements to Old Turnpike Road. Wells G315A, B, and C were installed at the end of Nunzio Drive, at the center of the plume, at the previous microwell location M-12, which were destroyed during new home construction in the area. Well G316A was installed at the southern boundary of the Landfill to confirm the absence of contaminants moving south from the Landfill. Wells G317A, B, and C were installed along Nunzio Drive to confirm the southern edge of the groundwater plume in that area. Wells G318A, B, and C were installed on Buckland Street to confirm the southern boundary of the groundwater plume in that area.

As discussed in Section 2.1.9, MACTEC submitted a report on the installation of the additional wells to EPA and CT DEP on February 4, 2004. As discussed in detail in that report, MACTEC subcontracted Dragin Drilling, located in Wareham, Massachusetts, to complete the soil boring and monitoring well installation program. On September 8, 2003, both MACTEC and Dragin Drilling arrived at the Site for the beginning of the investigation. Dragin utilized the DPW Facility as a staging area for all their equipment and a decontamination area that would be used for the cleaning of down-hole equipment. A temporary 4000-gallon Baker Tank and a 25-yard roll-off plastic lined bin were placed in this staging area for the containment of decontamination wash, purged water, and drill cuttings.

Field work was conducted between September 8, 2003 and October 2, 2003, in accordance with standard operating procedures identified in the existing Field Sampling Plan for the Site, consistent with the SGI Work Plan, dated August 1998. Dragin Drilling utilized a tire-mounted CME® Drill Rig fitted with a 4.25" ID (6.5" OD) hollow-stem auger bit to install the monitoring wells.

A 140 lb. weight and 2-foot split spoon sampler was used to collect soil samples in deep wells G312C, G314C, G315C, G317C, and G318C. Soil samples were collected at ten foot intervals from the top of the boring until bedrock was reached. MACTEC's field inspector made a log of the soil in the split spoon, took a photograph of the sample, and collected a sample of soil from the split spoon for analysis for total organic carbon (TOC) and grain size. Samples for TOC and grain size analysis were submitted to ESS Laboratory, Cranston, RI, for analysis for TOC and grain size. Results of TOC and grain size analyses were provided in Appendix A of the February 4, 2004 report. The photo log of split spoon samples is provided in Appendix B of the February 4, 2004 report.

Once bedrock was reached in each of the deep wells, a rock coring bit was lowered into the boring to collect a five foot confirmatory rock sample. In well G312C, highly weathered bedrock was encountered between 175 feet bgs and 191 feet bgs. After discussions with EPA and CT DEP, coring was stopped at 191 feet bgs and the well installed at 175 feet bgs. Following the rock coring in each of the deep wells, hydrated bentonite chips were used to seal the rock coring hole. The stainless steel well screens were then set just above bedrock.

In each of the deep wells (G312C, G313C, G314C, G315C, G317C, and G318C) and in wells G318B and G316A, 2 inch diameter stainless steel well screens and schedule 40 PVC riser were used for construction. All other wells were constructed using 2 inch diameter, schedule 40 PVC well screens and riser. The screens for all wells were 10 foot long and consisted of continuous slot construction with 0.01 inch wide slots.

The annular space between the screen and surrounding formation was filled with a sand-filter pack. The size of the sand-filter pack varied with each well (#00, #1 or #2). The driller determined the appropriate size based on the relative amount of fine silts that were evident in the drill cuttings. The sand-filter pack extended from the bottom of the well to a level that ranged from 1 foot to 5 feet above the top of the screen. The annular space above the sand-filter pack was filled with a bentonite clay seal that ranged between 1 foot and 3 feet. This was followed by filling the annular space with cement grout to a point of 2 feet to 3 feet below ground surface (bgs). Each well was completed with a lockable cap and a flush mount road box that was secured in place with a concrete collar.

Following the completion of a well, all cuttings were transported back to the DPW and placed in the plastic lined roll-off bin for eventual disposal. Prior to moving to a new drilling location, all down-hole equipment was also taken back to the DPW for decontamination. Decontamination procedures consisted of steam cleaning the equipment in a bearmed area and containerizing all associated water in the Baker Tank.

After installation, the monitoring wells were developed by Dragin Drilling using a two inch Grundfos submersible pump. Well development was started a minimum of 24 hrs after installation to allow the bentonite/grout to seal and set. Well development continued until all samples were visibly free of sediment. In two cases (G313A and G314A), the wells were purged until they were dry, three times each.

Development water was temporarily containerized in a 350-gallon tank mounted on the back of a pickup truck until it could be pumped into the Baker Tank and combined with the decontamination water.

Investigation derived wastes (IDW) were collected and stored, as discussed above, at the DPW while awaiting disposal. Once drilling and well development were complete, IDW were collected by New England Technologies, Shrewsbury, MA. Water was transported off-site to United Recycling, Meriden, CT. Soils were transported off-site to Turnkey Landfill, Rochester, NH.

All new well locations were surveyed by KWP Associates, a surveyor licensed and registered in the State of Connecticut.

Boring logs for the deep borings G312C, G314C, G315C, G317C, and G318C are provided in Appendix A. Table 2 provides the construction details for all the installed monitoring wells. Well installation reports for each new well are provided in Appendix B.

2.2.3 Small Diameter Well Installation

Thirteen small diameter wells were installed during the SGI. SDW-1, 3, 4, and 5 were installed to better understand the presence of vinyl chloride at well location G314. SDW-2 was installed to provide a shallow bridging well at the GZ12 well cluster location. SDW-6, 7, and 8 were installed to confirm the absence of VOC in shallow groundwater at the water table for purposes of evaluating vaporization issues. SDW-9A, B, and C were installed to further delineate the migration of the TCE-related VOC slug from the SSDA1 area. SDW-10A and B were installed to provide hydrologic data at the southern end of Black Pond for evaluating groundwater flow in that area.

During the week of August 2, 2004, MACTEC and LEA installed seven small diameter wells (SDW-1, SDW-2, SDW-3, SDW-4, SDW-5, SDW-7, and SDW-8). Due to access restrictions, SDW-6 could not be installed in August. During the week of September 13, 2004, MACTEC and LEA installed six small diameter wells (SDW-6, SDW-9A, B, C, and SDW-10A, B). SDW-10A and B were installed based on discussions with CT DEP at a meeting on September 13, 2004.

These monitoring wells were installed with a Geoprobe® drilling rig using two consecutive 5-foot Geoprobe ® pre-packed well screens for a total screen length of 10 feet. Except for SDW-9B and C, the wells were completed using 1.5 inch plastic pipe. Due to heaving sand in the deeper parts of the aquifer, the 1.5 inch pipe could not be placed properly due to the small clearance between the plastic pipe and the 2 inch casing. Therefore, wells SDW-9B and C were installed with 1 inch plastic pipe equipped with a ten-foot well screen. These wells were finished by emplacing a sand pack around the screens, because pre-packed 1 inch screens were not available.

Shallow wells were installed with about two foot of screen above the water table. Well SDW-9B was installed with the 10 foot screen at 26 to 36 feet bgs. Well SDW-9C was installed with the 10 foot screen set at 46 to 56 feet bgs. Well SDW-10B was installed with the ten foot screen at 54 -64 feet bgs, which is similar in depth to the intermediate well at G311.

All new well locations were surveyed by KWP Associates, a surveyor licensed and registered in the State of Connecticut. Table 2 provides the construction details for all the installed monitoring wells.

2.3 Groundwater Sampling and Analysis

As discussed in Section 2.1.4, a baseline groundwater monitoring round was conducted during the Phase 1B investigations. As discussed in Section 2.1.7, long-term monitoring of downgradient groundwater is required by the SOW until EPA decides sufficient data has been collected since the cap was installed to develop an Amended Feasibility Study and, if needed, Amended Ecological and Human Health Risk Assessments. The following table summarizes the number of samples and analyses that have been performed as part of the SGI groundwater monitoring programs:

Monitoring Round	Report Submittal Date	Groundwater Samples					
		VOCs	SVOCs	PCBs	TAL Metals	Natural Attenuation	Aquifer Indicators
1. Baseline- June 1999	Phase 1B Report – 09/13/99	16				8	
2. May 2000	09/11/2000	40	11	11	16	12	11
3. September 2000	01/12/2001	34	8	8	13	10	8
4. March 2001	12/19/2001	29			9	12	
5. September 2001	04/03/2002	28			9	13	
6. March 2002	07/29/2002	25			9	13	
7. September 2002	02/02/2003	25			9	13	
8. March 2003	08/07/2003	25			9	13	
9. September 2003	01/07/2003	20			20	8	
10. December 2003	07/15/2004	54	14		54	24	
11. March 2004	07/30/2004	54	14		54		
12. June 2004	09/29/2004	54	14		54	24	
13. Initial SDW – August 2004	SDW Report – 09/21/04	7					
14. September 2004	03/10/2005	62	14		55		
15. December 2004	05/11/2005	65	14		55	24	
16. March 2005	08/03/2005	65	14		55		
17. June 2005	10/15/2005	65	14		55	24	
18. September 2005	In process	65	14		55		
19. December 2005	In process	68	14		55	24	
20. March 2006	In process	68	14		55		

Sampling events two through eight were completed pursuant to the approved Semi-Annual Long-Term Monitoring Work Plan - Revision 2 and Revision 3. Sampling events nine through 12, and 14 through 20 were conducted in accordance with the addendums discussed below.

The September 2003 sampling round included the addition of 12 existing wells as discussed in Section 2.1.8 and analysis for VOC and metals in all wells. Beginning with the September 2003 sampling round, a separate data report for cap effectiveness was prepared and submitted to EPA on December 11, 2003. The data report for the SGI was submitted to EPA on January 7, 2004.

The December 2003, March 2004, and June 2004 sampling rounds included all of the wells plus the 19 new wells (a total of 54 wells), as discussed in Section 2.1.8. The September 2004 sampling event included the 8 new SDW (a total of 62 wells), as discussed in Section 2.1.11. All of the wells were sampled for VOC, 55 wells for metals, and 14 wells for SVOCs. The December 2004, March 2005, June 2005, and September 2005 sampling events included the additional 3 SDW (a total of 65 wells). The December 2005 and March 2006 sampling event included the 3 new piezometers (a total of 68 wells), as discussed in Section 2.1.13. A total of 24 wells were sampled for natural attenuation parameters in December 2003, June 2004, December 2004, June 2005, and December 2005.

Samples of groundwater were collected using a low-flow purging and sampling method which limits groundwater extraction to a flow rate of 0.5 liters per minute or less, in accordance with the USEPA Region I guidance for low flow sampling (USEPA, 1996a). Low flow rate sampling techniques minimize the amount of disturbance to the water contained within the well, resulting in less agitation and minimal entrainment of particulates.

Samples were collected at low-flow rates using submersible pumps, adjusted so that the discharge rate did not exceed the recharge capacity of the well. A peristaltic pump was used to purge and sample the 11 SDW wells, as the small diameter of these wells restricted use of a submersible pump. Whether using the submersible or peristaltic pump, the maximum pumping rate did not exceed 0.4 liters per minute. During the purging process, the temperature, pH, turbidity, and conductivity of the extracted groundwater were monitored every 3 to 5 minutes. The well was considered adequately purged and ready to be sampled when the measured parameters stabilized to within 10 percent over 3 consecutive readings. In the case of extremely low yield conditions, the well was considered adequately purged if complete evacuation of the well cannot be avoided during the low-flow purging process. In this case, the well was sampled as soon as a sufficient amount of groundwater had re-entered the well. Historical sampling of some of the monitoring wells had indicated that they may produce turbid samples, even with stabilization and low-flow sampling. In the event that a well being sampled for metals was visually turbid after stabilization, samples were collected and analyzed for both dissolved and total metals.

Samples of groundwater were collected, stored, and shipped under strict chain-of-custody protocols in accordance with the procedures described in the Task 2 Work Plan (ESE, 1992). The samples were collected in appropriate, laboratory-prepared, pre-preserved containers and stored on ice in secure coolers prior to transportation to the laboratory. Samples were analyzed for TCL VOC, TCL SVOC, PCB, and/or TAL metals, depending on the requirements for particular wells or particular sampling events, using CLP protocols (USEPA CLP SOW for Organics Analysis, Multi-Media, Multi-Concentration, OLM04.2 and for Inorganics Analysis, ILM04.1), with analysis for both cis- and trans- 1,2-dichloroethene isomers.

During the May 2000 and September 2000 sampling events, groundwater samples were collected from selected wells for the following aquifer parameters, using the indicated method: alkalinity (310.1), ammonia (350.1), chloride (9056), and sulfate (9056).

Field in-line measurements were collected from selected monitoring wells during sampling for oxidation reduction potential (ORP), dissolved oxygen (DO), carbon dioxide (CO_2), acidity (pH), temperature, and specific conductance, using a YSI Grant 6820 water quality logger, calibrated daily during sampling. In addition, for these wells, samples were collected for the following natural attenuation parameters, using the indicated method: alkalinity (310.1), chloride (9056), dissolved organic carbon (DOC; 415.1), total

organic carbon (TOC; 415.1), total and dissolved iron (CLP TAL) and manganese (CLP TAL), nitrate (353.2), sulfate (9056), sulfide (376.1), methane (RSK175), ethane (RSK175), and ethane (RSK175).

Equipment decontamination procedures are described in the Task 2 Work Plan (ESE, 1992). MACTEC ensured that those procedures were consistent with current USEPA Region 1 guidance. Quality assurance samples such as matrix spikes (MS), matrix spike duplicates (MSD), field blanks, trip blanks, and field duplicate samples were collected in accordance with CLP protocols and USEPA Region 1 guidance, and included submittal of PE samples and temperature blanks, as appropriate. When requested, the field sampling teams split samples with USEPA representatives. Purge and development water were managed as described in the July 10, 1992 Addendum to the Task 2 Work Plan (correspondence to A. Silva, 7/10/92).

Analyses were conducted by Severn Trent Laboratory, Shelton, CT (formerly Monroe, CT) or Newburgh, NY. Analytical data was validated using USEPA Region I data validation guidelines, Tier II (USEPA, 1996b).

2.4 Water Level Measurements

As discussed in Section 2.1, water level measurements were collected during the Phase 1A and Phase 1B investigations. Water level measurements have also been collected prior to every groundwater sampling event during the SGI. Prior to purging groundwater monitoring wells or microwells, static water level measurements were taken with a Solinst electronic water level meter, as prescribed in the Task 2 Work Plan (ESE, 1992).

2.5 Surface Water and Sediment Sampling and Analysis

The Operation and Maintenance Plan for the cap required that surface water and sediment be collected from two locations upon completion of the remedial construction activities and again one year after vegetative cover has been established. One sample was required to be collected approximately midway between the former Meriden Box access road and the Black Pond Discharge swale. The second sample was required to be collected in the Black Pond discharge swale east of Old Turnpike Road. No sediment was present in the discharge swell or on the riprap along the shoreline. Therefore, the samples were collected, in both cases, at that point closest to the shore at which sediment was present. Two surface water and sediment samples were collected for TCL VOC analysis, during the September 2001 and September 2002 groundwater monitoring events. Plate 3 shows the locations of samples sw-1a, sw-2a, sed-1a, and sed-2a.

As discussed in Section 2.1.11, EPA requested that three surface water and sediment samples be collected for TCL VOC, TCL SVOC, and TAL metals analyses. These samples were collected during the September 2004 groundwater monitoring event. Plate 3 shows the locations of samples SWS-12, SWS-13, SWS-14, SED-12, SED 13, and SED-14.

Surface water samples were collected by direct dipping of the sample bottle into the water, about six inches below the surface. Sediment samples were collected by scooping sediment from the bottom using a stainless steel scoop. Sediment was then transferred from the scoop into appropriate containers for the various analyses to be conducted. Samples were collected into laboratory-prepared, pre-preserved containers and stored on ice in secure coolers prior to transportation to the laboratory.

Samples were analyzed for TCL VOC, TCL SVOC, and/or TAL metals, depending on the requirements for particular sampling events, using CLP protocols (USEPA CLP SOW for Organics Analysis, Multi-Media, Multi-Concentration, OLM04.2 and for Inorganics Analysis, ILM04.1), with analysis for both cis- and trans- 1,2-dichloroethene isomers. Equipment decontamination procedures are described in the Task 2 Work Plan (ESE, 1992). MACTEC ensured that those procedures were consistent with current USEPA Region 1 guidance. Quality assurance samples such as matrix spikes (MS), matrix spike duplicates (MSD), field blanks, trip blanks, and field duplicate samples were collected in accordance with CLP protocols and USEPA Region 1 guidance.

3.0 PHYSICAL CHARACTERISTICS OF STUDY AREA

3.1 Area Description

The Study Area is located in the Connecticut Valley Lowland section of the New England physiographic province in west-central Connecticut. The terrain is characterized by moderately broad valleys separated by low north-northeastward-trending ridges. This north-south trending lowland section, also known as the Triassic Basin, is about 17 miles wide and is flanked by uplands consisting of crystalline igneous and metamorphic rock complexes. Southington is on the western flank of the lowland, approximately three miles east of the Western Upland (New England Upland section) boundary.

The Lowland section is further subdivided into a wide lowland on the east (e.g., the Connecticut River Valley) and a narrower lowland to the west, which is comprised of the Farmington River and Quinnipiac River valleys. The Study Area is within the Quinnipiac Lowland. The Quinnipiac Lowland is underlain by Triassic sediments which comprise the New Haven Arkose; a red sandstone (Krynine, 1950). Locally, the igneous West Rock Diabase intrudes the New Haven Arkose, forming the core of the north-northeast trending hills (e.g., Peck Mountain), which is located south of the Study Area.

In general, the pre-glacial bedrock topography was produced by weathering and stream erosion. Glacial erosion further smoothed bedrock and reduced vertical relief by depositing a veneer of sediment on hills while partially filling the bedrock valleys. Glacial sediments of this area are correlated with the most recent Wisconsin glacial stage. Postglacial erosion has only slightly modified these glacial drift deposits (La Sala, 1961).

The topography of the Study Area can be described as kame and kettle, sag and swell, or hummocky, because it is comprised of mounded hills amongst flat-bottomed valleys containing swamps, ponds, and lakes. This surface is a complex area of kames, composed primarily of gravel and sand, interspersed with kettle lakes. Unconsolidated deposits associated with glacial, glaciolacustrine, and glaciofluvial sedimentation (commonly called drift), in addition to fluvial sediments, overlay bedrock throughout the Study Area.

The regional climate classification of the Study Area is humid continental. The average annual temperature for Southington is 50.8°F (28° F in January, 49°F in April, 73°F in July, and 52°F in October). The highest recorded temperature was 102°F in July 1991, and the lowest recorded temperature is -14°F in January 1984. The average annual precipitation is approximately 52 inches, and is evenly distributed throughout the year. October is the average wettest month (4.81 inches).

3.2 Study Area Geology

A considerable number of soil borings were emplaced throughout the Study Area during the RI in order to evaluate local geology and soil quality. As discussed in Section 2.0 numerous other borings were completed and many new monitoring wells were installed during the various phases of the Supplemental Groundwater Investigation (SGI).

3.2.1 Surficial Geology

Unconsolidated sediments within the Study Area have attributes of glacial drift deposits. Plate 4 shows geologic cross-sections along Old Turnpike Road (N-S) and through the center of the contaminant plume (E-W). The locations of the cross-sections are also shown on Plate 4.

As illustrated in the cross-sections, bedrock beneath the Study Site is overlain by undifferentiated sand and gravel. This sand and gravel has varying amounts of silt and cobbles and is generally more compact than overlying deposits; therefore, it probably is glacial till, which has been deposited directly by glacial ice. The hydraulic conductivity of this sandy, gravely till is relatively low, due to its heterogeneous nature and its silt content.

Overlying the sandy, gravelly till are interfingering deposits of fine sand (primarily in the north), undifferentiated sand and silt, and/or undifferentiated sand. The presence of laminated fine sand and silt in some areas is indicative of sediments deposited in standing water. Above the interfingering deposit is an upper sand and gravel unit which contains relatively less silt than the lower sand and gravel unit.

A locally extensive peat deposit is associated with Black Pond and its unnamed/discharge stream. The peat ranges in thickness from three to at least nine feet in the southern portion of the Landfill. Peat is present at depths ranging from 15 to 54 feet (top) to 18 to 60 feet (bottom) below the ground surface. Most of the peat layer is approximately 2 to 40 feet below the groundwater table. In the northern portion of the landfill, the peat unit is located at a depth ranging from four to 14 feet (top) to 7 to 26 feet (bottom) and ranges in thickness from 0.3 to 14 feet. Most of the peat layer in this portion of the site is approximately 4 to 9 feet below the groundwater table (ESE, 1993).

As shown on Plate 4, high-permeability coarse sands and gravels underlay the southern portion of the Site in the deeper part of the aquifer. In this area, the upper and middle portions of the aquifer consist of lower-permeability fine-grained sands and silts. The high-permeability zones are very important because groundwater will tend to flow toward these areas of least resistance. Therefore, groundwater in the lower-permeability upper zone will prefer to drain vertically into the underlying, higher-permeability zone, resulting in larger downward flow components compared to horizontal.

3.2.2 Bedrock Geology

Published literature (Fritts, 1963) and bedrock cores taken during the RI and SGI indicate that most of the Study Area is underlain by bedrock mapped as the New Haven Arkose (a potassic feldspar-rich sandstone)[7]. This bedrock is sedimentary in origin and consists of grayish-orange-pink to very pale orange arkose with interbedded subordinate grayish red to dark-reddish-brown micaceous siltstone of Triassic age. Bedding within this unit generally strikes in a north-south direction and dips eastward, the average dip being around 15 degrees (Krynine, 1950).

[7] A diabase dike was encountered in boring LW19, which was located northeast of the former Meriden Box building. This diabase dike is believed to be part of the West Rock Diabase, which is a regionally extensive igneous rock intrusion that trends in a north-northeasterly direction across the extreme south and eastern portions of the Study Area.

Figure 1 provides an updated bedrock topography map, which is a compilation of published information and the data obtained during the RI and the SGI. Microwells (M-1 through M-18) and SDW9C were pushed to refusal. Monitoring wells were drilled and bedrock confirmed, generally through the use of coring. Plate 5 shows the data points for bedrock surface elevation used to generate the bedrock surface map. The points where bedrock was not confirmed are shaded.

In order to extend the saturated overburden information towards the west (i.e., in the direction of known overburden thinning), several additional data points located to the west of monitoring well G310C were included. The bedrock topography in this area was interpolated based on the top of rock map (Mazzaferro, 1975) and other data points were obtained from bedrock outcrops. The resulting contours demonstrate a steadily decreasing saturated overburden thickness towards the west. The overburden aquifer thins to less than 10 ft in thickness west of the River at the point where bedrock is very near the surface. This provides a natural hydraulic control of flow west of the River and, consequently, groundwater flows towards the Quinnipiac River from both sides of the River.

A deep north-south trending bedrock basin underlies Black Pond and the Landfill. This basin is connected to a shallower east-west trending basin, which extends from the landfill toward the Quinnipiac River. The southern flank of this east-west trend basin is defined by G317, and the north flank is defined by G309 and SDW9. The basin gradually shallows out in the vicinity of G310 and the River. As discussed in Section 4, the VOC plume migrating from the landfill is contained within this east-west trending bedrock basin.

3.3 Study Area Hydrogeology

3.3.1 Hydraulic Conductivity

The hydraulic conductivity of an aquifer is a measure of its capacity to transmit water. This parameter is very important because it controls contaminant migrations rates and determines groundwater extraction rates. In addition, spatial variations (e.g., shallow versus deep) in hydraulic conductivity can significantly affect flow directions.

The hydraulic conductivity of the aquifer was evaluated during the RI using a number of different field tests. First, pumping test data collected by GZA for former Municipal Well 5, located about 600 feet northwest of the northern portion of the Site, were re-analyzed. Second, a comprehensive set of constant-flow tests (single-well pumping tests; also know as specific capacity tests) and slug test-derived hydraulic conductivities were obtained by MACTEC from field tests of monitoring wells. Finally, an average regional hydraulic conductivity value was estimated during the calibration of the horizontal flow model developed as part of the Feasibility Study (ESE, 1993).

Hydraulic conductivities (K) estimated from the Municipal Well 5 pumping test ranged from 240 to 280 feet/day (Harding ESE, 2001). K-values estimated from these single-well tests generally ranged from about 10 to 200 feet/day, with values of 100 to 200 feet/day typical of coarser-grained deposits. Hydraulic conductivities in the range of 1 to 30 feet/day were found to be representative of fine-grained portions of the aquifer (also with greater silt contents), the till materials encountered immediately above the bedrock surface in some areas, and waste materials located in the upper portion of the Site. Calibration of the horizontal flow model developed during the FS indicated an average K-value of about

500 feet/day, which is representative of average aquifer conditions extending from the Site to the Quinnipiac River (Harding ESE 2001).

The hydraulic conductivity values estimated from both the Municipal Well pumping test and the two-dimensional model calibration are based on large-scale hydraulic assessments of aquifer conditions and are, as is typically the case, larger than K values measured during single-well tests that only stress an area within a few feet from the monitoring well. Therefore, the higher K estimates (e.g., 100-500 feet/day) are considered to be more appropriate for assessing the rate of COC migration in the area extending from the Site to the Quinnipiac River. In contrast, the lower permeability areas (e.g., K=1-50 feet/day) will locally reduce the natural flushing of COC from the aquifer by groundwater.

These hydraulic conductivity estimates are typical for the type of materials that make up the overburden. The estimates are used in the following section to explain groundwater flow directions near the Site. These estimates are also used in the assessment of COC transport in groundwater and to evaluate COC migration rates, as detailed in Section 5.

3.3.2 Groundwater Flow

Table 3 shows groundwater elevations for all sampling events through December 2004. These groundwater elevations have been used to develop groundwater contours and flow maps for the Study Area. Groundwater contours and flow maps have been developed for the shallow, medium, and deep portions of the aquifer for each groundwater sampling event, as well as for Phase 1A and Phase 1B. Although water levels rise and fall depending upon precipitation events and seasonal variations in rainfall, the general pattern of groundwater flow has not changed since the RI. As more data have been collected throughout the SGI, the general flow patterns have been confirmed and extended toward the Quinnipiac River. As discussed below, the availability of more bedrock information has allowed the development of a bedrock surface map covering the entire Study Area. Groundwater flow in the deep portion of the aquifer is very dependent upon bedrock topography and the presence of peaks and valleys.

Groundwater generally flows from the Site to the vicinity of wells B308/309 in an east to west direction, and gradually shifts to an approximate northwesterly direction as the hydraulic influence of the Quinnipiac River becomes more pronounced. Plan-view maps of the water level contours (Section 3.3.2.1) near the Quinnipiac River indicate that groundwater is discharging into the river.

The RI and SGI hydrologic data are consistent with the Site geology and demonstrate a strong downward flow component at the southern end of the Site due to the strong influence of Black Pond. The downward groundwater gradient in the Northern portion is less pronounced due to the presence of a thick and widespread peat deposit. Groundwater from the southern portion of the Site enters the deep part of the aquifer quickly and remains in the lower aquifer until it is influenced by the upward vertical hydraulic gradients near the river. Groundwater in the northern portion of the site remains in the upper and medium portion of the aquifer and is displaced deeper into the aquifer by subsequent infiltration. Groundwater entering the aquifer west of the Site (e.g., from Chuck & Eddie's junkyard) remains primarily in the upper portion of the aquifer, because the vertical hydraulic gradient is much smaller, and horizontal flow predominates.

Groundwater flow in the southern part of the deep aquifer in the vicinity of GZ14D is believed to follow the bedrock trough. Groundwater flow in the middle and shallow parts of the aquifer, and in the deep aquifer outside the bedrock trough, is consistent with the detailed groundwater analysis that was included in the Final Phase 2A Report. The analyses presented in the Phase 1A Report (which presented hydrologic data collected in February 1999), the Phase 1B Report (which included microwell data from June 1999), and the Final Phase 2A Report (which included additional microwell data collected in December 2000), provide additional control for the southern edge of the plume, beyond the existing wells (GZ13D, GZ14D, G317D, and G318D), from microwells M-3, M-5, M-6, M-7, M-13, M-15, and M-16. These data points were also used to produce the topography of the bedrock surface depicted in Figure 1. As discussed previously, the east-west trending bedrock trough provides strong hydraulic control, especially in the deeper portions of the aquifer.

As predicted during the RI/FS, the general hydrogeology has not changed with the placement of the cap on the Landfill. The main purpose of the cap was to limit access and contact with wastes. Although the cap prevents infiltration through the capped portion of the Study Area, groundwater recharge through Black Pond and other areas around and upgradient of the Site are more significant sources of infiltration to Study Area groundwater flow. The impact of the cap on Study Area hydrogeology was studied and discussed in the Feasibility Study (1993) and the Landfill Cap Design (2001). This is evident when water level measurements and groundwater contours are compared between pre- and post-cap sampling events. There is no statistical difference between water levels around and downgradient of the cap when water level data before and after the cap are compared. Likewise, the groundwater flow pathlines based on water level measurements after the cap was installed are the same as those generated during the RI, with minor differences resulting from the addition of a significant number of additional data points.

As discussed in detail in Section 4.1.1, during the SGI a slug of TCE-related VOC appeared at well G302 and low concentrations of vinyl chloride were detected at G314. These two locations are outside of the main contaminant plume emanating from the Landfill. As discussed in Sections 3.3.2.1 and 3.3.2.2, below, hydrologic investigations have been completed to address these two areas specifically.

The two following sections (3.3.2.1 and 3.3.2.2) discuss the horizontal and vertical flow characteristics in the aquifer based on evaluations of these data and the hydraulic conductivity and geologic investigations presented earlier. Section 5 discusses COC fate and transport and relates the measured three-dimensional distribution of COC in groundwater to the flow patterns presented in this section. The rate of change of water levels with distance (i.e., hydraulic gradient) affects the rate of COC transport in the aquifer, as outlined in Section 5.1.

3.3.2.1 Horizontal Groundwater Flow

As presented in the Phase 2A Report, Figure 2 provides a depth averaged groundwater level contour map (i.e., hydraulic head map) for the Site and the area extending west to the Quinnipiac River based on the data from the June 1999 sampling round, using RI monitoring wells and Phase 1B microwells. Because this analysis includes all of the microwells, it provides the most extensive data set to date. The hydraulic head map is based on the vertically-averaged head at each location where more than one monitoring point with depth (i.e., cluster) existed. The purple lines are groundwater pathlines numerically computed from the hydraulic head distribution using the Tecplot data visualization software (Amtec Engineering, Bellevue, Washington). The water table elevation decreases from about 145 feet within the Site to about 135 feet at microwells M-16, M-17, and M-18, located adjacent to the river. The mean horizontal

hydraulic gradient is about 0.003 feet/foot, increasing from 0.001 feet/foot in the area immediately downgradient from the Site (between Old Turnpike Road and monitoring wells B308 and B309) to 0.005 feet/foot in the area bounded by microwells M-11/M-12 (to the east) and M-16/M-17/M-18 (to the west).

Figure 3 provides a depth-averaged groundwater level contour map for the December 2005 groundwater measurements. At SDW-9, only SDW-9B and SDW-9C were used for the average. SDW-9A has a much higher water level and is impacted by the wetlands immediately adjacent to the well cluster. The figure was prepared in the same manner as Figure 2, but includes a smaller data set. Nonetheless, the general groundwater gradients are similar to those discussed above and the values determined above and used within this RI remain valid.

Main Contaminant Plume

Figures 4, 5, and 6 show groundwater contours and flow lines for the shallow, medium, and deep portions of the aquifer, respectively, for the December 2004 sampling event. Because there has been very little variation between sampling events over the course of the SGI, or since the RI, the December 2004 sampling event is representative of the groundwater flow in the Study Area and provides the latest available groundwater elevation data including the complete set of current wells.

As discussed in the RI report and confirmed by the SGI data, groundwater generally flows from the Site to the vicinity of wells B308/309 in a general east to west direction, with a slight northerly component, but changes to more of a northwesterly flow direction in the southernmost portion of the Site (e.g., wells GZ-13 and GZ-14). The shallow and medium portions of the aquifer have very similar flow characteristics.

Using just the water elevation data, groundwater in the deep portion of the aquifer at the southern boundary of the plume (GZ14D) appears to move more westerly, before turning north. However, groundwater in the deep portion of the aquifer is strongly influenced by the bedrock surface, because of the bedrock surface features in the Study Area. Looking at Figure 1, Bedrock Surface Map, wells GZ14D, G308C, G315C, and G309C are all in the bedrock trench running northwest. G317C is on the upper edge of the trench. Likewise, Cross-Section C-C' (Plate 4) details a line running from G312 through GZ14 to G317 to G318. As can be seen from the cross-section, groundwater in the deeper portion of the aquifer must flow around the bedrock high between GZ14D and G318C and cannot flow directly towards G318C as indicated by the groundwater contours.

Figure 6 shows the location of the bedrock trough, based on the 50 foot bedrock surface isopleth. In the eastern portion of the Study Area the 50 foot isopleth defines a large kidney-shaped basin directly under the Landfill. Moving west, the trough narrows, between G315 and G309, before expanding again in the vicinity of G310. As discussed in more detail in Section 5.1.2, although the potentiometric surface of deep groundwater indicates a westerly groundwater flow direction between GZ14D and G318C, groundwater in the lower portion of the aquifer at GZ14D would have to move up and over the bedrock surface in order to move west. As demonstrated by the contaminant distribution, groundwater from GZ14D takes the easier path and migrates around the bedrock hill toward the northwest.

Groundwater leaving the Site migrates to the deeper portion of the aquifer by the time it gets to the GZ14 well cluster area, just as it does before reaching GZ5M or G308C and G309C. Once deep, the groundwater flows along the bedrock trench until it gets to the vicinity of G310, where bedrock flattens.

At this point, groundwater flow is mostly influenced by the Quinnipiac River basin. As shown by the distribution of contaminants (Section 4), this groundwater flow path is totally consistent with the groundwater VOC data collected during the RI and the SGI. At G317C, for example, only low concentrations of VOC detected, which is consistent with its location relative to the trench and plume.

Based on the SGI data, downgradient from wells B308/309 groundwater flow gradually varies to an approximate northwesterly direction as the hydraulic influence of the Quinnipiac River becomes more pronounced. In fact, the groundwater level contours in the westernmost part of the hydraulic head map are generally parallel to the river alignment (i.e., flow is directly toward the river), which indicates that groundwater is discharging into the river rather than flowing beneath it. This interpretation takes into account the fact that the boundary of the aquifer is located about 800 feet west from the river, thus prohibiting flow beneath the river to the west. More specifically, groundwater on the opposite side of the Quinnipiac in this area flows from the bedrock outcrop to the east southeast and converges with the flow which contains COC from the Site. The natural hydrologic result of this convergence is an upwelling of groundwater from the aquifer into the river.

TCE-Related VOC Slug

In the vicinity of G302, groundwater moves towards GZ12 in the shallow and medium portions of the aquifer, and more westerly in the deep portion of the aquifer. As discussed in Section 4.1.1, the slug has been tracked from G302A to GZ12M, which is consistent with the flow pathways. As discussed in Section 2.1.11, a microwell survey was completed to determine the location of the slug downgradient from GZ12. Based on the results of that study, SDW-9A, B, and C were installed to further track the slug. By the time the slug reaches SDW-9, VOC are in the deep portion of the aquifer. The deep groundwater pathway from GZ12D confirms groundwater flow to SDW-9C. This results in the overall path of the slug moving from the original northwesterly path turning more toward the west. Based on the bedrock topography (Figure 1), this is consistent with the orientation of the bedrock trench. This is more clearly visible on Figure 7, which shows a different view of the trench orientation.

G314 Area

The groundwater in the area around G314 is very shallow (5 to 10 feet bgs). Shallow groundwater flow contours in this area are variable and measurements between wells appear to be inconsistent. During November and December, multiple water level measurements were taken to try and better explain groundwater flow in the area. Several of the monitoring points were also re-surveyed to eliminate the possibility of erroneous data. Table 4 provides the groundwater level measurements for this area and surrounding wells and precipitation data for the six day period leading up to each sampling event. Figure 8 shows shallow groundwater contours for two of the events (November 5, 2004 and December 1, 2004)[8]. These two dates were selected for representation because they represent the minimum and maximum water level elevations at Black Pond, respectively. The other three dates demonstrate similar groundwater

[8] Figure 8 also shows the measured groundwater elevations for the wells around G314A. Water levels in the unnamed intermittent stream were estimated based on the water level measurement taken in Black Pond at SG-3. The estimated elevations at SG-1 and SG-2 were determined by averaging the data from the unnamed intermittent stream study (see above) to determine the average relative difference between SG-1 and SG-2, as compared to SG-3. The estimated elevation shown for the wetland area just east of SDW-9A was then interpolated from the relative difference between SG-1 and SG-2.

flow patterns. Data collected since December 2004 in the G314 area are consistent. As discussed below, additional data points were added in November 2005 to better understand groundwater flow in this area.

As shown on Figure 8, there appears to be an east-west trending groundwater trough that extends from G314A to SDW-4. This interpretation is consistent with the VOC data from this area, which demonstrates that G314A and SDW-4 have been impacted by very low levels of VC, while SDW-1, SDW-3, and SDW-5 are clean. This trough is created by a variety of factors. First, both Black Pond to the east, and the unnamed intermittent stream to the south, have higher surface water elevations than most of the surrounding wells, which demonstrates that Black Pond (which discharges to the unnamed intermittent stream) is a groundwater recharge area. Second, SDW-3 and SDW-5 consistently have higher groundwater elevations as compared to SDW-1, SDW-4, and G314A. The higher groundwater elevations at SDW-3 and SDW-5 appear to be directly related to precipitation events. SDW-3 may be directly impacted by surface water runoff because it is located near the corner of a building in a low area where surface runoff is expected to collect. Likewise, SDW-5 also has consistently higher groundwater levels than the surrounding wells, and groundwater levels have fluctuated as much as 2.8 feet during the five measurement events.

During the October/November 2005 investigations, as discussed in Section 2.1.13, three piezometers were installed south of the unnamed stream on the radio station property (refer to Figure 15). The shallow groundwater contours developed for the December 2005 sampling event include these piezometers. The addition of these three water level data points clarifies groundwater flow around the unnamed stream, as shown on Figure 4. Groundwater from the Site moves south and west, south of the stream and then follows a west-northwest flow in concert with the main plume. Water flow north of the stream is somewhat radial in the area of G314, portions of which flow south toward the stream.

Four borings were also installed. What appear to be isolated clay lenses occur near, and on both sides of, the unnamed stream. One boring that identified a clay layer was installed adjacent to SDW3, which may help explain the higher water levels measured in SDW3, as compared to surrounding measurement points (G314A, SDW4, and SDW5).

3.3.2.2 Vertical Groundwater Flow

Vertical groundwater flow is important in explaining the vertical distribution of COC concentrations within the aquifer. Just as groundwater flows horizontally from higher water levels toward lower water levels, within a cluster of wells at a location, the differences in water level between the wells of different depths (vertical hydraulic gradient) indicate whether groundwater is flowing upward or downward within the aquifer. The relationship or relative magnitude of the horizontal gradient and vertical gradient are used to track the path that groundwater and, therefore, COC, will take through the aquifer.

During the RI, a significant amount of different types of data were collected and used to determine the migration of contaminants out of the Landfill. These data include infiltrometer tests, permeability tests, pump test, slug tests, and hydraulic gradient measurements. A conceptual model of groundwater flow was presented in the RI based on all of these data. That conceptual model describes contaminants migrating from the Landfill waste mass down into the aquifer below. This is due to the measured low permeability of the waste mass at this particular Landfill and the high permeability of the sand and gravel aquifer below the waste mass. Water will preferentially move from lower permeability strata to higher permeability strata. Once in the aquifer, contaminant-bearing water from the waste mass flows westerly in the direction of Study Area groundwater flow, from higher gradients to lower gradient.

Because of the large difference in permeability, the resultant strong vertical gradient versus horizontal gradient, and the depth of the waste mass, beneath the Landfill contaminants migrate quickly to the medium and deep portions of the aquifer. This plume moves west staying in the lower portion of the aquifer west of the Landfill. As discussed below, the SGI has confirmed through groundwater analyses and placement of additional well clusters, that the plume migrates to the west with very little change in elevation until it reaches the Quinnipiac River Basin.

Contaminants that were released from shallow sources such as SSDA2 remain shallow immediately west of the Site as demonstrated by the analytical data at G304A. However, these contaminants also migrate downward into the lower portions of the aquifer as they move west. This is demonstrated by the absence of contaminants in the shallow groundwater at all locations downgradient of G304A (G308A, G309A, and G315A). Figure 9 shows average vertical gradients between the shallow and medium portion of the aquifer and between the medium and deep portion of the aquifer at well clusters monitored during the SGI. The shallow to medium vertical gradients in the area of Chuck & Eddies are slightly upward (G309 and G304) or slightly downward (G308), on average. The area is virtually flat. The lateral to downward migration of contaminants across this area (between G304 and G308/G309) is accounted for by the large groundwater recharge this area provides to the shallow aquifer.

Therefore, the SGI data have confirmed what the RI described, that a plume migrating shallow or deep from the Site ultimately migrates to the deeper portion of the aquifer by the time groundwater has reached the western edge of Chuck & Eddies. The two-dimensional cross-sectional flow model developed during the FS and the VOC data from the RI and SGI support this flow pattern.

As groundwater flows further west, the COC plume remains in the medium to deep part of the aquifer due to a lack of strong upward gradients to move the plume and due to the continued existence of significant recharge areas above the plume. Finally, as the plume enters the Quinnipiac River Basin and bedrock continues to rise, the hydraulic influence of the river basin (natural discharge feature) and the reduction of the aquifer saturated thickness west of the river results in the plume moving out of the deepest portion of the aquifer into the middle portion of the aquifer. Near the Quinnipiac River, groundwater from east and west of the River converges and causes an upwelling of flow into the river basin.

3.3.3 Surface Water and Groundwater Interaction

Locally, precipitation runoff flows toward the lowland surrounding Black Pond. From Black Pond, surface water flows west-northwest through a culvert beneath Old Turnpike Road into a stream system that surficially drains into a wetland west of the Site. Regional groundwater flow in the unconsolidated deposits within the Quinnipiac River Valley basin generally follows the topography and ultimately discharges to the Quinnipiac River (Mazzaferro et al., 1979). The "Leachate and Wastewater Discharge Sources Inventory" map for the Quinnipiac River Valley, published by DEP, identifies approximate locations of facilities where known or potential releases of oil, toxic, or hazardous substances to the ground, groundwater, or surface water have occurred. The DEP has classified several areas within the upper portion of the Quinnipiac River Valley drainage basin as GB, reflecting the overall condition of groundwater within this area. A classification of GB is given to groundwater that is known or presumed to be contaminated and not fit for human consumption without treatment. Groundwater in the vicinity of and downgradient of the Site has also been classified as GB by DEP.

The Quinnipiac River Valley drainage basin extends from the Southington/Plainville town line to Long Island Sound. The Site and downgradient areas potentially impacted by the constituents from the Site (the "Study Area") are within the upper portion of the drainage basin. The southward flowing Quinnipiac River (classification C/B) is located approximately 3100 feet west of the Site. Tributaries to the southerly flowing Quinnipiac River often exhibit backhand drainage (northerly flowing tributaries in a southward flowing drainage basin) in the northern portion of the Quinnipiac basin. This drainage is characteristic of glaciated terrains in which stream capture occurs during post-glacial drainage development.

There are three potential areas for groundwater discharge to surface water which were investigated during the SGI. As discussed in the following subsections, groundwater discharge to surface water occurs only at the Quinnipiac River.

3.3.3.1 Black Pond

Black Pond is immediately upgradient of the Landfill and horizontal gradients in the area are strongly east to west; as evidenced by the difference in groundwater table elevations at G311 and wells west of the Landfill. It is unlikely that groundwater from beneath the Landfill is moving east into Black Pond. To confirm the interaction of Black Pond and underlying groundwater, a shallow and medium depth small diameter monitoring well cluster was installed south of Black Pond, between the cap and the pond. Water level measurements were taken from this new cluster, a staff gauge in Black Pond, and surrounding existing monitoring wells to confirm groundwater flow in that localized area. Table 5 provides a list of water level elevations used to develop groundwater contours for the area around Black Pond.

Figure 10 provides groundwater contours and flow pathways for November 5, 2004 and November 29, 2004. As shown on Figure 10, Black Pond is a hydrologic high relative to surrounding groundwater. In shallow groundwater, this mounding effect results in radial flow from Black Pond. The medium and deep portions of the aquifer flow beneath the pond and are not as greatly influenced by the pond. Data collected since December 2004 are consistent and show the same hydrologic high at Black Pond (see Figure 4).

3.3.3.2 Unnamed Stream

Six sets of surface water and groundwater elevation measurements were collected by LEA on January 29, 2004, April 5, 2004, June 30, 2004, September 14, 2004, November 8, 2004 and December 28, 2004, from stream gauges installed in the unnamed stream downgradient from Black Pond, in conjunction with water table measurements from nearby shallow wells. Water level measurements are provided in Table 6. Plate 6 shows the location of two transects across the unnamed stream. Plates 7 and 8 show cross-sections along those transects for each of the six measurement events. As shown on Plates 7 and 8, the water-level measurements collected in the vicinity of the unnamed stream clearly demonstrate that the surface water elevation is a minimum of one foot above the level of the water table and groundwater cannot discharge to the surface water. In fact, the recorded water levels in the monitoring wells closest to the stream are below even the base of the stream bed. These measurements were collected over a twelve-month period under a variety of conditions (stagnant water puddles in June 2004; and frozen stream in December 2004), thus accounting for significant seasonal variability.

As discussed above, in November 2005, three piezometers were installed along and south of the unnamed stream. These piezometers were included in the December 2005 water level measurements used for Figure 4 and were included in set of surface water and groundwater elevation measurements collected by LEA on April 6, 2006, in the same manner as discussed above. Plate 9 shows the LEA cross-section, for April 6, 2006 water level measurements, along the two transects. Plate 9 further confirms that the surface water elevation is a minimum of one foot above the level of the water table and groundwater cannot discharge to the surface water.

The data collected confirm that groundwater emanating from the Site does not discharge into the unnamed stream located west of the Site. Nonetheless, further protection of the ecosystem is afforded by the fact that shallow groundwater in wells located near and upgradient of the unnamed stream do not contain site contaminants that could impact the stream even if groundwater did discharge to the stream.

3.3.3.3 Quinnipiac River

As discussed in the RI report and confirmed by the SGI data, groundwater generally flows from the Site to the vicinity of wells G308/309 in an east to west direction toward the Quinnipiac River, with a more northwesterly flow direction in the southernmost portion of the site near wells GZ13 and GZ14. Downgradient from wells G308/309 groundwater flow varies to an approximate northwesterly direction as the hydraulic influence of the Quinnipiac River becomes more pronounced. In fact, based on the microwell data presented in the Phase 2A report, the groundwater level contours in the westernmost part of the hydraulic head map are generally parallel to the river alignment (i.e., flow is directly toward the river), which indicates that groundwater is discharging into the river rather than flowing beneath it (Harding ESE, 2001).

Groundwater flow direction is strongly influenced by the bedrock topography underlying the saturated overburden. As shown on Figures 1 and 7, bedrock highs to the north and south of the Study Area have a profound impact on groundwater flow (and plume movement) in the deeper portions of the overburden aquifer. The aquifer thins to less than 10 inches in thickness west of the Quinnipiac River at the point where bedrock is very near the surface. This provides a natural hydraulic control of flow west of the River and, consequently, groundwater flows towards the Quinnipiac River from both sides of the River (Harding ESE, 2001). This interpretation takes into account the fact that the boundary of the aquifer is

located about 800 feet west from the river, thus prohibiting flow beneath the river to the west. More specifically, groundwater on the opposite side of the Quinnipiac in this area flows from the bedrock outcrop to the east/southeast and converges with the flow which contains COC from the Site. The natural hydrologic result of this convergence is an upwelling of groundwater from the aquifer into the river. (Harding ESE, 2001).

These upward flow components in the immediate vicinity of the river are a natural result of converging flow from both sides of the river and indicate that the Quinnipiac River is the ultimate discharge point for the VOC plume. In the wetlands above the plume, some shallow groundwater is probably hydraulically connected to wetlands, but the groundwater in the deeper portions of the aquifer, where COC are present, are not hydraulically connected to wetlands. (Harding ESE, 2001).

Groundwater flow, moving west, ultimately will either intersect the River or mix with the groundwater in the Quinnipiac River Basin aquifer beneath the Quinnipiac River. The Quinnipiac River is the surface manifestation of the Quinnipiac River Basin aquifer. The River actually is in contact with the aquifer below it. The River Basin groundwater flows in a general southerly direction, while the surface water in the River meanders above it. At that time, groundwater from the Study Area aquifer becomes mixed and diluted by the River Basin aquifer.

4.0 NATURE AND EXTENT OF CONTAMINATION

4.1 Groundwater

As demonstrated in the RI/FS, the source of the Site-related groundwater plume is the waste mass in the Southern Portion of the Site, and that waste mass is both above and, to a lesser extent, below the water table. The primary COC are VOCs, primarily chlorinated ethenes. Other contaminants in the plume are at significantly lower concentrations and sporadic in detection. Irregardless, these other contaminants, when detected, are co-located with the VOC plume. Groundwater containing COC, primarily VOC, was identified emanating from the Southern Portion of the Landfill. During the SGI, the plume has been effectively mapped using VOC as the indicator contaminants. VOC are the predominant COC, are the most mobile in terms of fate and transport, and, therefore, provide the best indicator of contaminant migration in groundwater leaving the Site.

Based on extensive hydraulic investigations, the RI/FS demonstrated that VOC move with groundwater west/northwestward from the Site in a narrow and well-defined plume. The VOC plume, due to strong downward vertical hydraulic gradients, was demonstrated to travel to the lower portion of the aquifer as it leaves the Site and to remain in the lower portion of the aquifer to the west of Chuck & Eddies junkyard at monitoring locations G308 and G309.

Since the RI, significant additional wells have been installed and data collected. These data have allowed the conceptual model to be extended to the Quinnipiac River. However, the basic groundwater flow patterns and distribution of contaminants throughout the Study Area as described in the RI have not changed. The following sections describe the distribution of contaminants throughout the Study Area.

4.1.1 Distribution of Volatile Organic Compounds

Table 7 shows the detected values for VOC in groundwater for all monitoring events through September 2005, with a comparison to RI data[9]. The VOC plume consists primarily of tetrachloroethene (PCE), trichloroethene (TCE) and associated daughter products (1,2-Dichloroethene (1,2-DCE), 1,1-dichloroethene (1,1-DCE), vinyl chloride, and ethane). 1,1,1-Trichloroethane (1,1,1-TCA) and its daughter products (1,1-dichlorothane (1,1-DCA), 1,2-dichloroethane (1,2-DCA), and chloroethane) are also present within the footprint of the TCE-equivalent plume, but at low concentrations. Chloroform, BTEX, and other VOCs also occur sporadically in wells located within the plume core, but also at low concentrations, except for G304A. MTBE is also present, but follows a different pattern from the TCE-equivalent plume.

[9] Although the laboratory "reportable concentration" is 10 ug/L under the CLP method being used, the laboratory has consistently been reporting at from 0.5 to 1 ug/L. Although these values are qualified as estimated, consistent with the way that EPA has used estimated values within the CLP program for risk assessment and decision-making, the PSDs have reported these values as positive hits.

Starting with the September 2002 sampling event, a thin film of oily material has been observed at G304A. Multiple attempts to collect the material have failed. The film is too thin to allow collection of the material separate from the water. In December 2004 the film was no longer present. The material had an oily smell, not normally associated with BETX compounds. The material has made it impossible to collect in-line water measurements for the September 2002 through September 2004 sampling events. Measurements were able to be taken during the December 2004 event and subsequent events.

In the March 2004 sampling event, some TCE data were qualified to undetected ("U") during data validation, according to EPA requirements, due to TCE being detected in field blanks. By the time the data validation results were obtained, the June 2004 sampling event was underway. Some June 2004 data were also qualified as undetected. MACTEC had for some time been using distilled water from a local fish hatchery, because of the high quality of the water and the convenience of having it locally available during sampling events. The fish hatchery moved into a new facility prior to the March 2004 sampling event. It appears that something from the newly installed plastic piping was contaminating the distilled water. During the early days of the June 2004 event and for subsequent events, MACTEC is obtaining distilled water in bulk from an analytical laboratory. The subsequent data have no TCE blank problems.

4.1.1.1 Chlorinated VOCs

Table 8 provides a tabulation of TCE-equivalent concentrations for all of the monitoring events through the September 2005 monitoring event, with a comparison to RI data, for wells located in the plume. Normalizing the data to TCE-equivalent concentrations helps to evaluate whether the total mass has decreased.

For the TCE-equivalent concentration, the PCE, 1,2-DCE, 1,1-DCE, and VC concentrations at each well were converted to an equivalent TCE concentration and these resultant concentrations were added to the actual TCE concentration. The TCE-equivalent concentration [$(TCE)_{equivalent}$], represents the molar sum of the concentrations for TCE and its biotransformation daughter products DCE and vinyl chloride (VC). Because PCE is degrading to TCE, TCE is degrading to DCE and then DCE to vinyl chloride, tracking any one of these compounds is misleading because changes in concentrations of any one of them may be due to transformation. By converting data to TCE equivalent, it is possible to get a more accurate picture of VOC migration and concentration trends. The TCE equivalents for each sample were calculated as follows:

$$(TCE)_{equivalent} = (TCE)_{measured} + 131.4/165.85*(PCE)_{measured} + 131.4/96.95*(1,2\text{-}DCE)_{measured} + 131.4/96.95*(1,1\text{-}DCE)_{measured} + 131.4/62.5*(VC)_{measured}$$

Using the data on Table 7, time trend graphs were prepared for the following wells: G302A, G304A, G308C, G309B, G309C, G310A, G310B, G310C, G315B, G315C, GZ5M, GZ12M, and GZ14D. These wells were selected because they represent the parts of the main plume where VOC concentrations are present at elevated levels or they are wells impacted by the SSDA 1 slug.

For each well, a graph has been prepared showing the TCE-equivalent concentration over time. These graphs are presented in Figures 11A through 11F. These figures also show concentrations of PCE, TCE, DCE, and VC over time. Because of the variation in concentrations throughout the plume, the concentrations provided on the y-axis are not the same range for all graphs. In reviewing the graphs it is, therefore, important to check the concentration range used for the y-axis before trying to compare between graphs. If the compound was not detected either a value of 0 was assigned if the y-axis is arithmetic or a value of 1 was assigned if the y-axis is logarithmic.

Concentrations of TCE-related VOC continue to be present throughout the delineated contaminant plume. Concentrations at G304A (Figure 11A) exhibit the most fluctuation. This may be due in part to the high concentrations of VOC at this location and the difficulty of collecting reproducible groundwater samples even with low flow sampling techniques. In the rest of the contaminant plume (Figures 11A through 11E) the concentration levels are generally considerably less than those measured during the RI and, with some fluctuation up and down, have remained fairly stable throughout the SGI.

Table 9 shows the TCE equivalent data for all wells for the September 2005 sampling event. The September 2005 event data were used to develop a VOC distribution figure for the TCE-equivalent plume in the shallow, medium, and deep portions of the groundwater aquifer is shown on Plate 10. TCE-equivalent, TCA-equivalent, TCE, DCE, and vinyl chloride concentrations are also shown on the cross-section provided on Plate 4.

As shown on Plates 4 and 9, and consistent with the conclusions presented in the RI, the occurrence of TCE, DCE, and vinyl chloride downgradient of the Landfill is primarily across from the Southern Portion of the Landfill. This is evidenced by the high concentrations at GZ5M and G304A, and the general absence of, or very low concentration of any VOC at all other wells along Old Turnpike Road. The current well network extends along and beyond the entire length of the Landfill.

A shallow plume is only present in the area of G304. The plume downgradient from the Site is in the medium and deep portion of the aquifer (Plate 10). Figure 12 presents a TCE equivalent concentration cross-section of the main plume from the Landfill to the Quinnipiac River, for the September 2005 sampling event. This plume shape is consistent with previous sampling event data, going back to the start of the SGI. Although the concentrations of VOC at individual wells fluctuate, the basic plume shape and relative contaminant distribution have remained the same since the RI.

The G310 well cluster is located at the far extent of the contaminant plume just before the Quinnipiac River. At that location VOC are detected in Wells G310A, B, and C (TCE equiv., September 2004: 68 ppb G310A; 232 ppb G310B; 13 ppb G310C). Well G310A was installed, at the request of EPA, at a depth approximately 20 feet below the water table. Therefore, well G310S was installed in September 2003 as a bridging well to determine whether VOC were present in groundwater at the water table. G310S has had no detectable VOC, except for trace levels of ethyl benzene and xylene (September 2004: 2 ppb ethyl benzene; 9 ppb xylenes). Wells SDW-6, 7, and 8 were installed at the edge of the Quinnipiac River to confirm that VOC are not present in groundwater at the water table prior to the groundwater encountering the Quinnipiac River. Trace levels of non-chlorinated VOC (acetone, MEK, MTBE) have been detected sporadically in SDW-7 and 8. No chlorinated VOC have been detected in these wells.

SSDA1 TCE-Related Slug

Following the removal of SSDA 1 in 2000, an elevated level of TCE-related VOC appeared at well G302A (September 2000). Prior to this date, well G302A, as well as wells G302B and G302C, were unimpacted. This spike peaked in March 2002 and concentrations have been decreasing since. These increased concentrations are believed to be the result of a slug of TCE-related VOC moving from the area of SSDA 1. The decreasing levels at G302 indicate that this is a slug and not a plume with a continuing source (see Figure 11F). There is residual vinyl chloride at G302A (30 ppb in September 2005), but the remainder of the slug constituents have migrated downgradient.

Beginning with the March 2003 sampling event, a similar pattern of increasing TCE-related VOC is seen at GZ12M. The elevated levels at GZ12M appear to have peaked in September 2003 and concentrations have continued to decrease at this location (see Figure 11F).

A close review of the hydraulic gradients in the northern end of the Study Area demonstrates that groundwater flows from SSDA 1 to G302 to GZ12. The VOC spike is believed to result in a narrow slug of TCE-related VOC moving through the aquifer independent of the main plume emanating from the Landfill discussed above.

Additional groundwater investigations were conducted in August 2004 to further delineate the path of this slug downgradient of GZ12. As discussed in Section 2.1.11 and 2.2.3, a microwell study was used to place a well cluster downgradient of GZ12M (SDW-9A, B, and C). The VOC data collected at SDW-9 (see Table 7) demonstrate that the slug has moved into the area of SDW-9 and is now in the deep portion of the aquifer. At GZ12M, except for a trace level of vinyl chloride (3 ppb) in March 2005, no vinyl chloride has been detected since June 2004. TCE has not been detected at GZ12M since a 1 ppb level in September 2004. SDW-9C was at a maximum concentration of TCE (11 ppb), DCE (30 ppb), and vinyl chloride (3 ppb) in September 2004, the first time it was sampled. Only trace levels of TCE, DCE, and vinyl chloride have been detected at SDW9C since September 2004.

It further appears, from hydraulic and analytical data, that this narrow slug, although rapidly decreasing in concentration as it moves northwest, would, if not attenuated to non-detectable concentrations well before reaching that far, intersect the Quinnipiac River at a point near G310 and the main plume. Based on the December 2005 deep groundwater contours (see Figure 6), it appears that groundwater from SDW-9C moves towards the west-northwest, along the northern edge of the bedrock trough (see Figure 7).

Downgradient of Well G301

As part of the October/November 2005 shallow groundwater investigations, a number of sampling points on the radio station property were sampled for VOC to determine whether there were VOC in groundwater downgradient of well G301 (refer to Figure 15, M- wells). VOC, in particular chlorinated ethenes, were detected at the water table in M30, M31, and M45, and to a lesser extent, M32, M68, PZ-2 and PZ-3. Only trace levels of VOC were detected in subsequent downgradient sampling locations (M47-49, M58, M67, M69, and PZ-1). This is consistent with the trends seen at other locations on the west of the Site, namely that VOC present in shallow groundwater just west of the Site migrate into the deeper portions of the aquifer as groundwater flows to the west. Likewise, based on the shallow groundwater contours in this area (Figure 4, December 2005 contours), the VOC detected in this area will migrate towards the west and south co-mingling with the main plume.

Vinyl Chloride at G314

The December 2003 data showed an isolated detection of vinyl chloride at a trace level of 7 ppb at G314A. The vinyl chloride concentration in March 2004 had reduced to 3 ppb. Vinyl chloride was detected at G314A in September 2004 (1 ppb), December 2004 (2 ppb), and September 2005 (2 ppb) and was not detected in June 2004, March 2005, or June 2005. Additional groundwater investigations were conducted in this area in August 2004. As discussed in Section 2.1.11 and 2.2.3, SDW-1, 3, 4, and 5 were installed to better understand the extent of the vinyl chloride in this area. Only trace VOC and no chlorinated ethenes have been detected in SDW-1 or SDW-5. Vinyl chloride was detected at SDW-4 in August and September 2004 (3.8 and 2 ppb, respectively), and has not been detected since. Vinyl chloride has been detected at SDW-3 in December 2004 (1 ppb), June 2005 (1 ppb), and September 2005 (5 ppb). Further west of SDW-4, the microwell survey (Plate 1 – M-23 and M-25) did not detect vinyl chloride in groundwater, downgradient from SDW-4.

As discussed in Section 3.3.2.1, and shown on Figure 4, groundwater containing VOC does not flow from the Site into the G314 area. Some groundwater beneath the upper northern portion of the Landfill may flow toward the G314 area, however, as demonstrated by the sampling conducted at SDW-1, M26, M27, and M70, the groundwater in that portion of the Landfill does not contain VOC.

4.1.1.2 Tetrachloroethene

Tetrachloroethene (PCE) was detected during the SGI at trace concentrations (e.g., <5 ppb) at seven wells (G304A, G309B, G310C, G312B, G315B, G317C, GZ12D) during the June 2004 sampling round. It was also detected at eight other wells (G308C, G309C, G310A, G310B, G315C, GZ5M, GZ12M, GZ14D) at concentrations ranging from 5 ppb to 48 ppb (at G308C). All of the wells are located within the core of the plume, downgradient from the source.

4.1.1.3 Chloroform

Chloroform was detected during the SGI in nine wells (G304A, G308C, G309B, G309C, G310A, G310B, G310C, G315B, G315C, G317C, GZ5M, GZ12D, GZ14D, and SDW-5) at concentrations ranging from 0.5 ppb to 170 ppb (at G309C). The chloroform detections occur within the chlorinated ethene plume, with the exception of SDW-5. All of these wells are located within the core of the chlorinated VOC plume, with the exception of GZ12D. Chloroform was detected at GZ12D at concentrations less than 1 ppb and has not been detected there since March 2002. Chloroform was detected at GZ5M once in September 2005 at 0.9 ppb. Wells with the higher concentrations of chloroform have higher TCE-equivalent concentrations. Chloroform was detected at SDW-5 in March 2005 and June 2005 at a concentration of 1 ppb. As discussed above, this area is not an area impacted by contaminated groundwater from the Site.

4.1.1.4 MTBE

Unlike chloroform and the other VOCs, MTBE follows a distinctly different pattern from the chlorinated VOC plume, indicating a different source. MTBE was detected in 16 wells [G302A (ND-68), G303A (ND-670), G308A (ND-7000), G308B (ND-2), G309A (ND-65), G310A (ND-73), G310B (ND - 110), G310C (ND-1), G311B (ND-5), G311C (ND-1), G315B (100-270), G315C (70-200), GZ1 (ND-10), GZ3 (ND-9), GZ5S (ND-17), GZ14S (ND-6), and GZ14D (ND-3), SDW-4 (ND-2), SDW-7 (ND-3), SDW-9A (1-3), and SDW-9B (12-41)] during the SGI. With the exception of G310B&C, G315B, G315C, and GZ14D, the wells downgradient of the Site with MTBE present are shallow water table wells, and are located within the footprint of Chuck and Eddie's junk car operations. G310B&C, G315B, and G315C are located downgradient of both the Site and Chuck and Eddie's. In the wells with elevated MTBE concentrations, the presence of MBTE occurs sporadically, with a high concentration spike and then a slow decrease in concentration over time, as measured in later events. These spikes are consistent with salvage activities and the spillage of gasoline from junk cars.

4.1.1.5 BTEX

BTEX compounds have been detected at a maximum total concentration of 43,014 ppb at G304A (March 2002). They have been measured consistently at high concentrations at G304A throughout the SGI. They have also been detected at low concentrations (total BTEX: 0.2 to 11 ppb) in 21 other wells, including two background wells.

4.1.1.6 Ethanes

An analysis of 1,1,1-trichloroethane (TCA) and its daughter products (1,1,dichloroethane, 1,2-dichloroethane, and chloroethane), demonstrates that the occurrence of TCA and daughter products is closely correlated with the TCE plume, but they are lower in concentration than the TCE plume. TCA and/or daughter products were detected during the SGI at 16 wells (G302A, G303A, G304A, G304B, G308C, G309B and C, G310A and B, G312C, G313A, G315A, B, and C, GZ5M, and GZ14D).

Table 9 shows the TCA-equivalent data for all wells for the September 2005 sampling event. The September 2005 event data were used to develop a VOC distribution figure for the TCA-equivalent plume in the shallow, medium, and deep portions of the groundwater aquifer, is shown on Plate 11.

The TCA-equivalent concentration [$(TCA)_{equivalent}$], represents the molar sum of the concentrations for TCA and its biotransformation daughter products 1,1-DCA, 1,2-DCA, and chloroethane. Because TCA is degrading to 1,1-DCA, 1,2-DCA, and chloroethane, tracking any one of these compounds is misleading because changes in concentrations of any one of them may be due to transformation. By converting data to TCA equivalent, it is possible to get a more accurate picture of VOC migration and concentration trends. For the TCA-equivalent concentration plume, the 1,1-DCA, 1,2-DCA and chloroethane concentrations at each well were converted to an equivalent TCA concentration and these resultant concentrations were added to the actual 1,1,1-TCA concentration. The TCA equivalents for each sample were calculated as follows:

$$(TCA)_{equivalent} = (1,1,1\text{-}TCA)_{measured} + 133.42/98.97*(1,1\text{-}DCA)_{measured} + 133.42/98.97*(1,2DCA)_{measured} + 133.42/64.52*(chloroethane)_{measured}$$

As can be seen on Plate 11, although there are sporadic detections of TCA, there is no defined TCA plume. Where TCA-related compounds are detected they are in areas within the TCE plume (Plate 11).

4.1.1.7 Ketones

Acetone, 2-butanone, and 4-methyl-2-pentanone have been regularly detected at G304A, which also has routinely contained the highest concentrations of the TCE plume. The maximum concentrations of ketones were detected in the March 2002 sample from G304A, which is consistent with one of the highest concentrations of chlorinated VOCs and the maximum concentrations of BTEX at this location. In addition to G304A, acetone has been detected above blanks one time at G308A (2 ppb), G317B (1 ppb), GZ5M (490 ppb), SDW-2 (170 ppb), SDW-1 (6.3 ppb), SDW-3 (9 ppb), SDW-4 (3.4 ppb), SDW-5 (2.6 ppb), SDW-7 (2.9 ppb), and SDW-8 (2.8 ppb). Methyl ethyl ketone has been detected one time at G308B (2 ppb), SDW-2 (1.7 ppb), SDW-1 (3.2 ppb), SDW-3 (1.6 ppb), SDW-4 (1.5 ppb), SDW-5 (1 ppb), SDW-7 (1.2 ppb), and SDW-8 (1.2 ppb). 4-methyl-2-pentanone has only been detected at G304A. As noted previously, field blanks have contained acetone during recent sampling rounds, and measures are being taken to address this issue.

4.1.2 Distribution of Semi-Volatile Organic Compounds

Table 10 shows all of the SVOC data collected during the SGI. Eleven (11) monitoring wells throughout the Study Area were sampled and analyzed for SVOC as part of the May 2000 sampling event. As shown on Table 10, with the exception of G304A and G305A, only trace levels of SVOC were detected.

Eight (8) monitoring wells throughout the Study Area were sampled and analyzed for SVOC as part of the September 2000 sampling event. As shown on Table 10, with the exception of G304A, only trace levels of SVOC were detected.

Fourteen (14) monitoring wells throughout the Study Area were sampled and analyzed for SVOC as part of the December 2003 through September 2005 sampling events. Except for trace levels of phthalates, no SVOC have been detected in any of the wells during any sampling events except March 2004 and December 2004. In the March 2004 sampling event, trace concentrations of 1,3-dichlobenzene (1 ppb), 1,4-dichlorobenzene (2 ppb), and 1,2,4-trichlorobenzene (4 ppb) were detected in G312B, and N-nitroso-di-n-propylamine was detected at G310B (3 ppb). In the December 2004 sampling event, naphthalene (1 ppb) was detected in G310B and naphthalene (3 ppb) and 2-methylnaphthalene (2 ppb) were detected in the background well, G311B.

4.1.3 Distribution of Inorganic Compounds

4.1.3.1 Distribution of Metals

During the performance of the RI/FS, submitted in 1993, samples for metals analysis were collected in soil, sediment, landfill waste, surface water, and groundwater. Results of this sampling did not show a significant source of metals contamination. In addition, as part of the SGI and cap effectiveness monitoring, the EPA and CT DEP required a comprehensive sampling of the ground water for metals, throughout the study area. Table 11 shows a comparison of metals concentrations since the start of the SGI. From September 2003 through September 2005, a total of 473 groundwater samples have been collected from 55 wells.

As discussed in detail within this section, the results of this comprehensive sampling reveal the following:

- the occurrence of metals in small quantities in the ground water is ubiquitous throughout the study area, including up gradient of the landfill;
- the distribution of detected metals does not identify the Landfill as the source of metals in the Study Area;
- all of the contaminants in the Study Area are in the dissolved phase, whether metals, VOC, or SVOC. Any dissolved metals emanating from the Landfill would result in a plume distribution as that defined for VOC. Unlike VOC, which are distributed in a typical plume pattern, heavy metals appear randomly throughout the Study Area. Further, heavy metals, which could pose a toxicity risk to the environment, have not been detected in groundwater at concentrations that could pose a risk, except inconsistently at discrete intervals at isolated well locations; and
- metals that are often associated with solid waste landfills, such as iron, sodium, and barium, are not distributed in a typical plume pattern. Even with barium, which occurs in almost all wells, often below background, there is no concentration gradient from upgradient to downgradient wells. Similar concentrations of barium occur throughout the Study Area.

Statistical Summary of Groundwater Data for Metals

Table 12 provides a statistical summary of metals that have been detected from September 2003 through September 2005. This table shows:

- Column 1: metal name;
- Column 2: the maximum detected concentration for the metal and the date of the maximum detection;
- Column 3: the total number of samples that the metal was detected in;
- Column 4: the percentage of samples the metal was detected in ([Column 3]÷473);
- Column 5: the total number of wells that had at least one detection of the metal;
- Column 6: the percentage of wells that the metal was detected in ([Column 5]÷55); and
- Column 7: If the metal was detected in 10 wells or less, the wells the metal was detected in and the location of the maximum concentration detected (shaded).

Within the data set presented on Table 12, it is significant that a heavily turbid sample collected from well G318C in December 2003 had the maximum concentration of 8 metals collected within the Study Area. These metals are aluminum, beryllium, chromium, lead, magnesium, nickel, potassium, and vanadium. The turbidity was greater than 1000 NTUs at G318C in December 2003 indicating that there was a high concentration of silt in the sample. In the process of preparing the sample for analytical testing, acid is added to the sample. The addition of the acid can dissolve metals from the silt. Samples with high turbidity frequently have metals concentrations higher than what is actually dissolved in the groundwater. Although the turbidity measurements continue to be high in this well (64 NTU in September 2004), the metals concentrations are generally decreasing. As discussed in the June 2004 quarterly report, a sample from G318C was also analyzed for dissolved metals during the June 2004 sampling round because elevated metals had been detected in this well and this well is very silty. The filter paper used to filter the dissolved sample was also analyzed for total metals at the request of EPA. There is good correlation between the sum of the dissolved and filter paper samples with the total metals sample, and metals

concentrations are likely caused by suspended solids in the groundwater which were filtered out by the filter paper.

For the remaining metals:

- the maximum concentration for arsenic occurred in GZ1, a background well, in March 2005;
- the maximum concentration of copper was at G303A in December 2004;
- the maximum concentrations of barium and calcium were detected in the June 2004 sample from GZ5M;
- the maximum concentration of cobalt was detected in the March 2004 sample from G314A;
- the maximum concentrations of iron and manganese were detected in the sample from G304A in December 2004 and September 2004, respectively;
- the highest concentration of selenium was detected in the December 2003 sample from G309C;
- the maximum concentration of sodium was detected in the March 2004 sample from G302A; and
- the maximum concentration of zinc was detected in the September 2004 sample from G310S (this sample had a high turbidity – 729 NTUs).

Summary of the Distribution of Metals Throughout the Study Area

With the exception of the barium, calcium, and magnesium, a review of Tables 11 and 12 demonstrates that most of the metals are detected relatively infrequently (less than 50% of the samples). The heavy metals (antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, mercury, nickel, silver, thallium, and vanadium) occur sporadically and infrequently, if at all. This occurrence of various heavy metals at isolated wells is not consistent with a pattern of heavy metals migration emanating from the Landfill. There are no heavy metals detected consistently in any well.

All of the contaminants in the Study Area are in the dissolved phase, whether metals, VOC, or SVOC. Any dissolved metals emanating from the Landfill would result in a plume distribution as that defined for VOC. Unlike VOC, which are distributed in a typical plume pattern, heavy metals appear randomly throughout the Study Area.

Further, heavy metals have not been detected in groundwater at concentrations that could pose a risk to the environment, except inconsistently at discrete intervals at isolated well locations. At the G310 well cluster, which are the sampling points within the Landfill plume closest to the Quinnipiac River, wells G310A, B, and C are within the Landfill plume, based on VOC data collected during the SGI. VOC data from G310S, as well as, SDW-6, SDW-7, and SDW-8, have confirmed that the Landfill plume has not reached the shallow portion of the aquifer prior to discharge to the Quinnipiac River basin. The concentrations of metals detected at G310A, B, or C (aluminum, barium, chromium, cobalt, iron, manganese, nickel, selenium, vanadium, and zinc) have not exceeded either CT WQC or the CT SWPC at any time during the SGI. Antimony, arsenic, beryllium, cadmium, copper, lead, mercury, silver and thallium were not detected in G310A, B, or C, at any time during the SGI.

Likewise, metals that are often associated with solid waste landfills, such as iron, sodium, and barium, are not distributed in a typical plume pattern. Even with barium, which occurs in almost all wells, often below background levels, there is no concentration gradient from upgradient to downgradient wells. Similar concentrations of barium occur throughout the Study Area.
Taken as a whole, the significant amount of data on metals concentrations in groundwater throughout the Study Area demonstrate the absence of a metals plume emanating from the Landfill.

4.1.3.2 Water Quality Parameters

The Landfill has been closed for almost 40 years. Borings drilled through the Landfill (B207, B208, and B209) in 1992, demonstrated that the Landfill mass at that time was significantly degraded. During the RI, no active leachate seeps were identified around the Landfill. Nonetheless, water quality data have been collected during the SGI. Table 13 shows a comparison of all water quality parameters data collected during the SGI.

As detailed on Table 13, the pH of groundwater at well clusters immediately downgradient of the Site (G302, G303, G304, GZ5, and G312), as well as throughout the Study Area, ranges from 6-9 s.u. Iron is high at G304, but similar to background elsewhere throughout the Study Area. Sulphate concentrations are generally less than 30 mg/L throughout the Study Area (a single hit of 68 mg/L was measured at G312A in December 2003). Specific conductance only infrequently exceeds 1000 μS/cm and is generally less than 500 μS/cm. There is no pattern of a plume of inorganic anions or cations emanating from the Site.

Likewise, comparison of water quality parameters' data before the placement of the cap to data collected after placement of the cap, shows no significant differences in compounds detected nor concentrations. The data collected during the RI and the SGI, as discussed above, does not indicate a plume of inorganic anions or cations emanating from the Landfill before the cap, nor after the cap. Therefore, the cap has had no impact on the water quality.

4.1.4 Natural Attenuation Parameters

Since 1999, a subset of the OSL monitoring wells have been analyzed semi-annually for selected natural attenuation parameters to evaluate the potential for active biodegradation of the VOC plume. Natural attenuation parameters are being collected to allow for an appraisal of the probability of biodegradation at locations where significant chlorinated VOC are present in groundwater. These parameters include: organic carbon, dissolved oxygen, nitrate, iron (II), sulfate, sulfide, alkalinity, chloride, methane, oxidation reduction potential, pH, temperature, manganese, and conductivity. Table 14 shows a comparison of the natural attenuation parameters measured during the SGI.

Wells that have been selected for natural attenuation sampling include:

- Wells within the VOC plume: G304A, G308C, G309B and C, G310A, B, and C, G315B and C, GZ5M and GZ14D;
- Background wells: G311A and 311B;
- Wells screened above plume: G310S and GZ5S; and
- Wells at the edge of the plume: G312A, B, and C, G313A, GZ17M, GZ17D, G313C, and G317B and C.

4.1.4.1 Numerical Analysis of Natural Attenuation Parameters

EPA's Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water (EPA/500/R-98/128, September 1998) has been used to evaluate the data. As shown on Table 15, using

EPA's screening protocol, the data indicate "strong" or "adequate" evidence for anaerobic biodegradation in the areas of the groundwater plume where chlorinated VOC are present at significant concentrations.

Table 16 provides a summary of the evidence for active reductive dechlorination of the chlorinated plume at each of the wells. Cells highlighted in yellow indicate the presence of parameters that are considered to be favorable indicators of on-going natural attenuation, where as cells highlighted in gray indicate that the occurrence of that parameter at a given well is not a favorable indicator. As with other analytical data, there is variation between sampling events; however, any significant temporal changes in trends are also noted on Table 16.

These data indicate that there is "strong" evidence that reductive dechlorination is occurring in the vicinity of G304A, which is located near the core of the plume and has had some of the highest concentrations of VOCs. This is the only location where sufficient concentrations of both BTEX carbons and organic carbon have been detected to provide the energy source required to drive reductive dechlorination. Furthermore, after the TCE-equivalent plume peaked at a concentration of 19,100 ppb in March 2002, although there are seasonal fluctuations, the TCE-equivalent mass had decreased to 870 ppb in March 2004. However, the TCE-equivalent mass at G304A rebounded to 27,174 ppb in September 2004, which may indicate that on-going sporadic releases from the Landfill are still occurring or may be due to the difficulty of collecting reproducible groundwater samples even with low-flow techniques. Other favorable indicators observed at MW304A include low dissolved oxygen, nitrate and sulfate, higher concentrations of iron (II), alkalinity, chloride and methane, and favorable ORP readings (e.g., less than 50 millivolts). As is typical throughout the site, the pH readings at G304A are well within the acceptable range of 6-8 for reductive dechlorination to occur. On the other hand, temperature readings are consistently below 20°C, which is less than optimal for supporting biodegradation. Likewise, sulfide concentrations at G304A and elsewhere across the site are consistently low.

At other monitoring locations, the evidence that active reductive dechlorination is occurring is mixed. Two important fuel sources, organic carbon and BTEX, are notably absent from the other locations that are being assessed for reductive dechlorination. Nonetheless, according to the scoring procedures prescribed in the EPA protocol evaluation, that considers the multiple lines of evidence summarized in Table 16, there is "strong" evidence in support of reductive dechlorination at three other locations near the plume core, down gradient of the source (G315B, G315C and G310B), even though a fuel source has not been identified in these wells. Other wells (G308C and GZ5M) indicate "adequate" evidence of biodegradation.

The remaining wells, which are typically located near the plume edges, indicate only "limited" to "inadequate" evidence of reductive dechlorination. This observation is to be expected, because the low concentrations of VOCs typically detected in these wells are likely not sufficient to support the bacteria populations that drive the biodegradation process.

4.1.4.2 Assessment of Natural Attenuation Data and Numerical Analysis

As presented above, there are areas of the plume where the numerical analysis suggests strong or adequate evidence for reductive chlorination. Examination of the presence and relative concentrations of TCE and its daughter products, DCE and vinyl chloride, however, suggests that minimal reductive chlorination is currently occurring. The ratio of TCE to DCE continues to remain almost constant, little changed since the RI, as is evident at G308C, G309C, and G315C. At the G310 well cluster, TCE remains as a significant contributor to the total TCE equivalent calculation, indicating that little transformation has occurred within the plume as it migrates to the river.

4.2 Surface Water and Sediment

Based on discussions with EPA and CT DEP, surface water and sediment samples have been collected three times during the SGI. Surface water and sediment samples were collected around Black Pond and within the unnamed stream on two occasions during the RI. Plate 3 shows the sampling locations for the various sampling events. Table 17 shows the samples collected and analyses performed for each sampling event. VOC samples were collected at two locations within Black Pond for two consecutive years following the placement of the cap, to confirm that the placement of the cap did not impact the surface water or sediment. The ecological and human health risk assessments conducted during the RI/FS (ESE, 1993) concluded that there was no unacceptable risk to human health or the environment related to surface water or sediment. At the request of EPA, surface water and sediment samples were collected for VOC, SVOC, and metals from three locations around Black Pond to confirm that the levels of contaminants are similar in concentration to those considered during the risk assessments. Based on discussions with EPA, concentrations similar to the concentrations used in the risk assessments confirm that there is no unacceptable risk associated with surface water or sediments.

Tables 18, 19, 20, and 21 show the results of VOC/SVOC and metals analyses, respectively, for surface water and sediment samples collected during the SGI, compared to the results of surface water and sediment samples collected during the RI. As discussed below, contaminant levels detected in surface water and sediment samples collected during the SGI are lower or similar to the contaminant levels used in the RI/FS risk assessments.

4.2.1 Volatile Organic Compounds/ Semi-Volatile Organic Compounds

As shown on Table 18, only trace levels of VOC or SVOC have been detected in surface water during any of the sampling events. No VOC or SVOC were detected in the three samples collected around Black Pond in September 2004 to confirm the ecological and human health risk assessments (SWS-12, SWS-13, and SWS-14).

As shown on Table 20, only trace levels of VOC or SVOC have been detected in sediments during any of the sampling events. The only SVOC detected in sediment are PAH. The levels of PAH detected in the three samples collected around Black Pond to confirm the ecological and human health risk assessments (SED-12, SED-13, and SED-14) are in most cases lower than the RI concentrations. Acenapthene was detected in SED-13 at 3.4 mg/kg versus the maximum RI concentration of 0.54 mg/kg. Anthracene was detected in SED-13 at 5.3 mg/kg versus the maximum RI concentration of 3.7 mg/kg. Benzo(a)anthracene was detected in SED-13 at 8.2 mg/kg versus the maximum RI concentration of 8

mg/kg. Carbazole was detected in SED-13 at 2.7 mg/kg versus the maximum RI concentration of 1.6 mg/kg. Chrysene was detected in SED-13 at 8 mg/kg versus the maximum RI concentration of 7.8 mg/kg. Flouranthene was detected in SED-13 at 23 mg/kg versus the maximum RI concentration of 18 mg/kg. Benzo(b)flouranthene was detected in SED-13 at 12 mg/kg versus the maximum RI concentration of 8.8 mg/kg. Fluorene was detected in SED-13 at 2.6 mg/kg versus the maximum RI concentration of 0.86 mg/kg.

The only VOC detected in the three September 2004 sediment samples collected around Black Pond to confirm the ecological and human health risk assessments (SED-12, SED-13, and SED-14) was acetone at trace levels (<0.05 mg/kg).

4.2.2 Metals

Table 19 shows the metals detected in surface water for each sampling event. Only calcium, iron, magnesium, manganese, and potassium were detected in surface water in the three samples collected around Black Pond to confirm the ecological and human health risk assessments (SWS-12, SWS-13, and SWS-14). In all cases, the concentrations are much lower than the concentrations measured during the RI.

Table 21 shows the metals detected in sediment for each sampling event. Except for a trace concentration of silver detected in SED-14 (1.6 mg/kg), the metals measured in the three sediment samples collected around Black Pond to confirm the ecological and human health risk assessments (SED-12, SED-13, and SED-14) are much lower in concentration than the concentrations measured during the RI.

5.0 CONTAMINANT FATE AND TRANSPORT

This section discusses transport of COC within the Study Area. Section 5.1.1 presents general transport theory. The remaining sections discuss transport specifically for the various COC types (e.g., VOC, SVOC, and metals).

5.1.1 Transport Rates: Theory

This section presents the parameters and equations that govern COC migration rates. This information is used later to explain the present VOC distribution in the aquifer and to confirm the presence of an off-site source of metals contamination. In general, contaminant migration and distribution between air, water, sediment, and soil depend on both hydrogeologic and compound-specific parameters. Hydrogeologic factors such as hydraulic conductivity, hydraulic gradient, and porosity determine groundwater velocities and directions in the aquifer. Dissolved constituents move with the groundwater, but the migration rates may be retarded (i.e., less than the groundwater velocity) due to interaction of the contaminants with the soil particles within the aquifer. The extent of contaminant retardation is a function of several variables, including the physical-chemical character of the contaminant and the soil. The following discussion addresses each of these parameters in more detail.

Advection describes groundwater movement through the aquifer. Within a saturated porous medium such as the unconsolidated aquifer in the Study Area, Darcy's law governs the advection rate of dissolved-phase compounds (e.g., Bear, 1979):

$$v = -K\, i/n_e R_d$$

where v is the apparent contaminant migration rate (length/time); K is the hydraulic conductivity (length/time); i is the hydraulic gradient (dimensionless), which equals the hydraulic head difference between two points on a groundwater pathline divided by the distance between the two points; n_e is the effective or drainable porosity (dimensionless) of the soil, approximately equal to the specific yield; and R_d is the chemical retardation factor ($R_d > 1$), a dimensionless parameter that represents the ratio of groundwater pore velocity to the actual contaminant advection rate in a sorbing (onto immobile soil grains) porous medium.

The retardation factor is defined by the following relationship (Bear, 1979):

$$R_d = 1 + b\, K_d/n_e$$

where b is the bulk dry density of the soil (g/cm^3); and K_d is the soil-water partition coefficient (cm^3/g). For nonionic organic compounds such as VOC and SVOC, sorption to soil is primarily caused by chemical binding to the organic carbon fraction of the soil matrix unless the organic carbon content of the soil is very low (e.g., < 0.1%). Metals bind to both mineral surfaces and organic carbon.

One approach for obtaining the value of the soil-water partition coefficient is to conduct batch sorption tests in which soil and pore-water concentrations are measured for a range of concentrations. K_d is then calculated from the typical linear relation between the soil and pore water concentrations (i.e., K_d is the slope of the soil versus pore-water concentration graph. For metals, this is the typical approach.

For nonionic organic compounds such as VOC and SVOC a second estimation technique relies on the tendency of these constituents to sorb to soil organic matter. With this approach, K_d is proportional to the organic carbon content of the sediments and the degree of hydrophobicity of the contaminant, as measured by the organic carbon partition coefficient, K_{oc} (Lyman et al., 1982):

$$K_d = f_{oc} K_{oc}$$

Where f_{oc} is the soil organic carbon content (g organic carbon/g soil). Each contaminant has a unique K_{oc}, and the organic carbon content of an aquifer is typically characterized by performing total organic carbon (TOC) tests on selected soil samples.

In summary, the soil-water partition coefficient, K_d, is the key compound-specific parameter that controls contaminant migration rates. Furthermore, the magnitude of K_d for SVOC and metals is characteristically very large (refer to Sections 3.3 and 3.4), which is the reason these contaminants typically do not migrate very far from their release points.

5.1.2 VOC Transport

This section discusses the observed three-dimensional distribution of chlorinated ethenes downgradient from the Site and explains how the VOC plume configuration is a natural result of the groundwater flow patterns in the aquifer. Although hydraulic parameters are very useful in predicting the movement of COC, actual analytical data on COC concentrations in groundwater provide verification of those predictions.

Plates 9 and 10 show the plan view distribution of TCE- and TCA-equivalent VOC, respectively, in the Study Area aquifer for September 2005 (Section 4.1.1). As discussed in Section 3.3.2, the general horizontal and vertical flowpaths have not changed since the start of the SGI, nor since the RI. The flow paths are generally consistent with the VOC analytical data, except in the deepest portion of the Study Area, in the vicinity of GZ14, where the southern slope of the bedrock trough controls groundwater flow (see Section 3.3.2.1). Figures 12 (Section 4.1.1) and 15 are color flood contour maps of the VOC distribution in a cross-section through the middle of the plume. Figure 12 was generated with September 2004 data and Figure 14 was generated during the Phase 2A investigations (June 1999). The advantage of looking also at Figure 14 is the fact that it contains additional flow pathline information because it takes into account all of the Phase 1A and Phase 1B hydrologic data. There are no significant differences in contaminant flow or concentration levels between June 1999 and September 2005.

The VOC distribution shown in Figures 12 and 15 confirm the vertical flow interpretations presented in Section 3.3.2.2. VOC concentrations in groundwater are high in the shallow and medium part of the aquifer beneath the Site. Further west of the Site the VOC plume is in the deeper portions of the aquifer. As expected, the VOC concentrations decrease with distance from the Site due to biodegradation, rainwater dilution, and dispersion. For example, based on the September 2005 sampling results $(C_{TCE})_{EQ}$ reduces from 399 to 428 ppb at wells G308C and G309C (respectively) to 195 ppb in well G310B. Near

the Site, $(C_{TCE})_{EQ}$ measured in the middle of the plume (well GZ-5M) is 2021 ppb, or about a factor of ten greater than VOC levels at the downgradient extent of the plume at G310.

As shown on the VOC distribution in Figures 12 and 15, the contaminants continue to move in the deeper portions of the aquifer as the plume moves west. This is consistent with the generally flat vertical gradients west of Old Turnpike Road. Although there is some upward component to the vertical flow at some wells at some times, as demonstrated by the VOC plume migration, the horizontal flow predominates across the Study Area until the influence of the Quinnipiac River Basin.

The COC measured in high concentrations at G304A also migrate into the lower portions of the aquifer as they migrate to G308, G309, and subsequently G315. COC at G308, G309, and G315, downgradient of G304A, are in the lower portion of the aquifer and not in the shallow groundwater. This occurs despite the fact that head differences measured at G304, G308, G309 indicate a generally flat to upward vertical gradient. As discussed in Section 3.3.2.2, there is a large groundwater recharge area between the G304 location and the G308 and G309 locations. Groundwater recharge due to surface water infiltration pushes contamination in the shallow portion of the aquifer down into the deeper portion.

Likewise, the COC slug measured at G302A, then GZ12M, and then SDW-9C demonstrates a similar pattern of migration into the lower portions of the aquifer as the slug moves west/northwest. Head differences measured at G302 and SDW-2/GZ12 indicate a flat to upward gradient, with a downward gradient at SDW-9. As discussed above and in Section 3.3.2.2, a large recharge area exists west/northwest of G302 and accounts for the downward migration of the COC slug as the slug moves west/northwest to GZ12M and SDW-9C.

As a result, the COC that migrate into the lower portion of the aquifer near the Site, as well as the COC that are shallow at G304A and G302A and then migrate into the lower portion of the aquifer moving west, remain in the deeper aquifer until the bedrock rises to the west and the plume joins the Quinnipiac River Basin aquifer.

Near the Quinnipiac River groundwater is impacted by the Quinnipiac River Basin. This flow pattern is confirmed by the VOC analytical results for the G310 well cluster, which demonstrate a concentration reduction with depth in the aquifer. As illustrated in Figures 12 and 15, the VOC plume moves upward in the aquifer in the vicinity of G310 and ultimately discharges into the river. This is also consistent with the upward slope of the bedrock (Figures 1 and 7), which rises from east to west across the Study Area pinching out the aquifer west of the Quinnipiac River.

The VOC contaminant pathway is further consistent with the presence of the bedrock trough which impacts the movement of groundwater and contaminants in the deep portion of the aquifer (Figures 1 and 7).

5.1.3 SVOC Transport

Based on data collected during the RI, as confirmed by the SGI, SVOC migration downgradient of the Study Site has not occurred. As discussed in Section 4.1.2, selected monitoring wells have been sampled and analyzed for SVOC during the May and September 2000 sampling events and quarterly starting with the December 2003 sampling event. Generally, SVOC have not been detected in groundwater downgradient of the Site, with the exception of G304A, immediately downgradient of the Site. When SVOC have been detected in wells other than G304A, it has been trace levels of primarily phthalates. The data confirm the absence of an SVOC plume emanating from the Site.

Many SVOC typically have a high affinity for soils (i.e., very high soil-water partition coefficients) that limits their transport in groundwater. The lack of SVOC in groundwater downgradient of the Site, despite the occurrence of limited SVOC in soil within the Site, is consistent with these general SVOC transport characteristics. Even if SVOC existed in the groundwater plume, the migration pathways would be the same as those for VOC, discussed above, because the flow path is not dependent upon contaminant type.

5.1.4 Metals Transport

The analytical data collected during the RI, as confirmed by the SGI, do not demonstrate a metals plume emanating from the Site. This is predictable based on what is known about disposal practices at the Site and about the fate and transport of metals species in the environment. Metals that do exist in the Landfill result from disposal of metals products. There is no evidence of disposal of liquid metals-bearing wastes. Therefore, the metals that are present in the Landfill must be released from the solids into groundwater.

As discussed in Section 4.1.3.1, all of the contaminants in the Study Area are in the dissolved phase, whether metals, VOC, or SVOC. Any dissolved metals emanating from the Landfill would result in a plume distribution identical to that defined for VOC. Unlike VOC, which are distributed in a typical plume pattern, heavy metals appear randomly throughout the Study Area. Further, heavy metals, which could pose a toxicity risk to the environment, have not been detected in groundwater at concentrations that could pose a risk, except inconsistently at discrete intervals at isolated well locations.

Likewise, metals that are often associated with solid waste landfills, such as iron, sodium, and barium, are not distributed in a typical plume. Even with barium, which occurs in almost all wells, often below background, there is no concentration gradient from upgradient to downgradient wells. Similar concentrations of barium occur throughout the Study Area.

Further, any metals that are released into groundwater will be released very slowly and, therefore, will result in only low concentrations of metals in groundwater. Once in the groundwater, metals species migrate very slowly due to high retardation factors. This results in significantly long transport time periods.

For example, the metals detected in the Study Area generally exhibit very low mobility with characteristic retardation factors ranging from 100 to 100,000. In comparison with TCE, which is the least mobile VOC detected in the downgradient plume (R_d = 2 to 3), the most mobile metals would migrate almost 100 times slower. Therefore, the extent of metals migration beyond the Site boundary is expected to be very limited. Indeed, the metals groundwater analytical data demonstrate this, as summarized in Section 4.1.3.

5.1.4.1 Literature Review

From an Electric Power Research Institute (EPRI)-sponsored literature review of numerous sites (Battelle, 1984), the K_d for lead was found to range from 5 to 8,000 cm^3/g, with a median value of K_d = 100 cm^3/g (R_d ~ 700) from 125 observations. Baes and Sharp (1983) also report K_d values for metals based on an extensive literature review. From both of these studies, the following median K_d values for the indicator metals discussed in Section 5: chromium (II) (K_d~37 cm^3/g); copper (K_d~22 cm^3/g); nickel (K_d~10 cm^3/g); barium (K_d~530 cm^3/g); and manganese (K_d~150 cm^3/g). Assuming n_e=0.25 and a soil bulk density of 1.8 g/cm^3, the estimated retardation factors for these metals are: chromium (II) (R_d~270); copper (R_d~160); nickel (R_d~70); barium (R_d~3,800); and manganese (R_d~1,100). Data were not available for antimony or beryllium.

Walton (1985) presents K_d values as a function of pH for various metals in alluvial deposits. In this study K_d varied from 1,500 to 4,000 cm^3/g over a pH range of 5.5 to 7.5, similar to data collected for groundwater at OSL (metals are generally less retarded under more acidic conditions). The retardation factor for this range of K_d values corresponds to about 11,000 to 30,000.

5.1.4.2 Potential Site-Specific Metals Travel Distances

The retardation factors summarized in Section 5.1.4.1 and Darcy's law (Section 5.1.1) were used to estimate the potential distances that the indicator metals would be expected to travel downgradient from the Site. For these calculations the following parameter values were used: K= 250 feet/day (Section 2.3); n_e=0.25 (typical value for a sand and gravel aquifer); i=0.001 feet/foot (representative of the immediate Site vicinity, as discussed in Section 3.3.2.1). With these parameter values, the estimated groundwater pore velocity is 1 foot/day.

Using the above parameter values, Figure 13 plots the expected metals travel distances in the aquifer versus time. The time axis ranges from 30 to 60 years, with 30 years representative of the present time (assumes metals releases starting around the time of the 1967 landfill closure). The large variation in estimated migration distances illustrates the considerable differences in metals retardation factors. What is more important, however, are the very small distances that the metals are expected to migrate in the 30- to 60-year period. For example, the estimated 60-year travel length for copper, lead, barium, manganese, and chromium (II) is less than 150 feet.

6.0 CONCEPTUAL MODEL FOR THE STUDY AREA

6.1 Introduction

The investigations conducted during the SGI have developed data that are consistent with and expand upon the RI conceptual model. This section provides a refined conceptual model based on the data collected during the SGI.

As demonstrated in the RI/FS, the source of the groundwater plume is the waste mass in the Southern Portion of the Site and that waste mass is both above, and to a lesser extent below, the water table. Groundwater containing COC was identified emanating from the Southern Portion of the Landfill. The primary COC in the contaminant plume are TCE and its related daughter products (1,2-DCE and vinyl chloride); other VOC, when detected, are within the footprint of the TCE plume and are measured at concentrations considerably lower than TCE-related VOC. No SVOC plume is emanating from the Site and SVOC have only been detected sporadically throughout the Study Area at trace concentrations. Likewise, metals have been detected infrequently and sporadically, indicating that there is no metals plume is emanating from the Site.

The plume has been effectively delineated using VOC as the indicator contaminants. VOC are the most mobile in terms of fate and transport, and, therefore, provide the best indicator of contaminant migration in groundwater leaving the Site.

Based on extensive hydraulic investigations, the RI/FS demonstrated that VOC move with groundwater west/northwestward from the Site in a narrow and well-defined plume, likely intercepting with and discharging to the Quinnipiac River. The VOC plume, due to strong downward vertical hydraulic gradients between the Landfill mass and underlying groundwater, was demonstrated to travel to the lower portion of the aquifer as it leaves the Site and to remain in the lower portion of the aquifer to the west of Chuck & Eddies junkyard at monitoring locations G308 and G309.

Further, the RI/FS verified that there are no groundwater receptors downgradient of the Site because the entire area potentially impacted by the VOC plume is serviced by public water supply and private drinking water wells are prohibited. The RI/FS concluded, as supported by the RI conceptual model, that there are no groundwater receptors downgradient of the Site that could be impacted by the plume.

As the SRI demonstrates, Site-related COC in groundwater downgradient of the Site do not adversely impact environmental media other than groundwater. COC are transported by groundwater as a narrow plume in the lower portion of the aquifer immediately downgradient of the Site and remain in the lower portion of the aquifer, with ultimate discharge into the Quinnipiac River Basin west-northwest of the Site. This refined conceptual model also demonstrates that non-VOC COC from the Site do not exist in downgradient groundwater at concentrations greater than applicable regulatory criteria. Finally, this refined conceptual model is supported by data that confirm a significant influence of a secondary source for metals in shallow groundwater downgradient of the Site.

6.2 Groundwater Flow

Groundwater generally flows from the Site to the vicinity of wells B308/309 in an east to west direction, and gradually shifts to an approximate northwesterly direction as the hydraulic influence of the Quinnipiac River Basin becomes more pronounced. Groundwater discharges into the river basin rather than flowing beneath it. This interpretation takes into account the fact that the boundary of the aquifer is located about 800 feet northwest from the river, thus prohibiting flow beneath the river basin to the northwest. Groundwater from the Site and from the west side of the river converges and discharges into the Quinnipiac River Basin.

The RI and SGI data are consistent with the Site geology and demonstrate a strong downward flow component near the Site. This downward flow is the result of the significant difference in permeability between the low permeability of the waste mass and the high permeability of the sand and gravel aquifer. Groundwater from the Site enters the lower part of the aquifer quickly and remains in the lower aquifer until it is influenced by the Quinnipiac River Basin and rising bedrock surface.

Contaminants that were released from shallow sources such as SSDA2 remain shallow immediately west of the Site as demonstrated by the analytical data at G304A. However, these contaminants also move downward into the lower portions of the aquifer as they migrate west with groundwater flow. This is demonstrated by the absence of contaminants in the shallow groundwater at all locations downgradient of G304A (G308A, G309A, G315A). The downward migration of contaminants across this area between G304 and G308/G309 is accounted for by the large groundwater recharge this area provides to the shallow aquifer.

6.3 Contaminant Transport in Groundwater

In general, contaminant migration and distribution between air, water, sediment, and soil depend on both hydrogeologic and compound-specific parameters. Hydrogeologic factors such as hydraulic conductivity, hydraulic gradient, and porosity determine groundwater velocities and directions in the aquifer. Dissolved constituents move with the groundwater, but the migration rates may be retarded (i.e., less than the groundwater velocity) due to interaction of the contaminants with the soil particles within the aquifer. The extent of contaminant retardation is a function of several variables, including the physical-chemical character of the contaminant and the soil. All dissolved constituents will follow the groundwater flow path.

VOC, and most significantly TCE-related VOC, are the primary constituents of concern in groundwater. Although other VOC have been detected in groundwater in the Study Area, their presence is sporadic and concentrations are much less than for TCE-related VOC. No SVOC or metals plumes have been found to be emanating from the Site. No elevated SVOC detections have been seen anywhere in the Study Area downgradient of the Site. The metals that have been detected are sporadic in nature, as are the concentrations. There is no pattern of metals concentrations that define a plume emanating from the Landfill.

6.3.1 Transport of Organic Compounds

6.3.1.1 VOC Transport

VOC concentrations in groundwater are elevated in the shallow part of the aquifer beneath and near the Site. West of the Site the VOC plume is in the deeper portions of the aquifer, and VOC concentrations increase with depth. This is consistent with the observed hydrogeology, causing a strong downward gradient beneath the Southern Portion of the Site. This portion of the Landfill is the main source of contaminants to groundwater. The VOC concentrations decrease with distance from the Site due to biodegradation, rainwater dilution, and dispersion. The cap on the Site has little impact on groundwater hydraulics as was predicted by the FS and the cap design studies.

Bedrock topography beneath the Site and in the Study Area has a significant impact on deep groundwater flow. The presence of a bedrock trough running towards the west-northwest is consistent with the groundwater hydrogeological data. This bedrock trough accounts for the distribution of contaminants and plume delineation.

The contaminants that migrate into the lower portion of the aquifer near the Site remain in the lower aquifer until influenced by the Quinnipiac River Basin, where the VOC plume moves upward and discharges into the river basin.

6.3.1.2 SVOC Transport

Based on data collected during the RI, as confirmed by the SGI, SVOC migration downgradient of the Study Site has not occurred. As discussed in Section 4.1.2, 14 monitoring wells have been sampled and analyzed for SVOC starting in December 2003. Generally, SVOC have not been detected in groundwater downgradient of the Site. When detected, SVOC are at trace levels; primarily phthalates. The data confirm the absence of an SVOC plume emanating from the Site.

Many SVOC typically have a high affinity for soils (i.e., very high soil-water partition coefficients) that limits their transport in groundwater. The lack of SVOC in groundwater downgradient of the Site, despite the occurrence of limited SVOC in soil within the Site, is consistent with these general SVOC transport characteristics.

6.3.2 Metals Transport

The analytical data collected during the RI, and confirmed by the SGI, clearly demonstrates the lack of a significant metals plume emanating from the Site. This is predictable based on what is known about disposal practices at the Site and about the fate and transport of metals species in the environment. Metals that do exist in the Landfill are the result of disposal of metals products. There is no evidence that large volumes of liquid metals-bearing wastes were disposed of in the Landfill. Therefore, the metals that are present in the Landfill must have been released from the solids into groundwater.

As discussed in Section 4.1.3.1, all of the contaminants in the Study Area are in the dissolved phase, whether metals, VOC, or SVOC. Any dissolved metals emanating from the Landfill would result in a plume distribution as that defined for VOC. Unlike VOC, which are distributed in a typical plume

pattern, heavy metals appear randomly throughout the Study Area. Further, heavy metals, in concentrations that could pose a toxicity risk to the environment, have not been detected in groundwater.

Likewise, metals that are often associated with solid waste landfills, such as iron, sodium, and barium, are not distributed in a typical plume pattern. Even with barium, which occurs in almost all wells, often below background levels, there is no concentration gradient from upgradient to downgradient wells. Similar concentrations of barium occur throughout the Study Area.

6.4 Surface Water and Sediment

Based on discussions with EPA and CT DEP, surface water and sediment samples have been collected three times during the SGI. Surface water and sediment samples were collected around Black Pond and within the unnamed stream on two occasions during the RI. VOC samples were collected for two consecutive years following the placement of the cap, at two locations within Black Pond. These data demonstrate that the placement of the cap did not impact the surface water or sediment.

The ecological and human health risk assessments conducted during the RI/FS (ESE, 1993) concluded that there was no unacceptable risk to human health or the environment related to surface water or sediment. At the request of EPA, surface water and sediment samples were collected for VOC, SVOC, and metals from three locations around Black Pond to confirm that the levels of contaminants are similar in concentration to those considered during the risk assessments.

As discussed in Section 4.2, contaminant levels detected in surface water and sediment samples collected during the SGI are lower or similar to the contaminant levels used in the risk assessments, confirming that, consistent with the RI/FS risk assessments there is no risk to ecological and human health.

6.5 Groundwater Discharge to Surface Water

6.5.1 Black Pond

As discussed in Section 3.3.3.1, hydraulic studies around Black Pond have demonstrated that groundwater from beneath the Landfill cannot discharge to Black Pond, due to the fact that the elevation of the Pond is higher than that of the surrounding water table. In addition, with the cap in place, surface runoff to Black Pond is not in contact with wastes or contaminants within the Landfill.

6.5.2 Unnamed Stream and Wetlands

As discussed in Section 3.3.3.2, hydraulic studies along the unnamed stream have demonstrated that groundwater cannot discharge to the unnamed stream or wetlands. Furthermore, even if groundwater could discharge to this stream, shallow groundwater beneath and in the area of the unnamed stream does not contain contaminants at concentrations that could adversely impact the stream.

6.5.3 Quinnipiac River

The contaminant plume from the Study Area is at a relatively low concentration in the deeper wells at G310 (in September 2005, TCE equivalents were 0 ppb at G310S, 42 ppb at G310A, 195 ppb at G310B, and 13 ppb at G310C). No VOCs have been detected in the three shallow wells installed between G310 and the river (e.g., SDW-6, -7, and -8), indicating that the plume remains in the deeper portion of the aquifer until it merges with the easterly and southerly flowing groundwater in the Quinnipiac River Basin. The concentrations in the aquifer will be further reduced by dilution as the contaminant plume mixes with the River Basin aquifer prior to discharging to the Quinnipiac River.

Any impact of groundwater contaminants to the Quinnipiac River will be minor because the concentrations in the groundwater are low and considerable additional dilution and mixing will occur in the Quinnipiac River Basin. Moreover, a comparison of the groundwater quality data from the G310 wells to the Connecticut Surface Water Protection Criteria (SWPC) demonstrate that the maximum concentrations of constituents within the VOC plume that have ever been detected in any of the four G310 wells, as well as at SDW-6, -7, and -8, are generally at least an order of magnitude below the applicable SWPC.

The River is classified as C/B, indicating a degraded condition upgradient as well as downgradient of the Study Area. The Quinnipiac River basin has numerous upstream VOC sources in addition to potential VOC sources located on the opposite (west) side of the Quinnipiac River. The complexity of the system is such that definition of the OSL plume would become infeasible once it mixes with the groundwater in the Quinnipiac River Basin aquifer.

6.6 Comparison to Regulatory Criteria

This section assesses the conceptual model, based on data presented in this SRI, against a number of general categories of interest specified by EPA, as they relate to potentially appropriate regulatory criteria. When the discussion relates to data presented in this SRI, the appropriate section references are provided.

As discussed in Sections 1.2.1.2, 2.1.6, and 2.1.10, groundwater receptor studies have been completed for all areas of the Study Area. All potential receptors of VOC in the Study Area plume are on municipal water and private drinking water wells are prohibited throughout the applicable area. In addition, groundwater beneath the Site and west of the Site, to the Quinnipiac River, including the entire Study Area VOC plume, is classified by the CT DEP as a GB area. Finally, the groundwater use studies have confirmed that public drinking water is available in the entire Study Area and that groundwater is not, and may not be, used for drinking water within this area. Therefore, there are no receptors for a groundwater consumption pathway.

The applicable regulatory criteria for groundwater is Connecticut's Remediation Standard Regulations (RSRs), Conn. Gen. Stat. §22a-133k-3, Groundwater Remediation Standards. Pursuant to the CT RSRs, §22a-133k-3, remediation of groundwater in a GB area requires:

- Attainment of the requirements for SWPC, where appropriate;
- Attainment of the requirements for volatilization criteria; and
- Ensuring that concentrations of substances in the groundwater plume do not interfere with any existing use of the ground water.

These criteria are individually discussed in Sections 6.6.1 through 6.6.3, below.

6.6.1 Impact to Surface Waters

Considerable sampling of groundwater, surface water, and sediment have occurred during the RI and the SGI. An ecological risk assessment was presented in the RI/FS and is summarized in Section 1.2.1.3. As part of the Remedial Investigation and the SGI, significant data have been collected to define the hydrogeology at the Site and throughout the Study Area. Under the CT RSRs, the SWPC and the Water Quality Criteria (WQC) only apply to groundwater plumes discharging to surface water or wetlands, respectively. As discussed in Section 3.3.3, groundwater impacted by the Site does not discharge to any surface water or wetlands, until it reaches the Quinnipiac River Basin.

During the SGI, four (4) wells are being sampled at the western edge of the groundwater plume prior to discharge to the Quinnipiac River (G310S, G310A, G310B, and G310C). There have been no exceedances of the SWPC or WQC for VOC or SVOC in any of the four (4) wells at G310 during the last eight quarters (December 2003, March 2004, June 2004, September 2004, December 2004, March 2005, June 2005, and September 2005).

The PSDs have conducted metals analyses in groundwater at the G310 cluster wells located immediately upgradient of the Quinnipiac River. As discussed in Section 4.1.3.1, there is no evidence of a metals plume migrating in the groundwater. The metals detected at the G310 cluster are not a result of the Landfill. Further, metals detected in the wells screened within the Landfill plume do not exceed the CT SWPC or CT WQC.

6.6.2 Vapor Intrusion

Thirty-one (31) shallow groundwater monitoring wells, located throughout the Study Area, were being sampled as part of the SGI. With respect to vapor intrusion, CT DEP has proposed revisions to the volatilization criteria, however, those revisions are not yet final. As shown on Table 22, comparing the data generated within the study area to both the current and proposed criteria, exceedances of the CT RSR volatilization criteria have only occurred at five wells, G302A, G303A, G304A, G314A, and SDW3 during the last four quarters (December 2004, March 2005, June 2005, and September 2005).

Also shown in Table 22 is a comparison to the EPA Vapor Intrusion Guidance Table 2(c) criteria. The only location where the EPA Table 2(c) criteria are exceeded, but where the CT RSRs volatilization criteria are not exceeded, is at G312A. At G312A the groundwater is located deeper than 30 feet below the surface, so the CT RSRs volatilization criteria do not apply. Likewise, the concentrations of TCE detected at G312A do not exceed the CT RSRs volatilization criteria. Conducting further analysis of the TCE concentrations at G312A, using the EPA vapor intrusion guidance, the TCE concentration would meet the guidance in the very next step in the analysis (Question 5(a)).

All of these wells in which exceedances of CT RSR volatilization criteria have occurred are located on commercial property immediately downgradient of the Landfill, along the west side of Old Turnpike Road. As discussed in Sections 3.3.2.1 and 4.1.1.1, G314A and SDW4 are not impacted by the Landfill and VOC detected there are the result of historic activities on the property on which the G314 well cluster resides.

Under the new proposed volatilization criteria proposed by the CT DEP, only G304A exceeds an industrial/commercial volatilization criteria; for vinyl chloride. Depths to groundwater for these wells in December 2005 were 15.7 feet at G302A, 19.2 feet at G303A, and 29.9 feet at G304A.

Based on the concentrations detected over the last four quarters, additional sampling or remedial measures may be necessary to address exceedances of the CT RSR volatilization criteria. Remedial measures could include environmental land use restrictions, mechanical controls, etc.

6.6.3 Groundwater Consumption/ Aquifer Degradation

As discussed above and in the SRI, groundwater beneath the Site and west of the Site, to the Quinnipiac River, including the entire Study Area VOC plume, is classified by the CT DEP as a GB area. Groundwater use studies have been completed throughout the Study Area: from east of the Site (Section 2.1.10), west to the Quinnipiac River and north of the Site to Main Street and Maple Street and south to Mulberry Street (Section 1.2.1.2), and west of the Quinnipiac to Canal Street (Phase 2A; Section 2.1.5 of SRI). The groundwater use studies have confirmed that public drinking water is available in the entire Study Area and that groundwater is not, and may not be, used for drinking water within this area. Therefore, there are no receptors for a groundwater consumption pathway and EPA MCLs and CT GWPC do not apply.

In Connecticut, groundwater classified as GB is "… within a historically highly urbanized area or an area of intense industrial activity and where public water service is available". The Study Area groundwater has been impacted by numerous industrial activities, including the former Lori Corp., Chuck & Eddies' Salvage, and the former Angillilo property, as well as by the Landfill. The CT GB designation recognizes the present condition of the aquifer. The groundwater VOC concentrations within the Study Area are at steady state, with minor fluctuations in the concentration of VOC due to rain events and resulting changes in the water table. As detailed in the RI/FS, somewhat less than half of the waste mass remains within the water table beneath the cap. However, a significant amount of the waste mass is now isolated from the groundwater due to the placement of the impermeable cap. Although VOC will continue to be slowly solubilized by groundwater flowing through the portion of the waste mass located below the water table, overall cleanup times will be significantly shorter than if the cap were not present. Over time, the condition of the aquifer will improve.

7.0 REFERENCES

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FIGURES

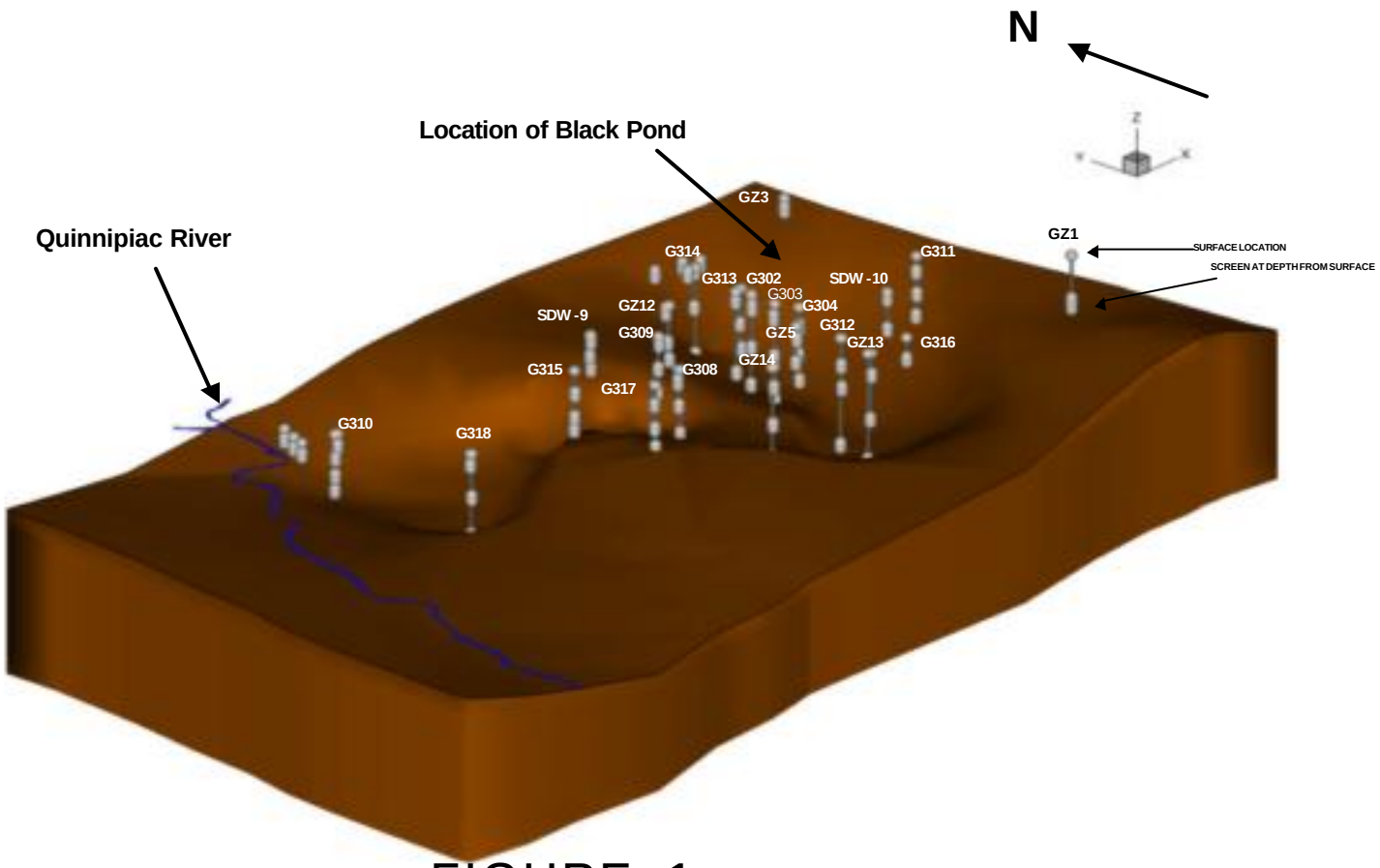


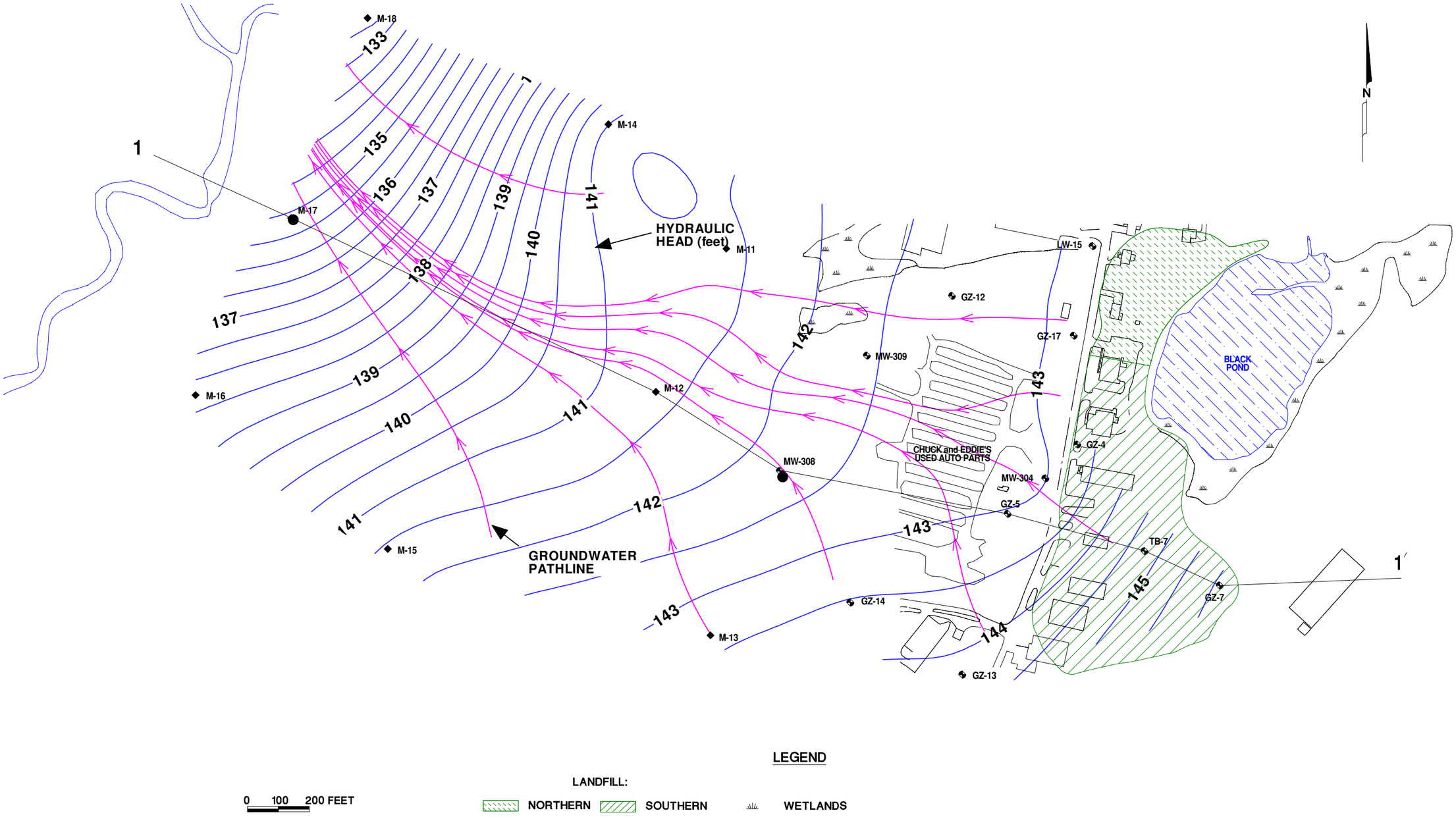
FIGURE 1

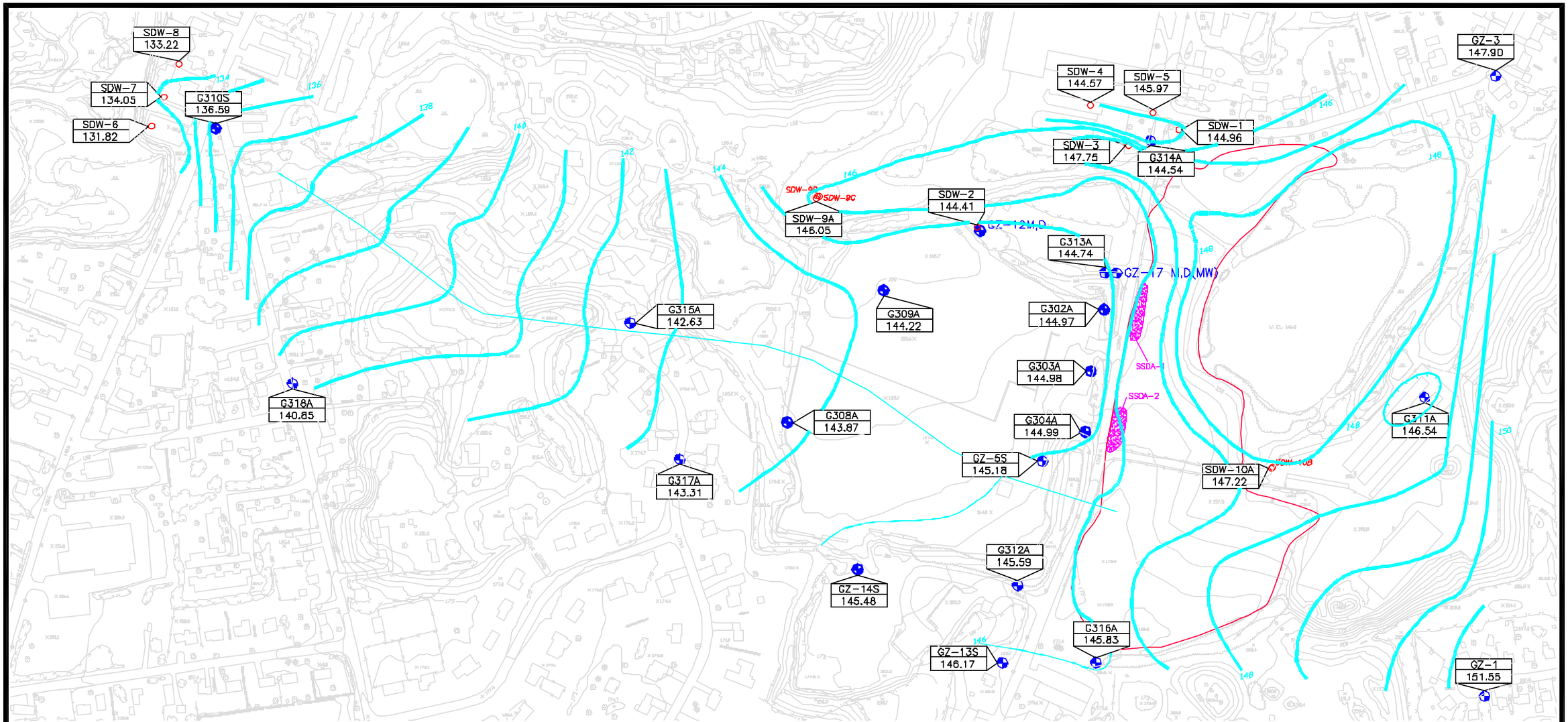
3-D BEDROCK SURFACE MAP – NORTHERN ORIENTATION

Old Southington Landfill Superfund Site

FIGURE 2

DEPTH-AVERAGED HYDRAULIC HEAD DISTRIBUTION AND GROUNDWATER PATHLINES: JUNE 1999
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site





KEY

SDW-9A ○ LOCATION OF SMALL DIAMETER GROUNDWATER MONITORING WELLS

GZ-4S ⊕ LOCATION OF GROUNDWATER MONITORING WELLS INSTALLED BY GENERAL BORINGS, INC. AND CLARENCE WELTI ASSOCIATES, INC. FOR GOLDBERG-ZOINO & ASSOCIATES, INC. AND GZA GEOENVIROMENTAL, INC., DURING 1987. LETTER SUFFIX INDICATES RELATIVE DEPTH OF INDICATED WELL SCREEN WITHIN THE WELL CLUSTER (S-SHALLOW, M-MEDIUM, D-DEEP).

⊕ GROUNDWATER MONITORING WELL

○ SMALL DIAMETER MONITORING WELLS

GZ13S / 146.17 — WELL IDENTIFICATION / INTERPOLATED GROUNDWAETER ELEVATION AT 100 FT. ABOVE MEAN SEA LEVEL

—137.00— GROUNDWATER CONTOUR

FLOW PATHLINE

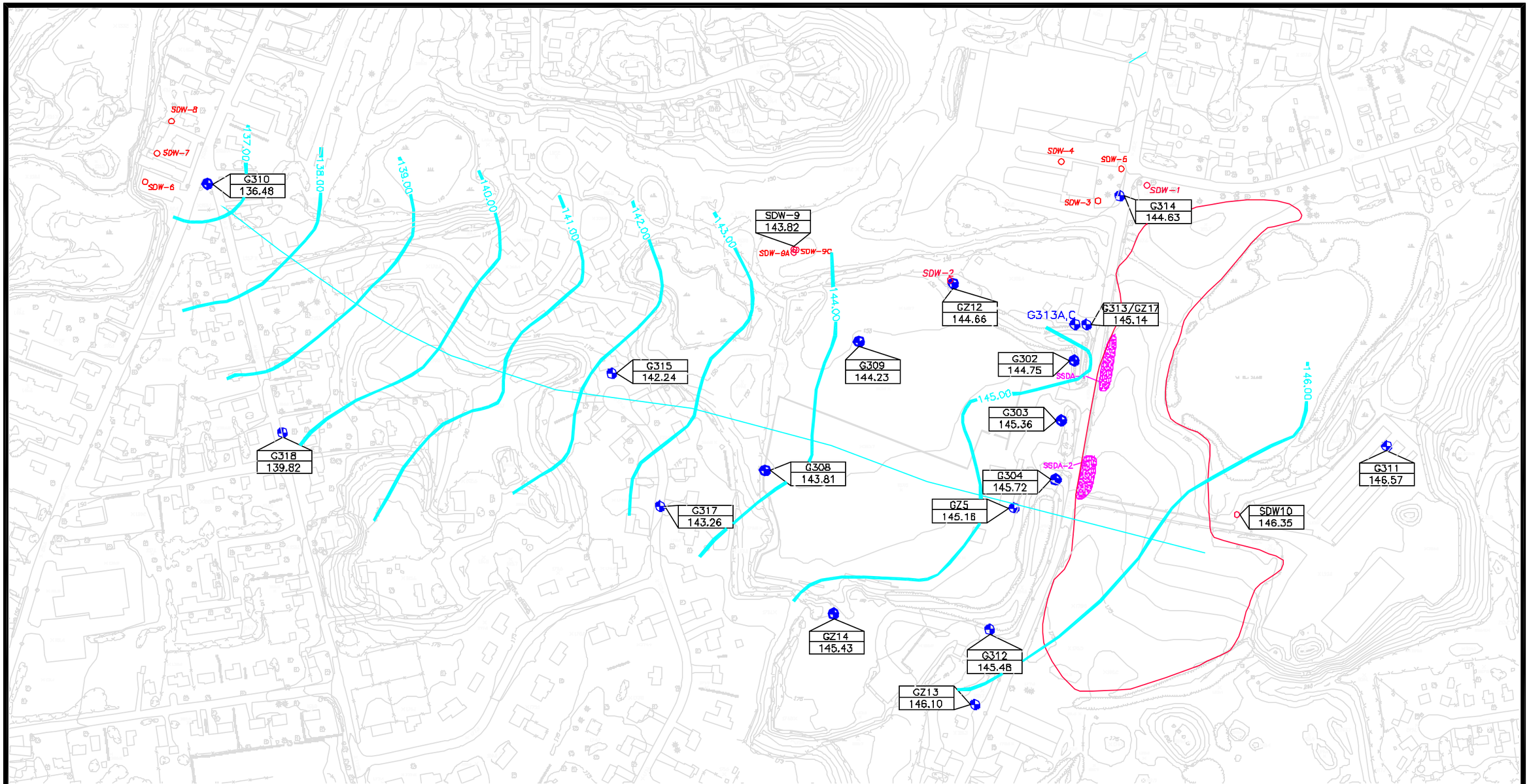
EXTENT OF STUDY AREA

N

FIGURE 3
SHALLOW GROUNDWATER CONTOURS
DECEMBER 2005
OLD SOUTHINGTON LANDFILL SUPERFUND PROJECT
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF.:060201.05DEC SHALL	CHECKED BY:
DRAFTED BY: ANG	DATE: 5/3/06
REVISED BY:	DATE:
SOURCE: MACTEC FILE# 719-7561	

KLEINFELDER
30 Porter Road • Littleton, MA 01460 • (978) 486-0060



KEY

GROUNDWATER MONITORING WELL

SMALL DIAMETER MONITORING WELLS

GZ13 / 146.10 — WELL IDENTIFICATION / INTERPOLATED GROUNDWAETER ELEVATION AT 100 FT. ABOVE MEAN SEA LEVEL

—137.00— GROUNDWATER CONTOUR

FLOW PATHLINE

EXTENT OF STUDY AREA

N

0 300

Scale in feet

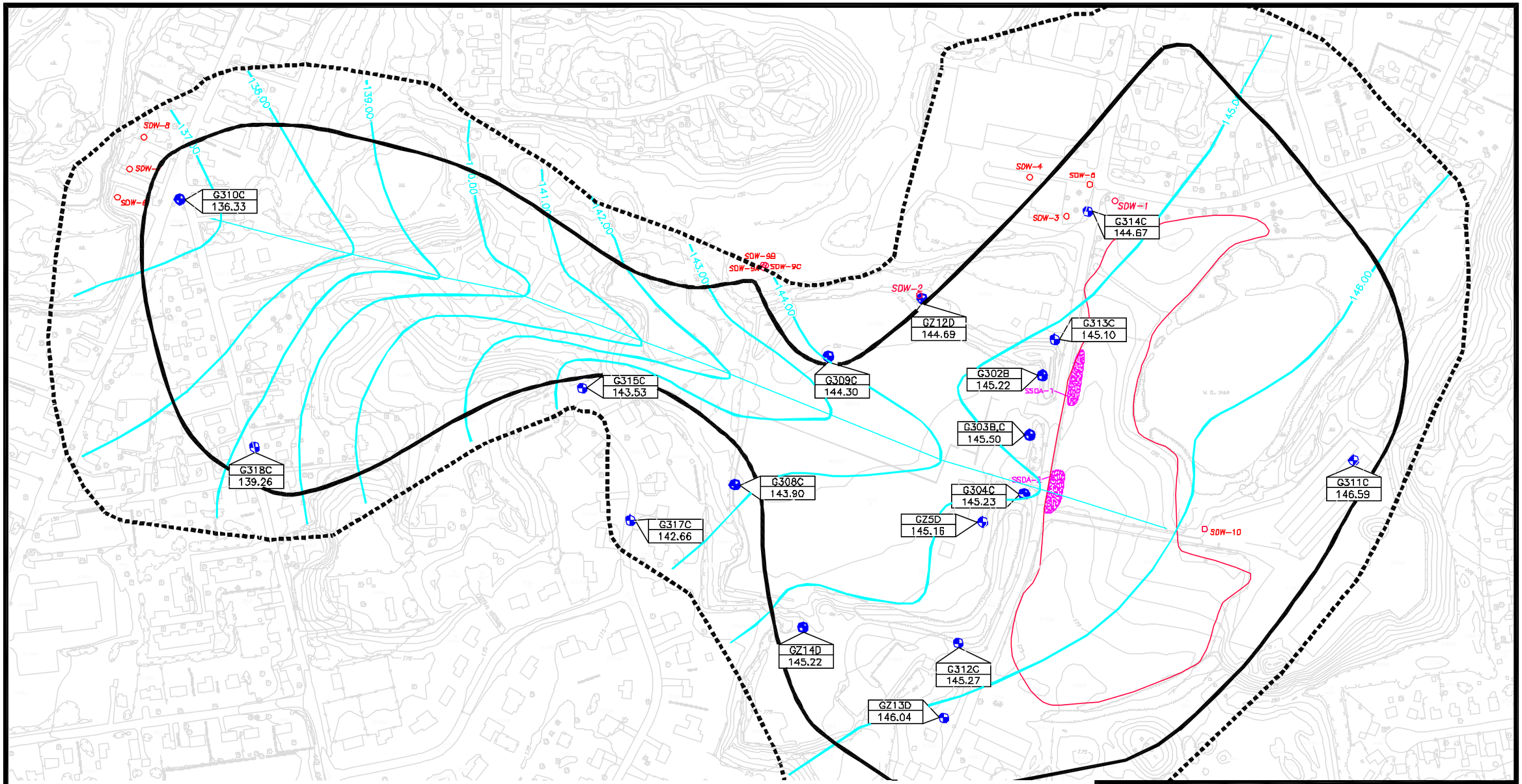
FIGURE 4

INTERPOLATED GROUNDWATER CONTOURS AT 100 FT MSL–DECEMBER 2005

OLD SOUTHINGTON LANDFILL SUPERFUND PROJECT
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF.:060201.05DEC 100 FT.	CHECKED BY:
DRAFTED BY: ANG	DATE: 5/9/06
REVISED BY:	DATE:
SOURCE: MACTEC FILE# 719-7561	

KLEINFELDER
30 Porter Road • Littleton, MA 01460 • (978) 486-0060



KEY

GROUNDWATER MONITORING WELL

SMALL DIAMETER MONITORING WELLS

GZ13D / 146.04 — WELL IDENTIFICATION / INTERPOLATED GROUNDWAETER ELEVATION AT 75 FT. ABOVE MEAN SEA LEVEL

—137.00— GROUNDWATER CONTOUR

FLOW PATHLINE

EXTENT OF STUDY AREA

BEDROCK SURFACE > 50' ABOVE MEAN SEA LEVEL

BEDROCK SURFACE > 75' ABOVE MEAN SEA LEVEL

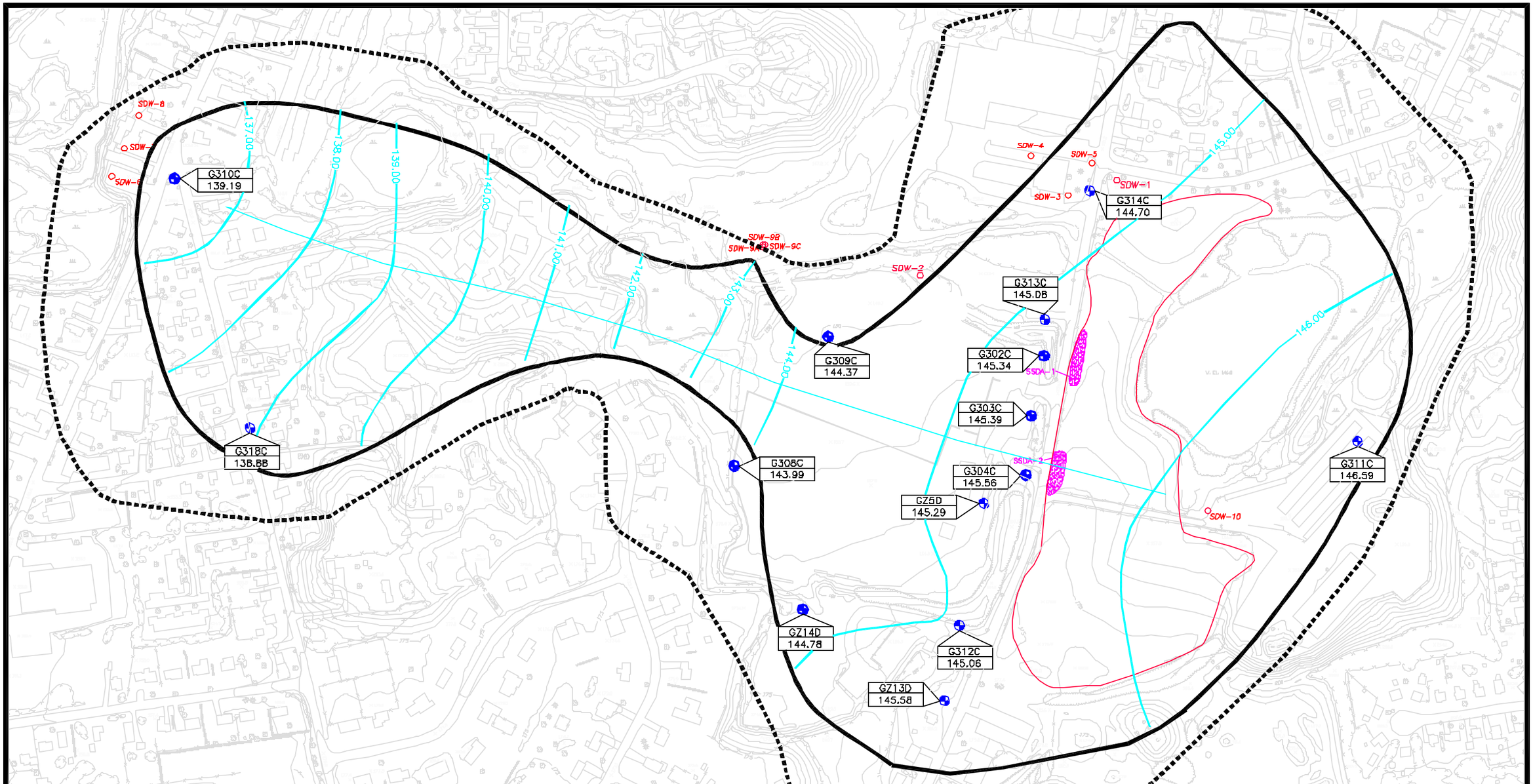
0 300
Scale in feet

N

FIGURE 5
INTERPOLATED GROUNDWATER CONTOURS AT 75 FT. MSL–DECEMBER 2005
OLD SOUTHINGTON LANDFILL SUPERFUND PROJECT
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF.:060201.05DEC 75 FT.	CHECKED BY:
DRAFTED BY: ANG	DATE: 5/10/06
REVISED BY:	DATE:
SOURCE: MACTEC FILE# 719-7561	

KLEINFELDER
30 Porter Road • Littleton, MA 01460 • (978) 486-0060



KEY

- GROUNDWATER MONITORING WELL
- SMALL DIAMETER MONITORING WELLS
- GZ13D / 146.58 — WELL IDENTIFICATION / INTERPOLATED GROUNDWAETER ELEVATION AT 50 FT. ABOVE MEAN SEA LEVEL
- —137.00— GROUNDWATER CONTOUR
- FLOW PATHLINE
- EXTENT OF STUDY AREA
- BEDROCK SURFACE > 50' ABOVE MEAN SEA LEVEL
- BEDROCK SURFACE > 75' ABOVE MEAN SEA LEVEL

0 300
Scale in feet

N

FIGURE 6
INTERPOLATED GROUNDWATER CONTOURS AT 50 FT. MSL–
DECEMBER 2005
OLD SOUTHINGTON LANDFILL SUPERFUND PROJECT
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF.:D602D1.05DEC 50 FT.	CHECKED BY:
DRAFTED BY: ANG	DATE: 5/10/06
REVISED BY:	DATE:
SOURCE: MACTEC FILE# 719-7561	

KLEINFELDER
Employee-owned
30 Porter Road ▪ Littleton, MA 01460 ▪ (978) 486-0060

Contours show the altitude of the bedrock surface in feet above mean sea level.

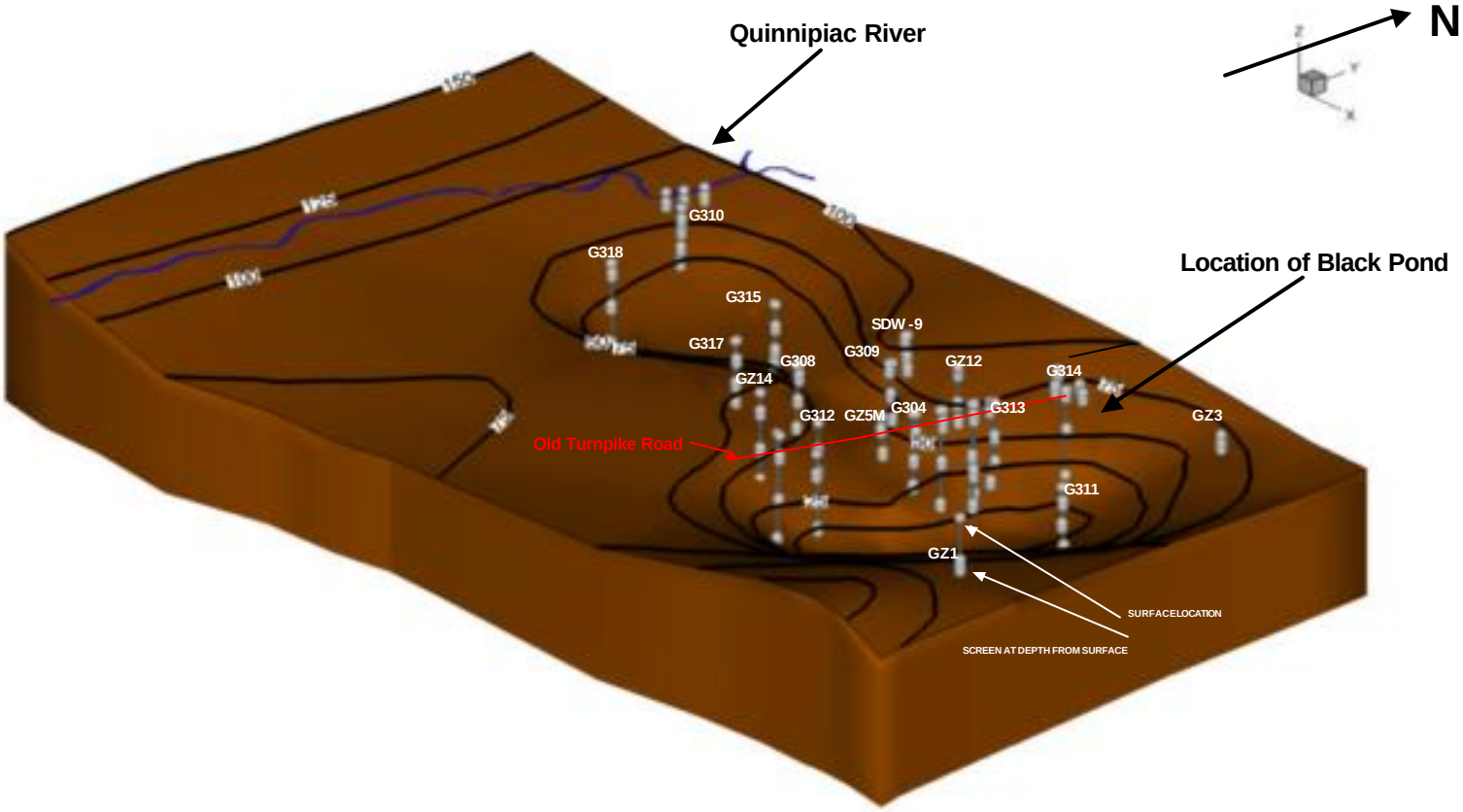
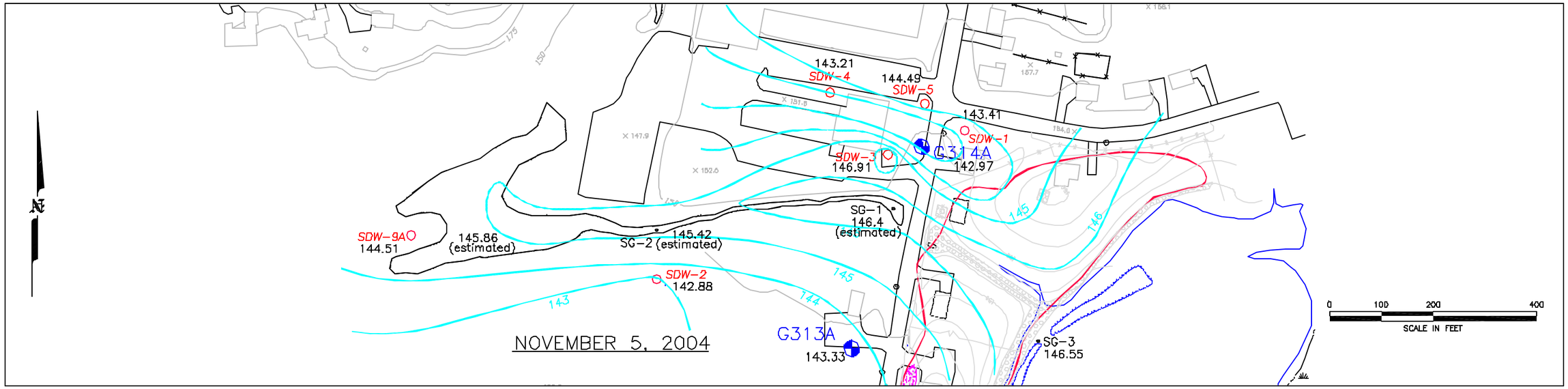


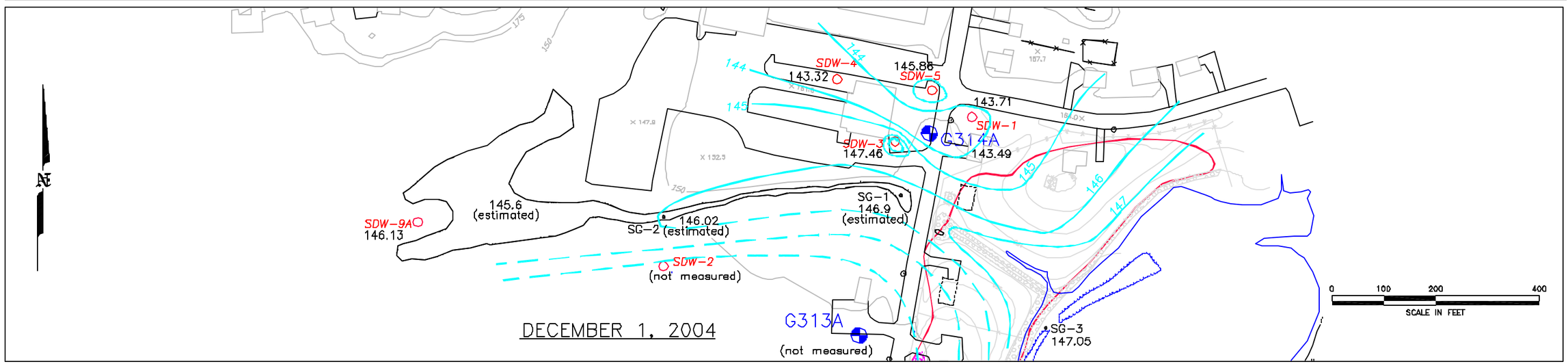
FIGURE 7

3-D BEDROCK SURFACE MAP – WESTERLY ORIENTATION

Old Southington Landfill Superfund Site



NOVEMBER 5, 2004



DECEMBER 1, 2004

LEGEND:

SHALLOW GROUNDWATER CONTOUR

FIGURE 8
G314 AREA SHALLOW GROUNDWATER CONTOURS
OLD SOUTHINGTON LANDFILL SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF.:060201.01VICINCONTOUR	CHECKED BY:
DRAFTED BY: ANG	DATE: 4/21/06
REVISED BY:	DATE:
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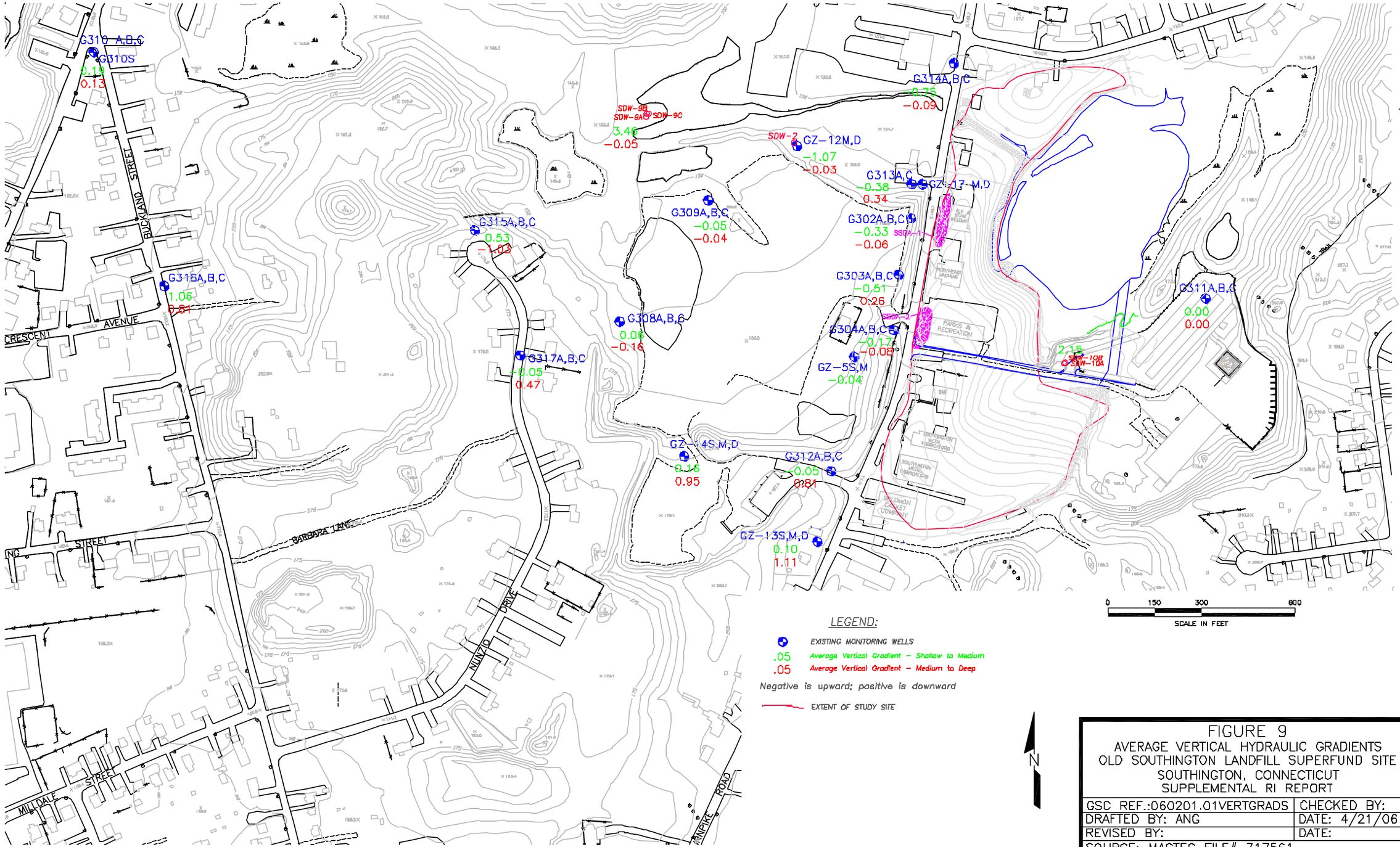

FIGURE 9
AVERAGE VERTICAL HYDRAULIC GRADIENTS
OLD SOUTHINGTON LANDFILL SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF.:060201.01VERTGRADS	CHECKED BY:
DRAFTED BY: ANG	DATE: 4/21/06
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SOURCE: MACTEC FILE# 717561	

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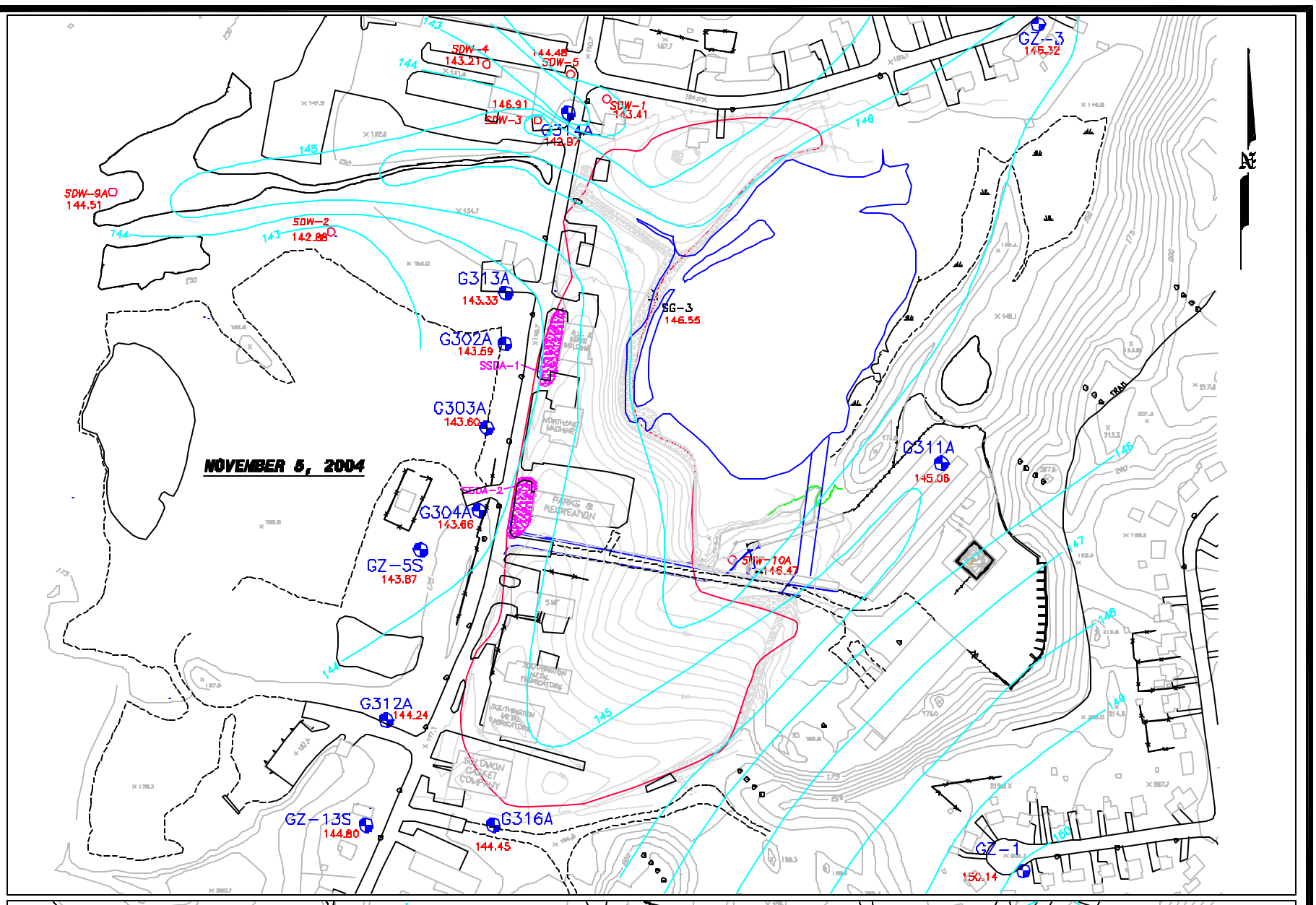

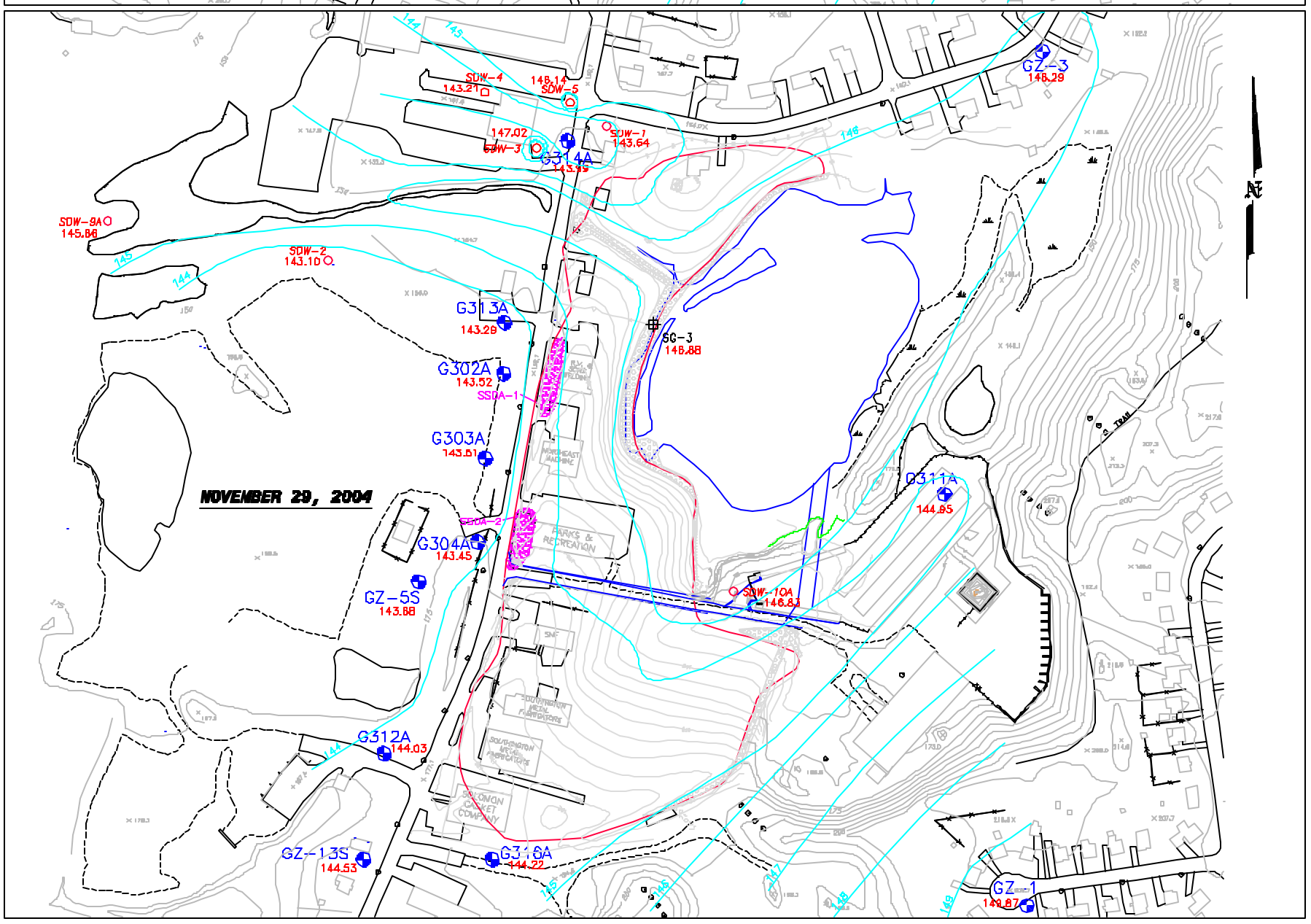

LEGEND:

- EXISTING MONITORING WELLS
- SDW-1 SMALL DIAMETER MONITORING WELLS
- EXTENT OF STUDY SITE
- SG-3 BLACK POND STAFF GAUGE
- GROUNDWATER CONTOUR
- FLOW LINE

0 150 300 600
SCALE IN FEET

FIGURE 10
BLACK POND AREA GROUNDWATER CONTOURS
OLD SOUTHINGTON LANDFILL SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF.: 060201.01PONDCONTOURS	CHECKED BY:
DRAFTED BY: ANG	DATE: 4/21/06
REVISED BY:	DATE:
SOURCE: MACTEC FILE# 719-7561	

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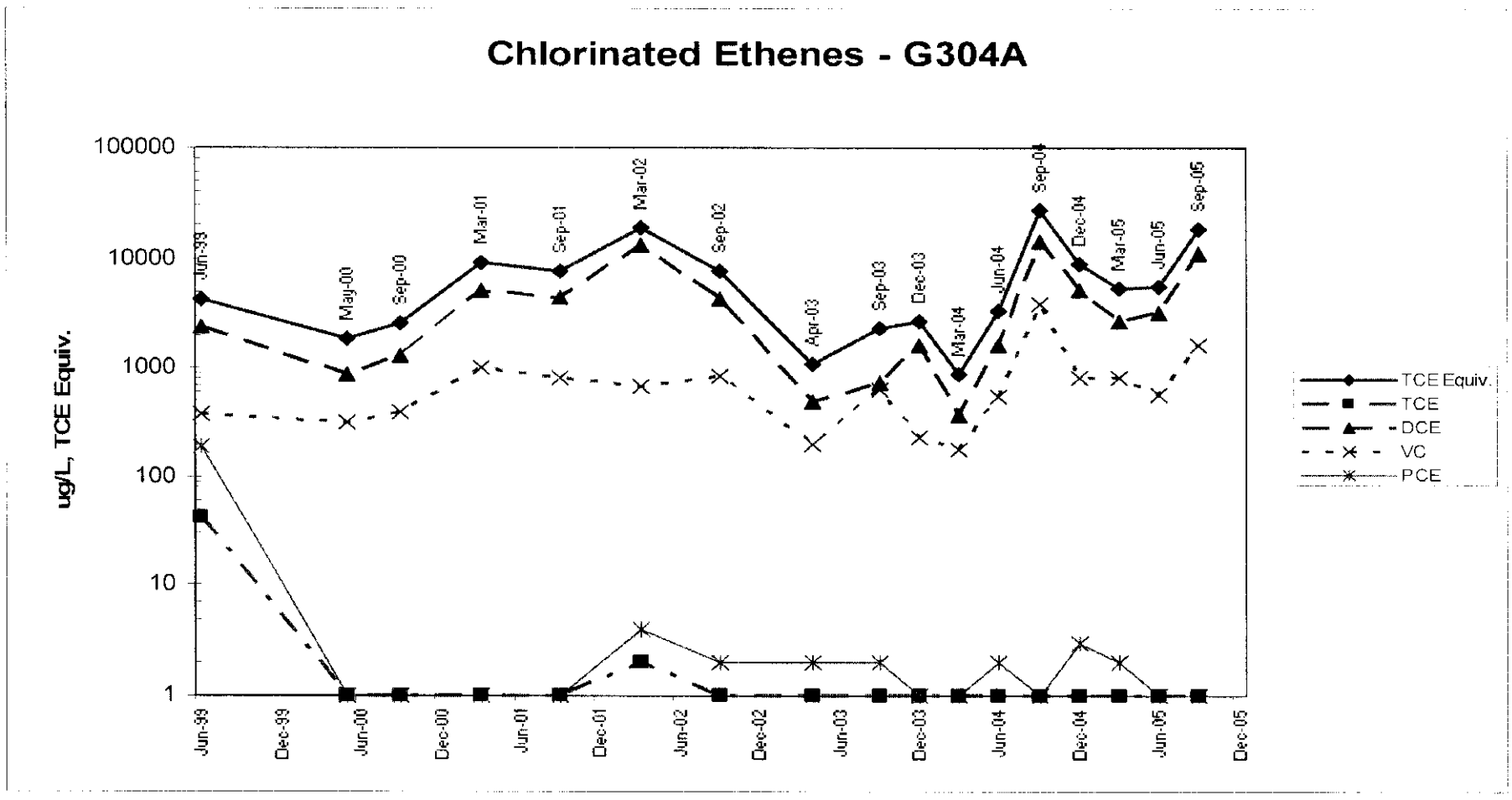
FIGURE 11A
TCE EQUIVALENTS COMPARISON OVER TIME
Old Southington Landfill Superfund Site



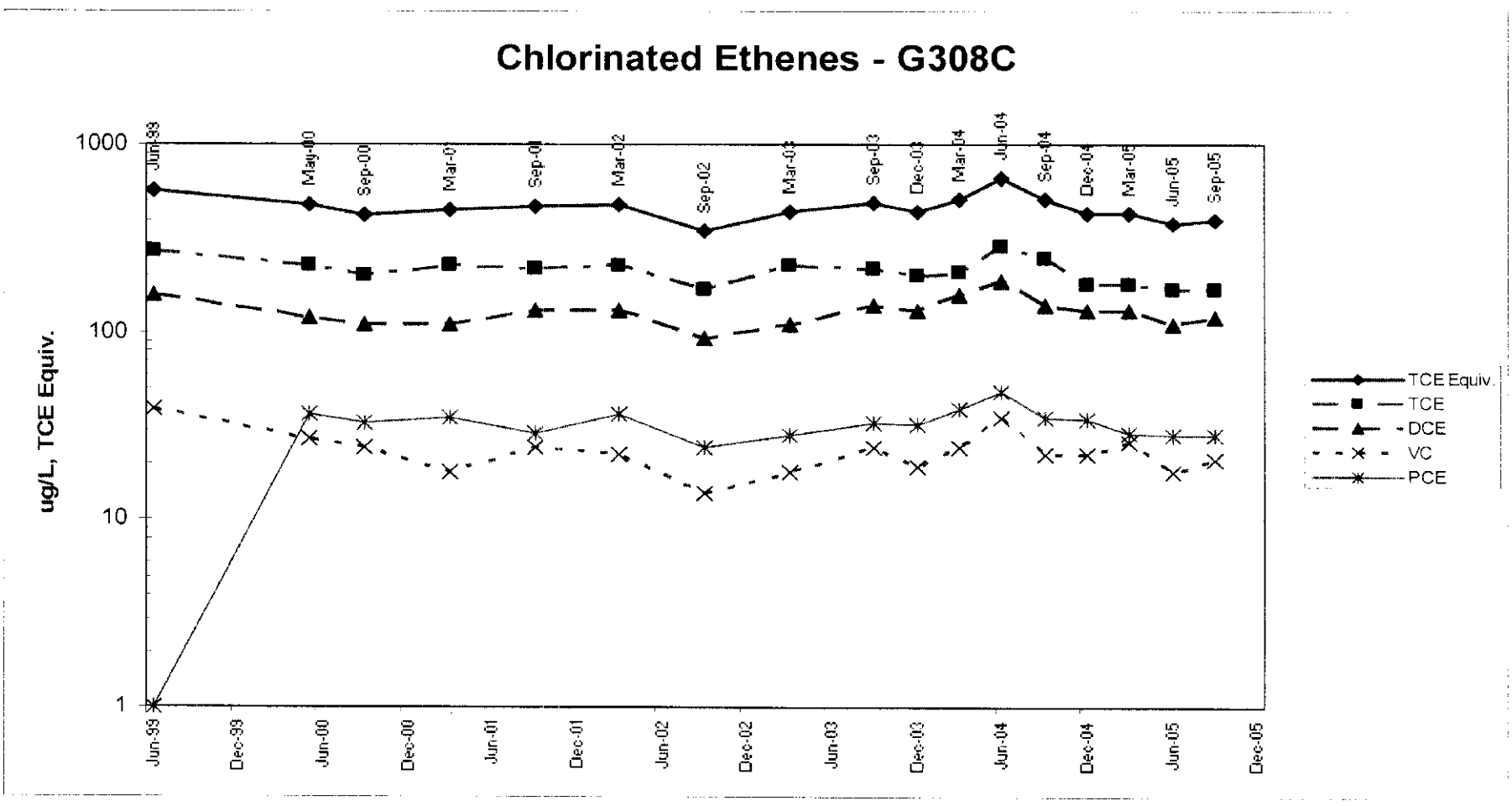
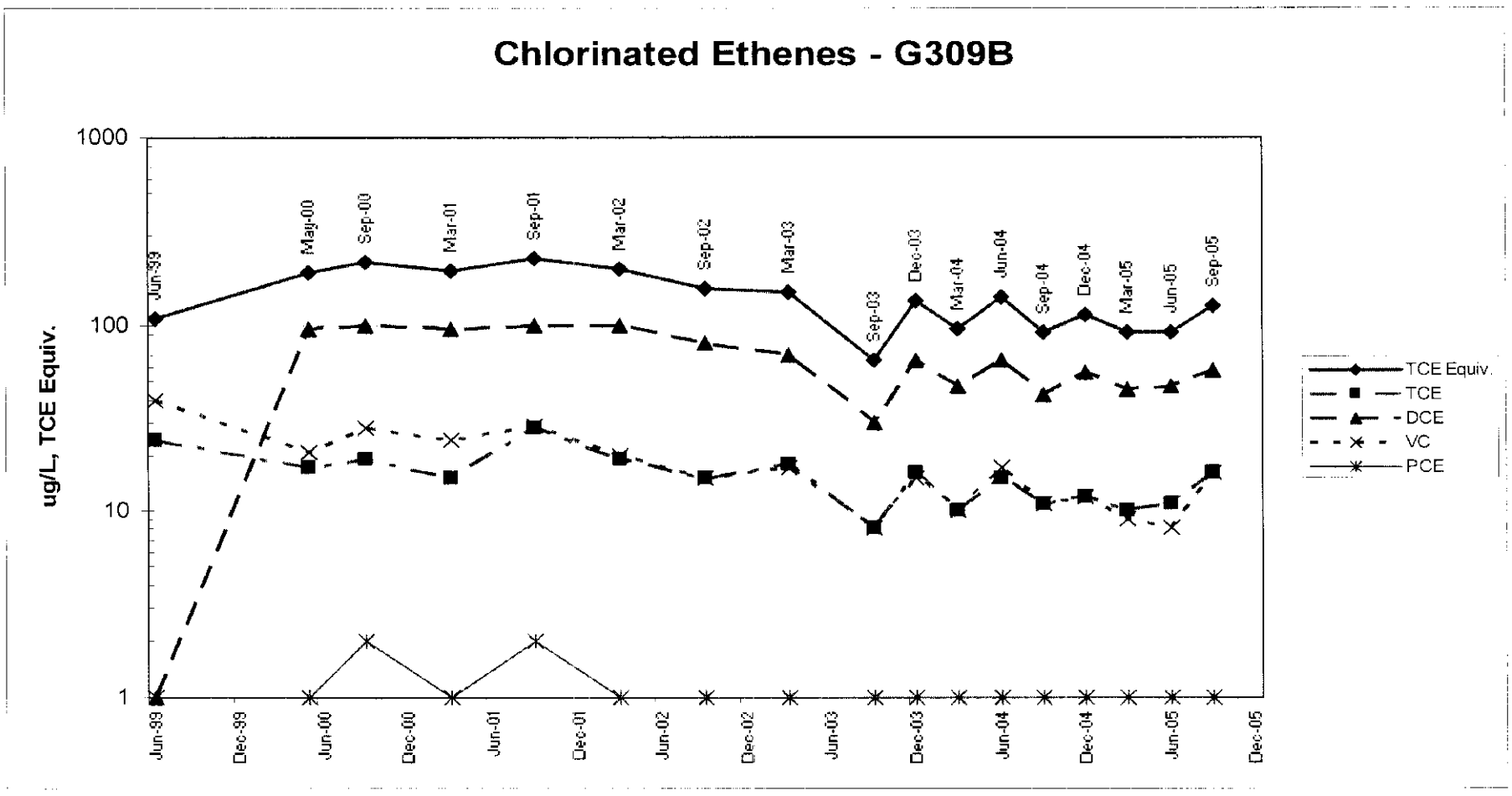


FIGURE 11B
TCE EQUIVALENTS COMPARISON OVER TIME
Old Southington Landfill Superfund Site



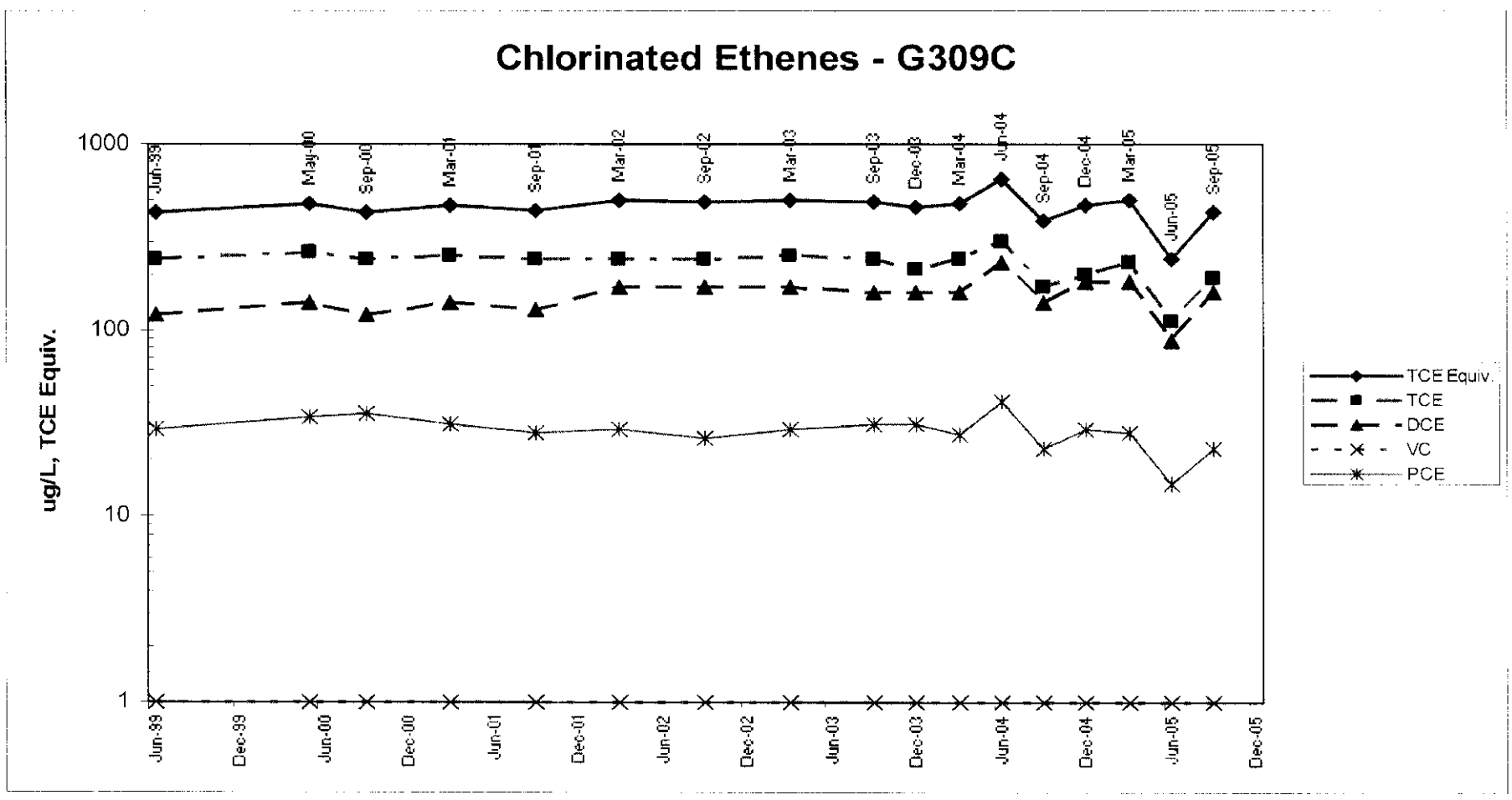
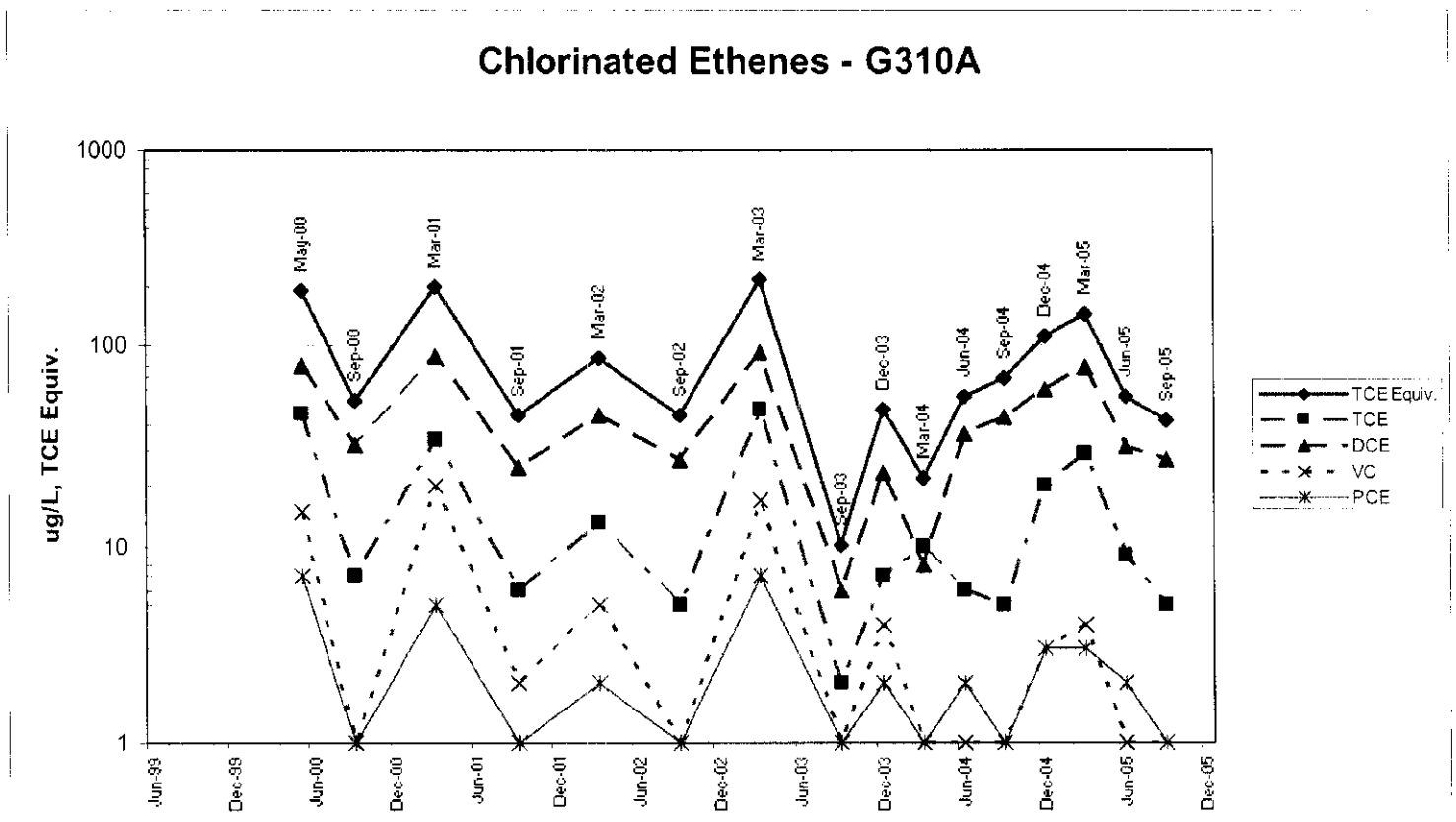
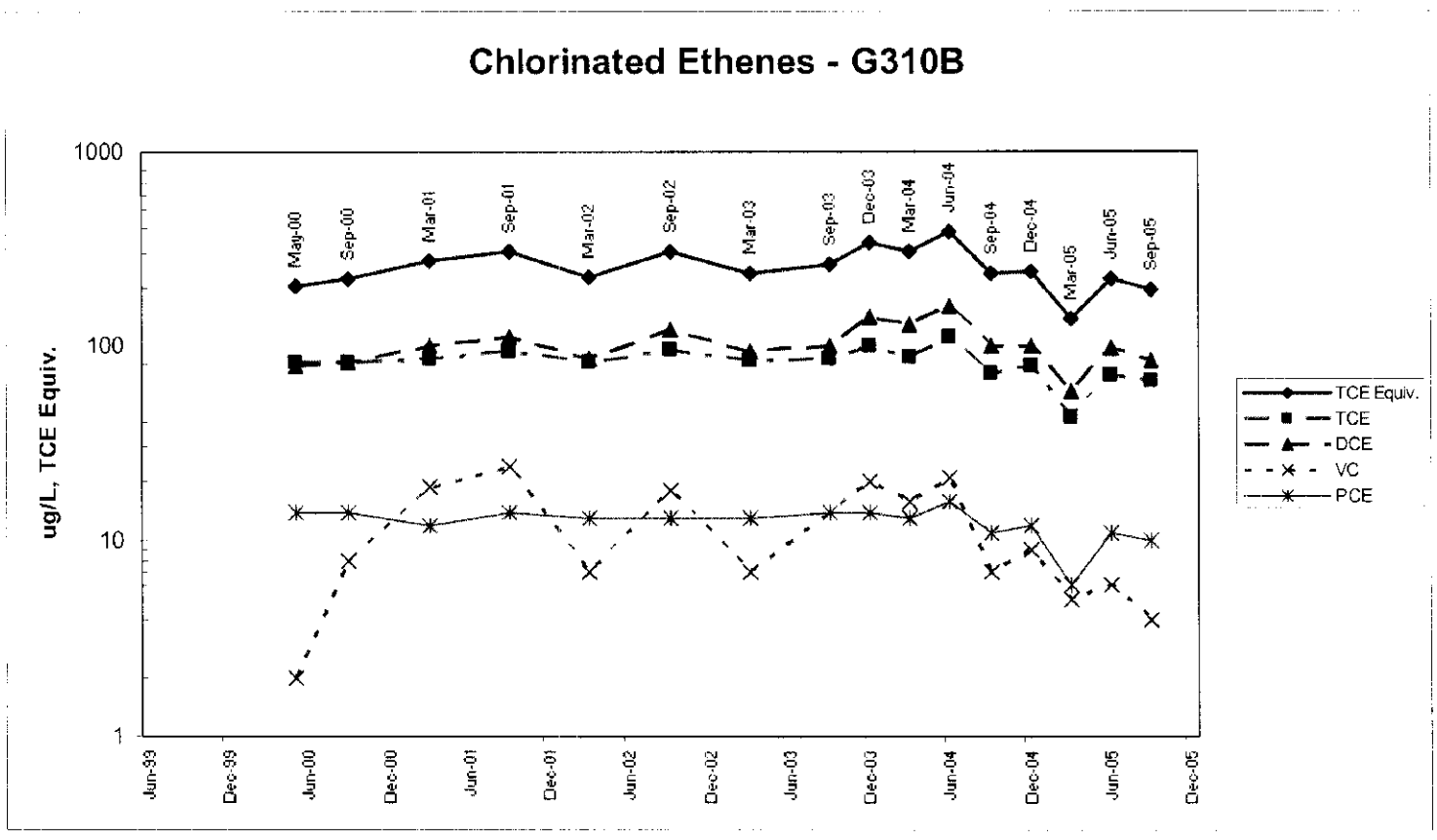


FIGURE 11C
TCE EQUIVALENTS COMPARISON OVER TIME
Old Southington Landfill Superfund Site





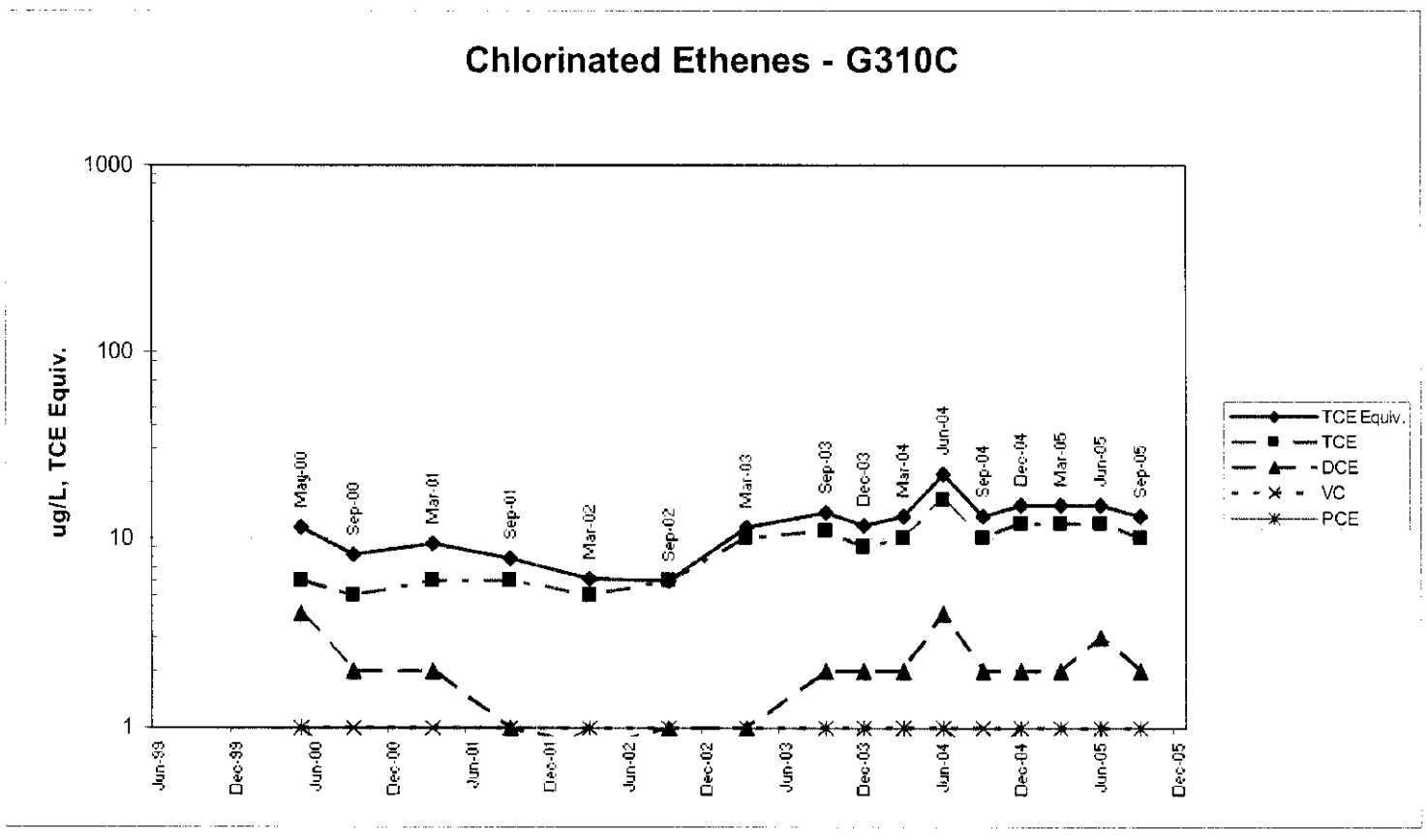
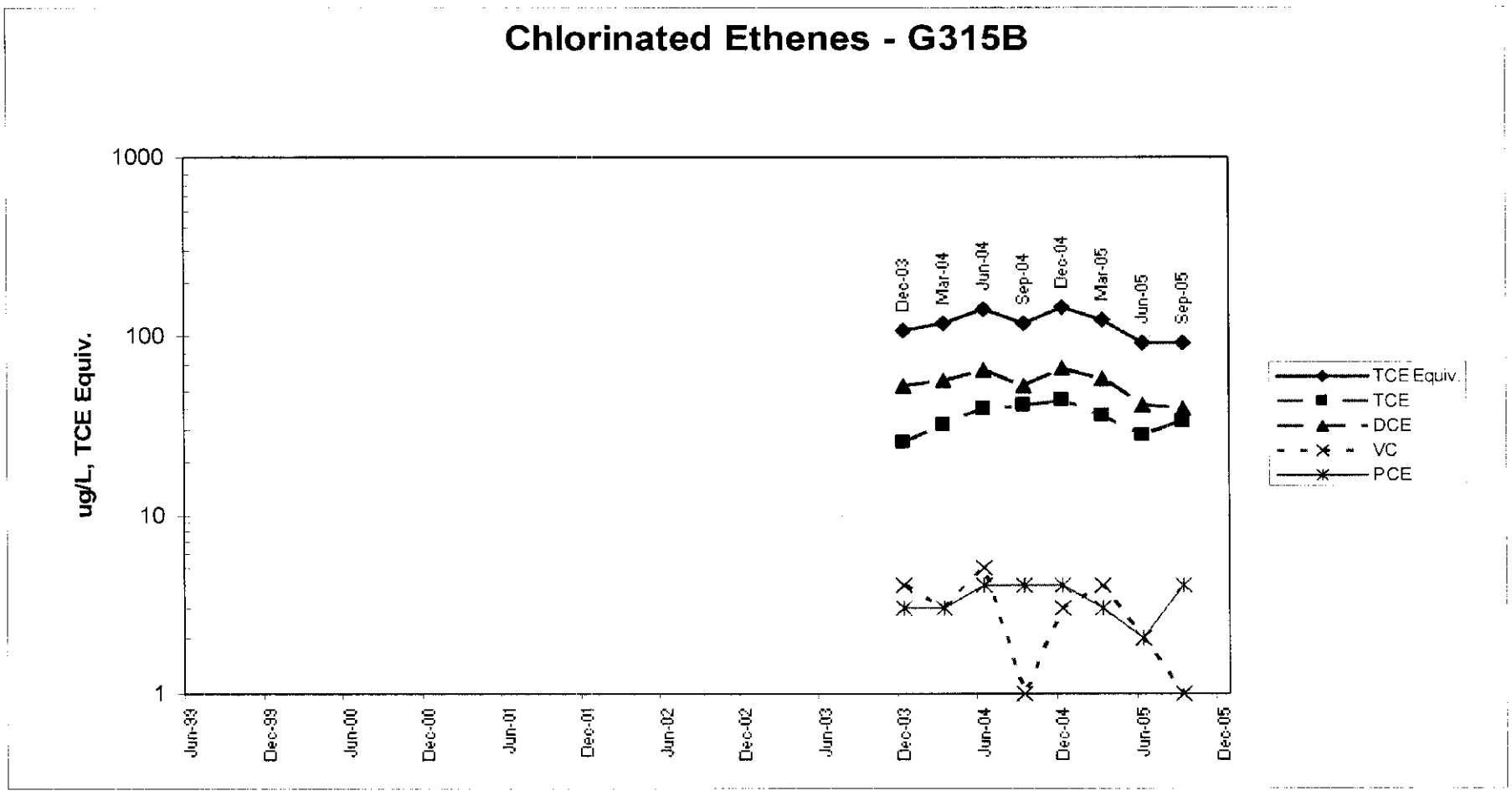


FIGURE 11D
TCE EQUIVALENTS COMPARISON OVER TIME
Old Southington Landfill Superfund Site



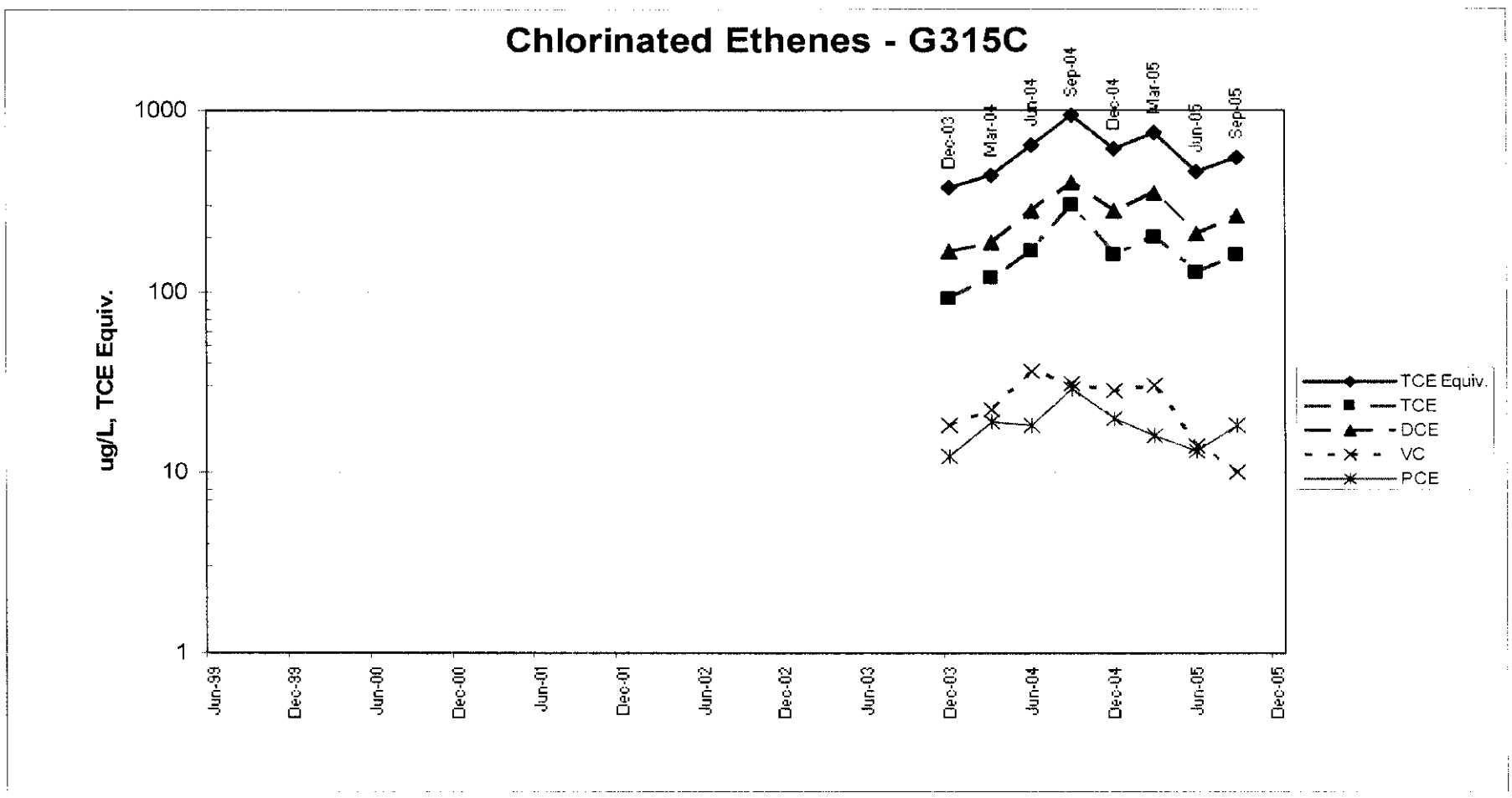
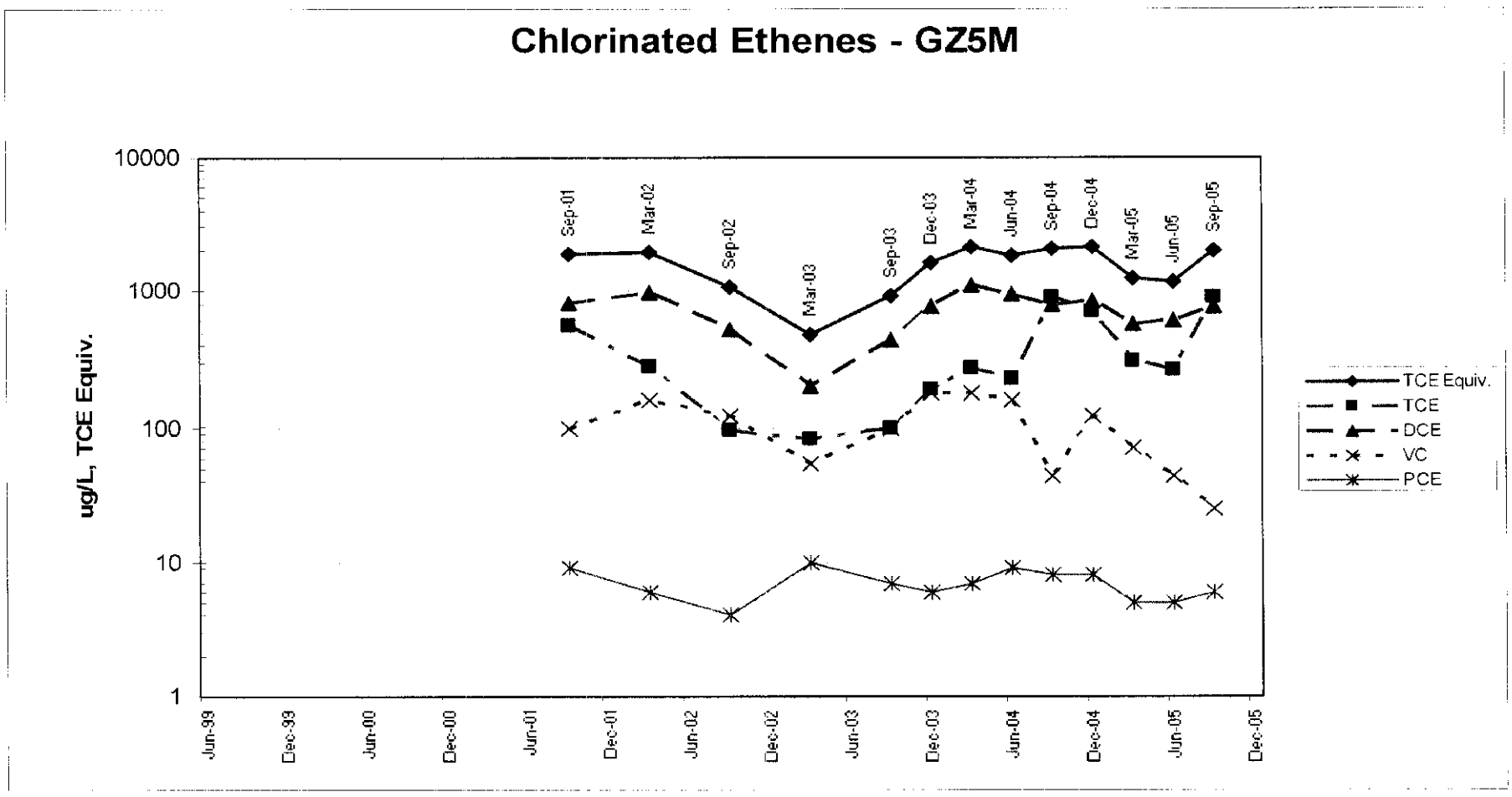


FIGURE 11E
TCE EQUIVALENTS COMPARISON OVER TIME
Old Southington Landfill Superfund Site



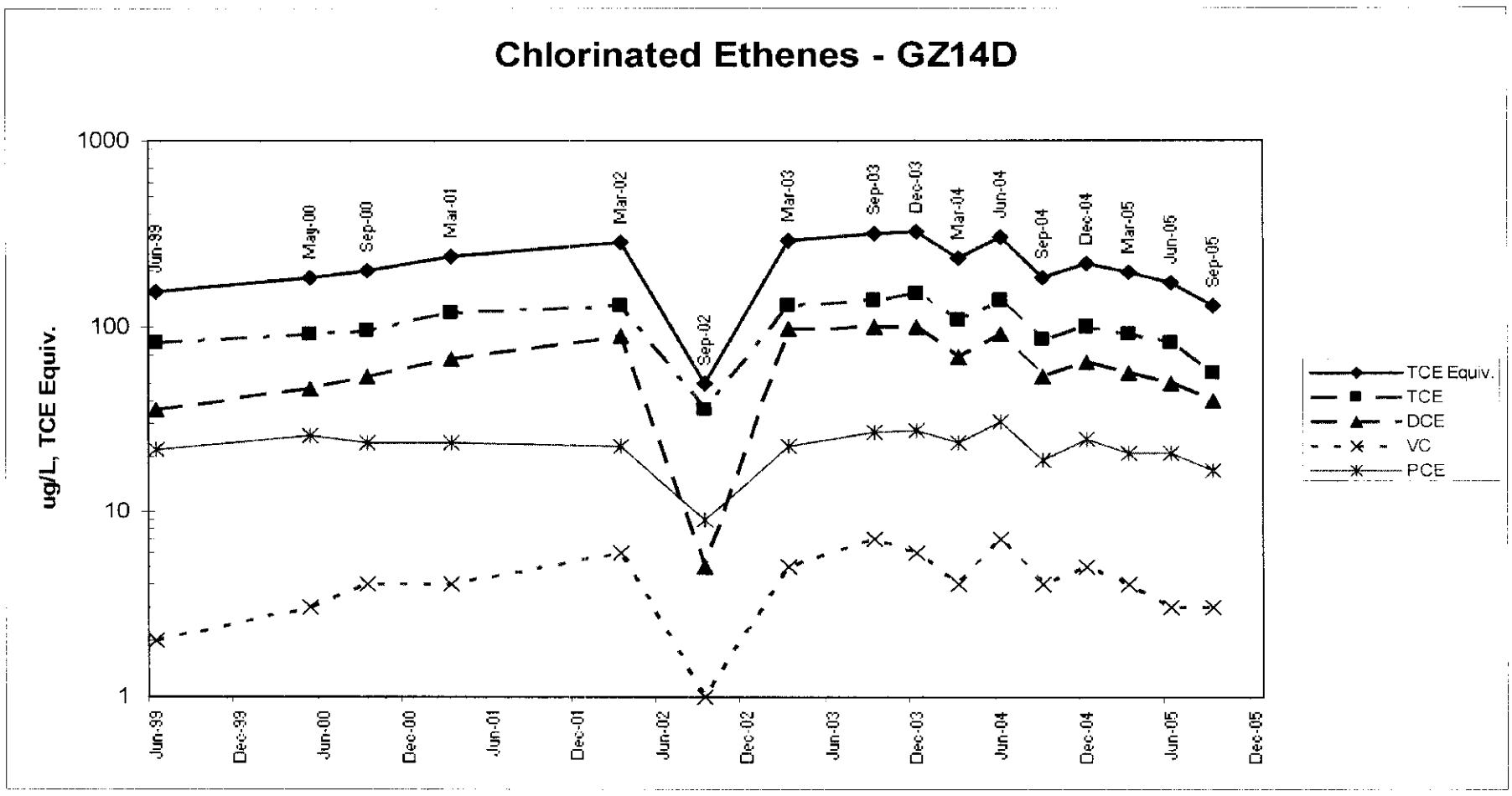
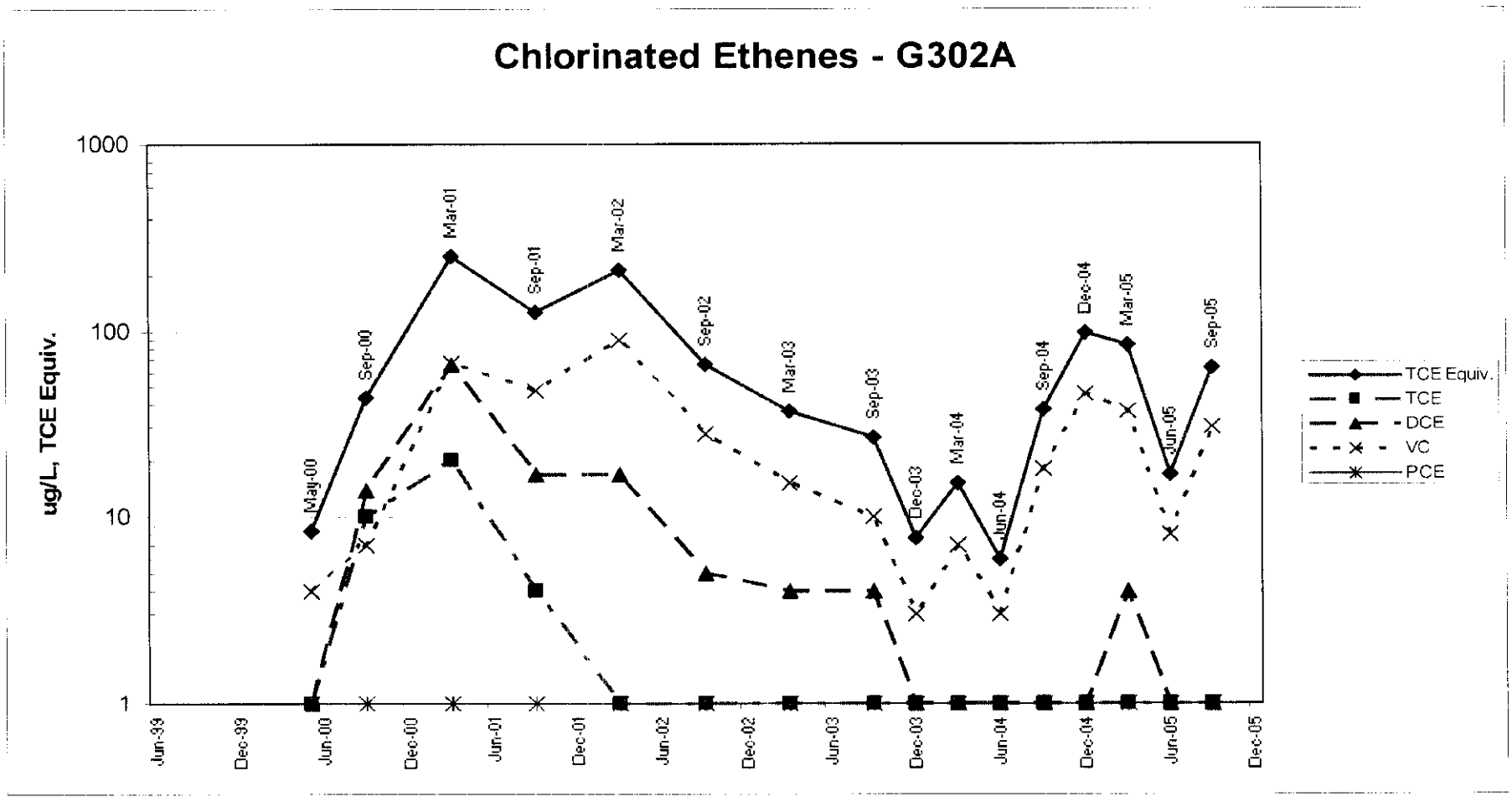
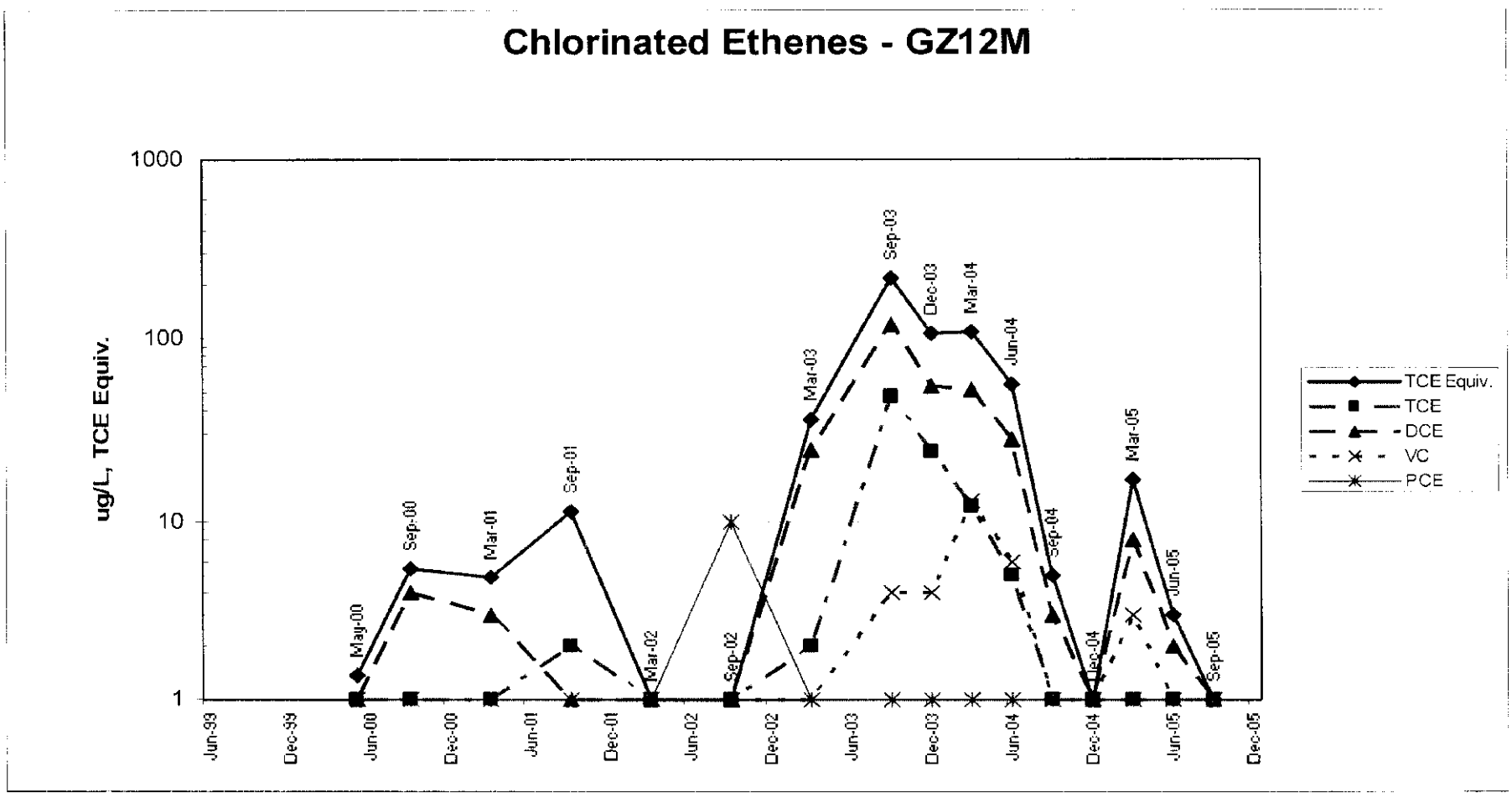


FIGURE 11F
TCE EQUIVALENTS COMPARISON OVER TIME
Old Southington Landfill Superfund Site





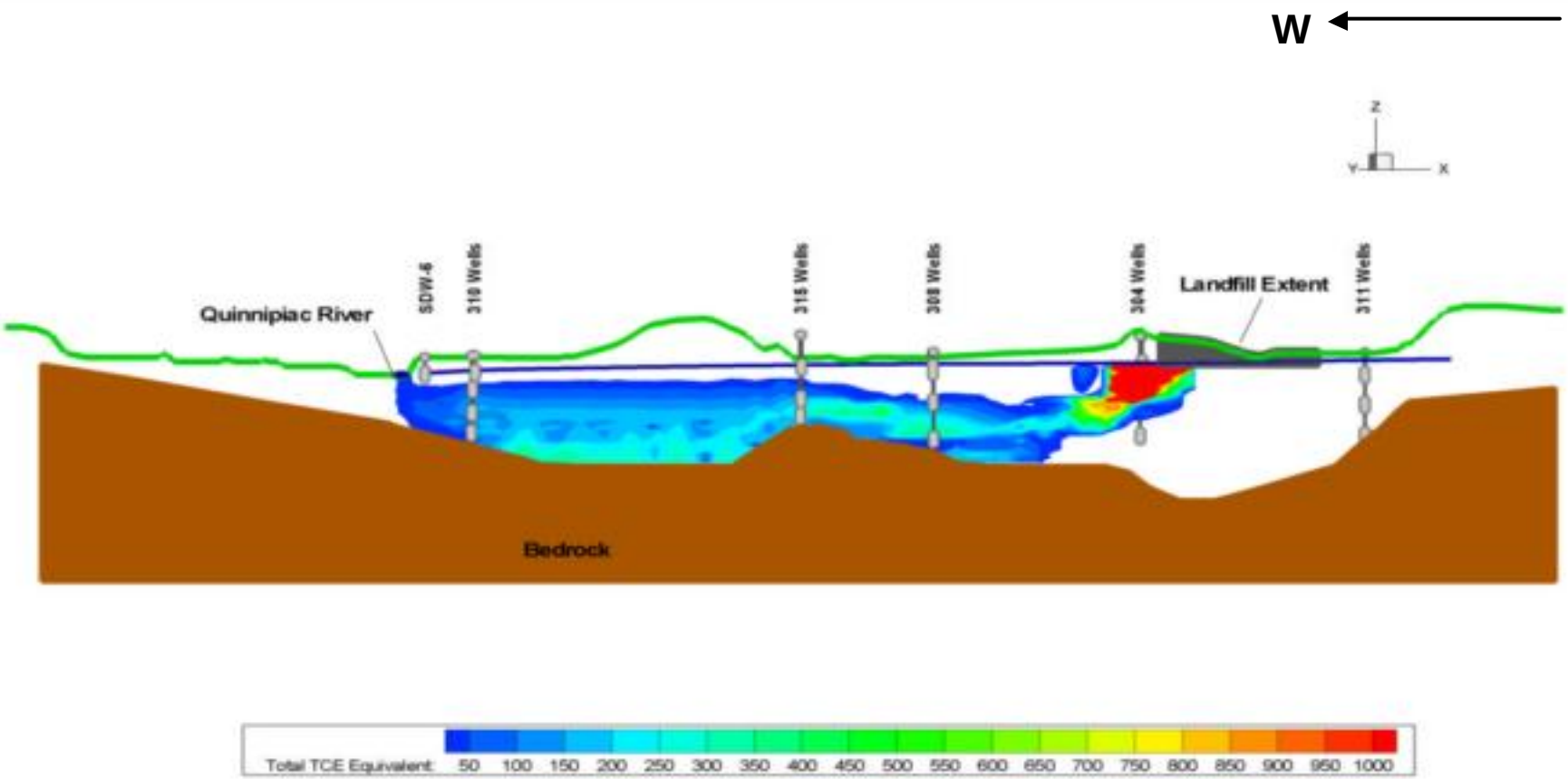


FIGURE 12

CROSS-SECTION OF TCE EQUIVALENT PLUME

Old Southington Landfill Superfund Site

FIGURE 13

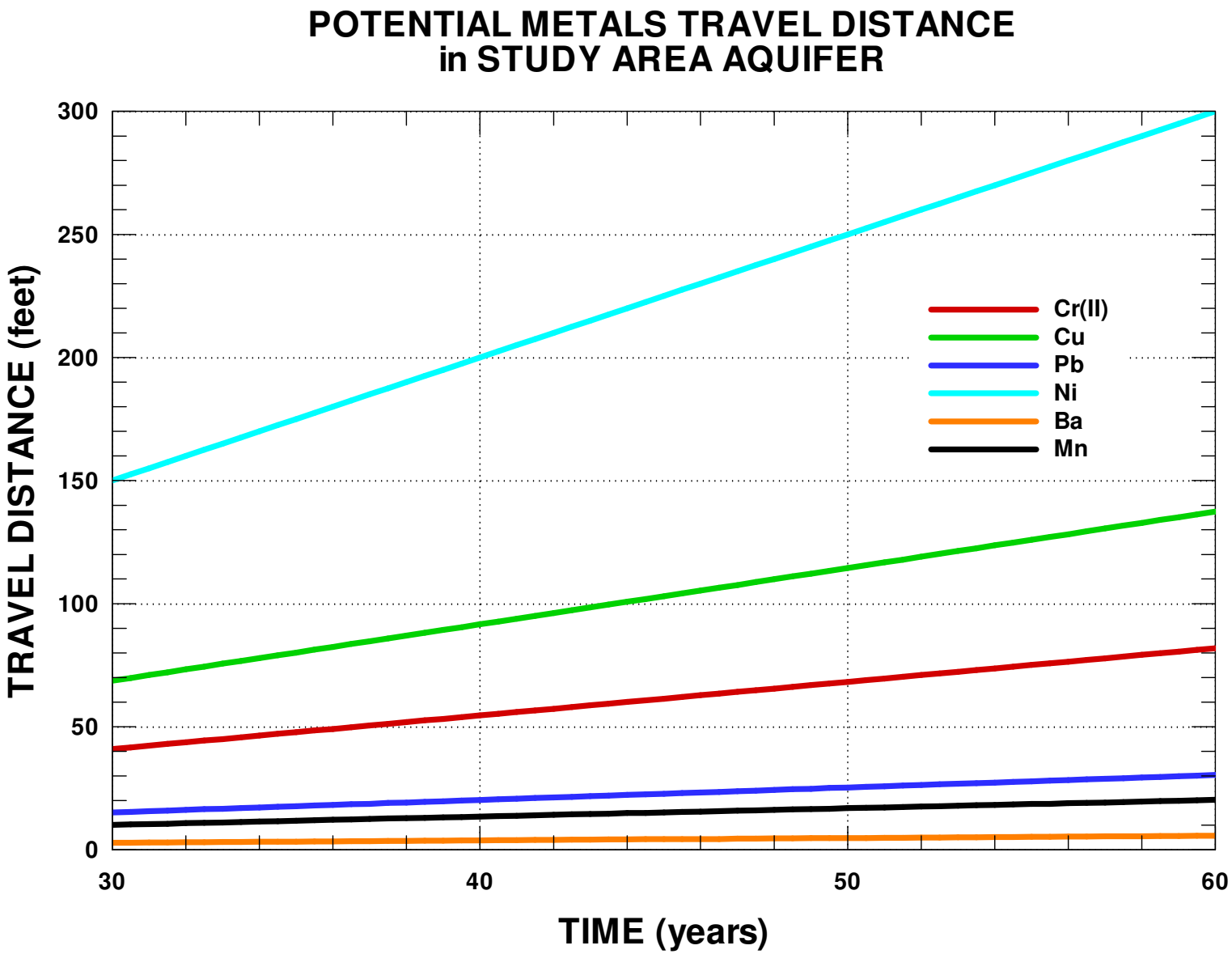
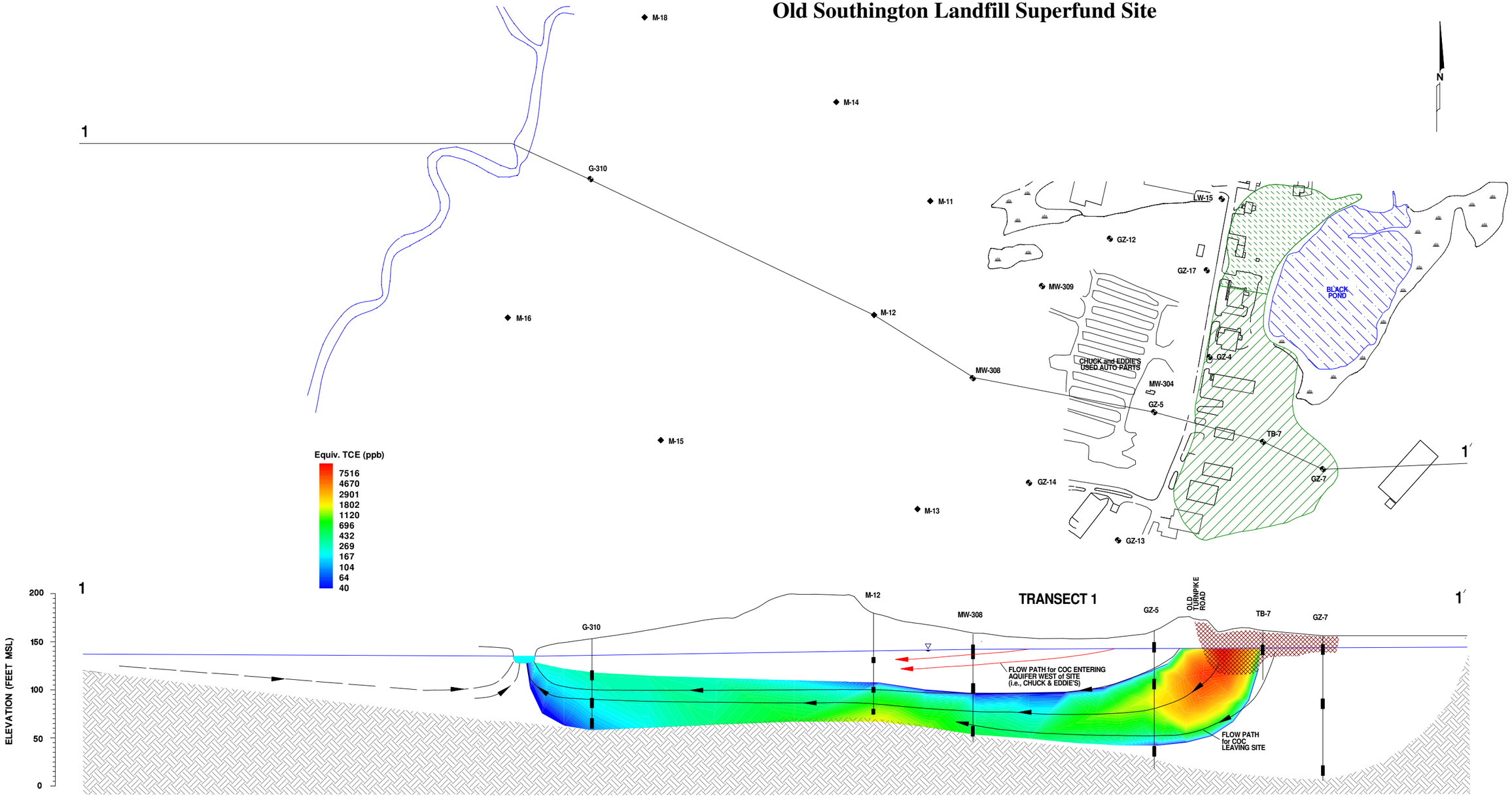
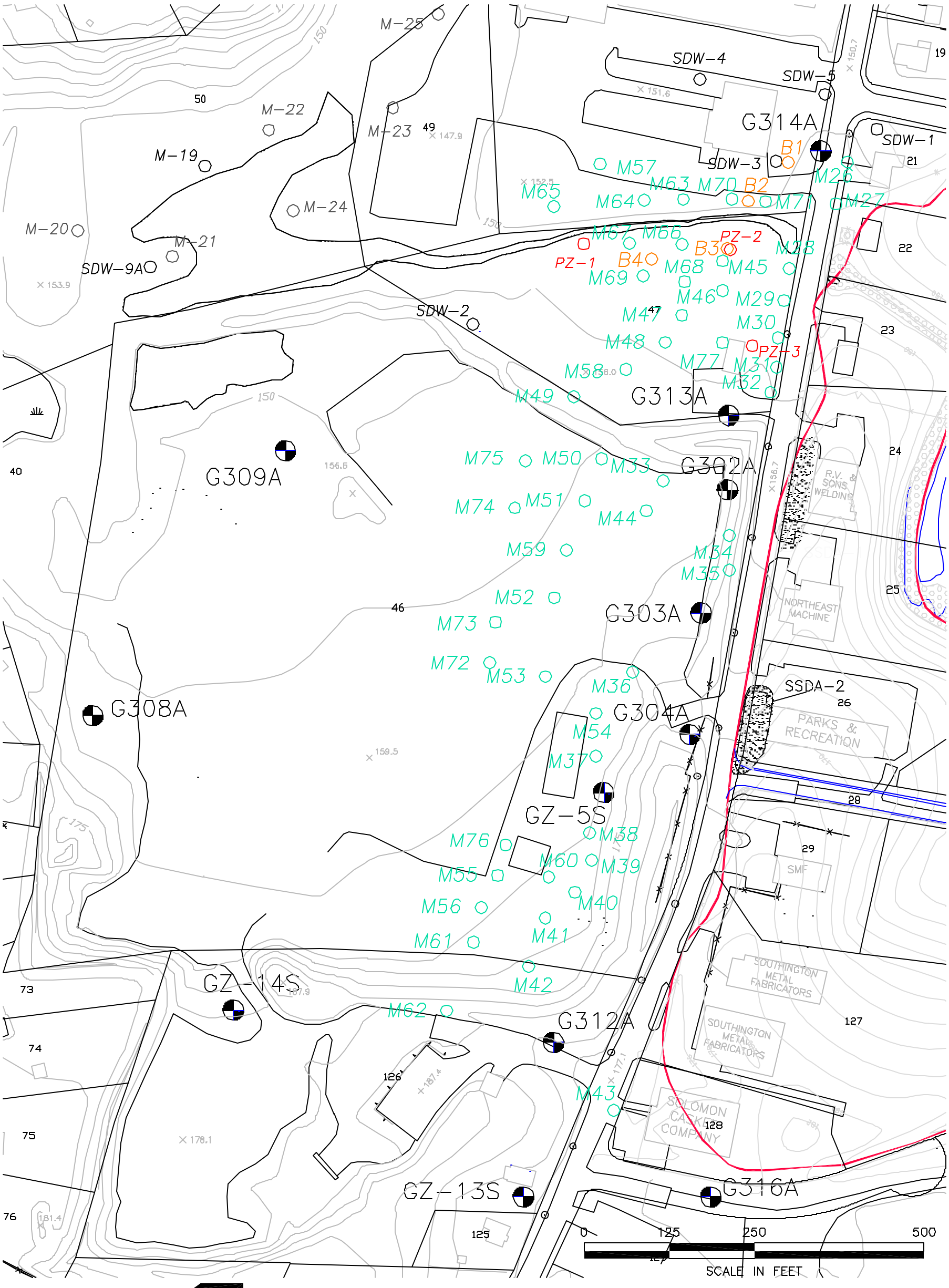

POTENTIAL METALS TRAVEL DISTANCE
in STUDY AREA AQUIFER
TRAVEL DISTANCE (feet)
300
250
200
150
100
50
0
30
40
50
60
TIME (years)
Cr(II)
Cu
Pb
Ni
Ba
Mn

FIGURE 14
VERTICAL GRADIENTS
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site



Concentrations for TCE equivalents based on a range of historical data, not a single sampling event.



KEY

EXISTING/PREVIOUS SAMPLING POINTS

MONITORING WELLS

SDW-1 SMALL DIAMETER MONITORING WELLS

M19 – 25 MICROWELL POINTS – SEPTEMBER 2004

SAMPLING POINTS – OCTOBER/NOVEMBER 2005

M26 – 77 MICROWELL POINTS

PZ-1 PIEZOMETERS

B1 BORINGS

EXTENT OF STUDY SITE

FIGURE 15
SAMPLING LOCATIONS OCT/NOV 2005
OLD SOUTHINGTON LANDFILL SUPERFUND PROJECT
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF.:060201.01SAMP-POINT	CHECKED BY:
DRAFTED BY: ANG	DATE: 5/4/06
REVISED BY:	DATE:
SOURCE: MACTEC FILE# 719-7561	

KLEINFELDER
30 Porter Road ◆ Littleton, MA 01460 ◆ (978) 486-0060

TABLES

TABLE 1
VOC IN GROUNDWATER
ALL MICROWELL SURVEYS
Old Southington Landfill Superfund Project

Results in ug/L

Microwell ID Depth, ft. ANALYTE/ Date Sampled	M11-S 15-20 06/10/99	M11-M 24-29 06/10/99	M11-D 37-42 06/10/99	M12-S 44-49 06/10/99	M12-M 74-79 06/10/99	M12-D 99-104 06/10/99	M13-S 40-45 06/11/99	M13-M 55-60 06/11/99	M13-D 74-79 06/11/99	M14-S 45-55 06/16/99	M14-M 70-80 06/17/99	M14-D 89-94 06/17/99	M15-S 31-36 06/14/99	M15-M 53-58 06/14/99	M15-D 74-79 06/14/99	M16-S 26-31 06/15/99	M16-M 47-52 06/15/99	M16-D 68-73 06/15/99	M17-S 25-30 06/15/99	M17-M 47-52 06/15/99	M17-D 64-69 06/15/99
Acetone																					
Benzene					0.5	4															
Bromobenzene																					
Carbon disulfide									0.2												1
Chlorobenzene	0.9		4	4		3													0.5	0.7	
Chloroethane					4	24															
Chloroform					5	76						0.4			0.5		0.5			0.7	16
Chloromethane																					
Dibromomethane																					
1,2-Dichlorobenzene																					
1,3-Dichlorobenzene																					
1,4-Dichlorobenzene																					
1,1-Dichloroethane				0.3	5	36														0.9	3
1,2-Dichloroethane																					
1,1-Dichloroethylene																					
cis-1,2-Dichloroethylene			1	4	100	510				0.7	0.7								0.7	19	63
trans-1,2-Dichloroethylene					0.5	18															0.4
Ethyl Benzene																					3
Methyl ethyl ketone																					
Methyl isobutyl ketone																					
Methyl tert-butyl ether																					
Methylene chloride						5		1	1		0.6								0.7	0.8	0.8
Styrene																					
Tetrachlorethene					2	31														1	7
Toluene				0.5	1				0.4												
1,1-Trichloroethane																					
1,2-Trichloroethane																					
Trichloroethene				2	27	320				0.4	2								0.6	5	55
Vinyl chloride					18	340														2	1
Total xylenes		1																1		0.5	7

Compounds not listed were not detected in any sample.
No value indicates that the compound was not detected in the sample at a detection limit of 0.5 ug/L.

TABLE 1
VOC IN GROUNDWATER
ALL MICROWELL SURVEYS
Old Southington Landfill Superfund Project

Results in ug/L

Microwell ID Depth, ft. ANALYTE/ Date Sampled	M18-S 26-31 06/16/99	M18-D 41-46 06/16/99	M-19-1 52-56 8/9/04	M-19-2 42-46 8/10/04	M-19-3 32-36 8/10/04	M-19-4 22-26 8/10/04	M-19-5 12-16 8/10/04	M-19-6 2-6 8/10/04	M-20-1 61-65 8/10/04	M-20-2 51-55 8/10/04	M-20-3 41-45 8/10/04	M-20-4 31-35 8/10/04	M-20-5 21-25 8/10/04	M-20-6 11-15 8/10/04	M-21-1 62-66 8/11/04	M-21-2 52-56 8/11/04	M-21-3 42-46 8/11/04	M-21-4 32-36 8/11/04	M-21-5 22-26 8/11/04	M-21-6 12-16 8/11/04
Acetone																				
Benzene			0.6												0.6	1				
Bromobenzene																				
Carbon disulfide																				
Chlorobenzene	0.4	4	17	13		0.7	0.6		1.9	4.6	1.8	1.2			0.9	24	11	2.3	1	
Chloroethane																1				
Chloroform		1							0.6						3,1	1.5	0.5			
Chloromethane																				
Dibromomethane																				
1,2-Dichlorobenzene			3.3	3.8						0.9	0.6					2.1	2			
1,3-Dichlorobenzene			5.3	9.1		0.7	0.5		0.5	1.9	0.8	0.7				2.6	3.3	0.6		
1,4-Dichlorobenzene			5.5	7.6		0.5	1.4			1.8	0.9	0.6				2.8	3.5	0.5		
1,1-Dichloroethane															1.1	0.6				
1,2-Dichloroethane																				
1,1-Dichloroethylene			0.5													0.6				
cis-1,2-Dichloroethylene	0.4	3	68	11	5.5	0.9		0.8	22	16	2.1	0.6	0.5		9.2	69	28	3.5	1.5	0.7
trans-1,2-Dichloroethylene																0.7				
Ethyl Benzene															0.9	0.6				
Methyl ethyl ketone																				
Methyl isobutyl ketone																				
Methyl tert-butyl ether					1.4	7.8	1.6	1.1	5.3	4.7	20	45	12	4.5	8.9	2.1	4.6	60	34	22
Methylene chloride	0.3																			
Styrene																				
Tetrachlorethene		1																		
Toluene			0.5																	
1,1-Trichloroethane																				
1,2-Trichloroethane																				
Trichloroethene	0.8	5	3.8		0.8		0.7		2.8	1.9					1.7	9.2	2.6	0.8		
Vinyl chloride			16	2.1						6.8	1.2					8.3	24	2.3	0.8	
Total xylenes																			1.8	1.2

Compounds not listed were not detected in any sample.
No value indicates that the compound was not detected in the sample at a detection limit of 0.5 ug/L.

TABLE 1
VOC IN GROUNDWATER
ALL MICROWELL SURVEYS
Old Southington Landfill Superfund Project

Results in ug/L

Microwell ID Depth, ft. ANALYTE/ Date Sampled	M-22-1 56-60 8/9/04	M-22-2 46-50 8/9/04	M-22-3 36-40 8/9/04	M-22-4 26-30 8/9/04	M-22-5 16-20 8/9/04	M-22-6 6-10 8/9/04	M-23-1 64-68 8/5/04	M-23-2 54-58 8/5/04	M-23-3 44-48 8/5/04	M-23-4 34-38 8/5/04	M-23-5 24-28 8/5/04	M-23-6 14-18 8/5/04	M-23-7 4-8 8/5/04	M-24-1 66-70 8/4/04	M-24-2 56-60 8/4/04	M-24-3 46-50 8/4/04	M-24-4 36-40 8/4/04	M-24-5 26-30 8/4/04	M-24-6 16-20 8/4/04	M-24-7 6-10 8/4/04
Acetone																0.7				
Benzene																				
Bromobenzene																				
Carbon disulfide	0.8																			
Chlorobenzene																26	1.2	0.8	0.5	
Chloroethane																				
Chloroform										0.6	0.7			2.2	0.5			0.5		
Chloromethane																				
Dibromomethane																				
1,2-Dichlorobenzene																11				
1,3-Dichlorobenzene																17	1.2	0.9		
1,4-Dichlorobenzene																15	1.2	0.8		
1,1-Dichloroethane																				
1,2-Dichloroethane																				
1,1-Dichloroethylene																0.6				
cis-1,2-Dichloroethylene	5.9	1.3	0.9	0.8	0.7										27	56	1.8	0.8	0.6	
trans-1,2-Dichloroethylene															0.6	0.7				
Ethyl Benzene																				
Methyl ethyl ketone																				
Methyl isobutyl ketone																				
Methyl tert-butyl ether		0.8	1.1		3	19												0.8		
Methylene chloride																				
Styrene																				
Tetrachlorethene																				
Toluene																				
1,1-Trichloroethane																				
1,2-Trichloroethane																				
Trichloroethene	1														12	5				
Vinyl chloride																77	2.5		0.8	1
Total xylenes																				

Compounds not listed were not detected in any sample.
No value indicates that the compound was not detected in the sample at a detection limit of 0.5 ug/L.

TABLE 1
VOC IN GROUNDWATER
ALL MICROWELL SURVEYS
Old Southington Landfill Superfund Project

Results in ug/L

Microwell ID Depth, ft. ANALYTE/ Date Sampled	M-25-1 59-63 8/6/04	M-25-2 49-53 8/6/04	M-25-3 39-43 8/6/04	M-25-4 29-33 8/6/04	M-25-5 19-23 8/6/04	M-25-6 9-13 8/6/04	M26-1 Bridge 10/10/05	M26-2 10' 10/10/05	M27-1 Bridge 10/10/05	M27-2 10' 10/10/05	M28-1 Bridge 10/10/05	M28-2 10' 10/10/05	M29-1 Bridge 10/10/05	M29-2 10' 10/10/05	M30-1 Bridge 10/10/05	M30-2 10' 10/10/05	M31-1 Bridge 10/10/05	M31-2 10' 10/10/05
Acetone											15							
Benzene															4.9	8.5	2.3	3.7
Bromobenzene																		
Carbon disulfide							0.5	0.6	0.7	0.7		0.7						1.1
Chlorobenzene														0.5	460	990	7.1	10
Chloroethane																		
Chloroform	0.6	0.6	0.5															
Chloromethane																		
Dibromomethane																		
1,2-Dichlorobenzene															25	45	1.2	1.3
1,3-Dichlorobenzene															59	160	4.5	3
1,4-Dichlorobenzene															57	160	4.3	4
1,1-Dichloroethane				1.3											0.7	1.5	1.2	1.3
1,2-Dichloroethane																		
1,1-Dichloroethylene				0.6													1.1	2.2
cis-1,2-Dichloroethylene				1.2													950	1500
trans-1,2-Dichloroethylene																	12	23
Ethyl Benzene															1.2	2.5		0.8
Methyl ethyl ketone									7.3		6.1	3.4						
Methyl isobutyl ketone																		
Methyl tert-butyl ether																		
Methylene chloride																		
Styrene																		
Tetrachlorethene																		
Toluene															2.5	44		0.5
1,1-Trichloroethane																		
1,2-Trichloroethane																		
Trichloroethene			0.6	1.7													12	9.9
Vinyl chloride											1	5.9		0.6	46	100	290	790
Total xylenes														1.2	2.9	6.4		1.2

Compounds not listed were not detected in any sample.
No value indicates that the compound was not detected in the sample at a detection limit of 0.5 ug/L.

TABLE 1
VOC IN GROUNDWATER
ALL MICROWELL SURVEYS
Old Southington Landfill Superfund Project

Results in ug/L

Microwell ID Depth, ft. ANALYTE/ Date Sampled	M32-1 Bridge 10/10/05	M32-2 10' 10/10/05	M33-1 Bridge 10/11/05	M33-2 10' 10/11/05	M34-1 Bridge 10/11/05	M34-2 10' 10/11/05	M35-1 Bridge 10/11/05	M35-2 10' 10/11/05	M36-1 Bridge 10/12/05	M36-2 10' 10/12/05	M37-1 Bridge 10/11/05	M37-2 10' 10/11/05	M38-1 Bridge 10/11/05	M38-2 10' 10/11/05	M39-1 Bridge 10/11/05	M39-2 10' 10/11/05	M40-1 Bridge 10/11/05	M40-2 10' 10/11/05
Acetone									120	340								
Benzene	0.8	4	1.5		0.5				7.1	17								
Bromobenzene				3														
Carbon disulfide	1								3.5	10								
Chlorobenzene	1.8	8.5	2.6	5.5	9.5				1.1	1.8								
Chloroethane						3.8	2.3	2.3	72	120								
Chloroform																		
Chloromethane																		
Dibromomethane																		
1,2-Dichlorobenzene		1			0.6					0.8								
1,3-Dichlorobenzene		1.3																
1,4-Dichlorobenzene	0.5	2.3			0.6					0.7								
1,1-Dichloroethane		0.5	0.7	1.3	1.2	1.3	0.9	1.8	130	420								
1,2-Dichloroethane									6.9	19								
1,1-Dichloroethylene										15								
cis-1,2-Dichloroethylene	2.5	4.6	32	42	210				670	1100							21	95
trans-1,2-Dichloroethylene					2.2				11	42								
Ethyl Benzene									130	220								
Methyl ethyl ketone																		
Methyl isobutyl ketone									120	400								
Methyl tert-butyl ether			1.1	2			0.8							4.8	150	130	120	
Methylene chloride																		
Styrene																		
Tetrachlorethene																		
Toluene									320	490								
1,1-Trichloroethane									28	100								
1,2-Trichloroethane									1.4	5.3								
Trichloroethene	3.2		3.7	3.6	6.6								1.3	4.9	1.1	5.9	16	64
Vinyl chloride	4.5	25	5.6	12	78	18	2.1	1.8	650	1000								
Total xylenes									170	310								

Compounds not listed were not detected in any sample.
No value indicates that the compound was not detected in the sample at a detection limit of 0.5 ug/L.

TABLE 1
VOC IN GROUNDWATER
ALL MICROWELL SURVEYS
Old Southington Landfill Superfund Project

Results in ug/L

Microwell ID Depth, ft. ANALYTE/ Date Sampled	M41-1 Bridge 10/12/05	M41-2 10' 10/12/05	M42-1 Bridge 10/12/05	M42-2 10' 10/12/05	M43-1 Bridge 10/12/05	M43-2 10' 10/12/05	M44-1 Bridge 10/12/05	M44-2 10' 10/12/05	M45-1 Bridge 10/27/2005	M45-2 10' 10/27/2005	M46-1 Bridge 10/27/2005	M46-2 10' 10/27/2005	M47-1 Bridge 10/27/2005	M47-2 10' 10/27/2005	M48-1 Bridge 10/27/2005	M48-2 10' 10/27/2005	M49-1 Bridge 10/27/2005	M49-2 10' 10/27/2005
Acetone					20	16												
Benzene									2.4	3.7		0.8		1.3				1
Bromobenzene																		
Carbon disulfide									1.4	0.9	0.5							
Chlorobenzene								1.4	120	160	14	70		29			0.6	4.5
Chloroethane																		
Chloroform																		
Chloromethane																		
Dibromomethane																		
1,2-Dichlorobenzene									42	80	3.2	19		8.1				0.6
1,3-Dichlorobenzene									83	130	7.4	40		19				0.9
1,4-Dichlorobenzene									74	120	6.9	38		18				1.3
1,1-Dichloroethane							0.6	1.8										
1,2-Dichloroethane										0.5								
1,1-Dichloroethylene		1.7																
cis-1,2-Dichloroethylene	140	580		9.8			4.5	9.3	3.6	3.5	8.6	39		82	2.9	6.7		
trans-1,2-Dichloroethylene	1.9	28												0.7				
Ethyl Benzene									0.9	1.7								
Methyl ethyl ketone				2.2	8.4	8												
Methyl isobutyl ketone																		
Methyl tert-butyl ether	4.7		2.7	9.7			0.7											
Methylene chloride									0.5		0.6	0.6			0.6	0.6	1.2	0.6
Styrene																		
Tetrachlorethene		1.1																
Toluene					0.8	0.8		0.7		4								
1,1-Trichloroethane																		
1,2-Trichloroethane																		
Trichloroethene	42	210	3.3	42			2.1	1.6			0.9	4.6		2.7		0.9		
Vinyl chloride		1.2					2.1	18	160	210	3.9	21		12				
Total xylenes									2.7	5.1								

Compounds not listed were not detected in any sample.
No value indicates that the compound was not detected in the sample at a detection limit of 0.5 ug/L.

TABLE 1
VOC IN GROUNDWATER
ALL MICROWELL SURVEYS
Old Southington Landfill Superfund Project

Results in ug/L

Microwell ID Depth, ft. ANALYTE/ Date Sampled	M50-1 Bridge 10/27/2005	M50-2 10' 10/27/2005	M51-1 Bridge 10/27/2005	M51-2 10' 10/27/2005	M52-1 Bridge 10/27/2005	M52-2 10' 10/27/2005	M53-1 Bridge 10/28/2005	M53-2 10' 10/28/2005	M54-1 Bridge 10/28/2005	M54-2 10' 10/28/2005	M55-1 Bridge 10/28/2005	M55-2 10' 10/28/2005	M56-1 Bridge 10/28/2005	M56-2 10' 10/28/2005	M57-1 Bridge 10/27/2005	M57-2 10' 10/27/2005	M58-1 Bridge 10/27/2005	M58-2 10' 10/27/2005
Acetone																		
Benzene						2.1		1.9	0.5	0.8	250	18	71	28				
Bromobenzene																		
Carbon disulfide																		
Chlorobenzene				0.8		1												
Chloroethane					2.9	21	0.8	8.3		1.1								
Chloroform																		
Chloromethane																		
Dibromomethane																		
1,2-Dichlorobenzene																		
1,3-Dichlorobenzene																		
1,4-Dichlorobenzene																		
1,1-Dichloroethane						0.8	1.3	7.5	16	36								
1,2-Dichloroethane						1.6		1.8	0.6	0.8								
1,1-Dichloroethylene									0.9	3.2								
cis-1,2-Dichloroethylene			62	93				1.8	4.3	22	1.6	3.9						0.5
trans-1,2-Dichloroethylene			1.4	0.7														
Ethyl Benzene									55	73	220	7.3	100	20				
Methyl ethyl ketone											19	3.6	3.4	2				
Methyl isobutyl ketone																		
Methyl tert-butyl ether											550	570	420	13				
Methylene chloride	0.5	0.6			0.6	0.6	0.6	0.6						0.9	0.7	0.7		0.6
Styrene											19							
Tetrachlorethene																		
Toluene								0.5	76	100	510		170	51				
1,1-Trichloroethane									2.4	4.8		31						
1,2-Trichloroethane																		
Trichloroethene			13	19							2.2	5.2						
Vinyl chloride			0.9	3		1.1	0.8	4.5	2.4	6.7						0.5		
Total xylenes					1.1	9.3			32	50	640	31	330	73				

Compounds not listed were not detected in any sample.
No value indicates that the compound was not detected in the sample at a detection limit of 0.5 ug/L.

TABLE 1
VOC IN GROUNDWATER
ALL MICROWELL SURVEYS
Old Southington Landfill Superfund Project

Results in ug/L

Microwell ID Depth, ft. ANALYTE/ Date Sampled	M59-1 Bridge 10/27/2005	M59-2 10' 10/27/2005	M60-1 Bridge 10/28/2005	M60-2 10' 10/28/2005	M61-1 Bridge 10/28/2005	M61-2 10' 10/28/2005	M62-1 Bridge 10/28/2005	M62-2 10' 10/28/2005	M63-1 Bridge 11/10/2005	M63-2 10' 11/10/2005	M64-1 Bridge 11/10/2005	M64-2 10' 11/10/2005	M65-1 Bridge 11/10/2005	M65-2 10' 11/10/2005	M66-1 Bridge 11/10/2005	M66-2 10' 11/10/2005	M67-1 Bridge 11/11/2005	M67-2 10' 11/11/2005
Acetone																		
Benzene			22		2.4	1												
Bromobenzene																		
Carbon disulfide																		
Chlorobenzene									2.1	2.5								
Chloroethane																		
Chloroform																		
Chloromethane																		
Dibromomethane									0.6	0.5						0.6	0.9	0.9
1,2-Dichlorobenzene									0.6	0.6								
1,3-Dichlorobenzene									2.3	2.2								
1,4-Dichlorobenzene									1.6	1.7								
1,1-Dichloroethane																		
1,2-Dichloroethane																		
1,1-Dichloroethylene																		
cis-1,2-Dichloroethylene		0.7	9.7	23								0.5						
trans-1,2-Dichloroethylene																		
Ethyl Benzene			59	1	3.9	2.6												
Methyl ethyl ketone							2.7	2.8										
Methyl isobutyl ketone																		
Methyl tert-butyl ether			13															
Methylene chloride	0.6	0.6	1	0.5	0.6	0.8	0.9	0.6										
Styrene																		
Tetrachlorethene				0.6														
Toluene			64	2.6	8.4	6	1	0.8										
1,1-Trichloroethane																		
1,2-Trichloroethane																		
Trichloroethene			31	68														
Vinyl chloride	4.1	12							3.3	3.8					0.6	1.1		
Total xylenes			250	5.9	18	14												

Compounds not listed were not detected in any sample.
No value indicates that the compound was not detected in the sample at a detection limit of 0.5 ug/L.

TABLE 1
VOC IN GROUNDWATER
ALL MICROWELL SURVEYS
Old Southington Landfill Superfund Project

Results in ug/L

Microwell ID Depth, ft. ANALYTE/ Date Sampled	M68-1 Bridge 11/10/2005	M68-2 10' 11/10/2005	M69-1 Bridge 11/11/2005	M69-2 10' 11/11/2005	M70-1 Bridge 11/10/2005	M70-2 10' 11/10/2005	M71-1 Bridge 11/10/2005	M71-2 10' 11/10/2005	M72-1 Bridge 11/11/2005	M72-2 10' 11/11/2005	M73-1 Bridge 11/11/2005	M73-2 10' 11/11/2005	M74-1 Bridge 11/11/2005	M74-2 10' 11/11/2005	M75-1 Bridge 11/11/2005	M75-2 10' 11/11/2005	M76-1 Bridge 11/11/2005	M76-2 10' 11/11/2005
Acetone																	66	15
Benzene		0.8								4.6	2.2	2.9					150	36
Bromobenzene																		
Carbon disulfide																		
Chlorobenzene	18	40				3.3				1.1	1.4	2		1.7		0.6		
Chloroethane									1.2	13	4	8.8						
Chloroform																		
Chloromethane											1.2							
Dibromomethane			0.9	0.8	0.7	3.9	0.5	0.6							0.7			
1,2-Dichlorobenzene	3.8	9.7									0.5	0.7						
1,3-Dichlorobenzene	8.9	23																
1,4-Dichlorobenzene	7.8	20										0.6						
1,1-Dichloroethane									13	7.9	1	1.5		0.5				
1,2-Dichloroethane										2.3	1.8	2.3						
1,1-Dichloroethylene									0.9									
cis-1,2-Dichloroethylene	27	56			0.7				1	1.2			6.1	48	15	34	34	9.9
trans-1,2-Dichloroethylene														0.6				
Ethyl Benzene										1.1	0.7	0.6					64	11
Methyl ethyl ketone								2.9									95	22
Methyl isobutyl ketone																		
Methyl tert-butyl ether										71							620	260
Methylene chloride																		
Styrene																		
Tetrachlorethene																		0.9
Toluene					0.7					0.6							220	73
1,1-Trichloroethane									2.2	1.9								
1,2-Trichloroethane																		
Trichloroethene	1.9	4.5											1.7	7.8	4	7.8	0.7	12
Vinyl chloride	3	5.8						1.2	2.1		1.2	1.5	0.9	5.7				
Total xylenes											160	170					260	66

Compounds not listed were not detected in any sample.
No value indicates that the compound was not detected in the sample at a detection limit of 0.5 ug/L.

TABLE 1
VOC IN GROUNDWATER
ALL MICROWELL SURVEYS
Old Southington Landfill Superfund Project

Results in ug/L

Microwell ID Depth, ft. ANALYTE/ Date Sampled	M77-1 Bridge 11/11/2005	M77-2 10' 11/11/2005	PZ-1 Bridge 11/22/2005	PZ-2 Bridge 11/22/2005	PZ-3 Bridge 11/22/2005
Acetone					
Benzene				0.7	
Bromobenzene					
Carbon disulfide					
Chlorobenzene				41	0.7
Chloroethane					
Chloroform					
Chloromethane					
Dibromomethane	0.7	0.5	0.6		
1,2-Dichlorobenzene				7.7	
1,3-Dichlorobenzene				20	
1,4-Dichlorobenzene				18	
1,1-Dichloroethane					
1,2-Dichloroethane					
1,1-Dichloroethylene					
cis-1,2-Dichloroethylene		0.9			25
trans-1,2-Dichloroethylene					
Ethyl Benzene					
Methyl ethyl ketone					
Methyl isobutyl ketone					
Methyl tert-butyl ether					
Methylene chloride					
Styrene					
Tetrachlorethene					
Toluene				0.7	
1,1-Trichloroethane					
1,2-Trichloroethane					
Trichloroethene					3
Vinyl chloride				12	4.2
Total xylenes					

Compounds not listed were not detected in any sample.
No value indicates that the compound was not detected in the sample at a detection limit of 0.5 ug/L.

TABLE 2
WELL CONSTRUCTION DETAILS
Groundwater Monitoring
Old Southington Landfill Superfund Site

Location	Installed By	Date of Installation	Construction Materials	Easting	Northing	Ground Surface Elevation	Top of PVC Elevation	Depth to Bedrock (bgs) or total depth	Bedrock Elevation	Top of Screen (bgs)	Bottom of Screen (bgs)	Top of Screen Elevation	Bottom of Screen Elevation
CW15	Layne	1965	2.5"steel	563046.26	273615.01	145.90	146.65	59	87	49.90	51.90	96.00	94.00
CW20	Layne	1965	2.5" Steel					50.5	99	48.50	50.50		
G301	ESE/Welti	7/14/1992	PVC	563648.69	273009.84	155.29	154.99			6.00	21.00	149.29	134.29
G302A	ESE/Welti	7/27/1992	PVC	563539.46	272894.65	158.95	160.67			12.00	27.00	146.95	131.95
G302B	ESE/Welti	8/14/1992	PVC	563531.69	272890.85	158.65	160.20			77.00	87.00	81.65	71.65
G302C	ESE/Welti	7/6/1992	PVC/Stainless	563537.14	272898.78	158.95	161.17	147.5	11	137.50	147.50	21.45	11.45
G303A	ESE/Welti	8/12/1992	PVC	563502.68	272720.18	162.45	164.21			14.00	29.00	148.45	133.45
G303B	ESE/Welti	8/5/1992	PVC	563500.14	272713.27	162.90	164.98			77.00	87.00	85.90	75.90
G303C	ESE/Welti	8/5/1992	PVC/Stainless	563497.17	272707.20	163.00	164.81	154	9	144.00	154.00	19.00	9.00
G304A	ESE/Welti	8/13/1992	PVC	563495.62	272544.43	173.90	174.91			25.00	40.00	148.90	133.90
G304B	ESE/Welti	8/11/1992	PVC	563484.77	272540.02	173.60	174.76			70.00	80.00	103.60	93.60
G304C	ESE/Welti	8/6/1992	PVC	563484.04	272534.52	173.80	175.05			110.00	120.00	63.80	53.80
G304D	ESE/Welti	7/30/1992	PVC/Stainless	563484.25	272531.29	173.90	175.61	161	13	151.00	161.00	22.90	12.90
G305	ESE/Welti	7/13/1992	PVC	563503.99	272450.58	173.55	176.13			26.00	41.00	147.55	132.55
G306C	ESE/Welti	7/14/1992	PVC/Stainless	563460.74	272034.23	174.69	176.42	179	-4	170.00	180.00	4.69	-5.31
G307	ESE/Welti	10/27/1992	PVC	563438.80	272134.84	176.59	176.59			25.50	41.00	151.09	135.59
G308A	ESE/Welti	10/27/1992	PVC	562609.12	272581.09	155.30	157.28			10.50	25.50	144.80	129.80
G308B	ESE/Welti	10/26/1992	PVC	562608.18	272573.54	155.80	157.75			51.50	61.50	104.30	94.30
G308C	ESE/Welti	10/22/1992	PVC/Stainless	562607.75	272565.42	156.00	157.89	104.7	51	94.70	104.70	61.30	51.30
G309A	ESE/Welti	10/22/1992	PVC	562880.80	272938.12	150.80	152.41			5.50	15.50	145.30	135.30
G309B	ESE/Welti	10/22/1992	PVC	562881.80	272945.67	150.40	152.34			44.50	55.00	105.90	95.40
G309C	ESE/Welti	10/22/1992	PVC/Stainless	562884.79	272952.02	150.10	152.42	91.5	59	81.50	92.00	68.60	58.10
G310S	MACTEC/ Dragin Drilling	9/25/2003	2"PVC	560916.80	273363.90	153.14	152.90			15.00	25.00	138.14	128.14
G310A	ESE/ Connecticut Test Borings	4/14/2000	2" PVC	560908.56	273370.93	153.18	152.97			35.00	45.00	118.18	108.18
G310B	ESE/ Connecticut Test Borings	4/14/2000	2" PVC	560905.18	273369.61	153.04	152.71			62.00	72.00	91.04	81.04
G310C	ESE/ Connecticut Test Borings	4/13/2000	2" Steel	560902.43	273369.51	153.07	152.38	110	43	85.00	95.00	68.07	58.07
G311A	ESE/ Connecticut Test Borings	4/19/2000	2" PVC	564478.36	272620.89	153.33	153.83			20.00	30.00	133.33	123.33
G311B	ESE/ Connecticut Test Borings	4/20/2000	2" PVC	564477.26	272616.76	153.41	154.2			55.00	65.00	98.41	88.41
G311C	ESE/ Connecticut Test Borings	4/18/2000	2" Steel	564480.06	272624.59	153.21	153.73	105	48	90.00	100.00	63.21	53.21
G312A	MACTEC/ Dragin Drilling	9/13/2003	2" PVC	563280.50	272083.80	183.77	183.29			40.00	50.00	143.77	133.77
G312B	MACTEC/ Dragin Drilling	9/18/2003	2" PVC	563283.20	272081.60	183.43	183.06			75.00	85.00	108.43	98.43
G312C	MACTEC/ Dragin Drilling	9/22/2003	2" PVC/Steel	563276.70	272085.20	183.91	183.54	191	-7	165.00	175.00	18.91	8.91
G313A	MACTEC/ Dragin Drilling	9/25/2003	2" PVC	563541.30	273004.10	155.62	155.24			11.00	21.00	144.62	134.62
GZ17M	Welti	4/5/1990	2" PVC	563572.97	273002.90	155.40	157.21			49.00	59.00	106.40	96.40
GZ17D	Welti	4/4/1990	2" PVC	563580.26	273001.16	155.60	157.34			89.00	99.00	66.60	56.60

TABLE 2
WELL CONSTRUCTION DETAILS
Groundwater Monitoring
Old Southington Landfill Superfund Site

Location	Installed By	Date of Installation	Construction Materials	Easting	Northing	Ground Surface Elevation	Top of PVC Elevation	Depth to Bedrock (bgs) or total depth	Bedrock Elevation	Top of Screen (bgs)	Bottom of Screen (bgs)	Top of Screen Elevation	Bottom of Screen Elevation
G313C	MACTEC/ Dragin Drilling	10/1/2003	2" PVC/Steel	563545.80	273001.80	155.66	155.25	136	20	124.00	134.00	31.66	21.66
G314A	MACTEC/ Dragin Drilling	9/23/2003	2" PVC	563676.70	273389.80	149.62	149.31			4.00	14.00	145.62	135.62
G314B	MACTEC/ Dragin Drilling	9/23/2003	2" PVC	563676.90	273393.20	149.67	149.24			60.00	70.00	89.67	79.67
G314C	MACTEC/ Dragin Drilling	9/24/2003	2" PVC/Steel	563675.80	273386.30	149.43	149.21	143	6	133.00	143.00	16.43	6.43
G315A	MACTEC/ Dragin Drilling	9/17/2003	2" PVC	562141.90	272856.50	177.54	176.92			33.00	43.00	144.54	134.54
G315B	MACTEC/ Dragin Drilling	9/15/2003	2" PVC	562139.30	272856.60	177.63	176.70			70.00	80.00	107.63	97.63
G315C	MACTEC/ Dragin Drilling	9/16/2003	2" PVC/Steel	562135.90	272855.90	177.71	177.27	101	77	90.00	100.00	87.71	77.71
G316A	MACTEC/ Dragin Drilling	9/30/2003	2" PVC	563514.80	271854.50	180.74	180.44			30.00	40.00	150.74	140.74
G317A	MACTEC/ Dragin Drilling	9/15/2003	2" PVC	562287.10	272458.30	173.91	173.61			28.00	38.00	145.91	135.91
G317B	MACTEC/ Dragin Drilling	9/15/2003	2" PVC	562286.10	272454.30	173.91	173.55			65.00	75.00	108.91	98.91
G317C	MACTEC/ Dragin Drilling	9/15/2003	2" PVC/Steel	562286.10	272450.90	173.94	173.54	107	67	94.00	104.00	79.94	69.94
G318A	MACTEC/ Dragin Drilling	9/30/2003	2" PVC	561141.90	272683.50	155.99	155.56			14.00	24.00	141.99	131.99
G318B	MACTEC/ Dragin Drilling	9/26/2003	2" PVC/Steel	561143.40	272676.50	156.14	155.67			65.00	75.00	91.14	81.14
G318C	MACTEC/ Dragin Drilling	9/30/2003	2" PVC/Steel	561143.60	272680.80	156.06	155.55	135	21	125.00	135.00	31.06	21.06
GZ1	General Borings	1/14/1987	2" PVC	564661.74	271755.93	209.05	208.57			66.50	86.50	142.55	122.55
GZ2	General Borings	1/16/1987	2" PVC	563505.34	270995.39	204.19	204.07	90	114	70.00	90.00	134.19	114.19
GZ3	General Borings	1/19/1987	2" PVC	564590.22	273586.26	155.31	155.01			10.00	25.00	145.31	130.31
GZ4D	General Borings	1/30/1987	2" PVC	563582.26	272658.86	162.14	161.65	132	30	110.00	130.00	52.14	32.14
GZ5S	Welti	5/17/1990	2" PVC	563354.64	272439.95	163.15	165.13			14.00	24.00	149.15	139.15
GZ5M	Welti	5/10/1990	2" PVC	563357.23	272449.15	163.20	164.82			52.00	62.00	111.20	101.20
GZ7D	Welti	4/4/1990	2" PVC	564053.31	272180.08	155.90	157.66	150	6	10.9	20.9	145.00	135.00
GZ11D	Welti	4/25/1990	2"PVC	563232.3	273845.38	148.20	149.76	73	75	50	60	98.20	88.20
SDW2	LEA-Cianci	8/3/2004	1.5" PVC w/ prepacked screen	563163.97	273137.77	155.91	157.00			5.00	15.00	150.91	140.91
GZ12M	Welti	4/11/1990	2" PVC	563169.20	273129.68	156.45	157.97			52.00	62.00	104.45	94.45
GZ12D	Welti	4/10/1990	2" PVC	563176.79	273127.09	156.55	158.43	89	68	79.00	89.00	77.55	67.55
GZ13S	Welti	4/20/1990	2" PVC	563246.70	271853.94	179.40	181.44			28.00	38.00	151.40	141.40
GZ13M	Welti	4/19/1990	2" PVC	563238.73	271855.45	179.70	181.99			98.00	108.00	81.70	71.70
GZ13D	Welti	4/18/1990	2" PVC	563223.26	271859.43	180.40	182.40	172	8	162.00	172.00	18.40	8.40
GZ14S	Welti	5/4/1990	2" PVC	562814.95	272126.05	176.95	178.29			26.00	36.00	150.95	140.95
GZ14M	Welti	5/4/1990	2" PVC	562811.72	272128.92	176.45	178.21			85.00	95.00	91.45	81.45
GZ14D	Welti	5/1/1990	2" PVC	562807.12	272131.75	176.15	178.00	148	28	135.00	145.00	41.15	31.15
LW15S	GZA Drilling	11/27/1984	2" PVC	563497.91	273222.39	149.71	149.71			7.50	27.50	142.21	122.21
LW15D	GZA Drilling	11/21/1984	2" PVC	563678.25	273393.79	149.73	149.61			49.00	99.00	100.73	50.73
LW103D	East Cost Drilling	1/17/1985	1.5" PVC	563225.62	273600.14	152.51	153.32	76.2	76	61.00	81.00	91.51	71.51
Mun. Well 5	Lane	7/15/1965	8" Steel					63	82*	49.00	58.00		
SDW1	LEA-Cianci	8/2/2004	1.5" PVC w/ prepacked screen	563759.67	273424.74	151.17	151.08			5.00	15.00	146.17	136.17
SDW3	LEA-Cianci	8/2/2004	1.5" PVC w/ prepacked screen	563610.99	273378.49	152.78	152.57			5.00	15.00	147.78	137.78

TABLE 2
WELL CONSTRUCTION DETAILS
Groundwater Monitoring
Old Southington Landfill Superfund Site

Location	Installed By	Date of Installation	Construction Materials	Easting	Northing	Ground Surface Elevation	Top of PVC Elevation	Depth to Bedrock (bgs) or total depth	Bedrock Elevation	Top of Screen (bgs)	Bottom of Screen (bgs)	Top of Screen Elevation	Bottom of Screen Elevation
SDW4	LEA-Cianci	8/2/2004	1.5" PVC w/ prepacked screen	563499.30	273498.09	153.38	153.26			5.00	15.00	148.38	138.38
SDW5	LEA-Cianci	8/2/2004	1.5" PVC w/ prepacked screen	563682.40	273476.33	151.38	151.29			5.00	15.00	146.38	136.38
SDW6	LEA-Cianci	9/15/2004	1.5" PVC w/ prepacked screen	560726.50	273436.22	151.16	150.80			15.00	25.00	136.16	126.16
SDW7	LEA-Cianci	8/3/2004	1.5" PVC w/ prepacked screen	560763.62	273521.59	149.91	149.60			14.00	24.00	135.91	125.91
SDW8	LEA-Cianci	8/3/2004	1.5" PVC w/ prepacked screen	560807.69	273619.94	149.95	149.82			12.00	24.00	137.95	125.95
SDW9A	LEA-Cianci	9/16/2004	1.5" PVC w/ prepacked screen	562689.37	273222.68	146.42	148.77			2.00	12.00	144.42	134.42
SDW9B	LEA-Cianci	9/17/2004	1.5" PVC w/ prepacked screen	562691.40	273231.00	146.41	149.58			26.00	36.00	120.41	110.41
SDW9C	LEA-Cianci	9/17/2004	1.5" PVC w/ prepacked screen	562697.63	272428.32	146.08	149.61			46.00	56.00	100.08	90.08
SDW10A	LEA-Cianci	9/15/2004	1.5" PVC w/ prepacked screen	564035.27	272431.06	155.10	155.09			6.00	16.00	149.10	139.10
SDW10B	LEA-Cianci	9/15/2004	1.5" PVC w/ prepacked screen	564032.46	272428.32	155.00	154.96			54.00	64.00	101.00	91.00
PZ-1	LEA-Cianci	11/22/2005	1.5" PVC w/ prepacked screen	563359.86	273249.96	153.42	152.57			8.00	18.00	145.42	135.42
PZ-2	LEA-Cianci	11/22/2005	1.5" PVC w/ prepacked screen	563543.77	273253.40	154.61	154.21			3.00	13.00	151.61	141.61
PZ-3	LEA-Cianci	11/22/2005	1.5" PVC w/ prepacked screen	563579.72	273104.81	154.47	154.22			4.00	14.00	150.47	140.47
BR101	Connecticut Test Boring	12/16/1999	2" PVC	583669.50	272996.70	154.42	157.04	143	11	138	148	16.42	6.42
BR102	Connecticut Test Boring	12/14/1999	2" PVC	563631.50	272785.20	157.21	159.54	177	-20	173	183	-15.79	-25.79
BR103	Connecticut Test Boring	12/15/1999	2" PVC	563626.00	272624.40	165.04	166.95	171	-6	166	176	-0.96	-10.96
BR104	Connecticut Test Boring	12/21/1999	2" PVC	563564.00	272412.70	172.53	175.36	188	-15	183	195	-10.47	-22.47
LW15D	GZA Drilling	11/21/1984	2" PVC	563678.25	273393.79	149.73	149.61	99	51	49	99	100.73	50.73
TW19	General Borings	2/19/1980	2" PVC					6.08	>140*	unknown	unknown		
M1(east)	MykroWaters	2/2/1999	0.62" steel	562608.89	273171.55	146.96	150.97	68	79	62.5	67.5	84.46	79.46
M1(west)	MykroWaters	2/2/1999	0.62" steel	562604.67	273171.55	146.96	148.03	129	18				
M2	MykroWaters	2/3/1999	0.62" steel	562291.72	272286.74	174.85	174.85	93.08	82	87.58	92.58	87.27	82.27
M3	MykroWaters	2/10/1999	0.62" steel	562888.96	271024.44	193.45	193.45	108.42	85	102.91	107.91	90.54	85.54
M4	MykroWaters	2/9/1999	0.62" steel	560915.80	273431.62	152.81	152.81	72.875	80	67.33	72.33	85.48	80.48
M5	MykroWaters	2/8/1999	0.62" steel	561304.67	272057.01	167.22	167.22	78.75	88	73.25	78.25	93.97	88.97
M6	MykroWaters	2/6/1999	0.62" steel	561370.75	271574.67	173.02	173.02	104.07	69	99	104	74.02	69.02
M7	MykroWaters	2/5/1999	0.62" steel	561603.43	270788.42	160.38	160.38	86.1	74	80.5	85.5	79.88	74.88
M8	MykroWaters	2/8/1999	0.62" steel	560519.83	272648.22	147.98	147.98	69.25	79	63.8	68.8	84.18	79.18
M9	MykroWaters	2/5/1999	0.62" steel	560225.79	271710.13	150.08	150.08	70.33	80	64.83	69.83	85.25	80.25
M10	MykroWaters	2/4/1999	0.62" steel	560020.87	270533.99	141.04	141.04	61.75	79	56.25	61.75	84.79	79.29
M11S	MykroWaters	6/10/1999	0.62" steel	562411.23	273313.23		152.22			14.5	19.5	137.72	132.72
M11M	MykroWaters	6/10/1999	0.62" steel	562407.91	273312.49		152.18			23.5	28.5	128.68	123.68
M11D	MykroWaters	6/10/1999	0.62" steel	562405.15	273311.90		152.00	47.05	105	37.05	42.05	114.95	109.95
M12S	MykroWaters	6/10/1999	0.62" steel	562171.39	272819.16		177.48			44	49	133.48	128.48
M12M	MykroWaters	6/10/1999	0.62" steel	562168.20	272820.90		177.60			73.5	78.5	104.10	99.10
M12D	MykroWaters	6/10/1999	0.62" steel	562164.08	272822.52		177.72	109.05	69	99.05	104.05	78.67	73.67
M13S	MykroWaters	6/11/1999	0.62" steel	562346.06	271980.88		171.64			40	45	131.64	126.64

TABLE 2
WELL CONSTRUCTION DETAILS
Groundwater Monitoring
Old Southington Landfill Superfund Site

Location	Installed By	Date of Installation	Construction Materials	Easting	Northing	Ground Surface Elevation	Top of PVC Elevation	Depth to Bedrock (bgs) or total depth	Bedrock Elevation	Top of Screen (bgs)	Bottom of Screen (bgs)	Top of Screen Elevation	Bottom of Screen Elevation
M13M	MykroWaters	6/11/1999	0.62" steel	562345.01	271989.08		171.76			54.5	59.5	117.26	112.26
M13D	MykroWaters	6/11/1999	0.62" steel	562345.49	271984.82		171.70	84	88	74	79	97.70	92.70
M14S	MykroWaters	6/16/1999	0.62" steel	561995.28	273727.61		172.92			45.3	55.3	127.62	117.62
M14M	MykroWaters	6/17/1999	0.62" steel	561998.27	273727.02		172.96			69.5	79.5	103.46	93.46
M14D	MykroWaters	6/17/1999	0.62" steel	561999.57	273726.27		172.94	99	74	89	94	83.94	78.94
M15S	MykroWaters	6/14/1999	0.62" steel	561247.46	272282.09		162.57			31	36	131.57	126.57
M15M	MykroWaters	6/14/1999	0.62" steel	561247.59	272281.35		168.47			52.5	57.5	115.97	110.97
M15D	MykroWaters	6/14/1999	0.62" steel	561247.76	272282.70		162.83	83.8	79	74.3	79.3	88.53	83.53
M16S	MykroWaters	6/15/1999	0.62" steel	560592.54	272807.47		148.11			25.7	30.7	122.41	117.41
M16M	MykroWaters	6/15/1999	0.62" steel	560592.42	272807.13		148.17			46.7	51.7	101.47	96.47
M16D	MykroWaters	6/15/1999	0.62" steel	560593.09	272808.18		148.13	77.5	71	68.2	73.2	79.93	74.93
M17S	MykroWaters	6/15/1999	0.62" steel	560917.72	273425.91		152.73			24.5	29.5	128.23	123.23
M17M	MykroWaters	6/15/1999	0.62" steel	560916.95	273427.72		152.73			47	52	105.73	100.73
M17D	MykroWaters	6/15/1999	0.62" steel	560916.15	273429.37		152.83	73.7	79	64.2	69.2	88.63	83.63
M18S	MykroWaters	6/16/1999	0.62" steel	561189.22	274109.52		149.38			26	31	123.38	118.38
M18D	MykroWaters	6/16/1999	0.62" steel	561189.46	274110.83		149.43	51	98	41	46	108.43	103.43

* Approximate

TABLE 3
GROUND WATER ELEVATIONS
SUPPLEMENTAL GROUNDWATER INVESTIGATIONS
Old Southington Landfill Site
Southington, Connecticut

Location	Easting	Northing	Ground Surface	2/16/1999	6/24/1999	5/1/2000	9/25/2000	3/19/2001	9/24/2001	3/18/2002	9/16/2002	3/25/2003	9/8/2003	12/1/2003	3/1/2004	6/1/2004	9/13/2004	11/29/2004	2/28/2005	6/6/2005	9/12/2005	11/30/2005
CURRENT WELLS																						
G302A	563539.46	272894.65	158.95			144.52	143.64	143.68	143.59	142.11	141.52	143.82	143.97	144.65	144.39	145.16	143.58	143.52	144.41	144.77	143.07	144.97
G302B	563531.69	272890.85	158.65			144.79	143.97	143.99					144.29	144.96	144.75	145.52	143.95	143.86	144.73	145.12	143.43	145.32
G302C	563537.14	272898.78	158.95			144.84	144.01	144.04					144.36	145.01	144.81	145.59	144.02	143.92	144.80	145.18	143.51	145.37
G303A	563502.68	272720.18	162.45			144.53	143.92	dry	143.42	142.09	141.51	143.76	144.00	144.65	144.41	145.19	143.62	143.51	144.42	144.80	143.11	144.98
G303B	563500.14	272713.27	162.90			144.96	144.19	144.03					144.53	145.18	144.99	145.77	144.19	144.06	144.93	145.38	143.69	145.53
G303C	563497.17	272707.20	163.00			144.69	143.90	143.97					144.24	144.88	144.70	145.48	143.91	143.76	144.65	145.10	143.48	145.23
G304A	563495.62	272544.43	173.90		143.17	144.46	143.75	143.44	143.58	142.00	141.44	143.49	144.05	144.65	144.53	145.31	143.76	143.45	144.49	144.94	143.33	144.99
G304B	563484.77	272540.02	173.60		142.93	144.65	143.88	143.78	143.75	142.18	141.61	143.79	144.18	144.87	144.74	145.52	143.91	143.73	144.66	145.13	143.44	144.24
G304C	563484.04	272534.52	173.80		142.83	144.74	143.99	143.87					144.34	144.92	144.80	145.61	144.02	143.84	144.73	145.19	143.53	145.32
G308A	562609.12	272581.09	155.30		142.17	143.25	142.55	142.33	142.25	140.84	140.33	142.58	142.79	143.47	143.26	144.05	142.37	142.30	143.26	143.66	141.93	143.87
G308B	562608.18	272573.54	155.80		142.11	143.18	142.49	142.27	142.17	140.77	140.27	142.50	142.74	143.41	143.20	143.98	142.35	142.27	143.20	143.59	141.86	143.81
G308C	562607.75	272565.42	156.00	143.73	142.30	143.31	142.64	142.42	142.40	140.91	140.41	142.57	142.90	143.55	143.39	144.17	142.54	142.43	143.36	143.79	142.11	143.97
G309A	562880.80	272938.12	150.80		142.46	143.70	142.88	142.91	142.56	141.31	140.76	143.10	143.18	143.86	143.60	144.34	142.76	142.79	143.62	143.95	142.21	144.22
G309B	562881.80	272945.67	150.40		143.43	143.69	142.84	142.88	142.54	141.30	140.76	143.11	143.14	143.85	143.57	144.30	142.71	142.78	143.61	143.92	142.19	144.23
G309C	562884.79	272952.02	150.10	143.16	142.46	143.77	143.01	142.95	142.75	141.38	140.83	143.09	143.29	143.96	143.74	144.51	142.90	142.88	143.73	144.12	142.42	144.33
G310S	560916.80	273363.90	153.14											136.36	135.95	136.56	135.40	135.52	136.13	136.25	135.04	136.59
G310A	560908.56	273370.93	153.18			136.10	135.29	135.49	135.06	134.39	134.11	135.72	135.49	136.13	135.76	136.39	135.22	135.33	135.90	136.04	134.82	136.45
G310B	560905.18	273369.61	153.04			136.09	135.34	135.51	135.07	134.39	133.99	135.73	135.49	136.12	135.76	136.39	135.19	135.32	135.90	136.06	134.83	136.39
G310C	560902.43	273369.51	153.07			135.87	135.04	130.42	135.32	134.18	133.93	135.57	135.27	135.85	135.52	136.16	134.96	135.16	135.71	135.79	134.55	136.26
G311A	564478.36	272620.89	153.33			145.96	145.08	145.09	145.03	143.26	142.67	144.98	145.48	146.17	145.88	146.93	145.29	144.95	145.81	146.44	144.63	146.54
G311B	564477.26	272616.76	153.41			145.95	145.11	145.11	145.05	143.27	142.68	144.96	145.44	146.14	145.90	146.94	145.24	144.98	145.89	146.49	144.68	146.58
G311C	564480.06	272624.59	153.21			145.96	145.08	145.10	145.04	143.26	142.69	144.95	145.45	146.14	145.90	146.94	145.22	144.98	145.90	146.48	144.71	146.57
G312A	563280.50	272083.80	183.77											145.20	145.25	146.07	143.34	144.03	144.97	145.73	144.06	145.59
G312B	563283.20	272081.60	183.43											145.12	145.16	145.98	144.43	143.95	144.89	145.65	143.99	145.51
G312C	563276.70	272085.20	183.91											144.38	144.32	145.12	143.54	143.23	144.15	144.72	143.06	144.76
G313A	563541.30	273004.10	155.62											144.51	144.14	144.93	143.34	143.29	143.93	144.53	142.79	144.74
GZ17M	563572.97	273002.90	155.40		143.03								144.12	144.77	144.54	145.33	143.76	143.73	144.55	144.91	143.22	145.14
GZ17D	563580.26	273001.16	155.60	144.06	143.04								144.18	144.81	144.63	145.39	143.81	143.77	144.61	144.98	143.29	145.20
G313C	563545.80	273001.80	155.66											144.40	144.28	145.05	143.53	143.43	144.23	144.64	142.95	144.85
G314A	563676.70	273389.80	149.62											143.40	142.97	143.52	142.76	143.09	144.95	143.26	142.35	144.54
G314B	563676.90	273393.20	149.67											144.33	143.90	144.74	143.26	143.28	144.11	144.36	142.72	144.66
G314C	563675.80	273386.30	149.43											144.30	144.05	144.89	143.31	143.41	144.21	144.51	142.83	144.75
G315A	562141.90	272856.50	177.54											142.20	141.89	142.77	141.12	141.06	141.97	142.39	140.67	142.63
G315B	562139.30	272856.60	177.63											141.66	141.37	142.25	140.59	140.52	141.46	141.86	140.14	142.10
G315C	562135.90	272855.90	177.71											142.69	142.39	143.28	141.64	141.55	142.48	142.88	141.17	143.13
G316A	563514.80	271854.50	180.74											145.44	145.47	146.28	144.71	144.22	145.17	145.93	144.26	145.83
G317A	562287.10	272458.30	173.91											142.89	142.64	143.57	141.89	141.66	142.70	143.20	141.46	143.31
G317B	562286.10	272454.30	173.91											142.95	142.69	143.62	141.92	141.70	142.78	143.23	141.52	143.35
G317C	562286.10	272450.90	173.94											142.25	141.98	142.86	142.25	141.18	142.11	142.48	140.81	142.66
G318A	561141.90	272683.50	155.99											140.24	139.97	141.15	138.96	138.67	140.15	140.78	138.65	140.85
G318B	561143.40	272676.50	156.14											139.01	138.90	139.66	138.07	138.04	138.96	139.32	137.72	139.43
G318C	561143.60	272680.80	156.06											138.03	138.21	138.39	137.47	137.51	137.99	138.20	136.64	138.51
GZ1	564661.74	271755.93	209.05		149.62	150.10	149.77	149.25	150.32	148.04	147.49	149.45	150.72	150.26	151.29	152.20	150.57	149.87	150.83	151.79	150.07	151.55
GZ3	564590.22	273586.26	155.31			147.23	146.26	146.45	146.14	144.55	143.86	146.31	146.68	147.38	147.10	148.11	146.41	146.29	147.16	147.61	145.82	147.90
GZ5S	563354.64	272439.95	163.15										144.28	144.82	144.75	145.56	143.60	143.68	144.66	145.18	143.53	145.18
GZ5M	563357.23	272449.15	163.20						143.76	142.12	141.60	143.63	144.22	144.80	144.70	145.51	143.92	143.62	144.62	145.14	143.50	145.14
SDW2	563163.97	273137.77	155.91														141.20	143.10	143.77	144.04	142.23	144.41
GZ12M	563169.20	273129.68	156.45		142.90	144.18	142.93	143.45	142.98	141.79	141.22	143.59	143.61	144.31	144.02	144.77	143.17	143.26	144.06	144.35	142.64	144.66
GZ12D	563176.79	273127.09	156.55	142.98	142.94	144.20	142.93	143.46	143.02	141.83	141.25	143.62	143.62	144.34	144.05	144.81	143.22	143.29	144.10	144.39	142.68	144.69
GZ13S	563246.70	271853.94	179.40		144.71								145.25	145.76	145.89	146.72	145.09	144.53	145.53	146.40	144.74	146.17
GZ13M	563238.73	271855.45	179.70		144.60								145.14	145.65	145.77	146.60	145.01	144.45	145.44	146.27	144.61	146.07
GZ13D	563223.26	271859.43	180.40	143.64	144.30								143.90	144.50	144.45	145.24	143.66	143.38	144.31	144.88	143.22	144.90
GZ14S	562814.95	272126.05	176.95		144.03								145.07	145.05	145.12	145.98	144.38	143.86	144.89	145.64	144.03	145.48
GZ14M	562811.72	272128.92	176.45		143.92	144.49	144.20	143.43	144.18	142.04	141.63	143.48	144.46	144.99	145.03	145.89	144.27	143.78	144.81	145.54	143.90	145.42
GZ14D	562807.12	272131.75	176.15	143.28	142.94	143.85	143.23	142.94	143.13	141.42	140.89	142.96	143.52	144.12	144.04	144.84	143.26	142.98	143.83	144.48	142.83	144.53
SDW1	563759.67	273424.74	151.17														143.38	143.64	144.42	144.53	142.87	144.96
SDW3	563610.99	273378.49	152.78														145.56	147.02	146.35	145.72	144.47	147.75
SDW4	563499.30	273498.09	153.38														143.13	143.21	144.01	144.24	142.62	144.57
SDW5	563682.40	273476.33	151.38														143.33	146.14	145.71	144.61	143.68	145.97
SDW6	560726.50	273436.22	151.16														NA	131.09	131.46	131.42	130.11	131.82
SDW7	560763.62	273521.59	149.91														132.52	133.08	133.25	133.22	132.20	134.05

TABLE 3
GROUND WATER ELEVATIONS
SUPPLEMENTAL GROUNDWATER INVESTIGATIONS
Old Southington Landfill Site
Southington, Connecticut

Location	Easting	Northing	Ground Surface	2/16/1999	6/24/1999	5/1/2000	9/25/2000	3/19/2001	9/24/2001	3/18/2002	9/16/2002	3/25/2003	9/8/2003	12/1/2003	3/1/2004	6/1/2004	9/13/2004	11/29/2004	2/28/2005	6/6/2005	9/12/2005	11/30/2005
SDW8	560807.69	273619.94	149.95														132.01	132.46	132.75	132.70	131.54	133.22
SDW9A	562689.37	273222.68	146.42														NA	145.86	145.54	144.96	141.74	146.05
SDW9B	562691.40	273231.00	146.41														NA	142.40	143.07	143.31	141.54	143.78
SDW9C	562697.63	272428.32	146.08														NA	142.45	143.16	143.41	141.65	143.83
SDW10A	564035.27	272431.06	155.10														NA	146.83	146.66	146.36	146.00	147.22
SDW10B	564032.46	272428.32	155.00														NA	144.68	145.61	146.36	144.45	146.27
PZ-1	563359.86	273249.96	153.42																			146.34
PZ-2	563543.77	273253.40	154.61																			145.12
PZ-3	563579.72	273104.81	154.47																			145.08
BLACK POND SURFACE WATER																						
SG3	563861.28	273000.45															NA	146.88	146.7	146.57	145.97	148.91
OTHER WELLS USED DURING RI																						
G301	563648.69	273009.84	155.29			145.08																
G304-D	563484.25	272531.29	173.90	144.11	142.14																	
G305	563503.99	272450.58	173.55			144.73																
G307	563438.80	272134.84	176.59			145.23																
GZ2	563505.34	270995.39	204.19		146.10																	
GZ4D	563582.26	272658.86	162.14		143.30																	
GZ4M	563582.74	272662.46	162.08		143.69																	
GZ4S	563583.47	272666.51	161.07		143.22																	
GZ-7D	564053.31	272180.08	155.9	145	144.68																	
GZ7M	564059.17	272179.86	156.10		144.64																	
GZ7S	564063.97	272178.96	156.10		149.22																	
LW-15D	563678.25	273393.79	149.73		143.26																	
LW15M	563680.21	273401.66	149.57		143.25																	
LW15S	563497.91	273401.66	149.71		142.76																	
TW17S	563580.41	273003.04	155.30		141.45																	
TW-18	563174.36	273131.67	156.55		142.85																	
PHASE 1A MICROWELLS																						
M-1(east)	562608.89	273171.55	146.96	141.12																		
M-1(west)	562604.67	273171.55	146.96	135.8																		
M-2	562291.72	272286.74	174.85	139.24																		
M-3	562888.96	271024.44	193.45	144.57																		
M-4	560915.80	273431.62	152.81	134.8																		
M-5	561304.67	272057.01	167.22	130.48																		
M-6	561370.75	271574.67	173.02	139.6																		
M-7	561603.43	270788.42	160.38	140.44																		
M-8	560519.83	272648.22	147.98	135.1																		
M-9	560225.79	271710.13	150.08	129.95																		
M-10	560020.87	270533.99	141.04	119.51																		
PHASE 1B MICROWELLS																						
M-11D	562405.15	273311.90	152.00		141.36																	
M-11M	562407.91	273312.49	152.18	143.73	141.33																	
M-11S	562411.23	273313.23	152.22	144.11	141.38	142.79	142.32															
M-12D	562164.08	272822.52	177.72		141.36	152.43	141.84															
M-12M	562168.20	272820.90	177.60		141.36	142.58	141.78															
M-12S	562171.39	272819.16	177.48		141.43	142.6	141.77															
M-13D	562345.49	271984.82	171.70		142.66																	
M-13M	562345.01	271989.08	171.76		143.72																	
M-13S	562346.06	271980.88	171.64		143.86																	
M-14D	561999.57	273726.27	172.94		141.5																	
M-14M	561998.27	273727.02	172.96		141.51																	
M-14S	561995.28	273727.61	172.92		141.72																	
M-15D	561247.76	272282.70	162.83		134.44																	
M-15M	561247.59	272281.35	162.47		137.01																	
M-15S	561247.46	272282.09	162.57		141.73																	
M-16D	560593.09	272808.18	148.13		137.68	132.75	135.21															
M-16M	560592.42	272807.13	148.17		138.54																	
M-16S	560592.54	272807.47	148.11		138.92	132.26	134.96															
M-17D	560916.15	273429.37	152.83		135.12																	
M-17M	560916.95	273427.72	152.73		135.03																	
M-17S	560917.72	273425.91	152.73		135.01																	
M-18D	561189.46	274110.83	149.43		132.62	137.04	133.48															
M-18S	561189.22	274109.52	149.38		132.06	136.47	132.45															

TABLE 4
SHALLOW WATER LEVEL MEASUREMENTS AND PRECIPITATION DATA
G314 AREA
Old Southington Landfill Superfund Site

Location	Easting	Northing	Ground Surface Elevation	Water Elevation November 5, 2004	Water Elevation November 29, 2004	Water Elevation December 1, 2004	Water Elevation December 8, 2004	Water Elevation December 15, 2004
G314A	563676.70	273389.80	149.62	142.97	143.09	143.49	142.85	144.32
SDW1	563759.67	273424.74	151.17	143.41	143.64	143.71	143.82	144.02
SDW2	563163.97	273137.77	155.91	142.88	143.10			143.38
SDW3	563610.99	273378.49	152.78	146.91	147.02	147.46	147.32	146.52
SDW4	563499.30	273498.09	153.38	143.21	143.21	143.32	143.51	143.64
SDW5	563682.40	273476.33	151.38	144.49	146.14	145.86	145.34	145.22
SDW9A	562689.37	273222.68	146.42	144.51	145.86	146.13	145.85	145.70
SG3	563861.28	273000.45		146.55	146.88	147.05	146.85	146.80

NOTES:
All units in feet.

Measurement Date	Daily Precipitation						Total Precipitation
5-Nov-04	10/31/04 0.01	11/01/04 0	11/02/04 0	11/03/04 trace	11/04/04 0.73	11/05/04 0	0.74
29-Nov-04	11/24/04 0.71	11/25/04 0.6	11/26/04 0	11/27/04 0	11/28/04 1.06	11/29/04 0	2.37
1-Dec-04	11/26/04 0	11/27/04 0	11/28/04 1.06	11/29/04 0	11/30/04 0	12/01/04 1.28	2.34
8-Dec-04	12/03/04 0	12/04/04 0	12/05/04 0	12/06/04 0.1	12/07/04 0.53	12/08/04 0.11	0.74
15-Dec-04	12/10/04 0.83	12/11/04 0.01	12/12/04 0.01	12/13/04 0.03	12/14/04 0	12/15/04 0	0.88

NOTES:
All precipitation data are in inches.

TABLE 5
BLACK POND AREA WATER LEVEL MEASUREMENTS
Old Southington Landfill Superfund Site

Location	Easting	Northing	Ground Surface Elevation	Water Elevation November 5, 2004	Water Elevation November 29, 2004
G302A	563539.46	272894.65	158.95	143.59	143.52
G303A	563502.68	272720.18	162.45	143.60	143.51
G304A	563495.62	272544.43	173.90	143.66	143.45
G311A	564478.36	272620.89	153.33	145.06	144.95
G312A	563280.50	272083.80	183.77	144.24	144.03
G313A	563541.30	273004.10	155.62	143.33	143.29
G314A	563676.70	273389.80	149.62	142.97	143.09
G316A	563514.80	271854.50	180.74	144.45	144.22
GZ1	564661.74	271755.93	209.05	150.14	149.87
GZ3	564590.22	273586.26	155.31	146.32	146.29
GZ5S	563354.64	272439.95	163.15	143.87	143.68
SDW2	563163.97	273137.77	155.91	142.88	143.10
GZ13S	563246.70	271853.94	179.40	144.80	144.53
SDW1	563759.67	273424.74	151.17	143.41	143.64
SDW3	563610.99	273378.49	152.78	146.91	147.02
SDW4	563499.30	273498.09	153.38	143.21	143.21
SDW5	563682.40	273476.33	151.38	144.48	146.14
SDW9A	562689.37	273222.68	146.42	144.51	145.86
SDW10A	564035.27	272431.06	155.10	146.47	146.83
SG3	563861.28	273000.45		146.55	146.88

NOTES:

(1) All units in feet.

TABLE 6
SURFACE WATER - GROUNDWATER INTERACTION
UNNAMED STREAM
Old Southington Landfill Superfund Site

Monitoring Location	Reference Elevation	Depth to Groundwater							Water Elevation						
		1/29/04	4/5/04	6/30/04**	9/14/04	11/8/04	12/28/04***	4/6/06	1/29/04	4/5/04	6/30/04	9/14/04	11/8/04	12/28/04	4/6/2006
SG-1	148.40	1.83	1.84	2.12	2.20	1.98	1.76	1.54	146.57	146.56	146.28	146.20	146.42	146.64	146.86
SG-2	149.34	3.60	3.51	4.45	3.31	4.22	3.49	3.39	145.74	145.83	144.89	146.03	145.12	145.85	145.95
SG-3	148.12	NM	1.24	1.83	1.80	1.76	1.10	1.02	NM	146.88	146.29	146.32	146.36	147.02	147.10
MW-12S (TW-18)	158.52	14.48	14.09	14.70	15.58	15.56	14.94	13.62	144.04	144.43	143.82	142.94	142.96	143.58	144.90
G314A*	149.51	6.27	4.43	6.24	6.61	6.49	4.30	4.90	143.24	145.08	143.27	142.90	143.02	145.21	144.61
TW-17S	158.04	13.28	13.04	13.40	14.33	14.38	13.96	12.43	144.76	145.00	144.64	143.71	143.66	144.08	145.61
PZ-1	152.57	NM	NM	NM	NM	NM	NM	6.46	NM	NM	NM	NM	NM	NM	146.11
PZ-2	154.21	NM	NM	NM	NM	NM	NM	8.35	NM	NM	NM	NM	NM	NM	145.86
PZ-3	154.22	NM	NM	NM	NM	NM	NM	8.75	NM	NM	NM	NM	NM	NM	145.47
SDW-1	151.08	NM	NM	NM	NM	NM	NM	5.85	NM	NM	NM	NM	NM	NM	145.23
SDW-2	157.00	NM	NM	NM	NM	NM	NM	12.25	NM	NM	NM	NM	NM	NM	144.75
SDW-3	152.57	NM	NM	NM	NM	NM	NM	6.03	NM	NM	NM	NM	NM	NM	146.54
SDW-5	151.29	NM	NM	NM	NM	NM	NM	5.98	NM	NM	NM	NM	NM	NM	145.31

NM: Not Measured
* Measurements in monitoring well G314A appear to exhibit greater variability than other wells measured, although the trend in water elevations appears consistent. The measurement obtained on 12/28/04 was verified the same day in the field.
** Standing water was measured on June 30, 2004 for SG-1, SG-2 (no flow conditions)
*** The measurements taken on December 28, 2004 for SG-1, SG-2, SG-3 are to the surface of the ice.

TABLE 7
VOC DATA COMPARISON
GROUNDWATER
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Results in ug/L (ppb)

Well	Sample Date	Acetone	Benzene	Bromodichloromethane	Butanone, 2- (methyl ethyl ketone)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (methyl chloride)	Cyclohexane	Dibromo-3- chloropropane,1,2-	Dichlorobenzene, 1,2-	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-	Dichlorodifluoro- methane	Dichloroethane, 1,1-	Dichloroethane, 1,2-	Dichloroethene, 1,1-	Dichloro ethene, cis-1,2-	Dichloroethene, total	Dichloroethene, trans-1,2-	Ethylbenzene	Isopropylbenzene (cumene)	Hexanone - 2	Methyl Acetate	Methyl cyclohexane	Methyl Tert-Butyl Ether	Methyl-2-Pentanone, 4- (methyl isobutyl ketone)	Methylene Chloride	Styrene	Tetrachloroethene	Tetrachloroethane, 1,1,2,2-	Toluene	Trichlorobenzene, 1,2,4-	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	Vinyl Chloride	Xylene (total)
G302A	RI		2			19		5	5									2																								
G302A	May-00		1					3																																	4	
G302A	Sep-00		1					3	2												14																	10	0.6	7	
G302A	Mar-01		4					7	14							0.5		3			66		0.3		0.4													20		68	
G302A	Sep-01		3					6	6					0.8				2			17																	4		48	
G302A	Mar-02		5					9	8					1		0.6		3			17																			90	
G302A	Sep-02		3						7									2			5																			28	
G302A	Mar-03		6					14	6					2		1		2			4								68											15	
G302A	Sep-03		5					10	4									1			4								11											10	
G302A	Dec-03		4					7	2									1			1								5											3	
G302A	Mar-04		4					9	2																				3											7	
G302A	Jun-04		1					3																					2											3	
G302A	Sep-04		4					12	4					1				3																						18	
G302A	Dec-04							15	7					1		1		5												2										46	
G302A	Mar-05		2					5	3									2			4																	1		37	
G302A	Jun-05							2																																8	
G302A	Sep-05		4					11										3																						30	
G302B	RI			2		7				22																												1			
G302B	May-00																																								
G302B	Sep-00																																								
G302B	Sep-03																																								
G302B	Dec-03																																								
G302B	Mar-04																																								
G302B	Jun-04																																								
G302B	Sep-04																																								
G302B	Dec-04																																								
G302B	Mar-05																																								
G302B	Jun-05																																								
G302B	Sep-05																																								
G302C	RI									10																															
G302C	May-00																																					2			
G302C	Sep-00																																						0.6		
G302C	Sep-03																																								
G302C	Dec-03																																								
G302C	Mar-04																																								
G302C	Jun-04																																								
G302C	Sep-04																																								
G302C	Dec-04																																								
G302C	Mar-05																																								
G302C	Jun-05																																								
G302C	Sep-05																																								

TABLE 7
VOC DATA COMPARISON
GROUNDWATER
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Results in ug/L (ppb)

Well	Sample Date	Acetone	Benzene	Bromodichloromethane	Butanone, 2- (methyl ethyl ketone)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (methyl chloride)	Cyclohexane	Dibromo-3- chloropropane,1,2-	Dichlorobenzene, 1,2-	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-	Dichlorodifluoro- methane	Dichloroethane, 1,1-	Dichloroethane, 1,2-	Dichloroethene, 1,1-	Dichloro ethene, cis-1,2-	Dichloroethene, total	Dichloroethene, trans-1,2-	Ethylbenzene	Isopropylbenzene (cumene)	Hexanone - 2	Methyl Acetate	Methyl cyclohexane	Methyl Tert-Butyl Ether	Methyl-2-Pentanone, 4- (methyl isobutyl ketone)	Methylene Chloride	Styrene	Tetrachloroethene	Tetrachloroethane, 1,1,2,2-	Toluene	Trichlorobenzene, 1,2,4-	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	Vinyl Chloride	Xylene (total)
G303A	RI																	5																								
G303A	May-00																												2						0.9							
G303A	Sep-01		0.3					0.4										0.9			0.4			1																	9	2
G303A	Mar-02							0.7	2									2																							19	
G303A	Sep-02																	2																							22	
G303A	Mar-03																	1																							30	
G303A	Sep-03																												670													
G303A	Dec-03																												73													
G303A	Mar-04																												1													
G303A	Jun-04																																									
G303A	Sep-04																																									
G303A	Dec-04																	1																							12	
G303A	Mar-05																												1													
G303A	Jun-05																												1													
G303A	Sep-05																												1													
G303B	RI																																									
G303B	May-00																																									
G303B	Sep-00																																									
G303B	Sep-03																																									
G303B	Dec-03																																									
G303B	Mar-04																																									
G303B	Jun-04																																									
G303B	Sep-04																																									
G303B	Dec-04																																									
G303B	Mar-05																																									
G303B	Jun-05																																									
G303B	Sep-05																																									
G303C	RI			2						20																																
G303C	May-00																																									
G303C	Sep-00																																									
G303C	Sep-03																																									
G303C	Dec-03																																									
G303C	Mar-04																																									
G303C	Jun-04																																									
G303C	Sep-04																																									
G303C	Dec-04																																									
G303C	Mar-05																																									
G303C	Jun-05																																									
G303C	Sep-05																																									

TABLE 7
VOC DATA COMPARISON
GROUNDWATER
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Results in ug/L (ppb)

Well	Sample Date	Acetone	Benzene	Bromodichloromethane	Butanone, 2- (methyl ethyl ketone)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (methyl chloride)	Cyclohexane	Dibromo-3- chloropropane,1,2-	Dichlorobenzene, 1,2-	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-	Dichlorodifluoro- methane	Dichloroethane, 1,1-	Dichloroethane, 1,2-	Dichloroethene, 1,1-	Dichloro ethene, cis-1,2-	Dichloroethene, total	Dichloroethene, trans-1,2-	Ethylbenzene	Isopropylbenzene (cumene)	Hexanone - 2	Methyl Acetate	Methyl cyclohexane	Methyl Tert-Butyl Ether	Methyl-2-Pentanone, 4- (methyl isobutyl ketone)	Methylene Chloride	Styrene	Tetrachloroethene	Tetrachloroethane, 1,1,2,2-	Toluene	Trichlorobenzene, 1,2,4-	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	Vinyl Chloride	Xylene (total)
G304A	RI																	160				30000		10000						640					23000		1800				560	13000
G304A	Jun-99	740			630													110				2400		11000						500	94	120	190		18000		320		43		380	15000
G304A	May-00									36								120			860			9700	140					200	550				8800		280				320	12000
G304A	Sep-00																				1300			10000						330		91			14000		220				390	13000
G304A	Mar-01																	190			5100			10000	560					1200					10000		310				1000	14000
G304A	Sep-01													110	76	110		100			4400			6900						940					9900		130				800	8800
G304A	Mar-02	400	14		580			3		3				4				290	10	32	13000		2	10000	180	29		10		4200	1		4		20000		630	11	2	6	680	13000
G304A	Sep-02	150	7					2				7		4				190	4	12	4300			9800	140	3	20	9		1300	1		2		9900		420	5	1	4	830	13000
G304A	Mar-03							1				7		4				130		2	490			8900	160			10		90		32	2		4900		170		1	3	200	12000
G304A	Sep-03	110	12		210			4	42			7						190	13		740		3	7400	160		6	9		570	1		2		4600		90			2	630	9900
G304A	Dec-03	37			97													160			1600			8000	110					310					7000		95				230	10000
G304A	Mar-04		16		240			6	83					5	15	28		170	17		360		3	5300	130	110 U		8		350					2600	2	46				180	6400
G304A	Jun-04	67 U	17		130			8	71			6		5	16	29		160	15	3	1600		2	7200	150		13	10		430			2		4800	3	86	3			540	8600
G304A	Sep-04		17		1000			5	43			2		2	7	12		160	18	20	14000		3	2500	52	11	21	4		3300		17			5800	2	92	14			3900	2700
G304A	Dec-04	180 U	14			0.9	25	3	23	3		5		3	2	4		100	14	16	5200		41	3500	120	9		7		1500		53	3		5900	2	200	10	1	3	800	4300
G304A	Mar-05	68 U	4		150		18	2	7			6		4		1		150	4	6	2700		1	7500	140	2		8		850		34	2		6400	1	120	3	1	3	810	11000
G304A	Jun-05				130													150			3200			6500	100					700					5100		79				560	9900
G304A	Sep-05				310													190			11000			8400						2200					10000		150				1600	10000
G304B	RI		4							10												54		44						8			93								3	190
G304B	Jun-99		0.5					1	2									0.5				0.8		1									2		0.7				2		1	0.5
G304B	May-00		1					2	11									2	1		2			2							2										6	
G304B	Sep-00		0.8					2	4												1																				3	
G304B	Mar-01								1												1				0.3														0.5		2	
G304B	Sep-01		0.4					1	2					0.3				0.5			0.7																				3	
G304B	Mar-02							1	3									0.7			1			0.5																	3	
G304B	Sep-02							1	3												7																				9	
G304B	Mar-03																																						1			
G304B	Sep-03																																									
G304B	Dec-03																																									
G304B	Mar-04																																									
G304B	Jun-04							1													1																		.7U			
G304B	Sep-04																																									
G304B	Dec-04																																									
G304B	Mar-05							1													1																				2	
G304B	Jun-05																																									
G304B	Sep-05																																									
G304C	RI					85				16										1		70		9											8				49		52	5
G304C	May-00																				4																		17		4	
G304C	Sep-00																				1																		8			
G304C	Sep-03																				1																		10			
G304C	Dec-03																																						6			
G304C	Jun-04																				1																		8U			
G304C	Sep-04																				4			2											3				6		2	2
G304C	Dec-04																																						7			
G304C	Mar-05																				1																		6		1	
G304C	Jun-05																																						5			
G304C	Sep-05																				0.9																		6			

TABLE 7
VOC DATA COMPARISON
GROUNDWATER
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Results in ug/L (ppb)

Well	Sample Date	Acetone	Benzene	Bromodichloromethane	Butanone, 2- (methyl ethyl ketone)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (methyl chloride)	Cyclohexane	Dibromo-3- chloropropane,1,2-	Dichlorobenzene, 1,2-	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-	Dichlorodifluoro- methane	Dichloroethane, 1,1-	Dichloroethane, 1,2-	Dichloroethene, 1,1-	Dichloro ethene, cis-1,2-	Dichloroethene, total	Dichloroethene, trans-1,2-	Ethylbenzene	Isopropylbenzene (cumene)	Hexanone - 2	Methyl Acetate	Methyl cyclohexane	Methyl Tert-Butyl Ether	Methyl-2-Pentanone, 4- (methyl isobutyl ketone)	Methylene Chloride	Styrene	Tetrachloroethene	Tetrachloroethane, 1,1,2,2-	Toluene	Trichlorobenzene, 1,2,4-	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	Vinyl Chloride	Xylene (total)
G308A	RI																																									
G308A	May-00																												36													
G308A	Sep-00																																									
G308A	Mar-01																												3													
G308A	Sep-01																												11													
G308A	Mar-02																												4													
G308A	Sep-02																																									
G308A	Mar-03																												9													
G308A	Sep-03	2	2																										1400						3							
G308A	Dec-03																												3200													
G308A	Mar-04										11																		7000													
G308A	Jun-04																												260													
G308A	Sep-04																												10													
G308A	Dec-04																												36													
G308A	Mar-05																												17													
G308A	Jun-05																												15													
G308A	Sep-05																												5													
G308B	RI																																									
G308B	Jun-99																																									
G308B	May-00																																									
G308B	Sep-00																																									
G308B	Mar-01				2																								2													
G308B	Sep-01																																									
G308B	Mar-02																																									
G308B	Sep-02																																									
G308B	Mar-03																																									
G308B	Sep-03																																									
G308B	Dec-03																																									
G308B	Mar-04																																									
G308B	Jun-04																																									
G308B	Sep-04																																									
G308B	Dec-04																																									
G308B	Mar-05																																									
G308B	Jun-05																																									
G308B	Sep-05																																									
G308C	RI									110										2		56											34		2		4		260			
G308C	Jun-99		0.5						2	140								7		2	160														7		2		270		39	
G308C	May-00		0.8						3	100								6		2	120												36				2		230		27	
G308C	Sep-00								2	95								6			110		0.3										33				2		200		24	
G308C	Mar-01									96								5		1	110		2										35				1		230		18	
G308C	Sep-01								3	100								6		2	130												29						220		24	
G308C	Mar-02								2	100								6		2	130										2		36				2		230		22	
G308C	Sep-02								2	80										1	94										1		24				1		170		14	
G308C	Mar-03								2	100								6		2	110										2		28						230		18	
G308C	Sep-03								3	110								7		2	140										2		33				1		220		24	
G308C	Dec-03								3	100								6		2	130										2		32				1		200		19	
G308C	Mar-04									110								9		3	160										2		39				1		210		24	
G308C	Jun-04									140								11	1	3	190										4 U		48				2		290		35	
G308C	Sep-04								4	110								8		2	140										10U		35				1		250		22	
G308C	Dec-04								4	98								7		2	130										10U		34				1		180		22	
G308C	Mar-05								5	97								7		2	130										3U		29				1		180		26	
G308C	Jun-05								4	85								6		1	110										2		28				1		170		18	
G308C	Sep-05								2	87								7			120												28						170		21	

TABLE 7
VOC DATA COMPARISON
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SUPPLEMENTAL RI REPORT
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Results in ug/L (ppb)

Well	Sample Date	Acetone	Benzene	Bromodichloromethane	Butanone, 2- (methyl ethyl ketone)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (methyl chloride)	Cyclohexane	Dibromo-3- chloropropane,1,2-	Dichlorobenzene, 1,2-	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-	Dichlorodifluoro- methane	Dichloroethane, 1,1-	Dichloroethane, 1,2-	Dichloroethene, 1,1-	Dichloro ethene, cis-1,2-	Dichloroethene, total	Dichloroethene, trans-1,2-	Ethylbenzene	Isopropylbenzene (cumene)	Hexanone - 2	Methyl Acetate	Methyl cyclohexane	Methyl Tert-Butyl Ether	Methyl-2-Pentanone, 4- (methyl isobutyl ketone)	Methylene Chloride	Styrene	Tetrachloroethene	Tetrachloroethane, 1,1,2,2-	Toluene	Trichlorobenzene, 1,2,4-	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	Vinyl Chloride	Xylene (total)
G309A	RI																					1																	2			
G309A	May-00		0.7					2													8								10										4			
G309A	Sep-00																				44																		12		1	
G309A	Mar-01		0.5					1													3								61										2		0.5	
G309A	Sep-01																				27								30										9			
G309A	Mar-02																				16																		7			
G309A	Sep-02																				3								16										2			
G309A	Mar-03																												4													
G309A	Sep-03																				3								37										2			
G309A	Dec-03																												65													
G309A	Mar-04																				2																		10U			
G309A	Jun-04							1													3								6										3U			
G309A	Sep-04																				4								2										3			
G309A	Dec-04																				1								3										2			
G309A	Mar-05							1													1								6										1			
G309A	Jun-05																				1								4										1			
G309A	Sep-05																				4								31										3			
G309B	RI		2						2	6								3				150											2		3				15		27	4
G309B	Jun-99		0.4							1								4		1				1							0.4	3	1						24		40	
G309B	May-00								7									2			96												1						17		21	
G309B	Sep-00								9									3		0.6	100												2						19		28	
G309B	Mar-01		0.2						8	0.5								3		0.4	95												1						15		24	
G309B	Sep-01		0.3						8	3								4			100												2						28		29	
G309B	Mar-02								7									3			100												1						19		20	
G309B	Sep-02								6									2			81																		15		15	
G309B	Mar-03								5									2			70												1						18		17	
G309B	Sep-03								3									1			30																		8		8	
G309B	Dec-03								5									2			65												1						16		15	
G309B	Mar-04																	2			47																		10U		10	
G309B	Jun-04																	3			65												1						15U		17	
G309B	Sep-04								2									2			42																		11		11	
G309B	Dec-04								4									2			56																		12		12	
G309B	Mar-05								4									1			45												1						10		9	
G309B	Jun-05								3									2			47																		11		8	
G309B	Sep-05								4									2			57																		16		16	
G309C	RI									100												70											28						230			
G309C	Jun-99									120	0.8							3		2		120											29				2		240			0.4
G309C	May-00									120								4			140										5		34				1		260			
G309C	Sep-00									110								4		2	120												35				1		240			
G309C	Mar-01									130								4		3	140		1										31				2		250			
G309C	Sep-01									110								4			130												28						240			
G309C	Mar-02									130								5		2	170		0.8								2		29				1		240			
G309C	Sep-02									130								5		2	170										1		26				1		240			
G309C	Mar-03									140								5		2	170										1		29				1		250			
G309C	Sep-03									130								5		2	160		0.9								1		31				1		240			
G309C	Dec-03									140								5		2	160		1								1		31				1		210			
G309C	Mar-04									140								3		2	160										1		27				2		240			
G309C	Jun-04									170								8		3	230										3 U		41				2		300			
G309C	Sep-04									110								4		2	140		3										23						170			
G309C	Dec-04									120								5		2	180												29						200			
G309C	Mar-05									130								6		3	180		1										28				1		230			
G309C	Jun-05									64										1	88												15						110			
G309C	Sep-05									110								5		2	160												23						190			

TABLE 7
VOC DATA COMPARISON
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SUPPLEMENTAL RI REPORT
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Results in ug/L (ppb)

Well	Sample Date	Acetone	Benzene	Bromodichloromethane	Butanone, 2- (methyl ethyl ketone)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (methyl chloride)	Cyclohexane	Dibromo-3- chloropropane,1,2-	Dichlorobenzene, 1,2-	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-	Dichlorodifluoro- methane	Dichloroethane, 1,1-	Dichloroethane, 1,2-	Dichloroethene, 1,1-	Dichloro ethene, cis-1,2-	Dichloroethene, total	Dichloroethene, trans-1,2-	Ethylbenzene	Isopropylbenzene (cumene)	Hexanone - 2	Methyl Acetate	Methyl cyclohexane	Methyl Tert-Butyl Ether	Methyl-2-Pentanone, 4- (methyl isobutyl ketone)	Methylene Chloride	Styrene	Tetrachloroethene	Tetrachloroethane, 1,1,2,2-	Toluene	Trichlorobenzene, 1,2,4-	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	Vinyl Chloride	Xylene (total)
G310S	Dec-03																																									
G310S	Mar-04																																									
G310S	Jun-04																																									
G310S	Sep-04																							2																		9
G310S	Dec-04																																									
G310S	Mar-05																																									
G310S	Jun-05																																									
G310S	Sep-05																																									
G310A	May-00																	4			79								28				7						46		15	
G310A	Sep-00																	1			32												1						7		1	
G310A	Mar-01		0.6					0.6	4	8								4		0.7	88			3					34				5						34		20	4
G310A	Sep-01								0.8									0.9			25								15				1						6		2	
G310A	Mar-02								2	3								2			45								17				2						13		5	
G310A	Sep-02																				27								73				1						5		1	
G310A	Mar-03							1	4									6			93								59				7						48		17	
G310A	Sep-03																				6								37										2			
G310A	Dec-03																				23								6				2						7		4	
G310A	Mar-04																				8								13 U				1						10U			
G310A	Jun-04	7U						1		3								2			36												2						6U			
G310A	Sep-04							0.9	1	1								1			44								6				1			0.5			5		1	
G310A	Dec-04								3	6								3			61								21				3						20		3	
G310A	Mar-05							1	4	9								4			78								57				3						29		4	
G310A	Jun-05									2								1			31								11				2						9		1	
G310A	Sep-05																				27								4				1						5			
G310B	May-00									22								6			78		0.8										14						82		2	
G310B	Sep-00								2	22								5	0.7		82												14				1		82		8	
G310B	Mar-01		0.6					0.2	3	24								6		1	99								62				12				1		86		19	
G310B	Sep-01		0.6						4	21								6			110								68				14				0.8		93		24	
G310B	Mar-02								2	23									5	0.5	86								35				13				0.8		81		7	
G310B	Sep-02								3	24								6			120								92				13						95		18	
G310B	Mar-03								2	23								6			93								54				13						84		7	
G310B	Sep-03								3	23								8			100								72				14				0.7		85		14	
G310B	Dec-03								5	24								10			140								100				14						100		20	
G310B	Mar-04								4	24								10			130								75				13						87		16	
G310B	Jun-04		1					1	6	30								13	1	1	160								67				16						110		21	
G310B	Sep-04		0.8					0.8	3	21								8	0.7	0.6	100		0.6						33				11						72		7	
G310B	Dec-04								5	21								8			99								42				12						78		9	
G310B	Mar-05								3	12								5			58								41				6						43		5	
G310B	Jun-05							1	5	20								7			97								100				11						70		6	
G310B	Sep-05							1	5	18								6			83								110				10						66		4	

TABLE 7
VOC DATA COMPARISON
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SUPPLEMENTAL RI REPORT
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Results in ug/L (ppb)

Well	Sample Date	Acetone	Benzene	Bromodichloromethane	Butanone, 2- (methyl ethyl ketone)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (methyl chloride)	Cyclohexane	Dibromo-3- chloropropane,1,2-	Dichlorobenzene, 1,2-	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-	Dichlorodifluoro- methane	Dichloroethane, 1,1-	Dichloroethane, 1,2-	Dichloroethene, 1,1-	Dichloro ethene, cis-1,2-	Dichloroethene, total	Dichloroethene, trans-1,2-	Ethylbenzene	Isopropylbenzene (cumene)	Hexanone - 2	Methyl Acetate	Methyl cyclohexane	Methyl Tert-Butyl Ether	Methyl-2-Pentanone, 4- (methyl isobutyl ketone)	Methylene Chloride	Styrene	Tetrachloroethene	Tetrachloroethane, 1,1,2,2-	Toluene	Trichlorobenzene, 1,2,4-	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	Vinyl Chloride	Xylene (total)
G310C	May-00																				4								1		5								6			
G310C	Sep-00																				2												0.6						5			
G310C	Mar-01									3											2												0.7						6			
G310C	Sep-01									3											1												0.6						6			
G310C	Mar-02									3											0.8																		5			
G310C	Sep-02									4																													6			
G310C	Mar-03																				1																		10			
G310C	Sep-03									5											2																		11			
G310C	Dec-03																				2																		9			
G310C	Mar-04									4											2																		10U			
G310C	Jun-04									8											4			3									1		1				16			4
G310C	Sep-04									4											2												0.7						10			
G310C	Dec-04									5											2																		12			
G310C	Mar-05									6											2																		12			
G310C	Jun-05									6											3																		12			
G310C	Sep-05									5											2																		10			
G311A	May-00									0.8																																
G311A	Sep-00																																									
G311A	Mar-01																																									
G311A	Sep-01																							0.6																		0.7
G311A	Mar-02																																									
G311A	Sep-02																																									
G311A	Mar-03																																									
G311A	Sep-03																																									
G311A	Dec-03																																									
G311A	Mar-04																																									
G311A	Jun-04																																									
G311A	Sep-04																																									2
G311A	Dec-04																																									
G311A	Mar-05																																									
G311A	Jun-05																																									
G311A	Sep-05																																									
G311B	May-00																																									
G311B	Sep-00																																							0.5		
G311B	Mar-01																												5													
G311B	Sep-01																							0.5							0.7									0.3		0.5
G311B	Mar-02																																									
G311B	Sep-02																																									
G311B	Mar-03																																									
G311B	Sep-03																																									
G311B	Dec-03																																									
G311B	Mar-04																																									
G311B	Jun-04																																									
G311B	Sep-04																																									
G311B	Dec-04																																									
G311B	Mar-05																																									
G311B	Jun-05																																									
G311B	Sep-05																																									

TABLE 7
VOC DATA COMPARISON
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SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Results in ug/L (ppb)

Well	Sample Date	Acetone	Benzene	Bromodichloromethane	Butanone, 2- (methyl ethyl ketone)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (methyl chloride)	Cyclohexane	Dibromo-3- chloropropane,1,2-	Dichlorobenzene, 1,2-	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-	Dichlorodifluoro- methane	Dichloroethane, 1,1-	Dichloroethane, 1,2-	Dichloroethene, 1,1-	Dichloro ethene, cis-1,2-	Dichloroethene, total	Dichloroethene, trans-1,2-	Ethylbenzene	Isopropylbenzene (cumene)	Hexanone - 2	Methyl Acetate	Methyl cyclohexane	Methyl Tert-Butyl Ether	Methyl-2-Pentanone, 4- (methyl isobutyl ketone)	Methylene Chloride	Styrene	Tetrachloroethene	Tetrachloroethane, 1,1,2,2-	Toluene	Trichlorobenzene, 1,2,4-	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	Vinyl Chloride	Xylene (total)
G311C	May-00																																									
G311C	Sep-00																																									
G311C	Mar-01																																									
G311C	Sep-01																																									0.2
G311C	Mar-02																																									
G311C	Sep-02																												1													
G311C	Mar-03																																									
G311C	Sep-03																																									
G311C	Dec-03																																									
G311C	Mar-04																																									
G311C	Jun-04																																									
G311C	Sep-04																																									
G311C	Dec-04																																									
G311C	Mar-05																																									
G311C	Jun-05																																									
G311C	Sep-05																																									
G312A	Dec-03																																					5				
G312A	Mar-04																																					10U				
G312A	Jun-04																																					12U				
G312A	Sep-04																																					5				
G312A	Dec-04																																		1			12				
G312A	Mar-05																																					8				
G312A	Jun-05																				2																	18				
G312A	Sep-05																																					7				
G312B	Dec-03																				2					2												14				
G312B	Mar-04																																					10U				
G312B	Jun-04																																					3U				
G312B	Sep-04																																1									
G312B	Dec-04																																2									
G312B	Mar-05																				1												1					1				
G312B	Jun-05																																2					2				
G312B	Sep-05																3																1					2				
G312C	Dec-03								4																																	
G312C	Mar-04								5									2																								
G312C	Jun-04																																									
G312C	Sep-04								4																																	
G312C	Dec-04								4																																	
G312C	Mar-05								5																																	
G312C	Jun-05								5																																	
G312C	Sep-05								5																																	
G313A	Dec-03		1					3	1																																	
G313A	Mar-04							2																																		
G313A	Jun-04							3																																		
G313A	Sep-04		1					6	1					0.5		0.7																				14						
G313A	Dec-04		1					6																																		
G313A	Mar-05							2																																		
G313A	Jun-05							1																																		
G313A	Sep-05							5																											6							

TABLE 7
VOC DATA COMPARISON
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SUPPLEMENTAL RI REPORT
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Results in ug/L (ppb)

Well	Sample Date	Acetone	Benzene	Bromodichloromethane	Butanone, 2- (methyl ethyl ketone)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (methyl chloride)	Cyclohexane	Dibromo-3- chloropropane,1,2-	Dichlorobenzene, 1,2-	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-	Dichlorodifluoro- methane	Dichloroethane, 1,1-	Dichloroethane, 1,2-	Dichloroethene, 1,1-	Dichloro ethene, cis-1,2-	Dichloroethene, total	Dichloroethene, trans-1,2-	Ethylbenzene	Isopropylbenzene (cumene)	Hexanone - 2	Methyl Acetate	Methyl cyclohexane	Methyl Tert-Butyl Ether	Methyl-2-Pentanone, 4- (methyl isobutyl ketone)	Methylene Chloride	Styrene	Tetrachloroethene	Tetrachloroethane, 1,1,2,2-	Toluene	Trichlorobenzene, 1,2,4-	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	Vinyl Chloride	Xylene (total)
GZ17M	RI																																									
GZ17M	Sep-03																																									
GZ17M	Dec-03																																									
GZ17M	Mar- 04																																									
GZ17M	Jun-04																																									
GZ17M	Sep-04																																									
GZ17M	Dec-04																																									
GZ17M	Mar-05																																									
GZ17M	Jun-05																																									
G17M	Sep-05																																									
GZ17D	RI																																									
GZ17D	Sep-03																																									
GZ17D	Dec-03																																									
GZ17D	Mar-04																																									
GZ17D	Jun-04																																									
GZ17D	Sep-04																																									
GZ17D	Dec-04																																									
GZ17D	Mar-05																																									
GZ17D	Jun-05																																									
G17D	Sep-05																																									
G313C	Dec-03																																									
G313 C	Mar -04																																									
G313C	Jun-04																																									
G313C	Sep-04																																									
G313C	Dec-04																																									
G313C	Mar-05																																									
G313C	Jun-05																																									
G313C	Sep-05																																									
G314A	Dec-03																				0.9																			7		
G314A	Mar-04																																							3		
G314A	Jun-04																																									
G314A	Sep-04																																							1		
G314A	Dec-04																																							2		
G314A	Mar-05																																									
G314A	Jun-05																																									
G314A	Sep-05																																							2		
G314B	Dec-03																																									
G314B	Mar-04																																									
G314B	Jun-04																																									
G314B	Sep-04																																									
G314B	Dec-04																																									
G314B	Mar-05																																									
G314B	Jun-05																																									
G314B	Sep-05																																									

TABLE 7
VOC DATA COMPARISON
GROUNDWATER
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Results in ug/L (ppb)

Well	Sample Date	Acetone	Benzene	Bromodichloromethane	Butanone, 2- (methyl ethyl ketone)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (methyl chloride)	Cyclohexane	Dibromo-3- chloropropane,1,2-	Dichlorobenzene, 1,2-	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-	Dichlorodifluoro- methane	Dichloroethane, 1,1-	Dichloroethane, 1,2-	Dichloroethene, 1,1-	Dichloro ethene, cis-1,2-	Dichloroethene, total	Dichloroethene, trans-1,2-	Ethylbenzene	Isopropylbenzene (cumene)	Hexanone - 2	Methyl Acetate	Methyl cyclohexane	Methyl Tert-Butyl Ether	Methyl-2-Pentanone, 4- (methyl isobutyl ketone)	Methylene Chloride	Styrene	Tetrachloroethene	Tetrachloroethane, 1,1,2,2-	Toluene	Trichlorobenzene, 1,2,4-	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	Vinyl Chloride	Xylene (total)
G314C	Dec-03																																									
G314C	Mar-04																																									
G314C	Jun-04																																									
G314C	Sep-04																																									
G314C	Dec-04																																									
G314C	Mar-05																																									
G314C	Jun-05																																									
G314C	Sep-05																																									
G315A	Dec-03																	1			2																	1			
G315A	Mar-04																	2			4																				
G315A	Jun-04																																					2U			
G315A	Sep-04																																					1			
G315A	Dec-04																																									
G315A	Mar-05																				1																	1			
G315A	Jun-05																																					1			
G315A	Sep-05																																									
G315B	Dec-03								3									6			53								170				3					26		4	
G315B	Mar-04								2	4								7			57								220				3					32		3	
G315B	Jun-04								6	3								9	1		66								270				4					40		5	
G315B	Sep-04								1	5								4			53								250				4					42		1	
G315B	Dec-04								5	3								6	0.5		67								200				4					44		3	
G315B	Mar-05								6	2								7	1		58								250				3					36		4	
G315B	Jun-05																	6			42								160				2					28		2	
G315B	Sep-05								2	5								4			40								100				4					34			
G315C	Dec-03		3					3	20	15								16	2		170								160				12					93		18	
G315C	Mar-04							3	36	25								25	3	2	190								200				19					120		22	
G315C	Jun-04		6					5	57	27								34	5	2	280		1						160		2		18					170		36	
G315C	Sep-04		3					4	23	57								20	2	2	400		2						70				29				1	300		31	
G315C	Dec-04		3					4	30	32								16	2	2	280								180				20					160		28	
G315C	Mar-05		3					5	26	30								14	2	2	350		2						170				16				1	200		30	
G315C	Jun-05		2					3	13	19								9			210								87				13					130		14	
G315C	Sep-05		1					3	9	31										2	260								85				18					160		10	
G316A	Dec-03																3																									
G316A	Mar-04																4																									
G316A	Jun-04																5																									
G316A	Sep-04																																									
G316A	Dec-04																2																									
G316A	Mar-05																																									
G316A	Jun-05																																									
G316A	Sep-05																																									
G317A	Dec-03																																									
G317A	Mar-04																																									
G317A	Jun-04																																									
G317A	Sep-04																																									
G317A	Dec-04																																									
G317A	Mar-05																																									
G317A	Jun-05																																									
G317A	Sep-05																																									

TABLE 7
VOC DATA COMPARISON
GROUNDWATER
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Results in ug/L (ppb)

Well	Sample Date	Acetone	Benzene	Bromodichloromethane	Butanone, 2- (methyl ethyl ketone)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (methyl chloride)	Cyclohexane	Dibromo-3- chloropropane,1,2-	Dichlorobenzene, 1,2-	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-	Dichlorodifluoro- methane	Dichloroethane, 1,1-	Dichloroethane, 1,2-	Dichloroethene, 1,1-	Dichloro ethene, cis-1,2-	Dichloroethene, total	Dichloroethene, trans-1,2-	Ethylbenzene	Isopropylbenzene (cumene)	Hexanone - 2	Methyl Acetate	Methyl cyclohexane	Methyl Tert-Butyl Ether	Methyl-2-Pentanone, 4- (methyl isobutyl ketone)	Methylene Chloride	Styrene	Tetrachloroethene	Tetrachloroethane, 1,1,2,2-	Toluene	Trichlorobenzene, 1,2,4-	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	Vinyl Chloride	Xylene (total)
G317B	Dec-03																																									
G317B	Mar-04																																									
G317B	Jun-04																																									
G317B	Sep-04																																									
G317B	Dec-04																																									
G317B	Mar-05																																									
G317B	Jun-05																																									
G317B	Sep-05	1																																								
G317C	Dec-03									13											5												3						26			
G317C	Mar-04									5											2																		10U			
G317C	Jun-04									12											5												2						21			
G317C	Sep-04									10											3												2						20			
G317C	Dec-04									13											4												3						27			
G317C	Mar-05									4											1																		7			
G317C	Jun-05									4											2																		8			
G317C	Sep-05									2											0.9																		3			
G318A	Dec-03																																									
G318A	Mar-04																																									
G318A	Jun-04																																									
G318A	Sep-04																																			1						
G318A	Dec-04																																									
G318A	Mar-05																																									
G318A	Jun-05																																									
G318A	Sep-05																																									
G318B	Dec-03																																									
G318B	Mar-04																																									
G318B	Jun-04																																									
G318B	Sep-04																																									
G318B	Dec-04																																									
G318B	Mar-05																																									
G318B	Jun-05																																									
G318B	Sep-05																																									
G318C	Dec-03																																									
G318C	Mar-04																																									
G318C	Jun-04																																									
G318C	Sep-04																																									
G318C	Dec-04																																									
G318C	Mar-05										1																															
G318C	Jun-05																																									
G318C	Sep-05																																									

TABLE 7
VOC DATA COMPARISON
GROUNDWATER
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Results in ug/L (ppb)

Well	Sample Date	Acetone	Benzene	Bromodichloromethane	Butanone, 2- (methyl ethyl ketone)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (methyl chloride)	Cyclohexane	Dibromo-3- chloropropane,1,2-	Dichlorobenzene, 1,2-	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-	Dichlorodifluoro- methane	Dichloroethane, 1,1-	Dichloroethane, 1,2-	Dichloroethene, 1,1-	Dichloro ethene, cis-1,2-	Dichloroethene, total	Dichloroethene, trans-1,2-	Ethylbenzene	Isopropylbenzene (cumene)	Hexanone - 2	Methyl Acetate	Methyl cyclohexane	Methyl Tert-Butyl Ether	Methyl-2-Pentanone, 4- (methyl isobutyl ketone)	Methylene Chloride	Styrene	Tetrachloroethene	Tetrachloroethane, 1,1,2,2-	Toluene	Trichlorobenzene, 1,2,4-	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	Vinyl Chloride	Xylene (total)
GZ1	RI																					3																				
GZ1	Jun-99																													0.9					0.4							0.3
GZ1	May-00																																									
GZ1	Sep-00																																									
GZ1	Mar-01																																									
GZ1	Sep-01																																									
GZ1	Mar-02																																									
GZ1	Sep-02																																									
GZ1	Mar-03																												3													
GZ1	Sep-03																												3													
GZ1	Dec-03																												2													
GZ1	Mar-04																												10 U													
GZ1	Jun-04																																									
GZ1	Sep-04																																									
GZ1	Dec-04																																									
GZ1	Mar-05																																									
GZ1	Jun-05																																									
GZ1	Sep-05																																									
GZ3	RI																																									
GZ3	May-00																												9													
GZ3	Sep-00																																									
GZ3	Mar-01																																									
GZ3	Sep-01																																									
GZ3	Mar-02																																									
GZ3	Sep-02																																									
GZ3	Mar-03																																									
GZ3	Sep-03																																									
GZ3	Dec-03																																									
GZ3	Mar-04																																									
GZ3	Jun-04																																									
GZ3	Sep-04																																									
GZ3	Dec-04																																									
GZ3	Mar-05																																									
GZ3	Jun-05																																									
GZ3	Sep-05																																									
GZ5S	RI																																1						2			
GZ5S	Sep-03																				1								17										1			
GZ5S	Dec-03																												14													
GZ5S	Mar-04																												10 U													
GZ5S	Jun-04																												2													
GZ5S	Sep-04																												2													
GZ5S	Dec-04																												1													
GZ5S	Mar-05																												1													
GZ5S	Jun-05																																									
GZ5S	Sep-05																												2													

TABLE 7
VOC DATA COMPARISON
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SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Results in ug/L (ppb)

Well	Sample Date	Acetone	Benzene	Bromodichloromethane	Butanone, 2- (methyl ethyl ketone)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (methyl chloride)	Cyclohexane	Dibromo-3- chloropropane,1,2-	Dichlorobenzene, 1,2-	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-	Dichlorodifluoro- methane	Dichloroethane, 1,1-	Dichloroethane, 1,2-	Dichloroethene, 1,1-	Dichloro ethene, cis-1,2-	Dichloroethene, total	Dichloroethene, trans-1,2-	Ethylbenzene	Isopropylbenzene (cumene)	Hexanone - 2	Methyl Acetate	Methyl cyclohexane	Methyl Tert-Butyl Ether	Methyl-2-Pentanone, 4- (methyl isobutyl ketone)	Methylene Chloride	Styrene	Tetrachloroethene	Tetrachloroethane, 1,1,2,2-	Toluene	Trichlorobenzene, 1,2,4-	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	Vinyl Chloride	Xylene (total)
GZ5M	RI									86								6				540									16		62						580		94	
GZ5M	Sep-01	490						9													820												9						550		98	
GZ5M	Mar-02		1					11	2							1				1	990		1										6						280		160	
GZ5M	Sep-02		2					17	6									1		1	520												4						96		120	
GZ5M	Mar-03		3					13	6							2		2			200												10						83		54	
GZ5M	Sep-03		3					19	8					1		3		2		1	440		1										7						99		98	
GZ5M	Dec-03		2					18	6					1		3		1		2	760		2										6						190		180	
GZ5M	Mar-04		2					18						2		3		2		2	1100		3										7						270		180	
GZ5M	Jun-04		2					24						2		3				2	940		2										9						230		160	
GZ5M	Sep-04							14	4					0.7		1				3	790		3										8						900		44	
GZ5M	Dec-04		1					18	5					1		2				3	840		2										8						710		120	
GZ5M	Mar-05		1					15	5					1		1		1		2	570		2										5						310		71	
GZ5M	Jun-05							16													600												5						260		44	
GZ5M	Sep-05		1					13	4	0.9				1		2				4	780		1										6						900		25	
SDW-2	Aug-04	170			1.7																																					
SDW-2	Sep-04																																									
SDW-2	Dec-04																																									
SDW-2	Mar-05																																									
SDW-2	Jun-05																																									
SDW-2	Sep-05																																		0.9							
GZ12M	RI							6																																5		
GZ12M	Jun-99																																					1				
GZ12M	May-00																				1									4												
GZ12M	Sep-00																				4																					
GZ12M	Mar-01							0.4													3																			0.4		
GZ12M	Sep-01							1													1											10						2	0.5			
GZ12M	Mar-02																																									
GZ12M	Sep-02																							3											3							3
GZ12M	Mar-03																				25																		2			
GZ12M	Sep-03							25						3	5	4					120																		48		4	
GZ12M	Dec-03							29						4	7	7					55																		24		4	
GZ12M	Mar-04		2					69						14	28	29					53																		12U		13	
GZ12M	Jun-04		2					46						12	24	23					28																		5U		6	
GZ12M	Sep-04							12						3	8	8					3																		1			
GZ12M	Dec-04							3						1	3	3																										
GZ12M	Mar-05							26						5	12	12					8																			3		
GZ12M	Jun-05							6							3	3					2																					
GZ12M	Sep-05							3						1	3	3																										

TABLE 7
VOC DATA COMPARISON
GROUNDWATER
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Results in ug/L (ppb)

Well	Sample Date	Acetone	Benzene	Bromodichloromethane	Butanone, 2- (methyl ethyl ketone)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (methyl chloride)	Cyclohexane	Dibromo-3- chloropropane,1,2-	Dichlorobenzene, 1,2-	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-	Dichlorodifluoro- methane	Dichloroethane, 1,1-	Dichloroethane, 1,2-	Dichloroethene, 1,1-	Dichloro ethene, cis-1,2-	Dichloroethene, total	Dichloroethene, trans-1,2-	Ethylbenzene	Isopropylbenzene (cumene)	Hexanone - 2	Methyl Acetate	Methyl cyclohexane	Methyl Tert-Butyl Ether	Methyl-2-Pentanone, 4- (methyl isobutyl ketone)	Methylene Chloride	Styrene	Tetrachloroethene	Tetrachloroethane, 1,1,2,2-	Toluene	Trichlorobenzene, 1,2,4-	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	Vinyl Chloride	Xylene (total)
GZ12D	RI	2																				2																				
GZ12D	Jun-99				3					0.7												6											0.5						2			
GZ12D	May-00									0.6											6																					
GZ12D	Sep-00									0.5											5																					
GZ12D	Mar-01									0.8											7																					
GZ12D	Sep-01									0.6											6												0.2						0.4	0.9		
GZ12D	Mar-02									0.7											6																					
GZ12D	Sep-02																				5																					
GZ12D	Mar-03																				5																					
GZ12D	Sep-03																				6																					
GZ12D	Dec-03																				4																					
GZ12D	Mar-04																				6																					
GZ12D	Jun-04																				7																					
GZ12D	Sep-04																				3																					
GZ12D	Dec-04																				3																					
GZ212D	Mar-05																				2																					
GZ12D	Jun-05																				3																					
GZ12D	Sep-05																				3																					
GZ13S	RI																																						2			
GZ13S	Sep-03																																									
GZ13S	Dec-03																																									
GZ13S	Mar-04																																									
GZ13S	Jun-04																																									
GZ13S	Sep-04																																									
GZ13S	Dec-04																																									
GZ13S	Mar-05																																									
GZ13S	Jun-05																																		2							
GZ13S	Sep-05																																									
GZ13M	RI																																						2			
GZ13M	Sep-03																																									
GZ13M	Dec-03																																									
GZ13M	Mar-04																																									
GZ13M	Jun-04																																									
GZ13M	Sep-04																																									
GZ13M	Dec-04																																									
GZ13M	Mar-05																																									
GZ13M	Jun-05																																									
GZ13M	Sep-05																																									
GZ13D	RI																																									
GZ13D	Sep-03																																									
GZ13D	Dec-03																																									
GZ13D	Mar-04																																									
GZ13D	Jun-04																														1											
GZ13D	Sep-04																																									
GZ13D	Dec-04																																									
GZ13D	Mar-05																																									
GZ13D	Jun-05																																									
GZ13D	Sep-05																																									

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VOC DATA COMPARISON
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Well	Sample Date	Acetone	Benzene	Bromodichloromethane	Butanone, 2- (methyl ethyl ketone)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (methyl chloride)	Cyclohexane	Dibromo-3- chloropropane,1,2-	Dichlorobenzene, 1,2-	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-	Dichlorodifluoro- methane	Dichloroethane, 1,1-	Dichloroethane, 1,2-	Dichloroethene, 1,1-	Dichloro ethene, cis-1,2-	Dichloroethene, total	Dichloroethene, trans-1,2-	Ethylbenzene	Isopropylbenzene (cumene)	Hexanone - 2	Methyl Acetate	Methyl cyclohexane	Methyl Tert-Butyl Ether	Methyl-2-Pentanone, 4- (methyl isobutyl ketone)	Methylene Chloride	Styrene	Tetrachloroethene	Tetrachloroethane, 1,1,2,2-	Toluene	Trichlorobenzene, 1,2,4-	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	Vinyl Chloride	Xylene (total)
GZ14S	RI																																									
GZ14S	Sep-03																												1													
GZ14S	Dec-03																																									
GZ14S	Mar-04																																									
GZ14S	Jun-04																																									
GZ14S	Sep-04																																									
GZ14S	Dec-04																																									
GZ14S	Mar-05																																									
GZ14S	Jun-05																																									
GZ14S	Sep-05																												6													
GZ14M	RI																																									
GZ14M	Jun-99				2																																					
GZ14M	May-00																																									
GZ14M	Sep-00																																									
GZ14M	Mar-01																																									
GZ14M	Sep-01																																									
GZ14M	Mar-02																																									
GZ14M	Sep-02										1																															
GZ14M	Mar-03																																									
GZ14M	Sep-03																																									
GZ14M	Dec-03																																									
GZ14M	Mar-04																																									
GZ14M	Jun-04																																									
GZ14M	Sep-04																																									
GZ14M	Dec-04																																									
GZ14M	Mar-05																																									
GZ14M	Jun-05																																									
GZ14M	Sep-05																																									
GZ14D	RI	15								18												8											22				2		49			
GZ14D	Jun-99								0.7	16								2		0.6		36											22				0.8		83		2	
GZ14D	May-00									21								2			47												26				1		91		3	
GZ14D	Sep-00								0.9	22								2		1	54		1										24						96	0.7	4	
GZ14D	Mar-01									29								2		1	67		1										24				7		120		4	
GZ14D	Sep-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GZ14D	Mar-02									42								3		1	89												23						130		6	
GZ14D	Sep-02									15											5												9				2		36			
GZ14D	Mar-03									45								3		1	97												23						130		5	
GZ14D	Sep-03									47								3		1	100												27						140		7	
GZ14D	Dec-03								1	43								3		1	100												28						150		6	
GZ14D	Mar-04									34								3			69												24						110		4	
GZ14D	Jun-04									42								4		1	91								3				31						140		7	
GZ14D	Sep-04									23								2			54								1				19						85		4	
GZ14D	Dec-04									26								3			65								3				25						100		5	
GZ14D	Mar-05								1	22								2		1	57								2				21						92		4	
GZ14D	Jun-05									17								2			50								2				21						82		3	
GZ14D	Sep-05									13											40								2				17						57		3	

TABLE 7
VOC DATA COMPARISON
GROUNDWATER
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Results in ug/L (ppb)

Well	Sample Date	Acetone	Benzene	Bromodichloromethane	Butanone, 2- (methyl ethyl ketone)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (methyl chloride)	Cyclohexane	Dibromo-3- chloropropane,1,2-	Dichlorobenzene, 1,2-	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-	Dichlorodifluoro- methane	Dichloroethane, 1,1-	Dichloroethane, 1,2-	Dichloroethene, 1,1-	Dichloro ethene, cis-1,2-	Dichloroethene, total	Dichloroethene, trans-1,2-	Ethylbenzene	Isopropylbenzene (cumene)	Hexanone - 2	Methyl Acetate	Methyl cyclohexane	Methyl Tert-Butyl Ether	Methyl-2-Pentanone, 4- (methyl isobutyl ketone)	Methylene Chloride	Styrene	Tetrachloroethene	Tetrachloroethane, 1,1,2,2-	Toluene	Trichlorobenzene, 1,2,4-	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	Vinyl Chloride	Xylene (total)
SDW-1	Aug-04	6.3			3.2																																					
SDW-1	Sep-04																																									
SDW-1	Dec-04																																									
SDW-1	Mar-05																																									
SDW-1	Jun-05																																									
SDW-1	Sep-05																																									
SDW-3	Aug-04	9			1.6																																					
SDW-3	Sep-04																																									
SDW-3	Dec-04																																								1	
SDW-3	Mar-05																																	2								
SDW-3	Jun-05																				1													1							1	
SDW-3	Sep-05																				3																				5	
SDW-4	Aug-04	3.4			1.5								1	3.7												1			1												3.8	
SDW-4	Sep-04							6						2	6	5																				2					2	2
SDW-4	Dec-04																																						1			
SDW-4	Mar-05																																									
SDW-4	Jun-05																																									
SDW-4	Sep-05							4																					2													
SDW-5	Aug-04	2.6			1																																					
SDW-5	Sep-04																																									
SDW-5	Dec-04																																									
SDW-5	Mar-05			1						1																																
SDW-5	Jun-05									1																																
SDW-5	Sep-05																																									
SDW-6	Sep-04																																									
SDW-6	Dec-04																																									
SDW-6	Mar-05																																									
SDW-6	Jun-05																																									
SDW-6	Sep-05																												1													
SDW-7	Aug-04	2.9			1.2																								1.6													
SDW-7	Sep-04																												2													
SDW-7	Dec-04																																									
SDW-7	Mar-05																																									
SDW-7	Jun-05																												1													
SDW-7	Sep-05																												3													
SDW-8	Aug-04	2.8			1.2																																					
SDW-8	Sep-04																																									
SDW-8	Dec-04																																									
SDW-8	Mar-05																																									
SDW-8	Jun-05																																									
SDW-8	Sep-05																																									

TABLE 7
VOC DATA COMPARISON
GROUNDWATER
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Results in ug/L (ppb)

Well	Sample Date	Acetone	Benzene	Bromodichloromethane	Butanone, 2- (methyl ethyl ketone)	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane (methyl chloride)	Cyclohexane	Dibromo-3- chloropropane,1,2-	Dichlorobenzene, 1,2-	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-	Dichlorodifluoro- methane	Dichloroethane, 1,1-	Dichloroethane, 1,2-	Dichloroethene, 1,1-	Dichloro ethene, cis-1,2-	Dichloroethene, total	Dichloroethene, trans-1,2-	Ethylbenzene	Isopropylbenzene (cumene)	Hexanone - 2	Methyl Acetate	Methyl cyclohexane	Methyl Tert-Butyl Ether	Methyl-2-Pentanone, 4- (methyl isobutyl ketone)	Methylene Chloride	Styrene	Tetrachloroethene	Tetrachloroethane, 1,1,2,2-	Toluene	Trichlorobenzene, 1,2,4-	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	Vinyl Chloride	Xylene (total)
SDW-9A	Sep-04																												1													
SDW-9A	Dec-04																												2													
SDW-9A	Mar-05																												8													
SDW-9A	Jun-05																												4													
SDW-9A	Sep-05																												3													
SDW-9B	Sep-04																												41													
SDW-9B	Dec-04																												24													
SDW-9B	Mar-05																												12													
SDW-9B	Jun-05																												15													
SDW-9B	Sep-05																												17													
SDW-9C	Sep-04							24						4	8	8					30																		11		3	
SDW-9C	Dec-04							6						2	3	3					10																		6		1	
SDW-9C	Mar-05							4						1	1	1					5																		3		2	
SDW-9C	Jun-05							4							2	1					3																		2		1	
SDW-9C	Sep-05							8						2	3	3					3																		1			

NOTES:
Compounds not listed have not been detected in any sample during the SGI
No value indicates compound not detected in that sample.
NA = not analyzed -sample spiked at laboratory by mistake.
U = Based on associated field blank contamination the result was qualified as < the report value (U).
RI values are the maximum concentration detected during the RI.

TABLE 8
TCE EQUIVALENT TIME COMPARISON - PLUME WELLS
SUPPLEMENTAL RI REPORT
Old SouthingtonLandfill Superfund Site

Results in ug/L TCE Equivalent

Sample Date	G304A	G308C	G309B	G309C	G310A	G310B	G310C	G315B	G315C	GZ5M	GZ14D	G302A	GZ12M
Sep-92	41837	366	277	347	NA	NA	NA	NA	NA	1559	77	0	11
May-00	1838	481	182	477	190	204	11	NA	NA	NA	182	8	1
Sep-00	2582	426	239	433	53	221	8	NA	NA	NA	199	44	5
Mar-01	9015	449	173	470	200	271	9	NA	NA	NA	241	253	5
Sep-01	7645	472	247	438	45	304	8	NA	NA	1875	NA	128	11
Mar-02	19100	484	153	497	86	223	6	NA	NA	1966	283	212	1
Sep-02	7592	347	156	494	44	306	6	NA	NA	1058	50	66	1
Mar-03	1090	442	149	506	215	235	11	NA	NA	476	292	37	36
Sep-03	2333	489	65	485	10	261	14	NA	NA	910	313	26	219
Dec-03	2652	444	136	455	48	343	12	109	371	1609	322	8	107
Mar-04	870	512	95	481	22	307	13	118	441	2152	231	15	108
Jun-04	3312	663	140	648	56	385	22	143	642	1853	304	6	56
Sep-04	27174	516	91	384	68	232	13	120	936	2077	181	38	5
Dec-04	8808	432	113	470	111	241	15	144	617	2114	218	97	1
Mar-05	5373	436	91	501	145	137	15	125	755	1241	196	84	17
Jun-05	5513	380	92	242	55	223	15	91	454	1169	173	17	3
Sep-05	18268	399	127	428	42	195	13	91	550	2021	131	63	1

Notes:

NA = Not Analyzed

TABLE 9
TCE/TCA EQUIVALENT CONCENTRATIONS
SEPTEMBER 2005
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Well	Total TCE Equivalent Concentration (ug/L)	Total TCA Equivalent Concentration (ug/L)
G302A	63	4
G302B	0	0
G302C	0	0
G303A	0	0
G303B	0	0
G303C	0	0
G304A	18268	406
G304B	0	0
G304C	7	0
G308A	0	0
G308B	0	0
G308C	399	14
G309A	8	0
G309B	127	11
G309C	428	7
G310S	0	0
G310A	42	0
G310B	195	18
G310C	13	0
G311A	0	0
G311B	0	0
G311C	0	0
G312A	7	0
G312B	3	0
G312C	0	10
G313A	0	2
GZ17M	0	0
GZ17D	0	0
G313C	0	0
G314A	4	0
G314B	0	0
G314C	0	0

Well	Total TCE Equivalent Concentration (ug/L)	Total TCA Equivalent Concentration (ug/L)
G315A	0	0
G315B	91	10
G315C	550	19
G316A	0	0
G317A	0	0
G317B	0	0
G317C	4	0
G318A	0	0
G318B	0	0
G318C	0	0
GZ1	0	0
GZ3	0	0
GZ5S	0	0
GZ5M	2021	8
SDW-2	0	0
GZ12M	5	0
GZ12D	4	0
GZ13S	0	0
GZ13M	0	0
GZ13D	0	0
GZ14S	0	0
GZ14M	0	0
GZ14D	131	0
SDW-1	0	0
SDW-3	15	0
SDW-4	0	0
SDW-5	0	0
SDW-6	0	0
SDW-7	0	0
SDW-8	0	0
SDW-9A	0	0
SDW-9B	0	0
SDW-9C	5	0

TABLE 10
SVOC DATA COMPARISON
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

SAMPLE ID:	G301A	G301A	G302A	G302A	G302A	G302B	G302B	G302B	G302C	G302C	G302C	G303B	G303B	G303B	G303C	G303C	G303C	G304A	G304A	G304A
DATE COLLECTED:	RI (Sept - 92	May-00	RI (Sept-92)	May-00	Sep-00	RI (Sept-92)	May-00	Sep-00	RI (Sept-92)	May-00	Sep-00	RI (Sept-92)	May-00	Sep-00	RI (Sept-92)	May-00	Sep-00	RI (Sept-92)	May-00	Sep-00
Acenaphthene	0.7																			
Acetophenone																			18	17
Biphenyl, 1,1'-																			0.9	0.9
bis(2-Ethylhexyl)phthalate																		700		
Butylbenzylphthalate																		130	7	
Carbazole																			0.5	0.6
Caprolactum														2						
Dichlorobenzene,1,2-	5																			
Dichlorobenzene,1,3-	12																			
Dichlorobenzene,1,4-	20																			
Diethylphthalate														1	0.7		0.7	170		51
Dimethyl Phthalate																				
Dimethylphenol, 2,4-																			15	19
Di-n-butylphthalate																		77		10
Di-n-octylphthalate																		19		
Methylnaphthalene, 2-	1																	20	16	15
Methylphenol, 2-																		47	15	20
Methylphenol, 4-																		83	31	52
Naphthalene	14																	83	150	160
N-Nitrosodi-n-propylamine																				
N-Nitrosodiphenylamine	2	0.8																	1	
Phenanthrene																			1	0.8
Phenol																0.6			11	
Pyrene																				
Trichlorobenzene, 1,2,4-	2																			

Compounds not listed were not detected in any sample.
No value indicates compound not detected in that sample.

TABLE 10
SVOC DATA COMPARISON
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

SAMPLE ID:	G304B	G304B	G304B	G304C	G304C	G304C	G305A	G305A	G307A	G307A	G310S	G310S	G310S	G310S	G310S	G310S	G310S	G310S	G310A	G310A	G310A	G310A	G310A	G310A	G310A	G310A
DATE COLLECTED:	RI (Sept-92)	May-00	Sep-00	RI (Sept-92)	May-00	Sep-00	RI (Sept-92)	May-00	RI (Sept-92)	May-00	Dec-03	Mar-04	June-04	Sep-04	Dec-04	Mar-05	June-05	Sep-05	Dec-03	Mar-04	June-04	Sep-04	Dec-04	Mar-05	June-05	Sep-05
Acenaphthene																										
Acetophenone								69																		
Biphenyl, 1,1'-																										
bis(2-Ethylhexyl)phthalate	49					52	30								3											
Butylbenzylphthalate	5						16																			
Carbazole																										
Caprolactum			3																							
Dichlorobenzene,1,2-						2																				
Dichlorobenzene,1,3-																										
Dichlorobenzene,1,4-																										
Diethylphthalate	3		3			2	950	150																		
Dimethyl Phthalate							16																			
Dimethylphenol, 2,4-							20	24																		
Di-n-butylphthalate	48			73			16		0.5																	
Di-n-octylphthalate																										
Methylnaphthalene, 2-							11	10																		
Methylphenol, 2-	2						31	51																		
Methylphenol, 4-							110	270																		
Naphthalene	2						98	100																		
N-Nitrosodi-n-propylamine																										
N-Nitrosodiphenylamine	4			10																						
Phenanthrene																										
Phenol							32	48																		
Pyrene																										
Trichlorobenzene, 1,2,4-																										

Compounds not listed were not detected in any sample.
No value indicates compound not detected in that sample.

TABLE 10
SVOC DATA COMPARISON
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

SAMPLE ID:	G310B	G310B	G310B	G310B	G310B	G310B	G310B	G310B	G310C	G310C	G310C	G310C	G310C	G310C	G310C	G310C	G311A	G311A	G311A	G311A	G311A	G311A	G311A	G311A
DATE COLLECTED:	Dec-03	Mar-04	June-04	Sep-04	Dec-04	Mar-05	June-05	Sep-05	Dec-03	Mar-04	June-04	Sep-04	Dec-04	Mar-05	June-05	Sep-05	Dec-03	Mar-04	June-04	Sep-04	Dec-04	Mar-05	June-05	Sep-05
Acenaphthene																								
Acetophenone																								
Biphenyl, 1,1'-																								
bis(2-Ethylhexyl)phthalate					2	1															1			
Butylbenzylphthalate															0.5									
Carbazole																								
Caprolactum																								
Dichlorobenzene,1,2-																								
Dichlorobenzene,1,3-																								
Dichlorobenzene,1,4-																								
Diethylphthalate																								
Dimethyl Phthalate																								
Dimethylphenol, 2,4-																								
Di-n-butylphthalate																	4							
Di-n-octylphthalate																								
Methylnaphthalene, 2-																								
Methylphenol, 2-																								
Methylphenol, 4-																								
Naphthalene					1																			
N-Nitrosodi-n-propylamine		3																						
N-Nitrosodiphenylamine																								
Phenanthrene																								
Phenol																								
Pyrene																								
Trichlorobenzene, 1,2,4-																								

Compounds not listed were not detected in any sample.
No value indicates compound not detected in that sample.

TABLE 10
SVOC DATA COMPARISON
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

SAMPLE ID:	G311B	G311B	G311B	G311B	G311B	G311B	G311B	G311B	G311C	G311C	G311C	G311C	G311C	G311C	G311C	G311C	G313A	G313A	G313A	G313A	G313A	G313A	G313A	G313A
DATE COLLECTED:	Dec-03	Mar-04	June-04	Sep-04	Dec-04	Mar-05	June-05	Sep-05	Dec-03	Mar-04	June-04	Sep-04	Dec-04	Mar-05	June-05	Sep-05	Dec-03	Mar-04	June-04	Sep-04	Dec-04	Mar-05	June-05	Sep-05
Acenaphthene																								
Acetophenone																								
Biphenyl, 1,1'-																								
bis(2-Ethylhexyl)phthalate													1								1			
Butylbenzylphthalate																								
Carbazole																								
Caprolactum																								
Dichlorobenzene,1,2-																								
Dichlorobenzene,1,3-																								
Dichlorobenzene,1,4-																								
Diethylphthalate																							6	
Dimethyl Phthalate																								
Dimethylphenol, 2,4-																								
Di-n-butylphthalate	2								4									1					0.6	
Di-n-octylphthalate																								
Methylnaphthalene, 2-					2																			
Methylphenol, 2-																								
Methylphenol, 4-																								
Naphthalene					3																			
N-Nitrosodi-n-propylamine																								
N-Nitrosodiphenylamine																								
Phenanthrene																								
Phenol																								
Pyrene																								
Trichlorobenzene, 1,2,4-																								

Compounds not listed were not detected in any sample.
No value indicates compound not detected in that sample.

TABLE 10
SVOC DATA COMPARISON
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

SAMPLE ID:	GZ17M	GZ17M	GZ17M	GZ17M	GZ17M	GZ17M	GZ17M	GZ17M	GZ17D	GZ17D	GZ17D	GZ17D	GZ17D	GZ17D	GZ17D	GZ17D	G313C	G313C	G313C	G313C	G313C	G313C	G313C	G313C
DATE COLLECTED:	Dec-03	Mar-04	June-04	Sep-04	Dec-04	Mar-05	June-05	Sep-05	Dec-03	Mar-04	June-04	Sep-04	Dec-04	Mar-05	June-05	Sep-05	Dec-03	Mar-04	June-04	Sep-04	Dec-04	Mar-05	June-05	Sep-05
Acenaphthene																								
Acetophenone																								
Biphenyl, 1,1'-																								
bis(2-Ethylhexyl)phthalate													2	1					29			8		
Butylbenzylphthalate																								
Carbazole																								
Caprolactum																								
Dichlorobenzene,1,2-																								
Dichlorobenzene,1,3-																								
Dichlorobenzene,1,4-																								
Diethylphthalate																								
Dimethyl Phthalate																								
Dimethylphenol, 2,4-																								
Di-n-butylphthalate										2								1						
Di-n-octylphthalate																								
Methylnaphthalene, 2-																								
Methylphenol, 2-																								
Methylphenol, 4-																								
Naphthalene																								
N-Nitrosodi-n-propylamine																								
N-Nitrosodiphenylamine																								
Phenanthrene																								
Phenol																								
Pyrene																								
Trichlorobenzene, 1,2,4-																								

Compounds not listed were not detected in any sample.
No value indicates compound not detected in that sample.

TABLE 10
SVOC DATA COMPARISON
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

SAMPLE ID:	G312A	G312A	G312A	G312A	G312A	G312A	G312A	G312A	G312B	G312B	G312B	G312B	G312B	G312B	G312B	G312B	G312C	G312C	G312C	G312C	G312C	G312C	G312C	G312C
DATE COLLECTED:	Dec-03	Mar-04	June-04	Sep-04	Dec-04	Mar-05	June-05	Sep-05	Dec-03	Mar-04	June-04	Sep-04	Dec-04	Mar-05	June-05	Sep-05	Dec-03	Mar-04	June-04	Sep-04	Dec-04	Mar-05	June-05	Sep-05
Acenaphthene																								
Acetophenone																								
Biphenyl, 1,1'-																								
bis(2-Ethylhexyl)phthalate													1											
Butylbenzylphthalate																		1						
Carbazole																								
Caprolactum																								
Dichlorobenzene,1,2-																								
Dichlorobenzene,1,3-										1														
Dichlorobenzene,1,4-										2														
Diethylphthalate																								
Dimethyl Phthalate																								
Dimethylphenol, 2,4-																								
Di-n-butylphthalate		3																2						
Di-n-octylphthalate																		1						
Methylnaphthalene, 2-																								
Methylphenol, 2-																								
Methylphenol, 4-																								
Naphthalene																								
N-Nitrosodi-n-propylamine																								
N-Nitrosodiphenylamine																								
Phenanthrene																								
Phenol																								
Pyrene																								
Trichlorobenzene, 1,2,4-										4														

Compounds not listed were not detected in any sample.
No value indicates compound not detected in that sample.

TABLE 11
TAL METALS--DATA
GROUNDWATER
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Results in ug/L (ppb)

Well	Sample Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
G301	**May-00**	47.2			821			62000			1.5	13200		27400	2150			29500			60700		0.52	
G302A	**May-00**	73.4			125		0.23	21000	6.3	3.8	3.6	2200		6180	2220	0.21	6.7	2060			54400		0.71	
G302A	**Sep-00**				383			48300	1.7	10.9	2.2	10000		16600	6580		5.3	5910			104000			13.1
G302A	**Mar-01**				527			62000	1.3	45.3		19900		21200	8000			7530			138000			33.4
G302A	**Sep-01**	1440			447			48900	11.7	13.8	4.5	15900		15600	4880		10.2	9920			141000		5.2	14.2
G302A	**Mar-02**		11	4.1	528			45700	3	14.7		21700	6.5	16500	5990		3.2	9870			199000			
G302A	**Sep-02**		9.8		395		0.69	32900		10.4		22100		12400	3970			8770			169000			
G302A	**Mar-03**				287			30200		13.6		17000		9850	3680		2.5	5750			93400			54.9
G302A	**Sep-03**				448			41500		10.3		18700		14200	5270		4.8	7850			146000			
G302A	**Dec-03**				373			41800				14200		13000	3700			5930			125000			
G302A	**Mar-04**				469			48500		7.2		8050		14500	3540			7440			182000			
G302A	**Jun-04**				322			38800				3620		9640	2220			5140			112000			
G302A	**Sep-04**				296			30700				14600		9740	3110			6090			107000			
G302A	**Dec-04**				324							27400		14000	4050			6110						
G302A	**Mar-05**				468			47000		9.5		16100		14900	5120			7410			184000			
G302A	**Jun-05**				405			45500		4.9		5170		12700	2950			4030			150000			
G302A	**Sep-05**				443			48400				31200		16700	4540			6110			116000			13.8
G302B	**Sep-03**				151			38100	3					6550	139		1.9						6.7	
G302B	**Dec-03**				145			44000						6930	18.7								6.7	
G302B	**Mar-04**				144			43500						6920	26.1									
G302B	**Jun-04**				146			41400						6710										
G302B	**Sep-04**				142			38200						6280				746						
G302B	**Dec-04**				134																			
G302B	**Mar-05**				144			43800						6980	23.1								6.6	
G302B	**Jun-05**				137			44600						6520							6700		7.7	
G302B	**Sep-05**							45200						7020	19.7						6850			10.6
G302C	**Sep-03**				178			21200	3.1	6.9				11600			1.9	1150					9.2	
G302C	**Dec-03**				179			24400				73.2		12800				1120					10.2	
G302C	**Mar-04**				184			23600						12800										
G302C	**Jun-04**				180			23300						12200										
G302C	**Sep-04**	954			177			21300				882		11000				1310						
G302C	**Dec-04**				166									12200										
G302C	**Mar-05**				171			22900						12300	8.7								10.7	
G302C	**Jun-05**				162			23500						11400			2.4	963			9040		10.8	
G302C	**Sep-05**				188			26200						13400	11.5						10400			
G303A	**Sep-01**	534			154			35500	2.6	2.4		2780		12000	909		3.5	1690			31600		1.8	6.8
G303A	**Mar-02**		11.5		236			43700	2.6	6.7		2880		11300	2840		3.7	3220			27000			
G303A	**Sep-02**				224			43700		5.3		4050		13100	2290			3190			36500			
G303A	**Mar-03**				233			43500	1.6	7.5		6910		10700	1520		1.9	3450			23400			
G303A	**Sep-03**				146			42600				1100		13600	202			1290			35200			
G303A	**Dec-03**				126			44300				1080		12600	203			1100			26700			
G303A	**Mar-04**				137			37800		3.7		1670		11400	333						33600			
G303A	**Jun-04**				131			42700						11900	174									
G303A	**Sep-04**				120			31900				410		12100	89.2			1130						
G303A	**Dec-04**				130						87.8	1970		13800	364									
G303A	**Mar-05**				133			49600				894		16700	188									
G303A	**Jun-05**				145			47300				805		17400	152			1030			24600			
G303A	**Sep-05**				171			36200				3320		15500	404						31700			

TABLE 11
TAL METALS--DATA
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Well	Sample Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
G303B	**Sep-03**				220			36600	2					5210	157								5.8	
G303B	**Dec-03**				232			45300						6000									6.7	
G303B	**Mar-04**				247			41700						5890	42.8									
G303B	**Jun-04**				230			42900						5850										
G303B	**Sep-04**				241			42800						5910	50.8			884						
G303B	**Dec-04**				234																			
G303B	**Mar-05**				245			47600						6470	84.2								7.5	
G303B	**Jun-05**				218			45400						6420	35.1			961			6720		7.5	
G303B	**Sep-05**				255			52900						7460	31.7						7190			
G303C	**Sep-03**				203			26100	3.2					8410	3.2		2.6						9.8	
G303C	**Dec-03**				185			27300						8350							5580		9.7	
G303C	**Mar-04**				215			27200						8850									12.5	
G303C	**Jun-04**				207			28400						8820										
G303C	**Sep-04**				202			26300						8280				809						
G303C	**Dec-04**				195									9120										
G303C	**Mar-05**				201			29300						8680									10.8	
G303C	**Jun-05**				194			30700						8870				1210			7250		11.5	
G303C	**Sep-05**				210			32400						9770							7730			14.6
G304A	**May-00**	1760			199	0.2		13200		6.2	9.8	87400		4870	3250			881			13100		12.5	14.4
G304A	**Sep-00**	25.8			194			21600	2.5			115000		6200	5230			970			15900		2	6.8
G304A	**Mar-01**	24	3.6	3.5	231	0.2	0.3	33500	0.5	0.96	6.8	133000	1.8	7930	7560	0.1	17.3	1550	10	1.1	20000	9.6	2.4	69.1
G304A	**Sep-01**	24			256			34800	1.4	3.3	1.9	120000		7440	6790			2490			22800	12.1	2.8	
G304A	**Mar-02**		20.5	26.8	226		0.82	39000	2.6			178000	18.4	10200	8550			2370			18400			
G304A	**Sep-02**	247		13.9	288		2.5	31500		4.8		153000	6.5	10200	7750			2010	2.2		31500			
G304A	**Mar-03**				122			10600		3.9		71600	2.3	3900	2160						18900			
G304A	**Sep-03**			12.9	380			36300		3.7		100000		7430	8010		3.1	2740			27100			
G304A	**Dec-03**			12.6	217			23000				100000		6360	4590						13500		1.8	
G304A	**Mar-04**				490			65200		3.8		89000		8220	11200			9800			40600			
G304A	**Jun-04**				400			52600				81100		6790	8640			8210						
G304A	**Sep-04**				603			72200				133000		10000	14300			14100						58
G304A	**Dec-04**	1210			493							190000	31.9	11100	11500			7310						36.1
G304A	**Mar-05**				280			27400		3.6		123000		7070	4960			1730						
G304A	**Jun-05**				302			27800				82300	8.0	5670	4580			5110			20500		5.0	
G304A	**Sep-05**				451			39400				141000		8510	7350			3550			37000			
G304B	**May-00**			7.2	222			84300				2350		10400	1050			708			23400			
G304B	**Sep-00**			3.6	192			74500				2150		8660	993			819			19100			31.8
G304B	**Mar-01**				128			52600				1400		5940	671						13900			35.7
G304B	**Sep-01**				141			61800				1760		6990	772			674			16100			
G304B	**Mar-02**		22.4	6.1	149			62400	4.2	8.7		1800		7230	829						11900			
G304B	**Sep-02**			6.2	192		0.37	56800		17.2		1990		8130	962						17500			
G304B	**Mar-03**				137			39900	1.4	2.3		1430	2.5	5530	714		1.9				11700			
G304B	**Sep-03**				130			38400				1320		5500	711						11100			
G304B	**Dec-03**				224			48100				1590		6170	836						12500			
G304B	**Mar-04**				146			47200		10.2		1550		6400	784									
G304B	**Jun-04**				149			47700				1490		6260	764									
G304B	**Sep-04**				133			48900		16.7		1550		6380	830			716						
G304B	**Dec-04**				134							1650			833									
G304B	**Mar-05**				125			46200				1480		6050	785									
G304B	**Jun-05**				130			51200				1540		6490	828						11300			
G304B	**Sep-05**				140			51900				1580		6480	826						11300			

TABLE 11
TAL METALS--DATA
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Results in ug/L (ppb)

Well	Sample Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
G304C	**Sep-03**				53.1			36200	2					7360	612		2.2				6770			
G304C	**Dec-03**				60.3			44500						8260	690			792						
G304C	**Mar-04**				59.9			39800						7840	598									
G304C	**Jun-04**							40400						7720	616									
G304C	**Sep-04**				65.8			39800						7760	607			663						
G304C	**Dec-04**														646									
G304C	**Mar-05**				57.2			39500						7340	601									
G304C	**Jun-05**				53.8			41100						7440	561						6660			
G304C	**Sep-05**				59.5			42100		17.6				7750	567						6460			8.7
G305	**May-00**	9.3		10.5	1040			73800			1.6	131000		51100	3660		15.1	48900			88800		19.3	
G307	**May-00**	104			170		1.2	29500			10	328		9320	5540		13.8	2230			55000			317
G308A	**Sep-03**	147			87.4			6770	1.3					3520	93.7		2.8							
G308A	**Dec-03**				75			6900						3350	55									
G308A	**Mar-04**				65.1			6130						3000	61.4									
G308A	**Jun-04**													2590										
G308A	**Sep-04**				82.8									3570	71.5									
G308A	**Dec-04**																							
G308A	**Mar-05**				54.0									2310	79.6									
G308A	**Jun-05**				52.8			5300						2390	45.2						4930			
G308A	**Sep-05**				92.5			8830						3740	26.3						5520			
G308B	**Sep-03**				158			63500	2.8					9890							8890			
G308B	**Dec-03**				193			83800						12500							8730			
G308B	**Mar-04**				185			84200						12700										
G308B	**Jun-04**				176			88000						13100										
G308B	**Sep-04**				147			64000						9780				805						
G308B	**Dec-04**				147			59300						8790										
G308B	**Mar-05**				154			68600				494		10600	14.5									
G308B	**Jun-05**				133			65500						9710				653			6760			
G308B	**Sep-05**				143			66200						10200							6910			
G308C	**Sep-03**	1380			342			27600	10.2			1160		6530	38.6		9.3	1440			7920		17.2	
G308C	**Dec-03**	997			332			29300				875		6300				1300					18.1	
G308C	**Mar-04**				360			33300						6900									16.7	
G308C	**Jun-04**				334			35000						6940										
G308C	**Sep-04**				356			35600						7260				1120					15.9	
G308C	**Dec-04**				289																			
G308C	**Mar-05**				329			31400						6350	2.6								17.3	
G308C	**Jun-05**				340			35900				506		6890				1240			8870		17.9	
G308C	**Sep-05**				374			39000						7350	17.8						10300			
G309A	**Sep-03**	501			97.4			37700	3			568		9320	5180		4	1200			17000		1.8	
G309A	**Dec-03**				87.2			39200				293		9200	3770						12500		1.3	
G309A	**Mar-04**				83.4			37500						8980	5010									
G309A	**Jun-04**				82.5			40300						9470	5940									
G309A	**Sep-04**				124			47100						11100	7360			1130						
G309A	**Dec-04**				88.1										5670									
G309A	**Mar-05**				109			46600						11100	8120									
G309A	**Jun-05**				142			62900						14200	11300			1020			27100			
G309A	**Sep-05**				148			60600						14400	9140						25300			

TABLE 11
TAL METALS--DATA
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Results in ug/L (ppb)

Well	Sample Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
G309B	**Sep-03**				341			34000						7000	701									
G309B	**Dec-03**				360			39800				63.1		7820	728						6000			
G309B	**Mar-04**				384			41600						8010	752									
G309B	**Jun-04**				357			42200						8070	665									
G309B	**Sep-04**				365			37500						7140	658			794						
G309B	**Dec-04**				344										607									
G309B	**Mar-05**				352			40600						7510	572									
G309B	**Jun-05**				341			41800						7360	465						6870			
G309B	**Sep-05**				352			40900						7450	578						6650			
G309C	**Sep-03**				177			16300	6	5.7				3910			4.1	1460			14700		14.5	
G309C	**Dec-03**	273			183			18600				392		4390				1550	1.3		12500		17.2	
G309C	**Mar-04**				183			18100		4.5				4250				1480					16.6	
G309C	**Jun-04**				188			19500						4500									17.6	
G309C	**Sep-04**	976			201			18400	19.2			741		4370				1790					15.9	
G309C	**Dec-04**				186																			
G309C	**Mar-05**				201			19200	5.2					4550	3.3		7.3	1580					17.1	
G309C	**Jun-05**				185			20300						4240			5.5	1480			16600		17.6	
G309C	**Sep-05**				200			20400						4400							17600		15.9	
G310S	**Dec-03**	591			79.4			14200				797		3130				3390			20900		1.9	
G310S	**Mar-04**	4370			96			12700	136	42.8		5730		4080	163		107	4540			20300		14.3	18.8
G310S	**Jun-04**				71.1			14300						3010										
G310S	**Sep-04**	49300			540			20700	69.8	31.5	44.2	58600	31.7	19700	1830		55.6	16300					154	215
G310S	**Dec-04**				86.2							733												
G310S	**Mar-05**	2690			80.4			15300	6.6	2.2		3230		4120	93.1		2.4	3380					8.7	41.8
G310S	**Jun-05**	3880			94.4			14800			3.4	6010		4290	137		4.8	4000			29700		13.6	
G310S	**Sep-05**	13800			148			16200	21.2			19400		7810	448	0.03	16.5	7280			31800		43.5	40.8
G310A	**Sep-03**				57			60100						8670							9900			
G310A	**Dec-03**				54.3			57000						8800							9750			
G310A	**Mar-04**				60.6			65100						9880										
G310A	**Jun-04**							51900						8010										
G310A	**Sep-04**							46700						7410				819						
G310A	**Dec-04**							52300																
G310A	**Mar-05**				53.9			65500						9850										
G310A	**Jun-05**				54.1			59400						8440				828			11600			
G310A	**Sep-05**				44.2			51300						7590							9410			
G310B	**Sep-03**				391			93500						12200							14500			
G310B	**Dec-03**				395			89000						12300				1300			14900			
G310B	**Mar-04**				406			93200						12800				2000						
G310B	**Jun-04**				365			85400						11900										
G310B	**Sep-04**				386			89900						12600				1530						
G310B	**Dec-04**				363			89600						12200										
G310B	**Mar-05**				389			99300						13100	2.4									
G310B	**Jun-05**				392			102000						13000				1300			17300			
G310B	**Sep-05**				412			102000						13400							18000			11.5
G310C	**Sep-03**	477			80.4			14500	5.9			406		2050	29		3.8	1430			9650		8.3	
G310C	**Dec-03**	559			78.5			12400				468		1910				1390			9730		9.9	
G310C	**Mar-04**	877			94			15000				656		2290	31.6			1730						9.2
G310C	**Jun-04**				80.3			13800																
G310C	**Sep-04**	2240			105			14400	26.3	14.9		1810		2720	77		17.3	1930					14.4	
G310C	**Dec-04**				88.1				8.0			526												
G310C	**Mar-05**				91.4			14500				481		2120	20.1								11.8	
G310C	**Jun-05**				96.1			15700	7.5			443		2050	17.1		6.1	1280			9930		12.3	
G310C	**Sep-05**				95.8			15600						1980	15.2						10100			

TABLE 11
TAL METALS--DATA
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Well	Sample Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
G311A	**May-00**				39.4			32800	23.5					4940				607			11000		1.1	
G311A	**Sep-00**	137			48.2			24500	1.7			163		3340	8.2			637			6730		1.6	8.3
G311A	**Mar-01**	44.4			45.4			21400	1.2		0.77	44.6		2780	4.9	NA		550			6640		1.4	3.5
G311A	**Sep-01**	437			54			24100	2.8		7.8	446		3180	11.5		1.4	574			6680		4	10.1
G311A	**Mar-02**		8.1		55.5			23800	3			359		3070	6			678			6630			
G311A	**Sep-02**				60.6			20600	2.1					3270	3						7410			
G311A	**Mar-03**				46.3			19900	3.6	6.7		207		2800	4.7						12900		2.6	
G311A	**Sep-03**				83.2			30300	0.86					4310							6830		1.9	
G311A	**Dec-03**				101			35400						5170										
G311A	**Mar-04**				137			45200						6620										
G311A	**Jun-04**				141			47100						6820										
G311A	**Sep-04**				128			38900						5760				946						
G311A	**Dec-04**				144																			
G311A	**Mar-05**				178			60700						8830	4.4									
G311A	**Jun-05**				164			60900						8550				1500			7280			
G311A	**Sep-05**				161			56900						8060		0.03		2400			7480			
G311B	**May-00**				139			40100						5570		0.12		532			4960		2.7	
G311B	**Sep-00**				164			40000	1.7	13.5				5420	1.8			557			4400		2.8	
G311B	**Mar-01**				147			36800	2.6		2.1			4840				582			3690		3.2	3.8
G311B	**Sep-01**				178			45200	3.6	22.7				5870			2.5	555			4770		3	
G311B	**Mar-02**		14.5		180			42600	3.2			16.7		5620							4840		3.7	
G311B	**Sep-02**		9.1		203			37900	1.8					5960							5050			
G311B	**Mar-03**				188			38100	2.3	14.3				5490	1.6						5000		3.3	
G311B	**Sep-03**				177			35000						5100										
G311B	**Dec-03**				214			41000						6030									3.4	
G311B	**Mar-04**				200			37900						5730										
G311B	**Jun-04**				193			38600						5660										
G311B	**Sep-04**				203			38400						5700				540						
G311B	**Dec-04**				192																			
G311B	**Mar-05**				187			42400						6130	4.5								3.9	
G311B	**Jun-05**				194			45800				405		6590			3.6	798			5260		4.7	
G311B	**Sep-05**				202			45500						6430							4830			
G311C	**May-00**				65.9			26500	1.2					6470	34.7			1500			9100		4.7	19
G311C	**Sep-00**	34			73.5			26300	1.5			33.5		6710	53			2380			8640		6	8.1
G311C	**Mar-01**	27.4			92.3			28100	1.2	2.3	1.1	10.6		6310	38.8	NA	0.82	1770			5690	7.2	5.7	3.6
G311C	**Sep-01**	497			106			30900	3			523		7680	46.3			1840			6830		8.6	
G311C	**Mar-02**				116			29900	3					6960	19.5			1810			6030		7.8	
G311C	**Sep-02**				146			28700	2					7380				2090			7030			
G311C	**Mar-03**	1620			14.1			12700	5.1	14.3		2750		1540	74.4		3.3	1540			27100		8.6	17.8
G311C	**Sep-03**				21.2			17500				303		2530	56.4			1660			36100		6.1	
G311C	**Dec-03**	68.4			31.3			21400				104			63			2120			44800		7.6	
G311C	**Mar-04**				43.4			21500		3.2				3850	47			2100			37700			18.9
G311C	**Jun-04**							20400						3780										
G311C	**Sep-04**							17000				379		3410	39.5			1910						
G311C	**Dec-04**											352												
G311C	**Mar-05**				52.8			18800						3470	13.1						30400			
G311C	**Jun-05**				56.4			19700						3600	15.6			1360			37900		10.4	
G311C	**Sep-05**				54.5			19000						3580	21.8			1740			38400			

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Well	Sample Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
G312A	**Dec-03**				129			24900						7590				2380			16600			
G312A	**Mar-04**				75.9			12500	35.3					3790	24			1980			14100			2.6
G312A	**Jun-04**	423			81.4			10400						3460										
G312A	**Sep-04**				61.4				15			411		2790				1530						
G312A	**Dec-04**				75.6									3400										
G312A	**Mar-05**				74.7									3290	6.0			2100						
G312A	**Jun-05**				105			14200						4440				2850			12800			
G312A	**Sep-05**				116			16300						5020				2420			16000			
G312B	**Dec-03**	355			184			53300	27.2			455		7810	129			4450			54200		2.1	
G312B	**Mar-04**				129			40000	13.3					5810	42			5990			38800			
G312B	**Jun-04**				143			44100	21.3					7290			20.5							
G312B	**Sep-04**				128			44800	74			632		7770	55.9		37.3	2940						
G312B	**Dec-04**				119				11.7					8400										
G312B	**Mar-05**				146			54400	43.7					10900	16.3		30.0	3060			41500			
G312B	**Jun-05**				139			55400	21.5					11200	17.8		31.5	1940			46800			
G312B	**Sep-05**				154			58000	22.7					11700	12.1		32.8	2050			54500			
G312C	**Dec-03**				346			63600				130		13400	463			2290			20800		2	
G312C	**Mar-04**				327			63900						12200	302			1890			18200			
G312C	**Jun-04**	596			346			60700						13000	259									
G312C	**Sep-04**				329			55500				403		11400	219			1480						
G312C	**Dec-04**				331			63700						12900	229									
G312C	**Mar-05**				320			58800						12200	196								3.1	
G312C	**Jun-05**				342			64800						12600	174			1080			17000			
G312C	**Sep-05**				369			65000						13300	189						19400			19.1
G313A	**Dec-03**	1770			322			74200				2930		18500	6930			7710			40200		6.6	
G313A	**Mar-04**	3330			302			51200	19.4	5.4		5280		12500	4690			9440			64400			20.3
G313A	**Jun-04**	1290			325			53100				2480		13400	4850			9720						
G313A	**Sep-04**	5730			340			62000	97.3		10.5	9470		16500	7840		77.1	8730					20.6	67.7
G313A	**Dec-04**	6060			284			56800	11.8			10700		13700	6890			7640					22.8	64.5
G313A	**Mar-05**				354			48800		2.6		738		15700	3380		2.8	11700			45900			
G313A	**Jun-05**	1250			382			55500				2830		18700	1770		6.6	12400			72200		5.9	
G313A	**Sep-05**	4010			308			55000				7420		13600	6140			6670			45800		16	15
GZ17M	**Sep-03**				165			40000	2.7					7900							7130		3.8	
GZ17M	**Dec-03**				168			43100						8440							6680		4.2	
GZ17M	**Mar-04**				166			42500		16.4				7970										
GZ17M	**Jun-04**				163			40000						7800										
GZ17M	**Sep-04**				165			38700						7970				828						
GZ17M	**Dec-04**				157																			
GZ17M	**Mar-05**				162			42000		8.5				8180									4.7	
GZ17M	**Jun-05**				158			42200	7.0	19.6				7910			6.0	609			7960		4.0	
GZ17M	**Sep-05**				169			42100						8060							8420			
GZ17D	**Sep-03**				198			37400	1.4					7870							7080		4.5	
GZ17D	**Dec-03**				187			38200						7830							6110		4.8	
GZ17D	**Mar-04**				190			39400						7670										
GZ17D	**Jun-04**				203			39600						8170										
GZ17D	**Sep-04**				209			39200						8510				865						
GZ17D	**Dec-04**				196																			
GZ17D	**Mar-05**				195			40700						8400	6.0								5.2	
GZ17D	**Jun-05**				191			41300						8170				643			7410		4.8	
GZ17D	**Sep-05**				199			39800						8060							8230			

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Well	Sample Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
G313C	**Dec-03**	18900			412			45700				18500		17300	848			8720			8490		60.5	70.1
G313C	**Mar-04**				183			35100						8200	132			1970						
G313C	**Jun-04**	576			192			34600						9910										
G313C	**Sep-04**				179			33100				481		10700	76.9			1500						
G313C	**Dec-04**				158									9120	58.4									
G313C	**Mar-05**				149			33400	10.1					10400	32.0		4.2						5.0	
G313C	**Jun-05**				140			34300						10600			3.1	1160			10300		5.2	
G313C	**Sep-05**				138			33300						10600							11300			
G314A	**Dec-03**	9730			302			47000				23300	18.6	9750	1200			4700			26500		37.7	62.8
G314A	**Mar-04**	5840			208			37200	153	1120		10100		6530	794		116	3730			26900		21.9	61.3
G314A	**Jun-04**	479			237			52000	16.4			19700		6580	1510									41.7
G314A	**Sep-04**				235			48500				5900		6620	476			2770						24.7
G314A	**Dec-04**				206							8400			430									
G314A	**Mar-05**				139			44400				1300		5090	221						26800			
G314A	**Jun-05**				191			53600		3.7		30600		6040	1130		3.7	1750			38500			
G314A	**Sep-05**				238			42700				37500		6850	614			2280			42600			28.1
G314B	**Dec-03**				310			63900				79.9		11900	10.1			1230					4.2	
G314B	**Mar-04**				307			63900						11200	11.8			1440						
G314B	**Jun-04**	338			322			61600						11700										
G314B	**Sep-04**				343			66700						12300				1310						
G314B	**Dec-04**				333			64600						12100										
G314B	**Mar-05**				355			70200						12100	11.8								4.5	
G314B	**Jun-05**				320			66400						11400				973			9660		3.7	
G314B	**Sep-05**				352			67100						11800							10800			
G314C	**Dec-03**	712			54.5			15600				542		7550	46.1			2880			31200		9	
G314C	**Mar-04**	851			51.5			16700				734		6880	65.4			3310			39100			16.3
G314C	**Jun-04**	303						15200						7930										
G314C	**Sep-04**							14200						6980				2290						
G314C	**Dec-04**																							
G314C	**Mar-05**				60.7			15300						7850	14.4			2030			37900		8.7	
G314C	**Jun-05**				55.9			15800	7					7700	18.1		4.8	2050			40400		8.4	
G314C	**Sep-05**				63.1			15800						7990	14.2		3.6	1990			43000			
G315A	**Dec-03**	1530			127			31900				1360		7530	117			1520			14900		5.1	
G315A	**Mar-04**				111			30000		7.8				6360										
G315A	**Jun-04**				126			34500						6590										
G315A	**Sep-04**				102			25800	17.2			314		6080				890						
G315A	**Dec-04**				85.5																			
G315A	**Mar-05**				78.5			22700						4940	7.0									
G315A	**Jun-05**				75.8			23600						4750				486			9770			
G315A	**Sep-05**	89.8			110			32300						6940							14200			37.2
G315B	**Dec-03**				166			85400						11000	159			1820			16900			
G315B	**Mar-04**	810			216			102000				651		13200	146			2180						
G315B	**Jun-04**				228			103000						13000										
G315B	**Sep-04**	1530			228			106000	12.4	23.1		1360		14100	185			2880						24.1
G315B	**Dec-04**	1910			223			102000	12.5			1720		13800										
G315B	**Mar-05**	646			213			95800				628		12200	98.3			2790						
G315B	**Jun-05**	746			211			102000	6.7			990		12700	96.8		5.2	2010			17600			
G315B	**Sep-05**				198			99000						12100	74.5						17600			

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Well	Sample Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
G315C	**Dec-03**	867			435			115000				759		17300	75.7			2180			22200		3.6	
G315C	**Mar-04**	1610			517			132000				1310		19700	151			2820			23800			22.4
G315C	**Jun-04**	378			572			142000						21400										
G315C	**Sep-04**	3410			648			130000				2770		20800	700			3500						35.5
G315C	**Dec-04**	1930			524			130000	23.6			1680		19800	251									
G315C	**Mar-05**	1520			516			133000	41.4	40.1		1360		19900	152		24.6	2470			25300		3.7	
G315C	**Jun-05**				504			128000						19000	62.2			1320			26600			
G315C	**Sep-05**				474			118000						17900	106			1760			26900			
G316A	**Dec-03**	829			440			114000				754		17400	78.8			2140			22100		3	
G316A	**Mar-04**				89.3			24600	18.1					3470	16.3		20.3							7.4
G316A	**Jun-04**				92.7			28700						3720										
G316A	**Sep-04**	1010			135			38100	55.1			1130		6000	54.8		36.1	851						
G316A	**Dec-04**				196			67700						8950										
G316A	**Mar-05**				109			33800						5040	3.8									
G316A	**Jun-05**				94.3			31300						4740				587			4050			
G316A	**Sep-05**				131			42700						7640							3830			
G317A	**Dec-03**				139			62300				244		10900									2.6	
G317A	**Mar-04**				150			66600						11000										
G317A	**Jun-04**				110			53700						8620										
G317A	**Sep-04**				123			52100						7650				691						
G317A	**Dec-04**				99.6																			
G317A	**Mar-05**				119			54300						8490										
G317A	**Jun-05**				129			60400						9030				479			8880			
G317A	**Sep-05**				101			46800						6550							4000			
G317B	**Dec-03**				63.5			13100						1510				1380					9.1	
G317B	**Mar-04**				48.3			9910						1220									12.4	4.7
G317B	**Jun-04**	464																						
G317B	**Sep-04**	842							24.3			790		983			18	2010						
G317B	**Dec-04**																							
G317B	**Mar-05**				55										9.5			2180					10.1	
G317B	**Jun-05**	4300			89.8			15800	11.6			5660		2680	134		8.3	3520			6260		19.5	
G317B	**Sep-05**				59.4			10500										2040			5480			
G317C	**Dec-03**	251			73.7			13600						2370									24.1	
G317C	**Mar-04**				78.1			13200				480		2310	15.4								25.1	
G317C	**Jun-04**	372			73.5			13300															25.2	
G317C	**Sep-04**	1930			97.5			14100	13.1			1550		2700	42.2			1320					27.8	
G317C	**Dec-04**	10600			164				153			10600			321		111						44.0	
G317C	**Mar-05**				73.8			12600	12.8	4.1				2140	8.8		6.5						24.4	
G317C	**Jun-05**				70.2			12800	9.0					1920			6.2	567			3400		23.0	
G317C	**Sep-05**				70			12300						1560			14.8				3210		23.8	
G318A	**Dec-03**	2290			62.8			4690				2190		1930	126			1120			6800		5	
G318A	**Mar-04**	2590			111			4710				2510		1980	155			1250						11
G318A	**Jun-04**	619																						
G318A	**Sep-04**	699			85							712		940	69.3			733						
G318A	**Dec-04**				75.6																			
G318A	**Mar-05**				99.4										22.5									
G318A	**Jun-05**				49.4			3730						844							9270			
G318A	**Sep-05**				70.2			3530							35.7						8090			

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Well	Sample Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
G318B	**Dec-03**	18800			185			58500	27.7			17600	18.2	14900	561			9480			12700		41.6	49.6
G318B	**Mar-04**	4800			141			46200	11.3	3.7		4240		10300	189			4930						18.6
G318B	**Jun-04**	13400			217			59200	22.3			11800		14700	453			6810					28.1	72.8
G318B	**Sep-04**	1060			102			49800	28.1			1040		10500	38.5		25	2610						
G318B	**Dec-04**	1330			98.0				17.0			1200		9340			18.0							
G318B	**Mar-05**	709			88.1			48900	14.3	10		729		8870	20.7		14.2						2.9	46.2
G318B	**Jun-05**	1380			89.3			49500	15.0			1740		9450	35.4		19.4	1400			6830		3.9	
G318B	**Sep-05**				91.1			50500						9330	18.5						6990			
G318C	**Dec-03**	69200		17.2	351	3.8		105000	160	51.3	82.7	63100	41.8	36900	1550		123	18300			29400		161	140
G318C	**Mar-04**	18300			243			32100	31	12.6		16800		11100	745		23.8	10200			23400		37.7	69.1
G318C	**Jun-04**	4250						18400	16.7			3140		3940	261									
G318C	**Sep-04**	3280			71.2			17600	36			2680		3230	185		23.1	3860						43.5
G318C	**Dec-04**											488												
G318C	**Mar-05**				41.8			14400	8.0					1950	70.0			2160					2.4	43.6
G318C	**Jun-05**	646			32.3			12600	27.6			790		1680	61.6		20.7	2190			22800		4.2	
G318C	**Sep-05**				33.6			13700						1620	54.4			1760			21600			
GZ1	**May-00**				173			36900	2.1					5990	0.66			541			7000		4.2	
GZ1	**Sep-00**	97			169			35100	7.3	10.2	2.9	468		5650	10		4	918			5540		5.3	11
GZ1	**Mar-01**				169			37300	1.6		1.9			5790				732			5900	4.5	4.9	2.9
GZ1	**Sep-01**	196			194			42800	7.2	16.9	1.6	481		6400	11.1		4.4	966			6330		6.4	14.1
GZ1	**Mar-02**		12		211			43000	11.8	7.8				6740	3.4		5.6	937			7020		5.4	
GZ1	**Sep-02**				243			44100	6.7	17.9				7680				1080	2.1		7100		6.3	
GZ1	**Mar-03**				218			37600	1.2	7.1		6420									6990		5	
GZ1	**Sep-03**	331			217			34600	17.9	2.4		551		6420	15.5		14.1	1030			6920		5.9	
GZ1	**Dec-03**	206			178			32400	10.6			275		6110			11.2				6000		6.2	
GZ1	**Mar-04**	1860			229			35900				2020		7060	53.1			1460						19.6
GZ1	**Jun-04**				193			35600	22					6380										
GZ1	**Sep-04**				187			31100						5550				685						
GZ1	**Dec-04**				174																			
GZ1	**Mar-05**			26.7	192	0.44		36300	6.7					6350	5.6		3.2						7.1	
GZ1	**Jun-05**				189			36600						5970				645			5560	7.8	5.8	
GZ1	**Sep-05**				210			37800				397		6500	16.2						6610			
GZ3	**May-00**				99.5			44600	0.9			784		6900	345			708			14500		1	
GZ3	**Sep-00**				93.5			46500	2.2		1.5	391		7300	368		2.6	1160			13900			8.2
GZ3	**Mar-01**				82.6			44200	1.4			487		6590	75.2						11200			21.6
GZ3	**Sep-01**				67.5			50600	1.2			497		7440	172			814			14500			
GZ3	**Mar-02**		16.2		108			45700	3.2			1850	3.7	7590	2040			847			12300			
GZ3	**Sep-02**		11.4		94.2			49300	4.2			2890		8520	1060						13100			
GZ3	**Mar-03**				125			46200	6	4.1		8750		7790	2170		3.9				15500		2.3	
GZ3	**Sep-03**				121			47400	2.2			4080		7940	853						16700			
GZ3	**Dec-03**				104			41300				1750		7120	818						14900			
GZ3	**Mar-04**				69.1			45500				1670		7800	377									
GZ3	**Jun-04**				121			45400				4840		7770	1630									
GZ3	**Sep-04**				68.2			42700				613		6810	172			1180						
GZ3	**Dec-04**											1030		7540	518									
GZ3	**Mar-05**				72.9			50800				2190		8080	612									
GZ3	**Jun-05**				64.2			47400				2080		7600	331			728			21300			
GZ3	**Sep-05**				67			49500				915		7800	235						19400			

TABLE 11
TAL METALS--DATA
GROUNDWATER
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Results in ug/L (ppb)

Well	Sample Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
GZ5S	**Sep-03**				71.3			22500	3.2					7310										
GZ5S	**Dec-03**				73.3			26900						7610										
GZ5S	**Mar-04**				55.2			14900						6860										
GZ5S	**Jun-04**													3510										
GZ5S	**Sep-04**				74.1			24300						9710										
GZ5S	**Dec-04**				91.7									13400										
GZ5S	**Mar-05**				66.8			26100						9790	11.1									
GZ5S	**Jun-05**				40.5			11900						5250							4100			
GZ5S	**Sep-05**				103			41500						16000							7410			
GZ5M	**Sep-03**				1670			145000		2.7				33600	4050		4.2	2850			21900			
GZ5M	**Dec-03**				1680			173000				254		35300	3900			2920			19000			
GZ5M	**Mar-04**				1680			162000		3.2				34000	3680			3080			27200			
GZ5M	**Jun-04**				1750			170000						35400	3700									
GZ5M	**Sep-04**				1540			154000						31000	3310			3060						
GZ5M	**Dec-04**				1590			166000						34000	3630									
GZ5M	**Mar-05**				1480			155000		2.5				30500	3300			2640			24700			
GZ5M	**Jun-05**				1540			155000						33200	3310			2490			28600			
GZ5M	**Sep-05**				1570			155000						32900	3200			2670			25000			
SDW2	**Sep-04**				178			14000						4450	2760			1040						
SDW2	**Dec-04**				171										1690									
SDW2	**Mar-05**				152									3170	1200		5.0							
SDW2	**Jun-05**				132			8860						2900	830		3.4	503			6920			
SDW2	**Sep-05**				317			13700						4470	2500						14200			
GZ12M	**Sep-03**				227			49700	1.4					8130	293						8590		3.6	
GZ12M	**Dec-03**				230			46800	0.81			15.6		8130	102						8280		3.3	
GZ12M	**Mar-04**				309			61200		2.7					542									
GZ12M	**Jun-04**				339			64800						10700	778									
GZ12M	**Sep-04**				287			55200						9020	683			1090						
GZ12M	**Dec-04**				201							446			258									
GZ12M	**Mar-05**				275			58600						9380	404								4.1	
GZ12M	**Jun-05**				262			57900						8950	457			886			9720		2.9	
GZ12M	**Sep-05**				273			54900						8670	555						10600			
GZ12D	**Sep-03**				155			27800	4.7					8610				1100			9050		8.2	
GZ12D	**Dec-03**	300			157			27800				250		8550				1080					7.9	
GZ12D	**Mar-04**	1040			176			30200		5.9		855		9520	33.1			1480						8
GZ12D	**Jun-04**	835			173			31100						9530										
GZ12D	**Sep-04**	1060			163			29600	32.1			999		9140			15.2	1420						
GZ12D	**Dec-04**				162				7.2			639												
GZ12D	**Mar-05**				170			33900	10.5			515		9190	22.7								9.7	
GZ12D	**Jun-05**				163			34800						9010	25.9			968			8520		8.2	
GZ12D	**Sep-05**				166			33500						8870	31.7						8100			
GZ13S	**Sep-03**	279			28.3			5180	6.3			291		2050	33.2						11800			
GZ13S	**Dec-03**				30.7			7390						2900							11700			
GZ13S	**Mar-04**				35.8			7810	14.2					3040										
GZ13S	**Jun-04**													3460										
GZ13S	**Sep-04**	7490			121			13100	19.8		10.3	7030		7640	747			3350					20.4	70.1
GZ13S	**Dec-04**																							
GZ13S	**Mar-05**				26.3									2450	5.1									
GZ13S	**Jun-05**				38.6			10200						3390				708			12700			
GZ13S	**Sep-05**				53.7			12300						3980	14.7		20.7				16900			

TABLE 11
TAL METALS--DATA
GROUNDWATER
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Results in ug/L (ppb)

Well	Sample Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
GZ13M	**Sep-03**	549			60.3			22400	7.9	3.2		514		2640	15.4								2.2	
GZ13M	**Dec-03**				49.4			22300				130		2590										72.4
GZ13M	**Mar-04**				54.2			23200						2620										
GZ13M	**Jun-04**							23400						2650										
GZ13M	**Sep-04**	4320			91.9			34700	45			3990		4630	130		24.6	2010						41.2
GZ13M	**Dec-04**								28.5			630												
GZ13M	**Mar-05**				70.7			34000	7.3					3580	7.5									
GZ13M	**Jun-05**				79.4			41100	12.1			435		3990	17.3		8.3	606			5500		2.4	
GZ13M	**Sep-05**				79.4			36800						3470							5680			
GZ13D	**Sep-03**	225			83.1			47300				239		8170	12.7						7750		6.1	
GZ13D	**Dec-03**				76.5			50300						8680							7610		6.4	
GZ13D	**Mar-04**				74.7			47300						8050										4.6
GZ13D	**Jun-04**				88.5			53600						8920										
GZ13D	**Sep-04**				79.4			50600						8570				817						
GZ13D	**Dec-04**				90.2			58400						9430										
GZ13D	**Mar-05**				89.7			54600	6.4					8880	2.4								5.4	
GZ13D	**Jun-05**				83.8			53600		1.7				8420				712			7540		7	
GZ13D	**Sep-05**				93.8			51900						7890							7740			
GZ14S	**Sep-03**	5900			172	0.28		42400	145	6.3		5760		9890	633		94.2	2910			11500		11.6	72.6
GZ14S	**Dec-03**				98.7			41600	23.9			191		8320							9840			
GZ14S	**Mar-04**				87.5			47100	29.1	22.2				8310	32.5		20.5							3.7
GZ14S	**Jun-04**	403			99.9			45200	47.6					9260			35.3							
GZ14S	**Sep-04**				67.2			31400	11.8			377		5930	42.5									
GZ14S	**Dec-04**				116			61500						11000										
GZ14S	**Mar-05**				170			67900						14200	7.9		4.4							
GZ14S	**Jun-05**				78.2			43400						7640			2.9				8610			
GZ14S	**Sep-05**				122			65100						11600							6670			
GZ14M	**Sep-03**	5590			171	0.27		21400	28	14.4		5320		4760	164		20.2	2300					12.4	75.9
GZ14M	**Dec-03**	1150			124			20100				991		2920							3570		5.7	
GZ14M	**Mar-04**	7410			196			27000	13	6		7740		5790	236			3330					19.4	34.9
GZ14M	**Jun-04**	3140			162			24500	96.2			3390		4140			61.6							
GZ14M	**Sep-04**	2490			146			21500	24.1	15.3		2320		3490	67.9			1200						39.1
GZ14M	**Dec-04**	1890			137				32.1			1800					20.0							
GZ14M	**Mar-05**	11800			260			31100	130	35.5		12500		8310	356		90.5	4480					29.9	98.1
GZ14M	**Jun-05**	5480			178			28200	13.2	4.0	5.6	7220		5120	174		10.2	2420			4200		17.8	
GZ14M	**Sep-05**				128			24600						2650	12.7						4160			
GZ14D	**Sep-03**				353			44400	2.6					6230			2.3				8960			
GZ14D	**Dec-03**				365			48800						6550							9160			
GZ14D	**Mar-04**				342			52100						6100										
GZ14D	**Jun-04**				384			54600						7160										
GZ14D	**Sep-04**				372			49700						6350				757						
GZ14D	**Dec-04**				381			60200	9.8															
GZ14D	**Mar-05**				388			57700	6.2					7340	7.1		3.2							
GZ14D	**Jun-05**				376			59000						7290							9880			
GZ14D	**Sep-05**				380			56100						6710							9360			

Compounds not shown were not detected in any sample.
No value indicates the compound was not detected in the sample.

TABLE 12
SUMMARY OF METALS STATISTICS
Old Southington Landfill Superfund Site
September 2003 and September 2005

Metal	Maximum Concentration Detected ug/L (date)	No. Samples Detected in (473 total)	Detected Frequency %	No. Wells Detected in (55 total)	Wells Detected in %	Well[1] ID
Aluminum	69200 (12/03)	98	21%	32	58%	G318C
Antimony	ND[2]	0	0%	0	0%	
Arsenic	26.7 (3/05)	4	1%	3	5%	G304A G318C GZ1[3]
Barium	1750 (6/04)	446	94%	55	100%	GZ5M
Beryllium	3.8 (12/03)	5	1%	4	7%	G318C GZ14S GZ14M GZ1[3]
Cadmium	ND	0	0%	0	0%	
Calcium	173000 (6/04)	415	88%	55	100%	GZ5M
Chromium	160 (12/03)	104	22%	38	69%	G318C
Cobalt	1120 (3/04)	49	10%	25	45%	G314A
Copper	87.8 (12/04)	7	1%	6	11%	G303A G310S G313A G318C GZ13S GZ14M
Iron	190000 (12/04)	167	35%	43	78%	G304A
Lead	41.8 (12/03)	6	1%	5	9%	G304A G310S G314A G318B G318C
Magnesium	36900 (12/03)	429	91%	55	100%	G318C
Manganese	14300 (9/04)	262	55%	52	94%	G304A

[1] If the metal was detected in 10 or less wells, the locations are shown and the location of maximum concentration is shaded.
[2] ND = not detected
[3] Background well.

TABLE 12
SUMMARY OF METALS STATISTICS
Old Southington Landfill Superfund Site
September 2003 and September 2005

Metal	Maximum Concentration Detected in ug/L (date)	No. Samples (473 total)	Detected Frequency %	No Wells (55)	Wells %	Well ID
Mercury	0.03 (9/05)	2	<1%	0	0%	G310S G311A[3]
Nickel	123 (12/03)	77	16%	37	67%	G318C
Potassium	18300 (12/03)	199	42%	53	96%	G318C
Selenium	1.3 (12/03)	1	<1%	1	2%	G309C
Silver	ND	0	0%	0	0%	
Sodium	182000 (3/04)	198	42%	55	100%	G302A
Thallium	7.8 (6/05)	1	<1%	1	2%	GZ1[3]
Vanadium	161 (12/03)	131	28%	40	73%	G318C
Zinc	215 (9/04)	53	11%	30	54%	G310S

TABLE 13
WATER QUALITY PARAMETERS
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

		Analytes												Field Measurements				
		Ammonia	Alkalinity	Chloride	DOC	Nitrate	Sulfate	Sulfide	TOC	Iron (total)	Iron (dissolved	Manganese (total)	Manganese (dissolved)	Oxidation Reduction Potential	pH	Temperature	Conductivity	Dissolved Oxygen
Method		350.1	310.1	9056	415.1	353.2	9056	376.1	415.1	TAL	TAL	TAL	TAL					
Well	**Unit**	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mV	s.u.	°C	µS/cm	mg/L
G301	May-00	18.3	283	156	NA	NA	5.41	NA	NA	13.2	NA	2.2	NA	-23.3	6.55	20.2	1142	0.82
G302A	May-00		66.3	114	NA	NA	20	NA	NA	2.2	NA	2.2	NA	32.6	6.28	22.21	514	2.2
G302A	Sep-00	0.123	50.5	306	NA	NA	15.9	NA	NA	10	NA	6.6	NA	NA	5.78	13.26	770	NA
G302B	May-00		91.7	17.7	NA	NA	25.7	NA	NA		NA	0.045	NA	108.7	8.31	18.5	255	3.69
G302B	Sep-00		89	17.4	NA	NA	26.9	NA	NA	0.024	NA	0.022	NA	NA	8.06	12.07	203	NA
G302C	May-00		79	13.4	NA	NA	21.5	NA	NA		NA		NA	97.9	8.5	16.3	206	3.89
G302C	Sep-00		76	12.8	NA	NA	22.3	NA	NA	0.044	NA	0.005	NA	NA	8.35	12.17	173	NA
G303B	May-00		101	19	NA	NA	24	NA	NA		NA	0.43	NA	108.2	7.9	14.3	270	1.86
G303B	Sep-00		106	19.1	NA	NA	25.3	NA	NA	0.016	NA	0.24	NA	NA	7.7	15.51	248	NA
G303C	May-00		71.8	11.4	NA	NA	20.2	NA	NA		NA		NA	151	8.4	14.26	202	2.81
G303C	Sep-00	0.047	74	11.9	NA	NA	21.3	NA	NA	0.052	NA	0.002	NA	NA	8.19	16.52	187	NA
G304A	Jun-99	NA	155	37	33.8				63.4	96	116	4.3	5.2	-104.1	6.46			1.03
G304A	May-00	0.096	139	14.2	55.8		1.07		66	87	86	3.2	3.3	-88.5	6.44	18.48	445	0.44
G304A	Sep-00		178	45.9	44.2				45.2	115	113	5.2	5.2	NA	6.29	16.82	421	NA
G304A	Mar-01	NA	70	92.9	81.7				112	133	133	7.6	7.6	165	6.26	14.48	817	0.3
G304A	Sep-01	NA	175	83.3	53.2				54	120	110	6.8	6.2	-82.8	6.28	16.03	585	0.4
G304A	Mar-02	NA	248	245			5		250	178	220	8.6	10	-80.7	6.19	12.28	1507	0.14
G304A	Sep-02	NA	220	97.8	96		22.5	0.163	97	153	146	7.8	7.2	NA	NA	NA	NA	NA
G304A	Mar-03	NA	176		14		6	0.13	15.2	72	72	2.2	2.2	NA	NA	NA	NA	NA
G304A	Sep-03	NA	172	103	25			0.12	26.5	100	130	8	7.8	NA	NA	NA	NA	NA
G304A	Dec-03	NA	119	34	21	0.7	5.5	0.15	25	100	87	4.6	4.4	NA	NA	NA	NA	NA
G304A	Jun-04	NA	206	120	39.6		9		38	81	85	8.6	9	NA	NA	NA	NA	NA
G304A	Dec-04	NA	242	240	110				118	190	184	11.5	11.3	171	6.34	13.81	1270	0.28
G304A	Jun-05	NA	174	74.3	22.9			0.054	212	82.3	84.3	4.6	4.8	8	6.24	15.63	606	0.18
G304B	May-00		230	42.3	NA	NA	15.3	NA	NA	2.4	NA	1.1	NA	-157.1	7.54	17.9	597	0.43
G304B	Sep-00		216	34.7	NA	NA	19.1	NA	NA	2.2	NA	0.99	NA	NA	7.33	15.03	398	NA
G304C	May-00		93	13.7	NA	NA	25.5	NA	NA		NA	0.58	NA	-140.1	7.75	19.2	292	1.01
G304C	Sep-00		90	15.2	NA	NA	26.9	NA	NA	0.11	NA	0.547	NA	NA	7.71	14.21	215	NA
G308C	Jun-99	NA	69.8	24.4		0.417				0.37	0.054	0.011	0.003	240.9	8.26			3.28
G308C	May-00	NA	70	17.1	1.91	0.39	11.9		1.67	0.29	0.15	0.029	0.025	84.1	8.45	13	172	3.52
G308C	Sep-00	NA	68	17.4	1.48	0.37	13		1.5	1.5	0.04	0.082	0.004	163.7	8.39	11.29	113	3.13
G308C	Mar-01	NA	66.5	19.1		0.33	12.6			1.1		0.051	0.002	310	8.62	12.15	205	2.63
G308C	Sep-01	NA	76	22.5	2.81	0.29	12.3		2.94	0.2	0.016			105.8	8.5	12.64	196	1.77
G308C	Mar-02	NA	78	22.5		0.37	13			1.2	0.007	0.048	0.014	75.1	8.36	12.53	253	2.02
G308C	Sep-02	NA	76	15.7		0.41	11.5			0.46	0.44	0.02	0.029	151	8.79	13.44	200	3.15
G308C	Mar-03	NA					13.5			0.32		0.011	0.001	201	8.57	11.12	208	2.2
G308C	Sep-03	NA	72.7	19.7		0.37	14			1.2		0.039		195	8.24	13.63	235	2.73
G308C	Dec-03	NA	72	21		0.39	13.5			0.088				44	8.06	10.97	214	2.14
G308C	Jun-04	NA	84.1	34		0.28	14							145	8.13	12.4	220	1.71
G308C	Dec-04	NA	87.1	24		0.24	14.8							289	8.74	10.94	265	3.06
G308C	Jun-05	NA	86.6	25.7		0.24	17.6	0.046		0.51	0.053			-14	8.07	15.07	272	2.63
G309B	Jun-99	NA	268	27.4			19.2			0.13	0.068	0.71	0.7	-113.7	7.92			1.28
G309B	May-00	NA	99.8	21.4	2.67		24.6		2.84	0.025		0.65	0.75	-109.5	7.95	12.91	231	0.79
G309B	Sep-00	NA	99	23.2	1.31		24.1		1.67	0.038		0.63	0.61	-53.8	7.79	15.09	269	0.87
G309B	Mar-01	NA	101	22.4	1.24		24.1		1.23	0.072		0.73	0.69	268	7.8	8.9	286	0.26
G309B	Sep-01	NA	98	25.9	1.87		22.1		2.15			0.81	0.79	-34.6	7.76	13.82	239	0.12
G309B	Mar-02	NA	100	20.4			17			0.14		0.45	0.73	-97.4	7.76	11.8	337	0.29
G309B	Sep-02	NA	96	19.6			21.5					0.82	0.74	157	8.15	16.1	286	0.15
G309B	Mar-03	NA	98				23			0.077		0.7	0.64	277	7.83	12.16	270	0.32
G309B	Sep-03	NA	92.9	15.7			24					0.7	0.61	-52	7.81	16.26	292	0.23
G309B	Dec-03	NA	93.6	21		21						0.73	0.7	-92	7.94	11.2	342	0.25
G309B	Jun-04	NA	98	26			23.5					0.67	0.58	-54	7.72	12.88	244	0.64
G309B	Dec-04	NA	103	22			22.9		2.94			0.617	0.55	297	8.03	11.89	291	0.16
G309B	Jun-05	NA	100	28.4			22				0.053	0.46	0.434	11.4	7.68	12.84	312	0.28
G309C	Jun-99	NA	59.3	16.1		0.931	18.6			0.15	0.026	0.007	0.006	26.2	8.54			3.61
G309C	May-00	NA	58	17.6	2.45	0.881	16.1		2.79	0.025				49	8.5	12.3	165	2.47
G309C	Sep-00	NA	54	17		0.848	16.3			0.029		0.005	0.003	NA	8.35	15.15	191	NA
G309C	Mar-01	NA	58	18.7		0.8	15.7			0.044		0.003	0.001	286	8.34	8.41	201	2.67
G309C	Sep-01	NA	56	49.5	1.34	0.83	14.9		1.41					129.6	8.36	12.9	164	2.55
G309C	Mar-02	NA	58	17.4		0.9	11					0.03	0.74	5.6	8.38	11.45	239	2.34
G309C	Sep-02	NA	64	22.5		0.87	14.5							171	8.8	13.8	207	2.24
G309C	Mar-03	NA					17							308	8.33	10.77	201	2.61
G309C	Sep-03	NA	50.5	26.7		0.93	14.5							91	8.28	13.18	211	2.23
G309C	Dec-03	NA	53.6	17		0.95	16			0.39				-80	8.44	10.87	246	0.73
G309C	Jun-04	NA	55	22		0.9	16							71	8.29	12.81	173	2.04
G309C	Dec-04	NA	59.7	20		0.84	15.4					0.006	0.001	120	8.5	11.11	202	1.56
G309C	Jun-05	NA	60.7	24.2		0.9	14.1						0.001	-60	8.71	12.29	211	2.17

TABLE 13
WATER QUALITY PARAMETERS
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

		Analytes												Field Measurements				
		Ammonia	Alkalinity	Chloride	DOC	Nitrate	Sulfate	Sulfide	TOC	Iron (total)	Iron (dissolved	Manganese (total)	Manganese (dissolved)	Oxidation Reduction Potential	pH	Temperature	Conductivity	Dissolved Oxygen
Method		350.1	310.1	9056	415.1	353.2	9056	376.1	415.1	TAL	TAL	TAL	TAL					
Well	**Unit**	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mV	s.u.	°C	µS/cm	mg/L
G310S	Dec-03	NA	19.8	31		8.42	10			0.8			0.019	235	5.45	15.26	211	2.52
G310S	Jun-04	NA	13.2	28		7.76	12							198	5.49	15.56	213	1.84
G310S	Dec-04	NA	16.5	33		9.02	12.2			0.73				299	5.52	14.8	234	3.36
G310S	Jun-05	NA	18.9	44.5		5.8	13.4			6.01		0.14	0.003	41	5.53	16.48	279	1.1
G310A	May-00	NA	183	35.1	3.43	0.132	19		3.17					5.8	7.47	14.17	425	0.27
G310A	Sep-00	NA	135	23.2			18.1		3.17			0.005	0.006	137.6	7.59	17.69	353	0.92
G310A	Mar-01	NA	167	36.2			20			0.33		0.005	0.001	381	7.31	10.69	410	0.37
G310A	Sep-01	NA	150	25	1.28		14.4							77.7	7.56	15.77	321	0.27
G310A	Mar-02	NA	168	29.8		6.7	14		7.6					114.6	7.52	13.17	341	0.49
G310A	Sep-02	NA	168	20.5			14.5							137	7.97	17.04	390	0.13
G310A	Mar-03	NA	194				20					0.001	0.001	308	7.26	13.25	454	0.46
G310A	Sep-03	NA	167	20.5			11							92	7.59	14.34	393	0.32
G310A	Dec-03	NA	159	24			17							48	7.2	11.6	361	0.3
G310A	Jun-04	NA	139	20			20							53	7.33	13.85	328	0.19
G310A	Dec-04	NA	148	25	1.04		20.7							264	7.77	12.5	386	0.17
G310A	Jun-05	NA	153	23.9		0.18	16.4							13	7.46	15.35	401	0.5
G310B	May-00	NA	224	46.8	1.45	1.3	18.1		3.18					120.9	8.56	14.84	522	0.63
G310B	Sep-00	NA	218	45.5		0.882	20					0.003	0.003	-24.1	8.17	20.1	244	1.32
G310B	Mar-01	NA	228	52.6		0.71	19			0.15		0.009		356	7.32	8.99	555	0.4
G310B	Sep-01	NA	230	49	2.23	0.65	16.9			0.14		0.011		29	7.27	15.9	522	0.44
G310B	Mar-02	NA	224	48.6		1	17		9			0.003	0.002	57	7.29	11.69	466	0.41
G310B	Sep-02	NA	256	51.9		0.79	17.5							139	7.62	15.6	656	0.16
G310B	Mar-03	NA	227				18.5		1.55			0.003	0.001	307	7.09	11.41	573	0.27
G310B	Sep-03	NA	215	54.8		0.89	18.5							166	7.34	13.92	601	0.29
G310B	Dec-03	NA	234	52		0.7	19							75	7.04	11.01	571	0.23
G310B	Jun-04	NA	246	47		0.38	19.5							226	7.19	13.04	585	0.17
G310B	Dec-04	NA	244	47	2.3	0.49								165	7.23	11.62	593	0.18
G310B	Jun-05	NA	251	50.8	1.1	0.56								143	7.39	13.57	656	0.23
G310C	May-00	NA	110	8.44	2.53		40		2.82	8.6	1.5	0.34	0.28	-173.5	8.34	17.7	299	0.87
G310C	Sep-00	NA	81	4.07			23			1.4	0.25	0.12	0.062	157.6	7.42	17.75	590	1.21
G310C	Mar-01	NA	75	2.63	1.41		12.6		1.47	1.3	0.017	0.1	0.064	339	8.19	7.8	160	1.65
G310C	Sep-01	NA	66	2.13			9.01			0.71		0.074	0.046	123.2	8.38	15.55	128	1.7
G310C	Mar-02	NA	72				14	0.12		1.6		0.083	0.028	84.3	8.2	9.85	116	0.9
G310C	Sep-02	NA	78				9.5			0.96		0.049	0.017	135	8.5	17.5	145	0.92
G310C	Mar-03	NA					7.5			0.36	0.45	0.022	0.007	318	8.03	11.03	209	5.34
G310C	Sep-03	NA	55.7				9.5			0.41		0.029	0.014	156	8.12	14.06	125	1.71
G310C	Dec-03	NA	56.5			0.7	9.5			0.47			0.028	4	8.3	11.6	119	1.6
G310C	Jun-04	NA	56.6				7.5							115	7.92	13.47	111	2.19
G310C	Dec-04	NA	60.4				8.1			0.53				283	8.59	10.47	131	1.75
G310C	Jun-05	NA	60.4	2.3		0.16	13.3	0.027		0.44		0.017	0.006	144	8.83	16.94	118	2.11
G311A	Mar-01	NA	70	3.08		0.32	11.2			0.045		0.005	0.003	311	7.45	8.21	169	4.56
G311A	Sep-01	NA	66	3.34	1.85	0.36	10.2			0.45		0.012		36.9	7.66	14.16	133	4.41
G311A	Mar-02	NA	78			0.45	8.5			0.36		0.006		123.9	7.82	10.16	207	4.68
G311A	Sep-02	NA	72			0.49	9		1.6					213	8.33	13.81	159	4.66
G311A	Mar-03	NA					9.5			0.21		0.005	0.002	315	7.65	12.42	169	4.31
G311A	Sep-03	NA	86.4			0.55	10							216	7.83	13.13	174	3.1
G311A	Dec-03	NA	99.3				10.5							97	7.24	12.11	200	3.87
G311A	Jun-04	NA	150			0.69	9							229	7.43	14.33	315	3.17
G311A	Dec-04	NA	159	9.4		0.9	9.54							220	7.64	11.7	317	2.23
G311A	Jun-05	NA	163	16.3		1.3	8.8				0.04			-53	7.47	13.18	370	3.03
G311C	Mar-01	NA	85	7.75		1.04	21.1			0.021		0.039	0.041	316	7.94	6.85	235	4.76
G311C	Sep-01	NA	81	7.42	2.29	1.09	19.7					0.046	0.034	115.4	8.17	12.33	179	5.56
G311C	Mar-02	NA	90	6.1		1.3	17.5			0.049		0.02	0.018	124.1	8.19	8.52	267	5.54
G311C	Sep-02	NA	94	8.8		1.32	18							216	8.43	13.42	235	4.71
G311C	Mar-03	NA					11		1.11	2.7		0.074	0.037	318	8.03	11.03	209	5.34
G311C	Sep-03	NA	61.4	42.1		1.57	20.5			0.3		0.056	0.052	206	8.49	11.86	266	1.43
G311C	Dec-03	NA	68.1	43		1.94	21.5			0.1		0.063	0.051	36	8.01	10.4	278	2.27
G311C	Jun-04	NA	78.2	35		1.24	20							119	8.07	12.23	261	2.18
G311C	Dec-04	NA	92.7	17		1.54	19.8			0.35				298	8.42	11.12	262	2.91
G311C	Jun-05	NA	90.4	23.6		1.4	19.3				0.087	0.016	0.014	-52	8.37	12.41	274	3.42
G312A	Dec-03	NA	41.1	11		1.38	68							204	6.04	13.77	223	7.82
G312A	Jun-04	NA	42.8	8.5		5.57	11.5							98	6.22	15.63	141	7.27
G312A	Dec-04	NA	40.8	10		1.67	5.02							335	6.46	13.11	133	7.38
G312A	Jun-05	NA	19.9	19.6		11	5.3							-63	5.79	16.78	144	7.25
G312B	Dec-03	NA	127	67		4.63	21			0.45		0.13	0.083	45	8.39	10.39	451	5.24
G312B	Jun-04	NA	97.9	54		3.52	20							88	7.74	14.95	426	5.73
G312B	Dec-04	NA	87.8	76		4.86	17.8							286	8.06	12.73	477	5.98
G312B	Jun-05	NA	111	110		32.5	16.7					0.018	0.003	136	7.6	10.66	634	6.06
G312C	Dec-03	NA	169	32			23.5			0.13		0.46	0.39	42	7.4	10.61	403	0.4
G312C	Jun-04	NA	167	25			24					0.26	0.24	16	7.47	14.1	448	0.39
G312C	Dec-04	NA	175	26	2.3		20.6											
G312C	Jun-05	NA	199	30.7	1.4		21.5											
G313A	Dec-03	NA	241	91.6			26.5			2.9	0.73	6.9	6.5	140	6.33	8.11	685	5.9
G313A	Jun-04	NA	175	110			10.5			2.5		4.8	4.7	231	6.45	15.19	610	1.12
G313A	Dec-04	NA	207	68	4.3				4.11	10.7	0.4	6.9	7.2	284	6.96	11.89	615	1.8
G313A	Jun-05	NA	129	157	1.8	0.1	34.5		2	2.8		1.8	1.8	55	6.13	14.74	882	0.36

TABLE 13
WATER QUALITY PARAMETERS
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

		Analytes												Field Measurements				
		Ammonia	Alkalinity	Chloride	DOC	Nitrate	Sulfate	Sulfide	TOC	Iron (total)	Iron (dissolved	Manganese (total)	Manganese (dissolved)	Oxidation Reduction Potential	pH	Temperature	Conductivity	Dissolved Oxygen
Method		350.1	310.1	9056	415.1	353.2	9056	376.1	415.1	TAL	TAL	TAL	TAL					
Well	**Unit**	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mV	s.u.	°C	µS/cm	mg/L
GZ17M	Sep-03	NA	86.4	21.5		2.92	22.5							161	8.06	14.48	298	5.73
GZ17M	Dec-03	NA	87.9	17		2.83	26							128	7.73	11.64	284	5.83
GZ17M	Jun-04	NA	92.7	20		2.79	24							134	7.85	12.67	255	6.03
GZ17M	Dec-04	NA	96.7	22		2.61	22.9							260	8.42	11.81	309	5.43
GZ17M	Jun-05	NA	95.5	20.4		3.1	21.7							-24	8.31	13.75	304	6.14
GZ17D	Sep-03	NA	84.5	19.6		2.49	23							167	8.12	14.22	279	4.5
GZ17D	Dec-03	NA	85.9	22		2.5	25							114	7.63	11.39	273	5
GZ17D	Jun-04	NA	90.5	20		2.44	22.5							141	7.81	13.17	243	4.42
GZ17D	Dec-04	NA	96.2	20		2.56	22.9							245	8.05	11.09	254	4.99
GZ17D	Jun-05	NA	93.9	21.2		2.8	25.2				0.042			-15	8.39	14	255	4.95
G313C	Dec-03	NA	83.3	15		2.25	28			18	0.29	0.85	0.15	72	7.93	9.9	262	3.79
G313C	Jun-04	NA	86.4	18		2.46	25					9.9		201	7.8	13.01	254	4.13
G313C	Dec-04	NA	95.3	19		2.38	23.2					0.058		228	7.9	10.75	284	2.37
G313C	Jun-05	NA	90.9	18.4		2.8	22.8						0.004	28	7.93	12.91	313	2.92
G315B	Dec-03	NA	224	44		0.52	17					0.16	0.17	142	6.92	10.82	578	0.18
G315B	Jun-04	NA	235	100		0.6	19							126	7.02	16.73	686	0.17
G315B	Dec-04	NA	270	49	3.32	0.81	17.2		3.34	1.72				260	7.04	13.54	652	0.21
G315B	Jun-05	NA	269	71.9	1.7	0.82	19.3	0.067	2.3	0.99	0.064	0.097	0.081	-24	7.23	14.05	653	0.62
G315C	Dec-03	NA	292	72		0.31	17			0.76		0.076	0.037	124	6.78	10.75	750	0.13
G315C	Jun-04	NA	347	130		0.46	13							153	6.73	17.46	929	0.46
G315C	Dec-04	NA	340	83	4.08	0.61	11.6		4.03	1.68		0.25		42	6.91	12.76	835	0.05
G315C	Jun-05	NA	334	128	2.7	0.71	14.2	0.034	2.2		0.073	0.062	0.031	86	6.9	13.99	899	0.17
G317B	Dec-03	NA	37.4			0.68	9.5							70	8.99	13.57	93	8.7
G317B	Jun-04	NA	35.8			0.48	6.5							59	9.36	14.89	71	8.95
G317B	Dec-04	NA	38.5			0.44	6.8							213	9.75	14.44	81	8.06
G317B	Jun-05	NA	39.6	1		0.48	7.7	0.049		5.66		0.134		76	9.67	14.18	101	8.68
G317C	Dec-03	NA	37.9			0.42	8							101	8.71	12.68	90	9.01
G317C	Jun-04	NA	39.1	8.4		0.24	5.5							2	8.77	15.67	75	9.17
G317C	Dec-04	NA	41.4			0.26	6.1			10.6		0.32		201	9.02	13.71	94	7.85
G317C	Jun-05	NA	44.1	1.7		0.21	5							-46	9.18	13.4	77	8.64
GZ5S	Sep-03	NA	82.8	6.9		1.43	6.5							285	6.25	13.02	195	7.12
GZ5S	Dec-03	NA	89.3			1.31	6							106	6.1	10	225	7.9
GZ5S	Jun-04	NA	30.6			1.17								139	5.77	15.05	87	7.24
GZ5S	Dec-04	NA	13.8		1.38	1.76	8.4		1.44					320	6.49	11.73	305	6.32
GZ5S	Jun-05	NA	50.1	2.1		2.2			1.1					110	5.75	13.21	118	7.51
GZ5M	Sep-01	NA	450	76.7	8.41	0.63	7.97		8.79	0.29		3.2	2.9	82.9	6.67	14.6	822	0.23
GZ5M	Mar-02	NA	499	84.7	16.7	0.69	10		19.6			3.61	3.24	89.3	6.76	12.61	1124	0.15
GZ5M	Sep-02	NA	510	77.3		1.23	13			0.3		4.4	4	168	6.89	13.18	1127	0.37
GZ5M	Mar-03	NA	384	53.6			7			0.2		2.4	1.3	300	6.54	10.54	813	2.42
GZ5M	Sep-03	NA	461	76.4			8				0.28	4.1	4	90	6.63	14.2	1138	0.27
GZ5M	Dec-03	NA	451	95		0.35	7.5			0.25	0.21	3.9	3.9	35	6.6	10.1	1270	0.3
GZ5M	Jun-04	NA	459	110			7					3.7	3.7	133	6.76	13.67	1166	0.31
GZ5M	Dec-04	NA	441	75	4.86		8.1		4.58		0.065	3.6	3.6	157	6.84	11.12	1039	0.82
GZ5M	Jun-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GZ14D	Jun-99	NA	102	28.2		1.68	13.2			0.074	0.094			95.7	8.12			4.09
GZ14D	May-00	NA	108	25.5	2.13	1.55	14.9		5.09					71.3	8.05	20.59	299	3.15
GZ14D	Sep-00	NA	105	25	2.27	1.5	15.6		2.73	0.076	0.033	0.002	0.002	NA	7.73	11.22	174	NA
GZ14D	Mar-01	NA	110	25.6	1.69	1.41	14.7		3.23	0.056		0.003	0.001	327	7.93	12.68	298	3.03
GZ14D	Sep-01	NA	102	25.8	3.02	1.62	14.1		3.06					133.1	7.64	12.38	240	3.88
GZ14D	Mar-02	NA	119	24.5		1.5	12					0.002		127.3	7.87	9.72	319	2.8
GZ14D	Sep-02	NA	45.1	17.6		4.17	15							185	8.68	16.18	188	7.61
GZ14D	Mar-03	NA	116			1.77	16					0.003	0.001	265	7.45	10.37	319	2.98
GZ14D	Sep-03	NA	111	29.2		1.69	16.5							109	7.74	12.92	353	2.43
GZ14D	Dec-03	NA	117	27		1.62	15.5							67	7.55	10.53	358	2.2
GZ14D	Jun-04	NA	118	33		1.68	14							108	7.67	14.3	360	2.64
GZ14D	Dec-04	NA	114	32		1.47	15.4		1.07					99	7.89	8.76	346	2.32
GZ14D	Jun-05	NA	131	41		1.6	13.5		2.7					-64	7.94	11.68	381	2.13

Notes:
NA = Not analyzed
No value listed indicates that compound was not detected in that sample.
µg/L = micrograms per liter
mg/L = milligrams per liter
s.u. = standard units
µS = micro siemens
mV = milliVolts

TABLE 14
NATURAL ATTENUATION PARAMETERS COMPARISON
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

		Analytes														Field Measurements				
		Alkalinity	Chloride	DOC	Nitrate	Sulfate	Sulfide	TOC	Iron (total)	Iron (dissolved	Manganese (total)	Manganese (dissolved)	Methane	Ethane	Ethene	Oxidation Reduction Potential	pH	Temperature	Conductivity	Dissolved Oxygen
	Method	310.1	9056	415.1	353.2	9056	376.1	415.1	TAL	TAL	TAL	TAL	RSK175	RSK175	RSK175					
Well	Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mV	s.u.	°C	µS/cm	mg/L
G304A	Jun-99	155	37	33.8				63.4	96000	116000	4340	5240	1200	15	16	-104.1	6.46			1.03
G304A	May-00	139	14.2	55.8		1.07		66	87400	86500	3250	3280	830	24	25	-88.5	6.44	18.48	445	0.44
G304A	Sep-00	178	45.9	44.2				45.2	115000	113000	5230	5170	2500	100	380	NA	6.29	16.82	421	NA
G304A	Mar-01	70	92.9	81.7				112	133000	133000	7560	7630	2700	110	370	165	6.26	14.48	817.2	0.3
G304A	Sep-01	175	83.3	53.2				54	120000	110000	6790	6220	6000	220	1800	-82.8	6.28	16.03	585	0.4
G304A	Mar-02	248	245			5		250	178000	220000	8550	10500	670	31	35	-80.7	6.19	12.28	1507	0.14
G304A	Sep-02	220	97.8	96		22.5	0.163	97	153000	146000	7750	7240	890	34	61	NA	NA	NA	NA	NA
G304A	Mar-03	176		14		6	0.13	15.2	71600	71500	2160	2240	210	5	3	NA	NA	NA	NA	NA
G304A	Sep-03	172	103	25			0.12	26.5	100000	130000	8010	7850	1300	400	170	NA	NA	NA	NA	NA
G304A	Dec-03	119	34	21	0.7	5.5	0.15	25	100000	87200	4590	4440	330	23	24	NA	NA	NA	NA	NA
G304A	Jun-04	206	120	39.6		9		38	81100	85400	8640	8990	2700	370	73	NA	NA	NA	NA	NA
G304A	Dec-04	242	240	110				118	190000	184000	11500	11300	2500	320	110	171	6.34	13.81	1270	0.28
G304A	Jun-05	174	74.3	22.9			0.054	21.2	82300	84300	4580	4760	1000	100	38	8	6.24	15.63	606	0.18
G308C	Jun-99	69.8	24.4		0.417				370	53.7	10.9	3	390	17	17	240.9	8.26			3.28
G308C	May-00	70	17.1	1.91	0.39	11.9		1.67	292	153	28.6	25.3	340	37	26	84.1	8.45	13	172	3.52
G308C	Sep-00	68	17.4	1.48	0.37	13		1.5	1540	40.3	81.8	3.5				163.7	8.39	11.29	113	3.13
G308C	Mar-01	66.5	19.1		0.33	12.6			1140		51.3	1.5	280	34	27	310	8.62	12.15	205	2.63
G308C	Sep-01	76	22.5	2.81	0.29	12.3		2.94	196	16.4			640	54	56	105.8	8.5	12.64	196	1.77
G308C	Mar-02	78	22.5		0.37	13			1220	6.6	47.5	13.7	72	8.7	7.1	75.1	8.36	12.53	253	2.02
G308C	Sep-02	76	15.7		0.41	11.5			465	443	20.1	29	53	5.9	4.2	151	8.79	13.44	200	3.15
G308C	Mar-03					13.5			321		10.7	0.87	41	4.6	3.5	201	8.57	11.12	208	2.2
G308C	Sep-03	72.7	19.7		0.37	14			1160		38.6		61	9	5.4	195	8.24	13.63	235	2.73
G308C	Dec-03	72	21		0.39	13.5			875				42	5.8	3.4	44	8.06	10.97	214	2.14
G308C	Jun-04	84.1	34		0.28	14							58	12	5.9	145	8.13	12.4	220	1.71
G308C	Dec-04	87.1	24		0.24	14.8							54	8.5	3.4	289	8.74	10.94	265	3.06
G308C	Jun-05	86.6	25.7		0.24	17.6	0.046		506	52.6			110	18	6.7	-14	8.07	15.07	272	2.63
G309B	Jun-99	268	27.4			19.2			127	67.7	705	695	310	3	7	-113.7	7.92			1.28
G309B	May-00	99.8	21.4	2.67		24.6		2.84	25.3		654	748	150		4.9	-109.5	7.95	12.91	231	0.79
G309B	Sep-00	99	23.2	1.31		24.1		1.67	38.2		631	604	510	7.3	9.9	-53.8	7.79	15.09	269	0.87
G309B	Mar-01	101	22.4	1.24		24.1		1.23	72		727	686	220		5	268	7.8	8.9	286.3	0.26
G309B	Sep-01	98	25.9	1.87		22.1		2.15			807	793	700	20	9.4	-34.6	7.76	13.82	239	0.12
G309B	Mar-02	100	20.4			17			141		449	734	85			-97.4	7.76	11.8	337	0.29
G309B	Sep-02	96	19.6			21.5					823	741	100			157	8.15	16.1	286	0.15
G309B	Mar-03	98				23			76.9		697	637	80			277	7.83	12.16	270	0.32
G309B	Sep-03	92.9	15.7			24					701	613	51			-52	7.81	16.26	292	0.23
G309B	Dec-03	93.6	21		21						728	703	59			-92	7.94	11.2	342	0.25
G309B	Jun-04	98	26			23.5					665	579	65			-54	7.72	12.88	244	0.64
G309B	Dec-04	103	22			22.9		2.94			607	550	100			297	8.03	11.89	291	0.16
G309B	Jun-05	100	28.4			22				52.9	465	434	67			115	7.68	12.84	312	0.28

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		Analytes														Field Measurements				
		Alkalinity	Chloride	DOC	Nitrate	Sulfate	Sulfide	TOC	Iron (total)	Iron (dissolved	Manganese (total)	Manganese (dissolved)	Methane	Ethane	Ethene	Oxidation Reduction Potential	pH	Temperature	Conductivity	Dissolved Oxygen
	Method	310.1	9056	415.1	353.2	9056	376.1	415.1	TAL	TAL	TAL	TAL	RSK175	RSK175	RSK175					
Well	Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mV	s.u.	°C	µS/cm	mg/L
G309C	Jun-99	59.3	16.1		0.931	18.6			148	26	7.2	6.2				26.2	8.54			3.61
G309C	May-00	58	17.6	2.45	0.881	16.1		2.79	25							49	8.5	12.3	165	2.47
G309C	Sep-00	54	17		0.848	16.3			28.7		5.1	3.4				NA	8.35	15.15	191	NA
G309C	Mar-01	58	18.7		0.8	15.7			44.4		2.6	1.3	9.5			286	8.34	8.41	200.8	2.67
G309C	Sep-01	56	49.5	1.34	0.83	14.9		1.41								129.6	8.36	12.9	164	2.55
G309C	Mar-02	58	17.4		0.9	11					2.5	736				5.6	8.38	11.45	239	2.34
G309C	Sep-02	64	22.5		0.87	14.5										171	8.8	13.8	207	2.24
G309C	Mar-03					17										308	8.33	10.77	201	2.61
G309C	Sep-03	50.5	26.7		0.93	14.5										91	8.28	13.18	211	2.23
G309C	Dec-03	53.6	17		0.95	16			392							-80	8.44	10.87	246	0.73
G309C	Jun-04	55	22		0.9	16										71	8.29	12.81	173	2.04
G309C	Dec-04	59.7	20		0.84	15.4					5.9	1.2				120	8.5	11.11	202	1.56
G309C	Jun-05	60.7	24.2		0.9	14.1						0.93				-60	8.71	12.29	211	2.17
G310S	Dec-03	19.8	31		8.42	10			797			18.9				235	5.45	15.26	211	2.52
G310S	Jun-04	13.2	28		7.76	12										198	5.49	15.56	213	1.84
G310S	Dec-04	16.5	33		9.02	12.2			733							299	5.52	14.8	234	3.36
G310S	Jun-05	18.9	44.5		5.8	13.4			6010		137	2.5				41	5.53	16.48	279	1.1
G310A	May-00	183	35.1	3.43	0.132	19		3.17					170		29	5.8	7.47	14.17	425	0.27
G310A	Sep-00	135	23.2			18.1		3.17			5.3	6.2	30		3.4	137.6	7.59	17.69	353	0.92
G310A	Mar-01	167	36.2			20			331		4.6	1.4	330		56	381	7.31	10.69	409.5	0.37
G310A	Sep-01	150	25	1.28		14.4							130		9.8	77.7	7.56	15.77	321	0.27
G310A	Mar-02	168	29.8		6.7	14		7.6					32			114.6	7.52	13.17	341	0.49
G310A	Sep-02	168	20.5			14.5										137	7.97	17.04	390	0.13
G310A	Mar-03	194				20					0.83	1.2	94	26		308	7.26	13.25	454	0.46
G310A	Sep-03	167	20.5			11							50			92	7.59	14.34	393	0.32
G310A	Dec-03	159	24			17							34	5.3		48	7.2	11.6	361	0.3
G310A	Jun-04	139	20			20							26	6.5		53	7.33	13.85	328	0.19
G310A	Dec-04	148	25	1.04		20.7							68	18		264	7.77	12.5	386	0.17
G310A	Jun-05	153	23.9		0.18	16.4							22	4.6		13	7.46	15.35	401	0.5
G310B	May-00	224	46.8	1.45	1.3	18.1		3.18					18		4	120.9	8.56	14.84	522	0.63
G310B	Sep-00	218	45.5		0.882	20					3.4	2.6				-24.1	8.17	20.1	244	1.32
G310B	Mar-01	228	52.6		0.71	19			153		8.5		190		40	356	7.32	8.99	555	0.4
G310B	Sep-01	230	49	2.23	0.65	16.9			138		10.6		550		110	29	7.27	15.9	522	0.44
G310B	Mar-02	224	48.6		1	17		9			2.6	2.3	5.7			57	7.29	11.69	466	0.41
G310B	Sep-02	256	51.9		0.79	17.5							51	16		139	7.62	15.6	656	0.16
G310B	Mar-03	227				18.5		1.55			2.6	1.4	14			307	7.09	11.41	573	0.27
G310B	Sep-03	215	54.8		0.89	18.5							46	14		166	7.34	13.92	601	0.29
G310B	Dec-03	234	52		0.7	19							51	16		75	7.04	11.01	571	0.23
G310B	Jun-04	246	47		0.38	19.5							140	45		226	7.19	13.04	585	0.17
G310B	Dec-04	244	47	2.3	0.49	17.6		2.08					120	38		165	7.23	11.62	593	0.18
G310B	Jun-05	251	50.8	1.1	0.56	15.4		1.2				1.7	87	30		143	7.39	13.57	656	0.23

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		Analytes														Field Measurements				
		Alkalinity	Chloride	DOC	Nitrate	Sulfate	Sulfide	TOC	Iron (total)	Iron (dissolved	Manganese (total)	Manganese (dissolved)	Methane	Ethane	Ethene	Oxidation Reduction Potential	pH	Temperature	Conductivity	Dissolved Oxygen
	Method	310.1	9056	415.1	353.2	9056	376.1	415.1	TAL	TAL	TAL	TAL	RSK175	RSK175	RSK175					
Well	Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mV	s.u.	°C	µS/cm	mg/L
G310C	May-00	110	8.44	2.53		40		2.82	8560	1490	343	276	18	4.2	6	-173.5	8.34	17.7	299	0.87
G310C	Sep-00	81	4.07			23			1380	254	121	62.4	4.2		4.4	157.6	7.42	17.75	590	1.21
G310C	Mar-01	75	2.63	1.41		12.6		1.47	1320	16.6	104	64.5				339	8.19	7.8	160	1.65
G310C	Sep-01	66	2.13			9.01			706		73.6	46				123.2	8.38	15.55	128	1.7
G310C	Mar-02	72				14	0.12		1620		82.7	27.9				84.3	8.2	9.85	116	0.9
G310C	Sep-02	78				9.5			962		48.7	17.1				135	8.5	17.5	145	0.92
G310C	Mar-03					7.5			362	454	21.8	7				318	8.03	11.03	209	5.34
G310C	Sep-03	55.7				9.5			406		29	13.9				156	8.12	14.06	125	1.71
G310C	Dec-03	56.5			0.7	9.5			468			27.8				4	8.3	11.6	119	1.6
G310C	Jun-04	56.6				7.5										115	7.92	13.47	111	2.19
G310C	Dec-04	60.4				8.07			526							283	8.59	10.47	131	1.75
G310C	Jun-05	60.4	2.3		0.16	13.3	0.027		443		17.1	5.6				144	8.38	16.94	118	2.11
G311A	Mar-01	70	3.08		0.32	11.2			44.6		4.9	2.7				311	7.45	8.21	168.8	4.56
G311A	Sep-01	66	3.34	1.85	0.36	10.2			446		11.5					36.9	7.66	14.16	133	4.41
G311A	Mar-02	78			0.45	8.5			359		6					123.9	7.82	10.16	207	4.68
G311A	Sep-02	72			0.49	9		1.6								213	8.33	13.81	159	4.66
G311A	Mar-03					9.5			207		4.7	1.8				315	7.65	12.42	169	4.31
G311A	Sep-03	86.4			0.55	10										216	7.83	13.13	174	3.1
G311A	Dec-03	99.3				10.5										97	7.24	12.11	200	3.87
G311A	Jun-04	150			0.69	9										229	7.43	14.33	315	3.17
G311A	Dec-04	159	9.4		0.9	9.54										220	7.64	11.7	317	2.23
G311A	Jun-05	163	16.3		1.3	8.8				40.2						-53	7.47	13.18	370	3.03
G311C	Mar-01	85	7.75		1.04	21.1			20.6		38.8	40.7				316	7.94	6.85	235	4.76
G311C	Sep-01	81	7.42	2.29	1.09	19.7					46.3	34.3				115.4	8.17	12.33	179	5.56
G311C	Mar-02	90	6.1		1.3	17.5			49		19.5	17.5				124.1	8.19	8.52	267	5.54
G311C	Sep-02	94	8.8		1.32	18										216	8.43	13.42	235	4.71
G311C	Mar-03					11		1.11	2750		74.4	37				318	8.03	11.03	209	5.34
G311C	Sep-03	61.4	42.1		1.57	20.5			303		56.4	52.5				206	8.49	11.86	266	1.43
G311C	Dec-03	68.1	43		1.94	21.5			104		63	51.3				36	8.01	10.4	278	2.27
G311C	Jun-04	78.2	35		1.24	20										119	8.07	12.23	261	2.18
G311C	Dec-04	92.7	17		1.52	19.8			352							298	8.42	11.12	262	2.91
G311C	Jun-05	90.4	23.6		1.4	19.3				87.4	15.6	13.7				-52	8.37	12.41	274	3.42
G312A	Dec-03	41.1	11		1.38	68										204	6.04	13.77	223	7.82
G312A	Jun-04	42.8	8.5		5.57	11.5										98	6.22	15.63	141	7.27
G312A	Dec-04	40.8	10		1.67	5.02										335	6.46	13.11	133	7.38
G312A	Jun-05	49.9	19.6		11	5.3										-63	5.79	16.78	144	7.25
G312B	Dec-03	127	67		4.63	21			455		129	83.2				45	8.39	10.39	451	5.24
G312B	Jun-04	97.9	54		3.52	20										88	7.74	14.95	426	5.73
G312B	Dec-04	87.8	76		4.86	17.8										286	8.66	12.73	477	5.98
G312B	Jun-05	111	110		32.5	16.7					17.8	3.4				136	7.3	16.66	634	6.06

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	Method	310.1	9056	415.1	353.2	9056	376.1	415.1	TAL	TAL	TAL	TAL	RSK175	RSK175	RSK175					
Well	**Unit**	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mV	s.u.	°C	µS/cm	mg/L
G312C	Dec-03	169	32			23.5			130		463	389	170			42	7.4	10.61	403	0.4
G312C	Jun-04	167	25			24					259	245	61			16	7.47	14.1	448	0.39
G312C	Dec-04	175	26	2.3		20.6		2.31			229	225	13			88	7.62	11.72	436	0.28
G312C	Jun-05	199	30.7	1.4		21.5		1.4			174	176	8.8			118	7.5	14.01	493	0.19
G313A	38140	175	110			10.5			2480		4850	4720	89	12		231	6.45	15.19	610	1.12
G313A	Dec-04	207	68	4.3				4.11	10700	402	6890	7230	280	23		284	6.96	11.89	615	1.8
G313A	Jun-05	129	157	1.8	0.1	34.5		2	2830		1770	1750	28			55	6.13	14.74	882	0.36
GZ17M	Sep-03	86.4	21.5		2.92	22.5										161	8.06	14.48	298	5.73
GZ17M	Dec-03	87.9	17		2.83	26										128	7.73	11.64	284	5.83
GZ17M	38140	92.7	20		2.79	24										134	7.85	12.67	255	6.03
GZ17M	Dec-04	96.7	22		2.61	22.9										260	8.42	11.81	309	5.43
GZ17M	Jun-05	95.5	20.4		3.1	21.7										-24	8.31	13.75	304	6.14
GZ17D	Sep-03	84.5	19.6		2.49	23										167	8.12	14.22	279	4.5
GZ17D	Dec-03	85.9	22		2.5	25										114	7.63	11.39	273	5
GZ17D	Jun-04	90.5	20		2.44	22.5										141	7.81	13.17	243	4.42
GZ17D	Dec-04	96.2	20		2.56	22.9										245	8.05	11.09	294	4.99
GZ17D	Jun-05	93.9	21.2		2.8	25.2				42.2						-15	8.39	14	255	4.95
G313C	Dec-03	83.3	15		2.25	28			18500	293	848	152				72	7.93	9.9	262	3.79
G313C	Jun-04	86.4	18		2.46	25					9910					201	7.8	13.01	254	4.13
G313C	Dec-04	95.3	19		2.38	23.2					58.4					228	7.9	10.75	284	2.37
G313C	Jun-05	90.9	18.4		2.8	22.8						4.2				28	7.93	12.91	313	2.92
G315B	Dec-03	224	44		0.52	17					159	168	31	13		142	6.92	10.82	578	0.18
G315B	Jun-04	235	100		0.6	19							91	36		126	7.02	16.73	686	0.17
G315B	Dec-04	270	49	3.32	0.81	17.2		3.34	1720				47	14		260	7.04	13.54	652	0.21
G315B	Jun-05	269	71.9	1.7	0.82	19.3	0.067	2.3	990	63.6	96.8	81.4	27	11		-24	7.23	14.05	653	0.62
G315C	Dec-03	292	72		0.31	17			759		75.7	37.3	360	110		124	6.78	10.75	750	0.13
G315C	Jun-04	347	130		0.46	13							720	240		153	6.73	17.46	929	0.46
G315C	Dec-04	340	83	4.08	0.61	11.6		4.03	1680		251		340	81		42	6.91	12.76	835	0.05
G315C	Jun-05	334	128	2.7	0.71	14.2	0.034	2.2		73	62.2	31.4	210	66		86	6.9	13.99	899	0.17
G317B	Dec-03	37.4			0.68	9.5										70	8.99	13.57	93	8.7
G317B	Jun-04	35.8			0.48	6.5										59	9.36	14.89	71	8.95
G317B	Dec-04	38.5			0.44	6.76										213	9.75	14.44	81	8.06
G317B	Jun-05	39.6	1		0.48	7.7	0.049		5660		134					76	9.67	14.18	101	8.68
G317C	Dec-03	37.9			0.42	8										101	8.71	12.68	90	9.01
G317C	Jun-04	39.1	8.4		0.24	5.5										2	8.77	15.67	75	9.17
G317C	Dec-04	41.4			0.26	6.05			10600		321					201	9.02	13.71	94	7.85
G317C	Jun-05	44.1	1.7		0.21	5										-46	9.18	13.4	77	8.64
GZ5S	Sep-03	82.8	6.9		1.43	6.5										285	6.25	13.02	195	7.12
GZ5S	Dec-03	89.3			1.31	6										106	6.1	10	225	7.9
GZ5S	Jun-04	30.6			1.17											139	5.77	15.05	87	7.24
GZ5S	Dec-04	138		1.38	1.76	8.37		1.44								320	6.49	11.73	305	6.32
GZ5S	Jun-05	50.1	2.1		2.2			1.1								110	5.75	13.21	118	7.51

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SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

		Analytes														Field Measurements				
		Alkalinity	Chloride	DOC	Nitrate	Sulfate	Sulfide	TOC	Iron (total)	Iron (dissolved	Manganese (total)	Manganese (dissolved)	Methane	Ethane	Ethene	Oxidation Reduction Potential	pH	Temperature	Conductivity	Dissolved Oxygen
	Method	310.1	9056	415.1	353.2	9056	376.1	415.1	TAL	TAL	TAL	TAL	RSK175	RSK175	RSK175					
Well	**Unit**	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mV	s.u.	°C	µS/cm	mg/L
GZ5M	Sep-01	450	76.7	8.41	0.63	7.97		8.79	288		3200	2940	550	6.9		82.9	6.67	14.6	822	0.23
GZ5M	Mar-02	499	84.7	16.7	0.69	10		19.6			3610	3240	170			89.3	6.76	12.61	1124	0.15
GZ5M	Sep-02	510	77.3		1.23	13			301		4370	3990	310	7.7		168	6.89	13.18	1127	0.37
GZ5M	Mar-03	384	53.6			7			202		2400	1320	400			300	6.54	10.54	813	2.42
GZ5M	Sep-03	461	76.4			8				278	4050	4000	350	11		90	6.63	14.2	1138	0.27
GZ5M	Dec-03	451	95		0.35	7.5			254	214	3900	3870	180	4.1		35	6.6	10.1	1270	0.3
GZ5M	Jun-04	459	110			7					3700	3730	300			133	6.76	13.67	1166	0.31
GZ5M	Dec-04	441	75	4.86		8.11		4.58		64.7	3630	3570	95			157	6.84	11.12	1039	0.82
GZ14D	Jun-99	102	28.2		1.68	13.2			73.6	94.1			69	1	15	95.7	8.12			4.09
GZ14D	May-00	108	25.5	2.13	1.55	14.9		5.09					120		9.7	71.3	8.05	20.59	299	3.15
GZ14D	Sep-00	105	25	2.27	1.5	15.6		2.73	75.7	33.1	2.2	1.6				NA	7.73	11.22	174	NA
GZ14D	Mar-01	110	25.6	1.69	1.41	14.7		3.23	56		2.8	1.2	12		10	327	7.93	12.68	298	3.03
GZ14D	Sep-01	102	25.8	3.02	1.62	14.1		3.06					220	23		133.1	7.64	12.38	240	3.88
GZ14D	Mar-02	119	24.5		1.5	12					2		43			127.3	7.87	9.72	319	2.8
GZ14D	Sep-02	45.1	17.6		4.17	15										185	8.68	16.18	188	7.61
GZ14D	Mar-03	116			1.77	16					2.6	1.3	45	4.7		265	7.45	10.37	319	2.98
GZ14D	Sep-03	111	29.2		1.69	16.5							63	7.4		109	7.74	12.92	353	2.43
GZ14D	Dec-03	117	27		1.62	15.5							74	9.4		67	7.55	10.53	358	2.2
GZ14D	Jun-04	118	33		1.68	14							84	11		108	7.67	14.3	360	2.64
GZ14D	Dec-04	114	32		1.47	15.4		1.07					78	8.8		99	7.89	8.76	346	2.32
GZ14D	Jun-05	131	40.9		1.6	13.5		2.7					47	4.4		-64	7.94	11.68	381	2.13

Notes:
No value listed indicates that compound was not detected in that sample.
µg/L = micrograms per liter
mg/L = milligrams per liter
s.u. = standard units
µS = micro siemens
mV = milliVolts

TABLE 15
SUMMARY OF NATURAL ATTENUATION SCREENING PROTOCOL
Old Southington Landfill Superfund Site

Location	Sample	Date Collected	EPA Protocol Score	Interpretation	Total Chlorinated Ethenes	Total TCE Equivalent	Total Chlorinated Ethanes	Total TCA Equivalent	Total BTEX	TOTAL Other VOC	Total VOC
Near Source	G304A	Jun-99	20	Adequate	NA	NA	NA	NA	NA	NA	NA
	G304A	May-00	30	Strong	1,180	1,838	400	442	30,500	926	33,006
	G304A	Sep-00	26	Strong	1,690	2,581	220	220	37,000	421	39,331
	G304A	Mar-01	31	Stong	6,100	9,013	500	566	34,000	1,760	42,360
	G304A	Sep-01	33	Strong	5,200	7,644	230	265	25,600	1,236	32,266
	G304A	Mar-02	33	Strong	13,720	19,096	930	1,034	43,014	5,427	63,091
	G304A**	Sep-02	33	Strong	5,145	7,590	614	682	32,707	1,645	40,111
	G304A**	Mar-03	22	Strong	695	1,090	300	345	25,800	307	27,102
	G304A**	Sep-03	37	Strong	1,375	2,333	335	451	21,912	1,079	24,701
	G304A**	Dec-03	25	Strong	1,830	2,651	255	311	25,000	554	27,639
	G304A**	Jun-04	35	Strong	2,147	3,311	332	469	20,617	803	23,899
	G304A	Dec-04	37	Strong	6,061	8,808	337	401	13,714	1,750	21,862
	G304A	Jun-05	29	Strong	3,760	5,513	229	281	21,500	930	26,419
Down Gradient of Source	G308C	Jun-99	16	Limited	488	651	11	16	8	140	647
	G308C	May-00	20	Adequate	415	481	11	16	1	100	527
	G308C	Sep-00	16	Adequate	367	426	10	14	0	95	472
	G308C	Mar-01	18	Adequate	396	449	6	8	0	96	498
	G308C	Sep-01	23	Strong	405	472	9	14	0	100	514
	G038C	Mar-02	16	Adequate	420	484	10	14	0	102	532
	G308C	Sep-02	16	Adequate	303	347	3	5	0	81	387
	G308C	Mar-03	14	Limited	388	442	8	12	0	102	498
	G308C	Sep-03	14	Limited	419	489	11	17	0	112	542
	G308C	Dec-03	15	Adequate	383	444	10	15	0	102	495
	G308C	Jun-04	16	Adequate	566	663	14	18	0	140	720
	G308C	Dec-04	18	Adequate	368	432	12	19	0	98	478
	G308C	Jun-05	17	Adequate	327	380	11	17	0	87	425
Down Gradient of Source	G309B	Jun-99	15	Adequate	73	143	4	5	1	4	83
	G309B	May-00	16	Adequate	135	192	9	17	0	0	144
	G309B	Sep-00	18	Adequate	150	216	12	23	0	0	162
	G309B	Mar-01	17	Adequate	135	196	11	21	0	0	147
	G309B	Sep-01	23	Strong	159	226	12	22	0	3	174
	G-309B	Mar-02	20	Adequate	140	197	10	19	0	0	150
	G309B	Sep-02	17	Adequate	111	156	8	15	0	0	119
	G309B	Mar-03	15	Adequate	106	149	7	13	0	0	113
	G309B	Sep-03	16	Adequate	46	65	4	8	0	0	50
	G309B	Dec-03	16	Adequate	97	136	7	13	0	0	104
	G309B	Jun-04	9	Limited	83	140	3	4	0	0	86
	G309B	Dec-04	15	Adequate	80	113	6	11	0	0	86
	G309B	Jun-05	15	Adequate	66	92	5	9	0	0	71
	G309C	Jun-99	11	Limited	391	428	5	6	0	120	516
	G309C	May-00	13	Limited	434	477	5	6	0	125	564
	G309C	Sep-00	12	Limited	397	433	5	6	0	110	512
	G309C	Mar-01	12	Limited	425	470	6	7	0	130	561
	G309C	Sep-01	12	Limited	398	438	4	5	0	110	512
	G309C	Mar-02	13	Limited	442	497	6	8	0	132	580
	G309C	Sep-02	12	Limited	438	494	6	8	0	131	575
	G309C	Mar-03	10	Limited	451	506	6	8	0	141	598
	G309C	Sep-03	10	Limited	434	485	6	8	0	131	571
	G309C	Dec-03	11	Limited	404	455	6	8	0	141	551
	G309C	Jun-04	10	Limited	574	648	10	13	0	170	754
	G309C	Dec-04	10	Limited	411	470	5	7	0	120	536
	G309C	Jun-05	9	Limited	214	242	0	0	0	64	278

TABLE 15
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Old Southington Landfill Superfund Site

Location	Sample	Date Collected	EPA Protocol Score	Interpretation	Total Chlorinated Ethenes	Total TCE Equivalent	Total Chlorinated Ethanes	Total TCA Equivalent	Total BTEX	TOTAL Other VOC	Total VOC
Furthest Well Nest Down Gradient of Source	G310S	Dec-03	2	Inadequate	0	0	0	0	0	0	0
	G310S	Jun-04	2	Inadequate	0	0	0	0	0	0	0
	G310S	Dec-04	4	Inadequate	0	0	0	0	0	0	0
	G310S	Jun-05	4	Inadequate	0	0	0	0	0	0	0
	G310A	May-00	21	Strong	147	190	4	5	0	28	179
	G310A	Sep-00	14	Limited	41	53	1	1	0	0	42
	G310A	Mar-01	20	Adequate	148	200	8	14	8	43	206
	G310A	Sep-01	20	Adequate	34	45	2	3	0	15	51
	G310A	Mar-02	17	Adequate	65	86	4	7	0	20	89
	G310A	Sep-02	16	Adequate	34	44	0	0	0	73	107
	G310A	Mar-03	20	Adequate	165	215	10	16	0	60	235
	G310A	Sep-03	14	Limited	8	10	0	0	0	37	45
	G310A	Dec-03	14	Limited	36	48	0	0	0	6	42
	G310A	Jun-04	9	Limited	38	56	2	3	0	4	44
	G310A	Dec-04	17	Adequate	87	111	6	10	0	27	120
	G310A	Jun-05	13	Limited	43	55	1	1	0	13	57
	G310B	May-00	13	Limited	177	204	6	8	0	22	205
	G310B	Sep-00	19	Adequate	186	221	9	13	0	22	217
	G310B	Mar-01	22	Strong	217	271	10	15	1	86	314
	G310B	Sep-01	27	Strong	241	304	11	17	1	89	341
	G310B	Mar-02	18	Adequate	188	223	8	12	0	58	253
	G310B	Sep-02	22	Strong	246	306	9	14	0	116	371
	G310B	Mar-03	20	Adequate	197	235	8	12	0	77	282
	G310B	Sep-03	22	Strong	213	261	12	18	0	95	320
	G310B	Dec-03	22	Strong	274	343	15	24	0	124	413
	G310B	Jun-04	24	Strong	308	385	20	31	1	98	427
	G310B	Dec-04	21	Strong	198	241	13	21	0	63	274
	G310B	Jun-05	20	Adequate	184	223	12	20	0	121	317
	G310C	May-00	11	Limited	10	11	0	0	0	6	16
	G310C	Sep-00	6	Limited	8	8	0	0	0	0	8
	G310C	Mar-01	8	Limited	9	9	0	0	0	3	12
	G310C	Sep-01	8	Limited	8	8	0	0	0	3	11
	G310C	Mar-02	8	Limited	6	6	0	0	0	3	9
	G310C	Sep-02	6	Limited	6	6	0	0	0	4	10
	G310C	Mar-03	8	Limited	11	11	0	0	0	0	11
	G310C	Sep-03	8	Limited	13	14	0	0	0	5	18
	G310C	Dec-03	9	Limited	11	12	0	0	0	0	11
	G310C	Jun-04	8	Limited	21	22	0	0	8	8	37
	G310C	Dec-04	8	Limited	14	15	0	0	0	5	19
	G310C	Jun-05	8	Limited	15	16	0	0	0	6	21

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SUMMARY OF NATURAL ATTENUATION SCREENING PROTOCOL
Old Southington Landfill Superfund Site

Location	Sample	Date Collected	EPA Protocol Score	Interpretation	Total Chlorinated Ethenes	Total TCE Equivalent	Total Chlorinated Ethanes	Total TCA Equivalent	Total BTEX	TOTAL Other VOC	Total VOC
Upgradient Well Nest	G311A*	Mar-01	4	Inadequate	0	0	0	0	0	0	0
	G311A*	Sep-01	3	Inadequate	0	0	0	0	1	0	1
	G311A*	Mar-02	4	Inadequate	0	0	0	0	0	0	0
	G311A*	Sep-02	4	Inadequate	0	0	0	0	0	0	0
	G311A*	Mar-03	4	Inadequate	0	0	0	0	0	0	0
	G311A*	Sep-03	4	Inadequate	0	0	0	0	0	0	0
	G311A*	Dec-03	4	Inadequate	0	0	0	0	0	0	0
	G311A*	Jun-04	4	Inadequate	0	0	0	0	0	0	0
	G311A*	Dec-04	4	Inadequate	0	0	0	0	0	0	0
	G311A*	Jun-05	3	Inadequate	0	0	0	0	0	0	0
	G311C*	Mar-01	0	Inadequate	0	0	0	0	0	0	0
	G311C*	Sep-01	-1	Inadequate	0	0	0	0	0	0	0
	G311C*	Mar-02	-1	Inadequate	0	0	0	0	0	0	0
	G311C*	Sep-02	2	Inadequate	0	0	0	0	0	1	1
	G311C*	Mar-03	1	Inadequate	0	0	0	0	0	0	0
	G311C*	Sep-03	0	Inadequate	0	0	0	0	0	0	0
	G311 C*	Dec-03	1	Inadequate	0	0	0	0	0	0	0
	G311C*	Jun-04	0	Inadequate	0	0	0	0	0	0	0
	G311C*	Dec-04	2	Inadequate	0	0	0	0	0	0	0
	G311C*	Jun-05	3	Inadequate	0	0	0	0	0	0	0
Side Gradient Near Source	G312A	Dec-03	-1	Inadequate	5	5	0	0	0	0	0
	G312A	Jun-04	-1	Inadequate	0	0	0	0	0	0	0
	G312A	Dec-04	1	Inadequate	12	12	0	0	1	0	13
	G312A	Jun-05	4	Inadequate	20	21	0	0	0	0	20
	G312B	Dec-03	4	Inadequate	16	17	0	0	0	2	18
	G312B	Jun-04	-1	Inadequate	0	0	0	0	0	0	0
	G312B	Dec-04	1	Inadequate	2	2	0	0	0	0	2
	G312B	Jun-05	2	Inadequate	4	4	0	0	0	0	4
	G312C	Dec-03	9	Limited	0	0	4	8	0	0	4
	G312C	Jun-04	6	Limited	0	0	0	0	0	0	0
	G312C	Dec-04	7	Limited	0	0	4	8	0	0	4
	G312C	Jun-05	7	Limited	0	0	5	10	0	0	5
Side Gradient Near Source	G313A	Dec-03	6	Limited	0	0	1	2	1	3	5
	G313A	Jun-04	8	Limited	0	0	0	0	0	3	3
	G313A	Dec-04	8	Limited	0	0	0	0	1	6	7
	G313A	Jun-05	6	Limited	0	0	0	0	0	1	1
	GZ17M	Sep-03	-3	Inadequate	0	0	0	0	0	0	0
	GZ17M	Dec-03	-3	Inadequate	0	0	0	0	0	0	0
	GZ17M	Jun-04	-3	Inadequate	0	0	0	0	0	0	0
	GZ17M	Dec-04	-3	Inadequate	0	0	0	0	0	0	0
	GZ17M	Jun-05	-2	Inadequate	0	0	0	0	0	0	0
	GZ17D	Sep-03	0	Inadequate	0	0	0	0	0	0	0
	GZ17D	Dec-03	0	Inadequate	0	0	0	0	0	0	0
	GZ17D	Jun-04	0	Inadequate	0	0	0	0	0	0	0
	GZ17D	Dec-04	0	Inadequate	0	0	0	0	0	0	0
	GZ17D	Jun-05	1	Inadequate	0	0	0	0	0	0	0
	G313C	Dec-03	0	Inadequate	0	0	0	0	0	0	0
	G313C	Jun-04	0	Inadequate	0	0	0	0	0	0	0
	G313C	Dec-04	0	Inadequate	0	0	0	0	0	0	0
	G313C	Jun-05	1	Inadequate	0	0	0	0	0	0	0

TABLE 15
SUMMARY OF NATURAL ATTENUATION SCREENING PROTOCOL
Old Southington Landfill Superfund Site

Location	Sample	Date Collected	EPA Protocol Score	Interpretation	Total Chlorinated Ethenes	Total TCE Equivalent	Total Chlorinated Ethanes	Total TCA Equivalent	Total BTEX	TOTAL Other VOC	Total VOC
Down Gradient of Source	G315B	Dec-03	20	Adequate	86	109	9	14	0	170	265
	G315B	Jun-04	24	Strong	115	143	16	26	0	273	404
	G315B	Dec-04	24	Strong	118	144	12	19	0	203	333
	G315B	Jun-05	17	Adequate	74	91	6	8	0	160	240
	G315C	Dec-03	25	Strong	293	371	38	66	3	178	512
	G315C	Jun-04	30	Strong	507	643	96	170	6	194	803
	G315C	Dec-04	25	Strong	490	617	48	86	3	216	757
	G315C	Jun-05	21	Strong	367	454	22	39	2	109	500
Down Gradient of Source	G317B	Dec-03	1	Inadequate	0	0	0	0	0	0	0
	G317B	Jun-04	-1	Inadequate	0	0	0	0	0	0	0
	G317B	Dec-04	-1	Inadequate	0	0	0	0	0	0	0
	G317B	Jun-05	-1	Inadequate	0	0	0	0	0	0	0
	G317C	Dec-03	5	Inadequate	34	35	0	0	0	13	47
	G317C	Jun-04	6	Limited	28	29	0	0	0	12	40
	G317C	Dec-04	3	Inadequate	34	35	0	0	0	13	47
	G317C	Jun-05	4	Inadequate	10	11	0	0	0	4	14
Near Source	GZ5S	Sep-03	3	Inadequate	2	2	0	0	0	17	19
	GZ5S	Dec-03	-1	Inadequate	0	0	0	0	0	14	14
	GZ5S	Jun-04	-1	Inadequate	0	0	0	0	0	2	2
	GZ5S	Dec-04	-1	Inadequate	0	0	0	0	0	1	1
	GZ5S	Jun-05	-1	Inadequate	0	0	0	0	0	0	0
	GZ5M	Sep-01	19	Adequate	1,477	1,874	0	0	0	499	1,976
	GZ5M	Mar-02	18	Adequate	1,438	1,965	2	4	1	12	1,453
	GZ5M	Sep-02	18	Adequate	741	1,057	7	14	2	17	767
	GZ5M	Mar-03	17	Adequate	347	475	8	15	3	15	373
	GZ5M	Sep-03	22	Strong	646	909	10	19	3	23	682
	GZ5M	Dec-03	21	Strong	1,140	1,608	7	14	2	22	1,171
	GZ5M	Jun-04	18	Adequate	1,343	1,853	0	0	2	29	1,374
	GZ5M	Dec-04	15	Adequate	1,683	2,114	5	10	1	21	1,710
	GZ5M	Jun-05	nc	nc	909	1,169	0	0	0	16	925
Down Gradient of Source	GZ14D	Jun-99	16	Adequate	159	167	182	3	4	0	178
	GZ14D	May-00	13	Limited	167	182	3	4	0	21	191
	GZ14D	Sep-00	14	Limited	180	199	3	5	0	23	206
	GZ14D	Mar-01	12	Limited	217	241	9	10	0	29	255
	GZ14D***	Sep-01	6	Limited	NA	NA	NA	NA	NA	NA	NA
	GZ14D	Mar-02	12	Limited	249	283	3	4	0	42	294
	GZ14D	Sep-02	5	Inadequate	50	50	2	2	0	15	67
	GZ14D	Mar-03	10	Limited	256	292	3	4	0	45	304
	GZ14D	Sep-03	10	Limited	275	313	3	4	0	47	325
	GZ14D	Dec-03	12	Limited	285	322	4	6	0	43	332
	GZ14D	Jun-04	12	Limited	270	304	4	5	0	45	319
	GZ14D	Dec-04	12	Limited	195	218	3	4	0	29	227
	GZ14D	Jun-05	12	Limited	156	173	2	3	0	19	177

Maximum concentrations are highlighted in bold
*Background Wells
**Field measurements were not available for MW304A; March 02 measurements were used for scoring.
****VOC sample lost; protocol score does not include points for VOCs.
nc: not calculated because water quality parameters were inadvertently omitted from June 2005 sampling event.
Evidence for anaerobic biodegradation (reductive dechlorination) of chlorinated organics:

	<5	Inadequate		15 to 20	Adequate
	6 to 14	Limited		>20	Strong

TABLE 16
SUMMARY OF EVIDENCE FOR ACTIVE REDUCTIVE DECHLORINATION OF CHLORINATED PLUME
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Well Nest	G311A	G311C	G304A	G308C	G309B	G309C	G310S	G310A	G310B	G310C	G312A	G312B	G312C	G313A	GZ17M	GZ17D	G313C	G315B	G315C	G317B	G317C	GZ5S	GZ5M	GZ14D
Location	Background wells		Plume core near source	Within plume core down gradient of source	Near plume edge		Downgradient edge of plume				Plume edge near source			Defines edge of smaller northern plume				Plume core down gradient of source		Southern edge of plume downgradient of source		Plume core near source		Southern edge of plume downgradient of source
Total Ethene Equivalent in ug/L (6/05)	0	0	5513	380	92	242	0	55	223	16	21	4	0	0	0	0	0	91	454	0	11	0	1169	173
Total Ethane Equivalent in ug/L (6/05)	0	0	281	17	9	0	0	1	20	0	0	0	10	0	0	0	0	8	39	0	0	0	0	3
Total Benzene, Toluene, Ethylbenzene, Xylenes (BTEX): Carbon and energy source; drives dechlorination (> 100 ug/L considered favorable) (6/05)	0	0	21500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
EPA Protocol Score (6/05)	3	3	29	17	15	9	4	13	20	8	4	2	7	6	-2	1	1	17	21	-1	3	-1	nc	12
Organic Carbon (DOC, TOC): Carbon and energy source that drives reductive dechlorination.	Background wells; low carbon		Generally favorable (e.g. > 20 mg/L)	Unfavorable (< 20 mg/L)	Unfavorable (< 20 mg/L)		Unfavorable (<20 mg/L)				Unfavorable (<20 mg/L)			Unfavorable (<20 mg/L)				Unfavorable (<20 mg/L)		Unfavorable (<20 mg/L)		Unfavorable (<20 mg/L)		Unfavorable (<20 mg/L)
Dissolved oxygen (DO): Most thermodynamically favored electron acceptor used by microbes. Anaerobic bacteria generally can't function if DO > 0.5 mg/L and reductive dechlorination will not occur. DO > 5 mg/L is not tolerated.	Background wells; unfavorable (DO > 0.5 mg/L)		Generally favorable (DO< 0.5 mg/L)	Unfavorable	Generally favorable in G309B; not favorable in G309C		Generally favorable in G310A and 310B ; but not in G310S and 310C				Highly unfavorable in G312A and 312B; favorable in G312C.			Highly unfavorable to unfavorable				Generally favorable		Highly unfavorable		Highly unfavorable in GZ5S; favorable in GZ5M		Unfavorable (>0.5 mg/L)
Nitrate: As dissolved oxygen is depleted, nitrate may be used as an electron acceptor for anaerobic biodegradation of organic carbon. Must be <1 mg/L for reductive dechlorination to occur.	Background wells; generally > 1 mg/L in G311C but < 1 mg/L in G311A).		Favorable < 1 mg/L)	Favorable (<1 mg/L)	Favorable (<1 mg/L)		Unfavorable in G310S; favorable in the deeper wells (G310A, 310B, and 310C)				Unfavorable in G312A and G312B; favorable in G312C)			Favorable in G313A; unfavorable in GZ17M, GZ17D, and G313C				Favorable		Favorable		Unfavorable in GZ5S; generally favorable in GZ5M		Unfavorable (>1 mg/L)
Iron (II): In some cases, iron (III) is reduced to iron (II) if it is used as an elecron acceptor during anaerobic biodegradation of organic carbon and can be used as an indicator of anaerobic degradation of fuel compounds and vinyl chloride. Native organic matter can also support reducing conditions. Iron (II) concentrations may be biased low due to repreciptiation as sulfides or cabonates.	Background wells; Fe(II)<1 mg/L		Favorable dissolved iron >1 mg/L)	Unfavorable (<1 mg/L)	Unfavorable		Generally unfavorable				Unfavorable			Unfavorable				Unfavorable		Unfavorable		Unfavorable		Unfavorable
Sulfate/Sulfide: After DO and nitrate have been depleted, sulfate may be used as an electron acceptor, thus producing sulfide. Concentrations > 20 mg/L may cause competitive exclusion of dechlorination, although reductive dechlorination can still occur in plumes with high sulfate concentrations	Background wells; sulfate ranges from 8.5 to 21.5 mg/L;		Generally favorable sulfate (<20 mg/L)	Generally favorable sulfate (<20 mg/L)	Unfavorable in G309B; sulfate favorable in G309C		Generally favorable				Mixed			Mixed in G313A; unfavorable in GZ17M, GZ17D, and G313C				Sulfate favorable		Sulfate favorable		Sulfate favorable		Sulfate favorable
	No sulfide detected		Unfavorable sulfide (<1 mg/L)	Unfavorable sulfide (<10 mg/L)	Unfavorable sulfide (<10 mg/L)		Unfavorable sulfide (<10 mg/L)				Unfavorable sulfide (<10 mg/L)			Unfavorable sulfide (<10 mg/L)				Unfavorable sulfide (<10 mg/L)		Unfavorable sulfide (<10 mg/L)		Unfavorable sulfide (<10 mg/L)		Unfavorable sulfide (<10 mg/L)
Alkalinity: Increased alkalinity results from dissolution of rock driven by CO2 produced by metabolism of microorganisms	Unfavorable--background as benchmark to evaluate alkalinity elsewhere		Mixed	Unfavorable (similar to background)	Unfavorable (similar to background)		Generally favorable in mid-depth wells (310A and 310B).				Generally unfavorable			Unfavorable				Generally favorable		Unfavorable (< background)		Favorable in deeper well (GZ5M)		Generally unfavorable (< 2 times background)
Chloride: Released into groundwater during biodegradation. Can be used as a conservative tracer	Unfavorable--background used as benchmark to evaluate chloride elsewhere		Generally favorable (e.g. > 2x background	Favorable prior to 2003	Favorable prior to 2003		Mixed				Favorable in mid-depth well (G312B)			Favorable in shallow well only (G313A)				Favorab;e		Unfavorable (< background)		Favorable in deeper well (GZ5M)		Mixed
Methane: Presence of methane is indicative of strongly reducing conditions.	Background wells; unfavorable (methane < 0.5 mg/L)		Generally favorable (>0.5 mg/L)	Generally unfavorable (<0.5 mg/L)	Unfavorable (<0.5 mg/L) since 2001		Generally unfavorable (<0.5 mg/L)				Unfavorable (<0.5 mg/L)			Unfavorable (<0.5 mg/L)				Generally unfavorable		Unfavorable (<0.5 mg/L)		Generally unfavorable (<0.5 mg/L)		Unfavorable (<0.5 mg/L)
Oxidation Reduction Potential (ORP): Measure of electron activity and an indicator of the relative tendency of a solution to accept or transfere elections. <50 millivolts (mV) indicates reductive pathway is possible; <-100 mV indicates reductive pathway is possible.	Background wells; ORP ranges from 36 mV to 318 mV		Generally favorable	Generally unfavorable	Mixed		Generally unfavorable				Mixed				Mixed			Generally unfavorable		Generally unfavorable		Generally unfavorable		Unfavorable
pH: microbes capable of degrading CVOCs and BTEX generally prefer pH values varying from 6 to 8 standard units	Favorable		Favorable	Favorable	Favorable		Favorable				Favorable			Favorable				Favorable		Mixed		Favorable		Favorable
Temperature: Directly affects the solubility of dissolved gasses and other geochemical species; also affects the metabolic activity of bacteria. Temperatures > 20° C are preferred.	Unfavorable		Unfavorable	Unfavorable	Unfavorable		Unfavorable				Unfavorable			Unfavorable				Unfavorable		Unfavorable		Unfavorable		Unfavorable
Manganese (II): Soluble manganese (II) can also be a byproduct of the biodegradation process and used to identify reducing zones. Not used in calculating the EPA protocol score.	Background wells Mn(II)< 1 mg/L		Dissolved manganese (Mn(II) > 1 mg/L	Mn(II) < 1 mg/L	Mn(II) < 1 mg/L		Mn(II) < 1 mg/L				Mn(II) < 1 mg/L			Mn(II) >1 mg/L in G313A; all other wells < 1 mg/L				Generally Mn(II) < 1 mg/L		Mn(II) < 1 mg/L		Mn(II)> 1 mg/L in GZ5M; < 1 mg/L in GZ5S		Mn(II) < 1 mg/L
Conductivity: measure of the ability of a solution to conduct electricity; conductivity increases as the ion concentration increases. Not included in EPA protocol score.	Conductivity ranges from 133 to 370 µS in background wells		High relative to background (421-1507 µS)	Similar to background (113-272 uS)	≥ background (164-342 µS)		≥ background (111-656 µS)				≥ background (133-634 µS)			≥ background (243-882 µS)				>background (578-899 µS)		≤background (71-101 µS)		≥ background (87-1270 µS)		≥ background (174-381 µS)

nc: not calculated

Unfavorable indicator
Favorable indicator

Inadequate evidence (<5)
Limited evidence (6-14)

Adequate Evidence (15-20)
Strong Evidence (>20)

TABLE 17
SURFACE WATER/SEDIMENT SAMPLES ANALYSES
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Sample ID	VOCs	SVOCs	Pesticides/ PCBs	Metals	Cn	Ammonia, Nitrate, Nitrite, Alklainity, Sulfate, COD TSS, K, Hardness	TOC, grain size	pH/Eh	Location
GZA Surface water and sediment Samples Collected in June and July 1990:									
SW-1	x			x					Unnamed tributary west of Turnpike Road
SW-2	x	x	x	x					Unnamed tributary west of SED-1
SW-3	DELETED FROM STUDY								Black Pond
SW-4	x	x	x	x					
SW-5	x	x	x	x					
SW-6	x			x					
SW-7	x	x	x	x					
SED-1	x			x					Unnamed tributary west of Turnpike Road
SED-2	x			x					Unnamed tributary west of SED-1
SED-3	x	x	x	x					Black Pond
SED-4	x	x	x	x					
SED-5	x	x	x	x					
SED-6	DELETED FROM STUDY								
SED-7	x	x	x	x					
ESE Surface water samples collected in June 1992									
SWS-1	x	x	x	x	x	x			Unnamed Tributary north of Lori Corporation (down stream)
SWS-2	x	x	x	x	x	x			Western shoreline of Black Pond
SWS-3	x	x	x	x	x	x			Southwest edge of Black Pond
SWS-4	x	x	x	x	x	x			Eastern edge of Black Pond
SWS-5	x	x	x	x	x	x			Outlet of Black Pond
SWS-6	x	x	x	x	x	x			Unnamed Tributary near GZA SED-2
SWS-7	x	x	x	x	x	x			Wetland area south of Black Pond
SWS-7B	x	x	x	x	x	x			
SWS-8	x	x	x	x	x	x			Northeast edge of Black Pond
SWS-9	x	x	x	x	x	x			Middle of Black Pond
SWS-10	x	x	x	x	x	x			Southeast edge of Black Pond
SWS-11	x	x	x	x	x	x			Unnamed tributary next to GZA SED-1

TABLE 17
SURFACE WATER/SEDIMENT SAMPLES ANALYSES
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Sample ID	VOCs	SVOCs	Pesticides/ PCBs	Metals	Cn	Ammonia, Nitrate, Nitrite, Alklainity, Sulfate, COD TSS, K, Hardness	TOC, grain size	pH/Eh	Location
ESE sediment samples collected in June 1992									
SED-1	x	x	x	x	x		x	x	Unnamed Tributary north of Lori Corporation (down stream)
SED-2	x	x	x	x	x		x	x	Western shoreline of Black Pond
SED-3	x	x	x	x	x		x		Southwest edge of Black Pond
SED-4	x	x	x	x	x		x		Eastern edge of Black Pond
SED-5	x	x	x	x	x		x	x	Outlet of Black Pond
SED-6	x	x	x	x	x		x	x	Unnamed Tributary near GZA SED-2
SED-7	x	x	x	x	x		x		Wetland area south of Black Pond
SED-8	x	x	x	x	x		x		Northeast edge of Black Pond
SED-9	x	x	x	x	x		x		Middle of Black Pond
SED-10	x	x	x	x	x		x		Southeast edge of Black Pond
SED-11	x	x	x	x	x		x	x	Unnamed tributary next to GZA SED-1
MACTEC - Sept. 01									
SW-1	x								Southwest edge of Black Pond
SW-2	x								Western edge of Black Pond
SED-1	x								Southwest edge of Black Pond
SED-2	x								Western edge of Black Pond
MACTEC - Sept. 02									
SW-1	x								Southwest edge of Black Pond
SW-2	x								Western edge of Black Pond
SED-1	x								Southwest edge of Black Pond
SED-2	x								Western edge of Black Pond
MACTEC - Sept. 04									
SWS-12	x	x		x					Western edge of Black Pond near outlet
SWS-12/DP	x	x		x					Western edge of Black Pond near outlet
SWS-13	x	x		x					Northwest edge of Black Pond
SWS-14	x	x		x					Southwest edge of Black Pond
SED-12	x	x		x					Western edge of Black Pond near outlet
SED-12/DP	x	x		x					Western edge of Black Pond near outlet
SED-13	x	x		x					Northwest edge of Black Pond
SED-14	x	x		x					Southwest edge of Black Pond

TABLE 18
SURFACE WATER SAMPLES
ORGANIC DATA
SUPPLEMENTAL RI REPORT
Old Southing Landfill Superfund Site

Sample ID	Sampling Date	Location	Units	Acetone	Carbon Disulfide	Xylene (total)	1,2-Dichloroethene (total)*	Chlorobenzene	Trichloroethene	di-n-butyl-phthalate	Naphthalene	1,3-Dichlorobenzene	Vinyl chloride	1,4-Dichlorobenzene
Maximum Detected Concentration:			**ug/L**		**23**	**3**	**9**	**2**	**3**	**0.7**	**8**	**2**	**3**	**0.7**
SWS-12[1]	Sep-04	Western edge of Black Pond near outlet	ug/L											
SWS-13	Sep-04	Northwest edge of Black Pond	ug/L											
SWS-14	Sep-04	Southwest edge of Black Pond	ug/L											
sw-1a[2]	Sep-01	Southwest edge of Black Pond	ug/L		1									
sw-1a[2]	Sep-02	Southwest edge of Black Pond	ug/L											
sw-2a[2]	Sep-01	Western edge of Black Pond	ug/L											
sw-2a[2]	Sep-02	Western edge of Black Pond	ug/L											
SW-1*	1990		ug/L											
SWS-1	1992	Unnamed Tributary north of Lori Corporation (down stream)	ug/L											
SW-2	1990		ug/L		4									
SWS-2	1992	Western shoreline of Black Pond	ug/L		13					**0.7**				
SWS-3	1992	Southwest edge of Black Pond	ug/L		1									
SW-4	1990		ug/L								3			
SWS-4	1992	Eastern edge of Black Pond	ug/L							0.6				
SW-5	1990		ug/L		5									
SWS-5R (SW9)	1990	Replicate	ug/L		**23**						**8**			
SWS-5	1992	Outlet of Black Pond	ug/L				4							
SW-6*	1990		ug/L											
SWS-6	1992	Unnamed Tributary near GZA SED-2	ug/L				6		2			1		
SW-7	1990		ug/L		12	**3**		**2**						
SWS-7	1992	Wetland area south of Black Pond	ug/L											
SWS-7B	1992													
SWS-8	1992	Northeast edge of Black Pond	ug/L		2									
SWS-9	1992	Middle of Black Pond	ug/L											
SWS-10	1992	Southeast edge of Black Pond	ug/L											
SWS-11	1992	Unnamed tributary next to GZA SED-1	ug/L				**9**		**3**			**2**	**3**	**0.7**

1 SWS-12 was rejected for SVOC during data validation. SWS-12-DUP had no detectable SVOC.
2 Not analyzed for SVOC
Compounds not listed were not detected in any sample.
No value indicates that the compound was not detected in the sample.
Bold = Maximum concentration

TABLE 19
SURFACE WATER SAMPLES
METALS DATA
SUPPLEMENTAL RI REPORT
Old Southing Landfill Superfund Site

Sample ID	Sampling Date	Location	Units	Aluminum	Antimony	Arsenic	Barium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Silver	Sodium	Thallium	Vanadium	Zinc
Maximum Detected Concentration:			**ug/L**	**4810**	**78.1**	**1.9**	**583**	**20.7**	**73900**	**25.9**	**11.1**	**45.6**	**70900**	**65.4**	**11900**	**5580**	**0.9**	**58.2**	**8340**	**18.1**	**29700**	**2.8**	**18.2**	**295**
SWS-12	Sep-04	Western edge of Black Pond near outlet	ug/L						12400						2540	68.3			2370					
SWS-13	Sep-04	Northwest edge of Black Pond	ug/L						13400				1080		2640	133			2860					
SWS-14	Sep-04	Southwest edge of Black Pond	ug/L						12300				326		2490	132			2370					
sw-1a*	Sep-01	Southwest edge of Black Pond	ug/L																					
sw-1a*	Sep-02	Southwest edge of Black Pond	ug/L																					
sw-2a*	Sep-01	Western edge of Black Pond	ug/L																					
sw-2a*	Sep-02	Western edge of Black Pond	ug/L																					
SWS-1	1990		ug/L	114			311		67400			16.9	9620		11200	**5580**	**0.9**		4670		**29700**			
SWS-1	1992	Unnamed Tributary north of Lori Corporation (down stream)	ug/L				96.4		21000				2800	4.5	5060	350					22000	**2.8**		
SW-2	1990		ug/L		**78.1**		262		22000	12.1		15.2	1960	3.8	10100	1000			**8340**	**18.1**	28900			17.5
SWS-2	1992	Western shoreline of Black Pond	ug/L	57.5			57.2		14600			3.4	663		4290	138					21300			
SWS-3	1992	Southwest edge of Black Pond	ug/L	41.4			53.7		14500			3.6	640		4170	129					21600			
SW-4	1990		ug/L	111			84.5		20300			6.9	666		5870	212			5370		24900			
SWS-4	1992	Eastern edge of Black Pond	ug/L	45.8			53.1		14700				732		4130	186					21600			
SW-5	1990		ug/L	124			171		20600			8.5	2010		7920	757			6880		26600			
SWS-5R (SW9)	1990	Replicate	ug/L	256			185		20900			11.4	2750		7950	1050			6940		26500			
SWS-5	1992	Outlet of Black Pond	ug/L				57.9		15100				823		4480	141					22200			
SW-6	1990		ug/L	203			156		55400			11.1	1910		8600	733			1780		12200			
SWS-6	1992	Unnamed Tributary near GZA SED-2	ug/L				93.3		24300				1950		5720	413					21300			
SW-7	1990		ug/L	**4810**			**583**	**20.7**	**73900**	**25.9**		**45.6**	**70900**	**65.4**	**11900**	2200		**58.2**	7110		29400		**18.2**	**295**
SWS-7	1992	Wetland area south of Black Pond	ug/L	4710		**1.9**	266		58200	14.2	11.1	19.4	16100	52.1	7500	2210		25.9			29700		11.6	243
SWS-8	1992	Northeast edge of Black Pond	ug/L	131			47.8		20100	2.8		3.2	2580	1.8	4580	575					19500			
SWS-9	1992	Middle of Black Pond	ug/L				47.2		14300				519		4000	100					21200			
SWS-10	1992	Southeast edge of Black Pond	ug/L	210			108		27900			3.8	5970	5.3	4900	1760					4870			28.6
SWS-11	1992	Unnamed tributary next to GZA SED-1	ug/L				114		24500				2640		5480	290					20400			

* Not analyzed for metals.
TAL Metals compounds not listed were not detected in any sample.
No value indicates that the metal was not detected in the sample.
Bold = Maximum concentration

TABLE 20
SEDIMENT SAMPLES
ORGANIC ANALYSES
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Sample ID	Sampling Date	Location	Units	Acetone	Carbon Disulfide	2-Butanone	4-Methyl-2-Pentanone	Toluene	Xylene (total)	Bromoform	Methylene chloride	1,2-Dichloroethene (total)	1,1-Dichloroethene	Benzene	Chlorobenzene	Chloromethane	Trichloroethene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Dibenzo(a,h)anthracene	Carbazole	Chrysene	Dibenzofuran	1,3-dichlorobenzene
Maximum Detected Concentration:			**ug/L**	**0.78**	**0.21**	**0.11**	**0.003**	**4.3**	**1.5**	**0.001**	**0.053**	**0.038**	**0.009**	**0.032**	**0.37**	**0.057**	**0.018**	**3.4**	**2.2**	**5.3**	**8.2**	**1.5**	**2.7**	**8**	**0.55**	**0.044**
SED-12	Sep-04	Western edge of Black Pond near outlet		0.02																						
SED-13	Sep-04	Northwest edge of Black Pond	mg/kg	0.04														**3.4**		**5.3**	**8.2**	1	**2.7**	**8**	1.5	
SED-14	Sep-04	Southwest edge of Black Pond	mg/kg	0.03															0.13	0.41	1.7	0.19		1.9		
sed-1a	Sep-01	Southwest edge of Black Pond	mg/kg					0.006																		
sed-1a	Sep-02	Southwest edge of Black Pond	mg/kg	0.16		0.034			0.004																	
sed-2a	Sep-01	Western edge of Black Pond	mg/kg				**0.003**	0.002		**0.001**																
sed-2a	Sep-02	Western edge of Black Pond	mg/kg	0.075		0.019																				
SED-1	1992	Unnamed Tributary north of Lori Corporation (down stream)	mg/kg	0.02														0.039	0.08	0.11	0.48	0.18	0.038	0.45	0.039	
SED-2 (SED3)	1990	Black Pond	mg/kg								0.007										0.15			0.16		
SED-2	1992	Western shoreline of Black Pond	mg/kg															0.039	0.08	0.11	0.48	0.18	0.038	0.45	0.039	
SED-3	1992	Southwest edge of Black Pond	mg/kg	0.24							**0.053**															
SED-4	1990	Eastern edge of Black Pond	mg/kg		**0.21**																0.6			0.49		
SED-4	1992	Eastern edge of Black Pond	mg/kg	0.21																				0.35		
SED-5	1990	Outlet of Black Pond	mg/kg								0.002							0.45	**2.2**	3.7	8	0.89		10	**0.55**	
SED-5	1992	Outlet of Black Pond	mg/kg	0.32		0.1		0.12			0.028	**0.038**							0.61	0.39	2.5	0.62	0.43	2.8		
SED-6 (SED2)	1990	Unnamed tributary west of SED-1	mg/kg																							
SED-6	1992	Unnamed Tributary near GZA SED-2	mg/kg	0.039									**0.009**						0.48	0.19	1		0.11	1.3		
SED-7	1990	Wetland area south of Black Pond	mg/kg			**0.11**			0.36			0.008	**0.009**	0.009	0.12			0.12	0.057	0.045	0.22			0.31	0.043	
SED-7R (SED8)	1990	Replicate	mg/kg						**1.5**					**0.032**	**0.37**	**0.057**		0.41	0.31	0.18	0.57			0.91	0.16	
SED-7	1992	Wetland area south of Black Pond	mg/kg					0.004													0.062			0.077		
SED-8	1992	Northeast edge of Black Pond	mg/kg	0.08		0.046		**4.3**										0.54	0.21	1.3	6.1	**1.5**	1.6	7.8	0.54	
SED-9	1992	Middle of Black Pond	mg/kg	**0.78**	0.02						0.023			0.026												
SED-10	1992	Southeast edge of Black Pond	mg/kg	0.17				0.11																0.32		
SED-11 (SED1)	1990	Unnamed tributary west of Turnpike Road	mg/kg													0.004										
SED-11	1992	Unnamed tributary next to GZA SED-1	mg/kg	0.072								0.019					**0.018**		0.045		0.21			0.24		**0.044**

Bold = maximum concentration
Shaded = Not analyzed for these compounds.
Compounds not listed were not detected in any sample.
No value indicates that the compound was not detected in the sample.

TABLE 20
SEDIMENT SAMPLES
ORGANIC ANALYSES
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Sample ID	Sampling Date	Location	Fluoranthene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Fluorene	2-Methylnaphthalene	4-Methylphenol	Naphthalene	4-Nitroaniline	Benzo(g,h,i)perylene	Phenanthrene	Phenol	Butyl benzyl phthalate	Bis(2-ethylhexyl) phthalate	di-n-butyl phthalate	Pyrene	Benzo(a)pyrene	Indeno(1,2,3,cd)pyrene
Maximum Detected Concentration:			**23**	**12**	**8.5**	**2.6**	**0.58**	**4.7**	**3.2**	**2**	**5.5**	**18**	**0.46**	**0.77**	**3.3**	**3.9**	**22**	**9.1**	**7.8**
SED-12	Sep-04	Western edge of Black Pond near outlet	0.043																
SED-13	Sep-04	Northwest edge of Black Pond	**23**	**12**	2.4	**2.6**	0.57		1.9		3.2	18					19	8	3.2
SED-14	Sep-04	Southwest edge of Black Pond	4.3	2.7	0.86	0.13					0.69	1.7					4.6	1.8	0.64
sed-1a	Sep-01	Southwest edge of Black Pond																	
sed-1a	Sep-02	Southwest edge of Black Pond																	
sed-2a	Sep-01	Western edge of Black Pond																	
sed-2a	Sep-02	Western edge of Black Pond																	
SED-1	1992	Unnamed Tributary north of Lori Corporation (down stream)	0.84	0.81	0.34	0.099					0.2	0.57					0.66	0.62	0.28
SED-2 (SED3)	1990	Black Pond	0.24									0.15						0.26	
SED-2	1992	Western shoreline of Black Pond	0.84	0.81	0.34	0.099					0.2	0.57					0.66	0.62	0.28
SED-3	1992	Southwest edge of Black Pond	0.61									0.46					0.48		
SED-4	1990	Eastern edge of Black Pond	0.66									0.37			0.89		0.58		
SED-4	1992	Eastern edge of Black Pond	0.65									0.29			0.26		0.52		
SED-5	1990	Outlet of Black Pond	21	6.7	**8.5**					**2**	**5.5**	**18**		**0.77**	0.93		**22**	**9.1**	**7.8**
SED-5	1992	Outlet of Black Pond	5.9	4.3	3.2	0.22			0.23		1.7	2.6			2.1		4.8	2.7	1.7
SED-6 (SED2)	1990	Unnamed tributary west of SED-1																	
SED-6	1992	Unnamed Tributary near GZA SED-2	1.8	2.2	1.7						0.9	0.57			1.3		2.1	1.3	1.1
SED-7	1990	Wetland area south of Black Pond	0.4	0.23	0.29	0.11	0.28		1.1		0.18	0.31			0.16		0.37	0.24	0.21
SED-7R (SED8)	1990	Replicate	1.2	0.91	0.59	0.37	**0.58**		**3.2**		0.62	0.85			0.32	**3.9**	1.4	0.87	0.77
SED-7	1992	Wetland area south of Black Pond	0.12	0.11								0.053		0.046			0.12		
SED-8	1992	Northeast edge of Black Pond	18	8.8	5.4	0.86		**4.7**			1.7	9.8	**0.46**		1.7		14	5.6	3.2
SED-9	1992	Middle of Black Pond													**3.3**	3.2			
SED-10	1992	Southeast edge of Black Pond	0.62									0.36					0.57		
SED-11 (SED1)	1990	Unnamed tributary west of Turnpike Road																	
SED-11	1992	Unnamed tributary next to GZA SED-1	0.47	0.31	0.22						0.18	0.097			0.3		0.29	0.22	0.18

Bold = maximum concentration
Shaded = Not analyzed for these compounds.
Compounds not listed were not detected in any sample.
No value indicates that the compound was not detected in the sample.

TABLE 21
SEDIMENT SAMPLES
METALS DATA
SUPPLEMENTAL RI REPORT
Old Southington Landfill Superfund Site

Sample ID	Sampling Date	Location	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Silver	Sodium	Vanadium	Zinc
Maximum Detected Concentration:			**mg/kg**	**16900**	**7.6**	**11.4**	**438**	**1.3**	**13.2**	**32200**	**42.3**	**20.3**	**92.5**	**47400**	**279**	**5910**	**11900**	**0.96**	**42.6**	**2920**	**1.6**	**777**	**365**	**535**
SED-12	Sep-04	Western edge of Black Pond near outlet	mg/kg	1310						200	1.7	0.095	1.3	1740	1.6	441	69.2						4	5.2
SED-13	Sep-04	Northwest edge of Black Pond	mg/kg							300	1.1		0.94	942	1.8	216	35.6							6.6
SED-14	Sep-04	Southwest edge of Black Pond	mg/kg	1340			40	0.29	0.54	2230	5	2.3	16	4310	19.7	605	205		7.9		**1.6**		5.5	70.8
sed-1a*	Sep-01	Southwest edge of Black Pond	mg/kg																					
sed-1a*	Sep-02	Southwest edge of Black Pond	mg/kg																					
sed-2a*	Sep-01	Western edge of Black Pond	mg/kg																					
sed-2a*	Sep-02	Western edge of Black Pond	mg/kg																					
SED-1	1992	Unnamed Tributary north of Lori Corporation (down stream)	mg/kg	6900		1.7	78.9	0.46		1820	12.8	6.1	89.3	12300	55.1	3130	204		35.8			95	27.6	124
SED-2 (SED3)	1990	Black Pond	mg/kg	4200			40.7	0.27	2.6	834	7.6		14.5	5830	11.2	1690	97.8		9.5	752			14.5	35.1
SED-2	1992	Western shoreline of Black Pond	mg/kg	3020		1.4	46.6	0.18	0.72	891	7.7	3.9	24	8020	133	1400	79.1		12.6			67	12.3	115
SED-3	1992	Southwest edge of Black Pond	mg/kg	4460		10.4	279			30200	17.6	12.8	45.7	28000	106	2110	2640	**0.96**	38.8			**777**	22	303
SED-4	1990	Eastern edge of Black Pond	mg/kg	1520			158			12400			21.8	8090		1050	1970					533		60.4
SED-4	1992	Eastern edge of Black Pond	mg/kg	1920		4.7	227			14400	4.3		26.8	13000	142	1310	1480		20.8			430	14.3	224
SED-5	1990	Outlet of Black Pond	mg/kg	6140		0.8	36.7	0.37	2.7	612	12.4	4.4	9.5	10500	3.6	2780	176		10.3	966			26	32.3
SED-5	1992	Outlet of Black Pond	mg/kg	15300		7.3	**438**	0.89		5610	**42.3**	**20.3**	86.5	42600	**279**	5190	**11900**	0.58	**42.6**	2850		537	57.6	**535**
SED-6 (SED2)	1990	Unnamed tributary west of SED-1	mg/kg	6000			75.1	0.39	3.7	1160	13.1		21.4	12000	33.2	2770	632		13.1	927		162	20.7	79.3
SED-6	1992	Unnamed Tributary near GZA SED-2	mg/kg	**16900**		5.6	255	1		4320	35.3	14.4	**92.5**	37300	234	**5910**	1990	0.23	32.4	**2920**		316	65.6	365
SED-7	1990	Wetland area south of Black Pond	mg/kg	6030		1.2	118	0.42	8.2	5880	24.1		42.1	29200	83.2	2260	300		22.8	865		174	23	244
SED-7R (SED8)	1990	Replicate	mg/kg	8560		1.7	156	0.62	13.2	5250	35.4		57.2	45000	109	3180	449		33.4	1270		277	31.4	340
SED-7	1992	Wetland area south of Black Pond	mg/kg	5580	**7.6**	1.6	60.6	0.4		3390	10.7	5.8	13.8	12300	32.3	2880	195	0.83	10.7			98.7	21.5	63.8
SED-8	1992	Northeast edge of Black Pond	mg/kg	5080		1.9	39.4			1840	11.6	4.3	18.8	9010	32.8	1840	197		7.6			130	19	59.3
SED-9	1992	Middle of Black Pond	mg/kg	13700		**11.4**	249	**1.3**		6480	34	17.5	88.2	**47400**	175	4380	1040	0.68	37.1			512	63.8	425
SED-10	1992	Southeast edge of Black Pond	mg/kg	5960		5.8	329			**32200**	15.3	15.7	42.4	32200	133	2760	3060	0.91	28.9			35.9	**365**	
SED-11 (SED1)	1990	Unnamed tributary west of Turnpike Road	mg/kg	3550			36.1		2.7	1510	11		22.7	7980	67.5	1700	145		7.6	652			15.3	82.7
SED-11	1992	Unnamed tributary next to GZA SED-1	mg/kg	5960		1.8	63.9	0.37	0.41	1820	13.1	5.3	32.5	15300	76.3	2930	278	0.1	12.6			125	26.3	148

Bold = maximum concentration
* Not analyzed for metals.
TAL Metals compounds not listed were not detected in any sample.
No value indicates that the metal was not detected in the sample.

TABLE 22
COMPARISON TO EPA VAPOR GUIDANCE AND CT RSR VOLATILIZATION CRITERIA
Last Four Quarters (December 2004, March 2005, June 2005, September 2005)
Old Southing Landfill
Southington, Connecticut

Well	Top of Screen (ft)	EXCEEDS EPA VAPOR GUIDANCE CRITERIA Table 2 (c) [1]	CONNECTICUT REMEDIATIION STANDARD REGULATIONS			
			> Current CT DEP GWVC [2]		> Proposed CTDEP GWVC [3]	
			Residential	Commercial/ Industrial	Residential	Commercial/ Industrial
G302A	12	**VC**	**VC**	**VC**	**VC**	None
G303A	14	**VC**	None	None	**VC**	None
G304A	25	**1,2-DCA VC Cis-1,2-DCE Ethylbenzene Toluene Benzene 1,1,2-TCA**	NA	NA	**1,2-DCA VC Cis-1,2-DCE Ethylbenzene Toluene Xylenes**	**Cis-1,2-DCE VC**
G308A	10.5	None	None	None	None	None
G309A	5.5	None	None	None	None	None
G310S	15	None	None	None	None	None
G311A	20	None	NA	NA	None	None
G312A	40	**TCE**	NA	NA	NA	NA
G313A	11	None	None	None	None	None
G314A	4	None	**VC**	None	**VC**	None
G315A	33	None	NA	NA	NA	NA
G316A	30	None	NA	NA	None	None
G317A	28	None	NA	NA	None	None
G318A	14	None	None	None	None	None
GZ1	66.5	None	NA	NA	NA	NA
GZ3	10	None	None	None	None	None
GZ5S	14	None	None	None	None	None
GZ13S	28	None	NA	NA	None	None
GZ14S	26	None	NA	NA	None	None
SDW1	5	None	None	None	None	None

TABLE 22
COMPARISON TO EPA VAPOR GUIDANCE AND CT RSR VOLATILIZATION CRITERIA
Last Four Quarters (December 2004, March 2005, June 2005, September 2005)
Old Southing Landfill
Southington, Connecticut

Well	Top of Screen (ft)	EXCEEDS EPA VAPOR GUIDANCE CRITERIA Table 2 (c) [1]	CONNECTICUT REMEDIATIION STANDARD REGULATIONS			
			> Current CT DEP GWVC [2]		> Proposed CTDEP GWVC [3]	
			Residential	Commercial/ Industrial	Residential	Commercial/ Industrial
SDW2	5	None	None	None	None	None
SDW3	5	**VC**	None	None	**VC**	None
SDW4	5	None	**VC**	None	None	None
SDW5	5	None	None	None	None	None
SDW6	15	None	None	None	None	None
SDW7	14	None	None	None	None	None
SDW8	12	None	None	None	None	None
SDW9A	2	None	None	None	None	None

NA – Criteria not applicable

1. Criteria apply to groundwater within 100 feet of the ground surface.
2. Criteria apply to groundwater within 15 feet of the ground surface.
3. Criteria apply to groundwater within 30 feet of the ground surface.

APPENDIX A

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

	AUGER	CASING	CASING
TYPE	Geoprobe		
ID/OD			
DEPTH INTERVAL			

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

BORING NUMBER: PZ-1
WELL NUMBER: PZ-1
DATE STARTED: 11/22/05
COMPLETED: 11/22/05

CONTRACTOR: LEA
DRILLER: Alex Clarke
FIELD INSPECTOR: J. Harshman
BORING LOG PREPARED BY: CBG

DEPTH TO GROUNDWATER: ~5'
SCREENED INTERVAL: 3-13'
DEPTH TO BOTTOM OF BORING: 13'
DEPTH TO BOTTOM OF WELL: 13'

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
0				Fine-coarse brown TOPSOIL, organic with root matter, cobble, dry.	#0 sand			
1					Bentonite chips	0	36	
2				Fine-medium light brown SAND, trace coarse sand, cobbles, loose, dampish at 4'.				
3					#0 sand			
4				Fine-medium-coarse brown/red SAND, with cobbles, trace coarse gravel, loose, wet.	2-5' sections 1.5" PVC with sand pre-packed well screen			
5						0	24	
6				Black organic PEAT, root matter, very fine, damp.				
7				Brown-tan-red fine-medium SAND, trace coarse sand, loose, wet.				
8								
9								
10								
11								
12								
13				End of exploration at 13'.				
14								
15								

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

	AUGER	CASING	CASING
TYPE	Geoprobe		
ID/OD			
DEPTH INTERVAL			

BORING NUMBER: B-1
WELL NUMBER: N/A
DATE STARTED: 11/22/05
COMPLETED: 11/22/05

CONTRACTOR: LEA
DRILLER: Alex Clarke
FIELD INSPECTOR: J. Harshman
BORING LOG PREPARED BY: CBG

HSA = HOLLOW STEM AUGER FJ = FLUSH JOINT CASING
SSA = SOLID STEM AUGER WC = WELDED CASING
SA = SLOTTED AUGER OTHER:

DEPTH TO GROUNDWATER: ~8'
SCREENED INTERVAL: N/A
DEPTH TO BOTTOM OF BORING: 20'
DEPTH TO BOTTOM OF WELL: N/A

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
0								
				Topsoil/loam, dark brown, loose, dry.	NO WELL INSTALLED.			
1						0	24	
2								
				Fine-medium brown-red SAND, trace coarse sand & gravel, loose, dry.				
3								
4								
				Very fine-fine-medium reddish SAND with GRAVEL, loose, wet at ~8'.				
5						0	18	
6								
7								
8								
				Reddish SAND & GRAVEL, medium dense, wet.				
9						0	24	
				Black organic PEAT, damp.				
10								
11								
				Fine-medium-coarse SAND, medium dense, wet.				
12								
				Red SAND & GRAVEL, medium dense, wet.				
13						0	12	
14								
15								
16								
				Grey CLAYEY SILT, medium stiff to stiff, damp.				
17						0	36	
18								
19								
20				Fine-medium SAND, tr. coarse sand, wet.				

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

	AUGER	CASING	CASING
TYPE	Geoprobe		
ID/OD			
DEPTH INTERVAL			

SA = HOLLOW STEM AUGER FJ = FLUSH JOINT CASING
SA = SOLID STEM AUGER WC = WELDED CASING
A = SLOTTED AUGER OTHER:

BORING NUMBER: B-3
WELL NUMBER: PZ-2
DATE STARTED: 11/22/05
COMPLETED: 11/22/05

CONTRACTOR: LEA
DRILLER: Alex Clarke
FIELD INSPECTOR: J. Harshman
BORING LOG PREPARED BY: CBG

DEPTH TO GROUNDWATER: ~6-7'
SCREENED INTERVAL: 4-14'
DEPTH TO BOTTOM OF BORING: 20'
DEPTH TO BOTTOM OF WELL: 14'

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
0				Forest topsoil, organic, dry.				
1				Fine-medium red SAND, trace coarse sand, cobbles, trace coarse gravel, loose, dry.		0	24	
2								
3								
4				Fine-medium-coarse brown/red SAND, trace gravel & cobble, loose, dry-damp.				
5						0	24	
6				Fine-medium brown/red SAND, with poorly sorted coarse sand, trace gravel, loose, wet at ~6-7'.	2-5' sections 1.5" PVC with sand pre-packed well screen			
7								
8				Fine-medium-coarse, brown/tan/red SAND & GRAVEL, poorly sorted, trace cobbles, loose, wet.				
9						0	24	
10								
11								
12				Fine-medium-coarse, poorly sorted SAND & GRAVEL, loose-medium dense, wet.				
13						2	48	
14				Fine-medium-coarse SAND, trace gravel medium dense, wet.				
15								
16				Brown-red-grey fine-medium-coarse SAND & GRAVEL, medium dense, wet.				
17						0	42	
18								
19								
20								

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

Environmental Science & Engineering, Inc.
A MACTEC Company

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
ESE PROJECT NUMBER: 7197561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER: G310
WELL NUMBER: G310 A, B, C
DATE STARTED: 4/11/00
COMPLETED: 4/13/00

CONTRACTOR: Connecticut Test Borings
DRILLER: Steve
ESE FIELD INSPECTOR: J. Horshman
BORING LOG PREPARED BY: J. Horshman

DEPTH TO GROUNDWATER:
SCREENED INTERVAL: See well reports
DEPTH TO BOTTOM OF BORING: 115'-3"
DEPTH TO BOTTOM OF WELL: See well reports

	AUGER	CASING	CASING
TYPE	HSA	FJ	
ID/OD	4.75"	3"	
DEPTH INTERVAL			

HSA = HOLLOW STEM AUGER FJ = FLUSH JOINT CASING
SSA = SOLID STEM AUGER WC = WELDED CASING
SA = SLOTTED AUGER OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
				GRASSY AREA				
0	2-6 6-7	SS1	SAND	Loose, very fine-coarse, brow-red SAND, trace gravel, trace silt, dry. 0-2" topsoil		0	20	Collect samples for TOC and grain size.
10	2-1 1-1	SS2	SAND	Loose, very fine, red SAND, trace fine-medium sand, cobble, trace silt, damp.		20	12	Collect samples for TOC and grain size.
20	2-2 1-2	SS3	SAND	Loose, soupy, very wet, very fine brown-red SAND, little coarse sand and gravel.		0	10	Collect samples for TOC and grain size.
30	3-4 6-7	SS4	SAND	Loose, very wet, very fine-fine, red SAND, trace silt.		0	24	Collect samples for TOC and grain size.
40								

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

Environmental Science & Engineering, Inc.
A MACTEC Company

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
ESE PROJECT NUMBER: 7197561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

	AUGER	CASING	CASING
TYPE	HSA	FJ	
ID/OD	4.75"	3"	
DEPTH INTERVAL			

HSA = HOLLOW STEM AUGER FJ = FLUSH JOINT CASING
SSA = SOLID STEM AUGER WC = WELDED CASING
SA = SLOTTED AUGER OTHER:

BORING NUMBER: G310
WELL NUMBER: G310 A, B, C
DATE STARTED: 4/11/00
COMPLETED: 4/13/00

CONTRACTOR: Connecticut Test Borings
DRILLER: Steve
ESE FIELD INSPECTOR: J. Horshman
BORING LOG PREPARED BY: J. Horshman

DEPTH TO GROUNDWATER:
SCREENED INTERVAL: See well reports
DEPTH TO BOTTOM OF BORING: 115'-3"
DEPTH TO BOTTOM OF WELL: See well reports

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
80	9-14 22-24	SS9	SILT	Stiff, damp, very fine, red SILT, trace clay.		0	16	Collect samples for TOC and grain size.
90	6-14 17-17	SS10	TILL	Medium dense, very fine-fine, red sandy TILL, some small gravel and medium sand, damp.		0	12	Collect samples (including duplicate) for TOC and grain size.
100	14-37 49-100 /5"	SS11	TILL	Very dense, very fine-medium-coarse, red sandy TILL, some small gravel, trace grey cobble, damp.		0	16	Collect samples for TOC and grain size.
110	100/3"	SS12		Weathered bedrock - 110'-3"		0	3	Collect samples for TOC and grain size.
115		ROCK CORE	BEDROCK	Hard-medium, very sound and highly competent, 3 drill breaks, grey with imbedded red coloration, fine to medium grained SANDSTONE (Arkose).				Bedrock surface at 110'-3" End of exploration:115'-3"

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

Environmental Science & Engineering, Inc.
A MACTEC Company
410 AMHERST STREET SUITE 100 NASHUA, NEW HAMPSHIRE 03063

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
ESE PROJECT NUMBER: 7197561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER: G311
WELL NUMBER: G311 A, B, C
DATE STARTED: 4/17/00
COMPLETED: 4/18/00

CONTRACTOR: Connecticut Test Borings
DRILLER: Steve
ESE FIELD INSPECTOR: J. Harshman
BORING LOG PREPARED BY: J. Harshman

DEPTH TO GROUNDWATER:
SCREENED INTERVAL: See well reports
DEPTH TO BOTTOM OF BORING: 110'
DEPTH TO BOTTOM OF WELL: See well reports

	AUGER	CASING	CASING
TYPE	HSA	FJ	
ID/OD	4.75"	3"	
DEPTH INTERVAL			

HSA = HOLLOW STEM AUGER FJ = FLUSH JOINT CASING
SSA = SOLID STEM AUGER WC = WELDED CASING
SA = SLOTTED AUGER OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
40	6–11 15–22	SS5	SAND	Loose–medium dense, fine–coarse, red SAND, trace small gravel, trace silt, wet		0	24	Collect samples for TOC and grain size.
50	8–4 6–14	SS6	SAND	Loose–medium dense, fine–coarse, red SAND, trace small gravel, trace silt, wet.		0	12	Collect samples for TOC and grain size.
60	6–15 28–39	SS7	SAND & GRAVEL	Medium dense, very fine–medium, grey to red SAND, some sand and gravel at 61.5–62', trace cobble, trace silt, wet.		0	20	Collect samples for TOC and grain size.
70	10–12 16–16	SS8	SAND	Medium dense, fine–coarse, red SAND, trace silt, trace very fine sand, trace gravel, wet.		0	24	Collect samples for TOC and grain size.
80								

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

MACTEC

37 DANIEL WEBSTER HIGHWAY
SUITE 25
MERRIMACK, NEW HAMPSHIRE
03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G312C
DATE STARTED: 9/17/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: SJO/SC
BORING LOG PREPARED BY: SJO/SC

DEPTH TO GROUNDWATER: 39.68'
SCREENED INTERVAL: 165–175'
DEPTH TO BOTTOM OF BORING: 191'
DEPTH TO BOTTOM OF WELL: 175'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–173'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
0								
1								
2								
3								
4								
5								
6								
7	12			SAND, fine–medium, trace silt, few gravel, moderately graded, dry, brown–red brown.		0	6	Collect sample for TOC & sieve analysis.
8	13							
	12							
9	9							
10								
11								
12								
13								
14								
15								
16								
17	8			SAND, fine, trace coarse, dry–damp, very poorly graded, brown–white.		0	18	Collect sample for TOC & sieve analysis.
18	9							
	10							
19	11							
20								

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G312C
DATE STARTED: 9/17/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: SJO/SC
BORING LOG PREPARED BY: SJO/SC

DEPTH TO GROUNDWATER: 39.68'
SCREENED INTERVAL: 165–175'
DEPTH TO BOTTOM OF BORING: 191'
DEPTH TO BOTTOM OF WELL: 175'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–173'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
40								
41								
42								
43								
44								
45								
46								
47	5			SAND, fine–very fine, some silt, wet, red, poorly graded.		0	18	Collect sample for TOC & sieve analysis.
48	8							
	11							
49	13							
50								
51								
52								
53								
54								
55								
56								
57	7			SAND, medium–fine, trace silt, poorly–moderately graded, wet, red.		0	18	Collect sample for TOC & sieve analysis.
58	11							
	12							
59	14							
60								

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G312C
DATE STARTED: 9/17/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: SJO/SC
BORING LOG PREPARED BY: SJO/SC

DEPTH TO GROUNDWATER: 39.68'
SCREENED INTERVAL: 165–175'
DEPTH TO BOTTOM OF BORING: 191'
DEPTH TO BOTTOM OF WELL: 175'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–173'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
80								
81								
82								
83								
84								
85								
86								
87	8			SAND, fine–very fine, few coarse, poorly graded, wet, red.		0	22	Collect sample for TOC & sieve analysis.
88	13							
	29							
89	31							
90								
91								
92								
93								
94								
95								
96								
97	9			SAND, medium, some coarse, moderately well graded, wet, red.		0	24	Collect sample for TOC & sieve analysis.
98	19							
	30							
99	41							
100								

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G312C
DATE STARTED: 9/17/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: SJO/SC
BORING LOG PREPARED BY: SJO/SC

DEPTH TO GROUNDWATER: 39.68'
SCREENED INTERVAL: 165–175'
DEPTH TO BOTTOM OF BORING: 191'
DEPTH TO BOTTOM OF WELL: 175'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–173'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
120								
121								
122								
123								
124								
125								
126								
127	6			127–128': SAND, fine, few medium grains, poorly graded, wet, red.		0	24	Collect sample for TOC & sieve analysis.
128	6			128–129': SILT, few sand & clay, soft–firm, wet, red.				
	7							
129	8							
130								
131								
132								
133								
134								
135								
136								
137	2			137–137.8': SAND, fine, trace medium, poorly graded, wet, red.		0	24	Collect sample for TOC & sieve analysis.
138	3			137.8–138.5': SAND, fine–medium, moderately graded, wet, red.				
	3			138.5–139': SILT, some clay.				
139	4							
140								

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G312C
DATE STARTED: 9/17/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: SJO/SC
BORING LOG PREPARED BY: SJO/SC

DEPTH TO GROUNDWATER: 39.68'
SCREENED INTERVAL: 165–175'
DEPTH TO BOTTOM OF BORING: 191'
DEPTH TO BOTTOM OF WELL: 175'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–173'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
160								
161								
162								
163								
164								
165								
166								
167	4			SAND, medium, few coarse sand & gravel, moderately–poorly graded, red, wet.		0	17	Collect sample for TOC & sieve analysis.
168	5							
	5							
169	6							
170								
171	15			Red, SILTY SAND with bits of weathered rock, wet.		0	15	Collect sample for TOC & sieve analysis.
172	22							
	25							
173	27			End soil boring				
174				Bedrock core from ____ to ____' BGS.				
175								

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

312C-9.DWG

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G314C
DATE STARTED: 9/23/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: Steve Cap
BORING LOG PREPARED BY: Steve Cap

DEPTH TO GROUNDWATER: 6.56'
SCREENED INTERVAL: 133–143'
DEPTH TO BOTTOM OF BORING: 148'
DEPTH TO BOTTOM OF WELL: 143'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–148'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
20								
21								
22								
23								
24								
25								
26								
27								
28	6			Reddish brown, silty SAND, coarse, wet.		0	9	Collect sample for TOC & sieve analysis.
29	9							
	14							
30	12							
31								
32								
33								
34								
35								
36								
37								
38	9			Red silty SAND, coarse, wet.		0	6	Collect sample for TOC & sieve analysis.
39	11							
	10							
40	13							

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G314C
DATE STARTED: 9/23/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: Steve Cap
BORING LOG PREPARED BY: Steve Cap

DEPTH TO GROUNDWATER: 6.56'
SCREENED INTERVAL: 133–143'
DEPTH TO BOTTOM OF BORING: 148'
DEPTH TO BOTTOM OF WELL: 143'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–148'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
60								
61								
62								
63								
64								
65								
66								
67								
68	4			Red silty SAND, fine–medium, wet.		0	18	Collect sample for TOC & sieve analysis.
69	4							
	8							
70	22							
71								
72								
73								
74								
75								
76								
77								
78	4			Red silty SAND, fine–medium, wet.		0	12	Collect sample for TOC & sieve analysis.
79	4							
	5							
80	18							

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G314C
DATE STARTED: 9/23/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: Steve Cap
BORING LOG PREPARED BY: Steve Cap

DEPTH TO GROUNDWATER: 6.56'
SCREENED INTERVAL: 133–143'
DEPTH TO BOTTOM OF BORING: 148'
DEPTH TO BOTTOM OF WELL: 143'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–148'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
100								
101								
102								
103								
104								
105								
106								
107								
108	3			Red silty SAND, fine, wet.		0	22	Collect sample for TOC & sieve analysis.
109	5							
	15							
110	25							
111								
112								
113								
114								
115								
116								
117								
118	3			Red silty SAND, fine, wet.		0	23	Collect sample for TOC & sieve analysis.
119	5							
	6							
120	12							

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 28 — MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G143C
DATE STARTED: 9/23/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: Steve Cap
BORING LOG PREPARED BY: Steve Cap

DEPTH TO GROUNDWATER: 6.56'
SCREENED INTERVAL: 133–143'
DEPTH TO BOTTOM OF BORING: 148'
DEPTH TO BOTTOM OF WELL: 143'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–148'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
140								
141								
142								
143				End soil boring				
				Bedrock core from 143–148' BGS.				
144								
145								
146								
147								
148								
149								
150								

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

314C-8.DWG

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G315C
DATE STARTED: 9/16/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: S. J. O'Brien
BORING LOG PREPARED BY: S. J. O'Brien

DEPTH TO GROUNDWATER: ~35.7'
SCREENED INTERVAL: 90–100'
DEPTH TO BOTTOM OF BORING: 106'
DEPTH TO BOTTOM OF WELL: 100'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–101'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
20								
21								
22								
23								
24								
25								
26								
27								
28	6			SAND, medium–coarse, some silt, dry, red.		0	13	Collect sample for TOC & sieve analysis.
29	9							
	10							
30	13							
31								
32								
33								
34								
35								
36								
37								
38	2			SAND, medium--coarse, some silt, wet, red.		0	8	Collect sample for TOC & sieve analysis.
39	2							
	6							
40	11							

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G315C
DATE STARTED: 9/16/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: S. J. O'Brien
BORING LOG PREPARED BY: S. J. O'Brien

DEPTH TO GROUNDWATER: ~35.7'
SCREENED INTERVAL: 90–100'
DEPTH TO BOTTOM OF BORING: 106'
DEPTH TO BOTTOM OF WELL: 100'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–101'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
60								
61								
62								
63								
	25			SAND, medium--coarse, some silt, little gravel, wet, red.		0	23	Collect sample for TOC & sieve analysis.
64	40							
	20							
65	22							
66								
67								
68								
69								
70								
71								
72								
73								
	13			SAND, fine–medium, some silt, wet, red.		0	24	Collect sample for TOC & sieve analysis.
74	34							
	20							
75	24							
76								
77								
78								
79								
80								

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 2B — MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G315C
DATE STARTED: 9/16/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: S. J. O'Brien
BORING LOG PREPARED BY: S. J. O'Brien

DEPTH TO GROUNDWATER: ~35.7'
SCREENED INTERVAL: 90–100'
DEPTH TO BOTTOM OF BORING: 106'
DEPTH TO BOTTOM OF WELL: 100'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–101'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
100								
101				Bedrock core from 101–106'				
102								
103								
104								
105								
106				End of boring at 106' BGS.				
107								
108								
109								
110								

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

315C-6.DWG

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 26 — MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G317C
DATE STARTED: 9/8/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: Steve Cap
BORING LOG PREPARED BY: Steve Cap

DEPTH TO GROUNDWATER: 32.90'
SCREENED INTERVAL: 94–104'
DEPTH TO BOTTOM OF BORING: 113.5'
DEPTH TO BOTTOM OF WELL: 104'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–113.5'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
20								
21								
22								
23								
24								
25								
26								
27								
28	8			28–28'8": Red SAND and SILT, very fine, dry.				PID background reading = 5.5ppm.
29	12			28'8"–30': Red SAND, medium, dry, mixed with bits of gravel (quartz).		5.5	14	Collect sample for TOC & sieve analysis.
	14							
30	15							
31								
32								
33								
34								
35								
36								
37								
38	2			Red SAND, fine–medium with some silt, saturated – water added to borehole.				PID background reading above 5ppm.
39	2					5	?	Collect sample for TOC & sieve analysis.
	3							
40	3							

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G317C
DATE STARTED: 9/8/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: Steve Cap
BORING LOG PREPARED BY: Steve Cap

DEPTH TO GROUNDWATER: 32.90'
SCREENED INTERVAL: 94–104'
DEPTH TO BOTTOM OF BORING: 113.5'
DEPTH TO BOTTOM OF WELL: 104'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–113.5'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
60								
61								
62								
63								
64								
65								
66								
67								
68				Red SAND, medium, saturated.				
	6							PID background reading = 1.5ppm.
69	13					1.0	8	Collect sample for TOC & sieve analysis.
	12							
70	12							
71								
72								
73								
74								
75								
76								
77								
78				Red SAND and SILT, very fine, saturated				
	8							PID background reading = 2.5ppm.
79	12					2.5	24	
	14							Collect sample for TOC & sieve analysis.
80	10							

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G317C
DATE STARTED: 9/8/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: Steve Cap
BORING LOG PREPARED BY: Steve Cap

DEPTH TO GROUNDWATER: 32.90'
SCREENED INTERVAL: 94–104'
DEPTH TO BOTTOM OF BORING: 113.5'
DEPTH TO BOTTOM OF WELL: 104'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–113.5'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
100								
101								
102								
103								
104								
105	100/3"			0–12": Red SAND and SILT, very fine, saturated.		0	14	Collect sample for TOC & sieve analysis.
106				12–14": Till material above bedrock, Red SAND, medium with bits of gravel, moist. Bedrock at 107' BGS.				
107								
108				Bedrock core from 108–113.5'				
109								
110								
111								
112								
113								
114								
115								

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G318C
DATE STARTED: 9/29/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: Mike Faith
BORING LOG PREPARED BY: Mike Faith

DEPTH TO GROUNDWATER: 35.67'
SCREENED INTERVAL: 125–135'
DEPTH TO BOTTOM OF BORING: 140'
DEPTH TO BOTTOM OF WELL: 135'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–140'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
20								
21								
22								
23								
24								
25								
26								
27								
28	3			Saturated fine brown SILTY SAND.		0	24	Collect sample for TOC & sieve analysis.
29	4							
	4							
30	6							
31								
32								
33								
34								
35								
36								
37								
38	5			Reddish brown saturated fine SILTY SAND.		0	20	Collect sample for TOC & sieve analysis.
39	5							
	7							
40	5							

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
ALL SAMPLING COMPLETED WITH 2" OD SPLIT SPOON SAMPLER DRIVEN BY 140 LB. HAMMER UNLESS OTHERWISE NOTED.

MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G318C
DATE STARTED: 9/29/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swigtek
FIELD INSPECTOR: Mike Faith
BORING LOG PREPARED BY: Mike Faith

DEPTH TO GROUNDWATER: 35.67'
SCREENED INTERVAL: 125–135'
DEPTH TO BOTTOM OF BORING: 140'
DEPTH TO BOTTOM OF WELL: 135'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–140'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
60								
61								
62								
63								
64								
65								
66								
67								
68				Saturated brown fine SILTY SAND.				
	6							Collect sample for TOC & sieve analysis.
69	7					0	16	
	10							
70	13							
71								
72								
73								
74								
75								
76								
77								
78				Saturated brown fine SILTY SAND.				
	11							
79	15					0	12	Collect sample for TOC & sieve analysis.
	17							
80	21							

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
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MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G318C
DATE STARTED: 9/29/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: Mike Faith
BORING LOG PREPARED BY: Mike Faith

DEPTH TO GROUNDWATER: 35.67'
SCREENED INTERVAL: 125–135'
DEPTH TO BOTTOM OF BORING: 140'
DEPTH TO BOTTOM OF WELL: 135'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–140'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
100								
101								
102								
103								
104								
105								
106								
107								
108	11			Saturated fine brown SILTY SAND.		0	12	Collect sample for TOC & sieve analysis.
109	17							
	21							
110	25							
111								
112								
113								
114								
115								
116								
117								
118	5			Saturated fine brown SILTY SAND.		0	24	Collect sample for TOC & sieve analysis.
119	9							
	15							
120	17							

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
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MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 MERRIMACK, NEW HAMPSHIRE 03054

TEST BORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT
GROUND ELEVATION:

BORING NUMBER:
WELL NUMBER: G318C
DATE STARTED: 9/29/03
COMPLETED:

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: Mike Faith
BORING LOG PREPARED BY: Mike Faith

DEPTH TO GROUNDWATER: 35.67'
SCREENED INTERVAL: 125–135'
DEPTH TO BOTTOM OF BORING: 140'
DEPTH TO BOTTOM OF WELL: 135'

	AUGER	CASING	CASING
TYPE	HSA		
ID/OD	4.25/7.25		
DEPTH INTERVAL	0–140'		

HSA = HOLLOW STEM AUGER
SSA = SOLID STEM AUGER
SA = SLOTTED AUGER
FJ = FLUSH JOINT CASING
WC = WELDED CASING
OTHER:

DEPTH (IN FEET)	6" BLOW COUNTS	SAMPLE NO.	LOG	SOIL/ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	VOC (PPM)	RECOVERY (INCHES)	REMARKS
120								
121								
122								
123								
124								
125								
126								
127								
128				Coarse saturated SAND & SILT, quartz, cobble, till encountered, mica.				Collect sample for TOC & sieve analysis.
	11							
129	19					0	?	
	21							
130	25							
131								
132								
133								
134								
				End soil boring at 135' BGS.				
135				Bedrock core from 135–140' BGS. Recovery = 50".				
136								
137								
138								
139								
140								

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.
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Environmental Science & Engineering, Inc.

Log of Soil Boring No. B302C

Project Southington Landfill Superfund

Location Southington, Connecticut

Job No. 4925534

Date 07/06/92

Date Started 07/06/92 Date Completed 07/20/92

Sample & Type	Depth		Soil Description	Penetration Blows for 6"	Notes
		FLUVIAL SANDS -OUTWASH	Very loose to compact, red, fine to coarse SAND, little silt, little angular gravel and cobbles.	2	Recovery 0.3' PID 0
SS-1	1			4	
				18	
	2			23	
				18	
SS-3	3			21	Recovery 0' PID 0ppm
				19	
	4			17	
				6	
SS-3	5			7	Recovery 1.3' PID 5ppm
				60	Spoon refusal
	6				
				70/	Recovery 0.3' PID 7-10ppm
SS-4	7		Very dense, red, fine to coarse SAND, little medium gravel.	3"	
	8				
				5	
SS-5	9			7	Recovery 1.0' PID 15ppm
				19	
	10			42	
				5	
SS-6	11			9	Recovery 1.2' PID 12ppm
				8	
	12		Very loose to loose, red, fine to coarse SAND, little fine to medium gravel, trace silt.	20	
				2	
SS-7	13			2	Recovery 1.0' PID 12ppm
				7	
▼	14		Loose, red, fine SAND, trace clay, trace medium to coarse gravel. Saturated.	9	
				8	
SS-8	15			6	Recovery 1.1' PID 0ppm
				5	
	16		Compact to dense, red to brown, fine to coarse SAND, little silt, little fine to coarse gravel. Angular cobble in spoon tip.	10	
				29	
SS-9	17			16	Recovery 1.1' PID 3ppm
				30	
	18			24	
				9	
SS-10	19	Fine SAND & SILT LACUSTRINE		11	Recovery 0' PID 0ppm
				11	
	20			7	
				3	
SS-11	21		Very loose to loose, red, fine to coarse SAND, some fine grave, trace silt.	3	Recovery 0.1' PID 2ppm
				6	
	22			5	
			Loose to compact, laminated, brown to red fine SAND & SILT.	7	
SS-12	23			9	Recovery 0.4' PID 0ppm
				9	
	24			12	
				10	
	25			14	

Contractor Clarence Welti & Associates, Inc.

Groundwater encountered at 14.0 feet.

Environmental Science & Engineering, Inc.

Job No. 4925534
Date 07/06/92

Log of Soil Boring No. B302C
Project Old Southington Landfill Superfund
Location Southington, Connecticut

Sample & Type	Depth		Soil Description	Penetration Blows for 6"	Notes
				29	
SS-24	51		Compact to very dense, dark tan SAND, trace silt.	61	Recovery 1.0' PID 0ppm
				100	
	52			10	
			Red fine SAND, trace silt.	13	
SS-25	53			15	Recovery 1.3' PID 0ppm
				11	
	54			14	
				11	
	55			16	
				7	
	56			5	
				5	
	57			6	
				7	Recovery 3.0' PID 0ppm
SS-26	58			13	
				23	
	59			34	
				54	
	60	LACUSTRINE	Loose to very dense, tan to red, fine SAND, trace silt, laminated with fine Sand & silt.	83	
				8	
	61			14	
				31	
	62			42	
				64	
	63			59	
				96	
SS-27	64			71	Recovery 4.0' PID 0ppm
					Note: Spoon refusal- drilled
	65				through obsrtruction.
				10	
SS-28	66			32	
				99	
	67		Compact to dense, red fine SAND, trace silt, laminated with red silty beds and light red sandy beds.	82/	3"
				15	Note: Begin telescoping with 4" casing.
	68			22	
SS-29				28	
	69			29	Recovery 2.0' PID 0ppm
				36	
	70			29	
				8	
	71			17	
SS-30			Compact to dense, red, fine SAND, trace to little silt. Black and red banding occurs at 1/8" intervals.	27	Recovery 3.0' PID 0ppm
	72			40	
				35	
	73			36	
				34	
	74			44	
				3	
	75			12	

Environmental Science & Engineering, Inc.

Job No. 4925534
Date 07/06/92

Log of Soil Boring No. B302C
Project Old Southington Landfill Superfund
Location Southington, Connecticut

Sample & Type	Depth	Legend	Soil Description	Penetration Blows for 6"	Notes
				38	
SS-36	101			38	Recovery 2.9'
				36	
	102			40	
				40	
	103		Compact to very dense,red fine to coarse SAND, some fine to coarse gravel, little cobble, little silt, trace clay. Angular rock fragments in tip of spoon.	39	
				57	
	104			30	
				29	Recovery 3.0'
SS-37	105			33	
				36	
	106			26	
				30	
	107			34	
				40	
	108		Dense to very dense, fine to coarse SAND, some fine to coarse gravel, one cobble in spoon.	36	
				58	
	109			52	
				36	
	110			32	
				34	
SS-38	111	TILL		40	Recovery 3.2'
				33	
	112			34	
			Dense, red fine to medium SAND, laminated with fine Sand & Silt in 1 " intervals.	35	
	113			34	
				38	
	114			42	
				38	
	115			62	
SS-39			Very dense, red fine to medium SAND, laminated with fine Sand & Silt in 1" intervals.	70	Recovery 3.2'
	116			60	
				70	
	117			67	
			Fine to medium SAND, trace to little fine gravel, little silt, trace clay.	51	
	118			58	
				51	
SS-40	119			43	Recovery 1.2'
				74/	Note: Cored through obstruction.
	120			5 "	
SS-41				34	
	121			70	Recovery 2.0'
				77	
	122			84	
				52	
	123			63	
				132	
SS-42	124			55	
				20	
	125			20	

Environmental Science & Engineering, Inc.

Log of Soil Boring No. B302C

Project Old Southington Landfill Superfund

Location Southington, Connecticut

Job No. 4925534

Date 07/06/92

Sample & Type	Depth		Soil Description	Penetration Blows for 6"	Notes
	151		BEDROCK. SANDSTONE.		
	152		End of Exploration 152.5 feet.		
	153				
	154				
	155				
	156				
	157				
	158				
	159				
	160				
	161				
	162				
	163				
	164				
	165				
	166				
	167				
	168				
	169				
	170				
	171				
	172				
	173				
	174				
	175				

Environmental Science & Engineering, Inc.

Log of Soil Boring No. B303C

Project Old Southington Landfill Superfund

Location Southington, Connecticut

Job No. 4925534

Date 07/22/92

Sample & Type	Depth		Soil Description	Penetration Blows for 6"	Notes
			Loose red fine to coarse SAND, with fine to medium, angular gravel, some silt.	5	
SS-11	26			6	
				8	
	27	GRADED DELTAIC	Red fine SAND and SILT.	9	
				10	
	28			9	
				12	
	29			10	
				6	
	30		Red fine to coarse SAND, little to trace silt, trace clay.	10	
				9	
	31			8	
SS-12				10	
	32			11	Recovery 2.1' PID 0ppm
				15	
	33			19	
				12	
	34			12	
				7	
	35			10	
				12	
SS-12A	36		Compact red fine SAND, trace silt, grading to fine to coarse SAND, some fine to medium gravel, trace little silt.	12	
				11	Recovery 2.3' PID 0ppm
	37			12	
				11	
	38			14	
				14	
	39			17	
				12	
	40			15	
			Compact to very dense, black to red, fine SAND & SILT, laminated with silt and some clay.	17	
SS-13	41			21	Recovery 3.9' PID 0ppm
				30	
	42			31	
				34	
	43			44	
				43	
	44			58	
				6	
	45			7	
				5	
SS-14	46			8	Recovery 2.2' PID 0ppm
				17	
	47			19	
				13	
	48			17	
				20	
	49			22	
				9	
	50			13	Description on next page.

Environmental Science & Engineering, Inc.

Log of Soil Boring No. B303C

Project Old Southington Landfill Superfund

Location Southington, Connecticut

Job No. 4925534

Date 07/22/92

Sample & Type	Depth		Soil Description	Penetration Blows for 6"	Notes
		LACUSTRINE / DELTAIC	Compact to dense red fine to medium SAND, trace silt. Grading to red fine SAND, little silt, trace clay.	23	
	76			32	
				38	
SS-20	77			43	Recovery 3.0' PID 0ppm
				52	
	78			85	
				97	
	79			69	
					Weight of rock forced
	80				spoon down 1 foot.
				94	
	81			21	
				34	
SS-21	82			56	Recovery 3.0' PID 0ppm
	83		As above grading to fine to coarse SAND, some fine to coarse, subrounded to angular gravel.	50	
				53	
	84			38	
				10	
	85			17	
				25	
	86			32	
				30	
SS-22	87			33	Recovery 2.6' PID 0ppm
				50	
	88			77	
				59	
	89			84	
				37	
	90			30	
				30	
SS-23	91			38	Recovery 3.2' PID 0ppm
				44	
	92			51	
				35	
	93			43	
	94				
				14	
	95		Compact to dense red fine to medium SAND, little silt, trace clay, grading to fine to coarse SAND, some fine to coarse gravel, some silt, little cobbles, trace clay.	24	
				33	
	96			36	
				36	Recovery 2.3' PID 0ppm
SS-24	97			40	
				39	
	98			39	
				34	
	99			30	
				52	
SS-25	100			53	Recovery 2.1' PID 0ppm

Environmental Science & Engineering, Inc.

Log of Soil Boring No. B303C

Project Old Southington Landfill Superfund

Location Southington, Connecticut

Job No. 4925534

Date 07/22/92

Sample & Type	Depth		Soil Description	Penetration Blows for 6"	Notes
			Red fine SAND grading to fine to coarse SAND, trace fine gravel, trace clay.	37	
	126			43	
SS-29				52	
	127			64	
				56	
	128			56	
				68	
	129			16	
				26	
SS-30	130		Compact to very dense red fine SAND, trace silt, trace clay. Grading to fine to medium SAND, trace silt alternating with fine sand & silt.	29	Recovery 3.0' PID 0ppm
				43	
	131			41	
				42	
	132			54	
				56	
	133			66	
				69	
	134			18	
				44	
	135			56	
				85	
SS-31	136	DELTAIC		90	Recovery 3.2' PID 0ppm
				110	
	137			108	
				112	
	138			103	
				82	
	139			34	
				37	
	140			37	
				49	
SS-32	141			50	Recovery 3.6' PID 0ppm
				57	
	142			69	
				49	
	143			67	
				68	
	144			23	
				31	
SS-33	145			42	Recovery 2.8' PID 0ppm
				53	
	146			60	
				68	
	147			78	
				144	
	148		Very dense red fine SAND, some clay, little silt, little fine to medium gravel-size extremely weathered, light orange Sandstone.	69	
				130	
	149			36	
SS-34				44	Recovery 1.6' PID 0ppm
	150			102	

Environmental Science & Engineering, Inc.

Log of Soil Boring No. B304D

Project Old Southington Landfill Superfund

Location Southington, Connecticut

Job No. 4925534

Date 07/16/92

Date Started 7/16/92 Date Completed 7/30/92

Sample & Type	Depth		Soil Description	Penetration Blows for 6"	Notes
		Graded SAND & GRAVEL - OUTWASH	Red fine to medium SAND, little coarse sand, trace subrounded to subangular gravel, silt.	3	
SS-1	1			2	
				3	Recovery 12" PID 0ppm
	2		Wet red fine to coarse SAND, trace fine gravel.	4	
				2	PID 0.2 to 0.4ppm
SS-2	3			3	
			Brown to red very fine to fine SAND, little silt.	3	Recovery 22" PID 0.6ppm
	4			3	
				6	
SS-3	5		Red angular fine to coarse GRAVEL, little fine to coarse sand, trace silt grading to moist brown fine to coarse SAND, trace silt, fine gravel.	35	
				22	Recovery 21" PID 0.6ppm
	6			10	
				32	
SS-4	7			18	Recovery 16" PID 0.2ppm
			Moist red very fine to medium SAND, little silt.	26	
	8			20	
				13	PID 1.0ppm
SS-5	9		Moist red very fine to medium SAND, some to little silt, trace gravel, coarse sand.	13	
				12	Recovery 16" PID 1.6ppm
	10			14	
			Moist red very fine to medium SAND, little silt, trace subangular fine gravel, occasional layer of medium to coarse sand.	3	
SS-6	11			6	
				12	Recovery 16" PID 2.2ppm
	12			16	
			Moist to wet red to orange-brown very fine to medium SAND, little subangular to angular fine to coarse gravel, silt.	16	
SS-7	13			24	
				18	Recovery 3" PID 2.0ppm
	14			20	
			Moist red fine to coarse SAND, some subrounded to angular fine to coarse gravel, trace silt, with cobbles.	26	
SS-8	15			32	
				24	Recovery 18" PID 3.2 ppm
	16			28	
			Moist red to brown fine to coarse SAND, trace angular fine to coarse gravel, slate pieces.	6	
SS-9	17			28	
				16	
	18			24	Recovery 16" PID 0.4ppm
			Moist red fine to coarse SAND, trace subangular fine gravel.	6	
SS-10	19			6	
				18	Recovery 3" PID 0.4 to 0.8ppm
	20		Moist red fine to coarse SAND, subrounded to angular gravel, occasional layer very fine to fine sand, little silt, seam brown medium sand.	12	
				5	
SS-11	21			8	
				10	Recovery 10"
	22			12	
				5	
SS-13	23		No recovery except angular cobble in tip of spoon.	10	
				14	Recovery 0"
	24		Moist red fine to coarse SAND, subangular fine to coarse gravel.	8	
				6	PID 1ppm
SS-14	25			8	

Contractor Clarence Welti & Associates, Inc.

Groundwater encountered at 30.0 feet.

Environmental Science & Engineering, Inc.

Log of Soil Boring No. B304D

Project Old Southington Landfill Superfund

Location Southington, Connecticut

Job No. 4925534

Date 07/16/92

Sample & Type	Depth		Soil Description	Penetration Blows for 6"	Notes
		Graded SAND with gravel.	Moist, red very fine to fine SAND, trace silt, occasional 5" layer of fine to medium SAND, trace course sand.	7	PID 0ppm
	51			8	
				8	Recovery 2.0'
	52			12	
SS-19				15	
	53			15	Note: Odor in soil;
				16	possible outside source.
	54			16	
				16	
	55		Moist to wet, red very fine to medium SAND, trace coarse sand, frequent 2" to 6" layers of medium to coarse SAND, little angular fine gravel, occasional 6" layer of very fine to fine SAND and SILT.	22	
				20	PID 20ppm
	56			13	
				17	Recovery 3.5'
	57			18	
SS-20				30	
	58			34	
				26	
	59			18	
				32	
	60		Moist, red very fine to medium SAND, trace silt, occasional 6" layer of very fine to fine SAND, little silt.	15	
				25	PID 1.6ppm
	61			21	
				28	Recovery 2.7'
	62			39	
SS-21				41	
	63			40	
				60	
	64			63	
				47	
	65		Moist, red very fine to fine SAND, trace subrounded fine to medium gravel, silt, 3" layer very fine to medium SAND, 4" layer coarseSAND and subangular fine GRAVEL, occasional dark brown laminae.	56	
				24	PID 0.2ppm
	66			26	
				29	Recovery 2.8'
	67			25	
SS-22				29	
	68			32	
				43	
	69			53	
				62	
	70		Moist, red very fine to fine SAND, little silt, occasional seam of medium SAND, frequent layers of fine to coarse SAND, occasional layer of coarse SAND, trace angular fine gravel.	73	
				32	PID 0.2 to 0.6ppm
	71			28	
				26	Recovery 3.75'
	72			20	
SS-23				33	
	73			34	
				55	
	74			59	Note: Very slight petroleum odor.
				62	
	75			63	

Environmental Science & Engineering, Inc.

Log of Soil Boring No. B304D

Project Old Southington Landfill Superfund

Location Southington, Connecticut

Job No. 4925534

Date 07/16/92

Sample & Type	Depth		Soil Description	Penetration Blows for 6"	Notes
			Top:	8	PID 0.2ppm
	101		2" Medium to coarse SAND, with a	10	
			seam of very fine SAND and SILT.	12	Recovery 3.0'
	102		6" coarse SAND, with subangular fine	22	
SS-29			gravel. 3" subrounded to subangular	32	
	103		fine to medium GRAVEL, little silt	32	
			matrix.	34	
	104			48	
				62	
	105		Bottom:	68	
			Moist, red very fine to coarse SAND,	16	PID 0.2ppm
	106		little silt.	21	
				34	Recovery 2.3'
	107		Moist to wet, red very fine to medium	45	
SS-30			SAND, little silt, occasional layer (top	38	
	108		of spoon) of medium to coarse SAND,	48	
			trace very fine gravel.	60	
	109			67	
				64	
	110	Graded SAND	Top 4":	65	PID 0.2 to 0.6ppm
			Wet, red-brown coarse SAND, trace	24	
	111		fine gravel.	30	Recovery 2.35'
			Bottom:	28	
	112		Moist, red very fine to fine SAND,	32	
SS-31			trace silt.	78	
	113			90	Note: Angular gravel.
				90	
	114			95	
				115	PID 0ppm
	115		Top 1':	104	
			Wet, red-brown coarse SAND, trace	18	Recovery 2.7'
	116		fine gravel.	27	
				34	
	117		Bottom 1.7':	49	
SS-32			Moist to wet, red fine to medium	55	
	118		SAND, trace silt, very coarse sand.	54	
				45	
	119			62	
				69	
	120		Moist to wet, red very fine to coarse	96	
			SAND, little to trace silt, occasional	7	PID 0ppm
	121		layer fine to medium GRAVEL with	17	
			very coarse sand.	23	Recovery 2.0'
	122			34	
SS-33				52	
	123			64	Note: Subrounded gravel.
				72	
	124			76	
				89	
	125			94	

Environmental Science & Engineering, Inc.

Job No. 4925534
Date 07/16/92

Log of Soil Boring No. B304D
Project Old Southington Landfill Superfund
Location Southington, Connecticut

Sample & Type	Depth		Soil Description	Penetration Blows for 6"	Notes
		Graded SAND & GRAVEL	Moist to wet, red very fine to fine SAND, with silt, trace medium sand.	16	PID 0ppm
	151			20	
				23	Recovery 3.05'
	152			40	
SS-39			Top 1':	41	
	153		Layer of very fine to medium SAND,	53	
			with occasional seam of fine to coarse	52	
	154		SAND.	82	
			Top 1.7':	79	
	155		Wet, red fine to coarse SAND, trace fine	87	
			to medium subangular to subrounded	12	PID 0ppm
	156		gravel in seams, occsasional seam of	32	
			very fine to fine SAND, with silt.	42	Recovery 2.95'
	157			44	
SS-40			Bottom 1.2': Moist, red very fine to	49	
	158		very coarse SAND, with silt, little	53	
		BEDROCK	subangular to subrounded fine to	78	
	159		coarse gravel.	300	
	160			2	
			Red, moderately fractured ARKOSE.		
	161			2	
	162			4.5	Recovery 4'
	163			3	
	164			5.5	
	165			5	
	166			5	Recovery 4.15'
	167		Red, slightly fractured ARKOSE.	5	
	168			5	
	169		End of exploration at 169.0 feet.		
	170				
	171				
	172				
	173				
	174				
	175				

Environmental Science & Engineering, Inc.

Job No. 4925534

Date 07/13/92

Log of Soil Boring No. B305

Project Old Southington Landfill Superfund

Location Southington, Connecticut

Sample & Type	Depth		Soil Description	Penetration Blows for 6"	Notes
		SAND	Grey-red-brown, fine to medium SAND.	4	Recovery 18" PID 55 ppm
	26			8	Distinct odor.
				9	
SS-14	27			11	
			Red-brown, fine to medium SAND.	6	Recovery 18" PID 85 ppm
	28			8	
				9	
SS-15	29			9	
			Red-brown, fine SAND.	5	Recovery 6" PID 120 ppm
▼	30			7	
				7	
SS-16	31			8	
			Red-brown, fine SAND, streaks of black.	8	Recovery 24" PID 150 ppm
	32			9	Strong solvent odor.
				9	
SS-17	33			12	
				11	Recovery 24" PID 150+ ppm
	34			16	Strong odor.
				16	
SS-18	35			21	
				6	Recovery 24" PID 30 ppm
	36		Med-dark grey-brown with black streaks, fine to medium SAND.	6	Distinct odor.
				6	
SS-19	37			9	
				6	Recovery 24" PID 2 ppm
	38		Trace black rubber.	6	
				8	
SS-20	39		Grey-brown, fine to medium SAND.	10	
					Recovery 24" PID 4 ppm
	40		Red-brown, fine to medium SAND.		Note: Blow counts were not recorded.
SS-21	41		End of exploration 41 feet.		
	42				
	43				
	44				
	45				
	46				
	47				
	48				
	49				
	50				

Environmental Science & Engineering, Inc.

Log of Soil Boring No. B306C

Project Old Southington Landfill Superfund

Location Southington, Connecticut

Job No. 4925534

Date 06/22/92

Sample & Type	Depth		Soil Description	Penetration Blows for 6"	Notes
		Graded SAND and GRAVEL	Red fine to coarse SAND, with some gravel.	7	
	26			7	
				7	
SS-14	27		Red-brown fine to coarse SAND, with some gravel, trace fines.	6	Recovery 1.1' PID 25 ppm
				7	
	28			8	
				3	
SS-15	29		Red fine to coarse SAND, trace gravel.	5	Recovery 1.4' PID 0 ppm
				6	
	30			7	
				3	
SS-16	31		Red fine to coarse SAND, trace fine gravel.	3	Recovery 1.5' PID 0 ppm
▼				4	Wet
	32			5	
				4	
SS-17	33		Red fine to coarse SAND, trace silt, fine gravel.	5	Recovery 2.0' PID 0 ppm
				5	
	34			6	
				3	
SS-18	35		Red fine to medium SAND, trace silt, fine gravel.	1	Recovery 1.3' PID 0 ppm
				1	
	36			4	
				3	
SS-19	37		Red fine to coarse SAND, trace silt, fine gravel.	4	Recovery 2.0' PID 0 ppm
				6	
	38			6	
		Silty SAND-Graded, No Gravel	Red fine to coarse SAND, trace silt with bottom 0.8' layer of very fine to fine SAND, trace silt.	-	
SS-20	39			-	Recovery 2.0' PID 0 ppm
				-	No blow counts.
	40			-	
			Red fine to coarse SAND, trace silt with bottom 0.6' layer of very fine to fine SAND, trace silt.	1	
SS-21	41			1	Recovery 2.0' PID 0 ppm
				1	
	42			1	
				2	
SS-22	43		Red fine to medium SAND, trace silt.	1	Recovery 2.0' PID 0 ppm
				2	
	44			2	
				2	
SS-23	45		Red fine to medium SAND, trace silt, coarse SAND.	4	Recovery 2.0' PID 0 ppm
				5	2 - 3 pieces of gravel.
	46			5	
				3	
SS-24	47		Fine to medium SAND, trace silt, coarse SAND.	2	Recovery 1.0' PID 0 ppm
				2	Possible washed sample.
	48			1	
				2	
SS-25	49		Red fine to medium SAND, trace silt.	2	Recovery 0.6' PID 2.1 ppm
				5	
	50			8	1.3' wash.

Environmental Science & Engineering, Inc.

Log of Soil Boring No. B306C

Project Old Southington Landfill Superfund

Location Southington, Connecticut

Job No. 4925534

Date 06/22/92

Sample & Type	Depth		Soil Description	Penetration Blows for 6"	Notes
				13	
	76			18	
				6	
SS-38	77		Red very fine to fine SAND.	6	Recovery 1.4 feet PID 0
				7	
	78			8	
				16	
SS-39	79		Red very fine to medium SAND, with some coarse sand, fine gravel.	10	Recovery 1.4 feet PID 0
				12	
	80			14	
				24	
SS-40	81		Red very fine to medium SAND, trace coarse sand, fine gravel.	18	Recovery 2.0 feet PID 0
				10	
	82			10	
				15	
SS-41	83	Graded SAND and GRAVEL	Red very fine to medium SAND, with mica flicks.	7	Recovery 0.8 feet PID 0
				7	
	84			9	
				11	
SS-42	85		Red very fine to fine SAND, trace silt.	8	Recovery 0.3 feet PID 0
				7	
	86			7	
				5	
SS-43	87		Red very fine to coarse SAND, trace silt.	6	Recovery 1.0 feet PID 0
				7	
	88			9	
				11	
SS-44	89		Red very fine to coarse SAND, trace silt.	5	Recovery 0.7 feet PID 0
				6	Note: Large grains subangular to
	90		Red fine to coarse angular to subrounded SAND, trace silt, gravel.	8	subrounded.
				20	
SS-45	91		Note: Gravel contains angular to subangular greenish gray chips of stone.	9	Recovery 0.9 feet PID 0
				7	
	92			9	
				9	
SS-46	93		Red very fine to coarse SAND, some fine to medium gravel, trace silt.	4	Recovery 0.6 feet PID 0
				5	Note: 0.7 feet wash top of
	94			6	sample.
				6	
SS-47	95		Red very fine to coarse SAND, some gravel - up to ~5mm, trace silt.	6	Recovery 0.8 feet PID 0
				6	Note: Coarse sand and gravel
	96			6	grains are subangular to
				2	subrounded quartz/schist.
SS-48	97		Red very fine to coarse SAND, some gravel (subangular to subrounded).	1	Recovery 0.3 feet PID 0
				4	
	98			5	
				6	
SS-49	99		Red very fine to coarse SAND.	4	Recovery 0.7 feet PID 0
				5	Note: 99% of 0.7 feet Recovery - wash
	100			8	sample.

Environmental Science & Engineering, Inc.

Log of Soil Boring No. B306C

Project Old Southington Landfill Superfund

Location Southington, Connecticut

Job No. 4925534

Date 06/22/92

Sample & Type	Depth		Soil Description	Penetration Blows for 6"	Notes
				7	
	126			6	
				1	
SS-63	127		Brownish-red SILT, trace very fine sand, gravel.	0	Recovery 2.0' PID 0 ppm
				0	
	128	SILT		6	Note: One stone.
			Brownish-red SILT, trace very fine sand grading into silt, some very fine to fine sand.	11	
SS-64	129			12	Recovery 2.0' PID 0 ppm
				15	
	130			16	
			Brownish-red SILT, trace very fine sand.	10	
SS-65	131			12	Recovery 1.8' PID 0 ppm
				12	
	132		Interbedded SILT and SAND: 132'-132.3' Red very fine to medium SAND. 132.3'-133' SILT. 133'-134' Tan-orange-black very fine to medium laminated SAND.	16	
				13	
SS-66	133			14	Recovery 1.5' PID 0 ppm
				17	Note: Laminations ~2.5 mm range
	134			16	tan-orange-black.
				6	
SS-67	135		Red very fine to medium SAND, trace silt, minor laminations.	7	Recovery 1.0' PID 0 - 1 ppm
				9	Note: Wet.
	136			10	
				5	
SS-68	137		Red very fine to medium SAND, trace silt.	7	Recovery 1.0' PID 0 ppm
				9	Note: Bottom 6: left in borehole.
	138			9	
				5	
SS-69	139		Red very fine to coarse SAND, trace silt.	7	Recovery 1.5' PID 0 ppm
				9	Note: Wet.
	140			11	
				5	
SS-70	141	Graded SAND	Red very fine to coarse SAND, trace silt, gravel cobbles.	6	Recovery 1.4' PID 0 ppm
				8	Note: Wet.
	142			12	
				5	
SS-71	143		Red very fine to fine SAND, trace silt.	6	Recovery 0.7' PID 0 ppm
				6	Note: Wet.
	144			6	
			No recovery - trace of material in the spoon tip indicates same material as previous spoon (SS-71).	8	
SS-72	145			9	Recovery 0' PID 0 ppm
				10	Note: Wet.
	146			10	
				10	
SS-73	147		Red very fine to fine SAND, trace silt, fine gravel.	12	Recovery 1.1' PID 0 ppm
				12	Note: Wet/Moist.
	148			15	
			Red very fine to fine SAND, little silt, trace subrounded to subangular fine to coarse gravel.	8	
SS-74	149			11	Recovery 1.3' PID 0 ppm
				12	Note: Moist.
	150			18	

Environmental Science & Engineering, Inc.

Job No. 4925534

Date 06/22/92

Log of Soil Boring No. B306C

Project Old Southington Landfill Superfund

Location Southington, Connecticut

Sample & Type	Depth		Soil Description	Penetration Blows for 6"	Notes
		TILL	subangular fine to coarse gravel,	75	Note: Top 1.7' probable wash-start
	176		occasional seam of silt and very fine	76	sample description below this material.
			sand layer of very fine to medium	56	
	177		sand, little silt.	38	Note: Moist.
			Bottom 1.3': Red very fine to coarse	42	Change to TILL at 175'
	178		SAND, some subangular to angular fine	75	
			to coarse gravel, little silt, trace clay,	105/4"	Recovery 0.5' PID 0 ppm
SS-88	179	BEDROCK	with cobbles.	29	Note: Moist.
				130/4"	178 - 178'10" sample possible
	180		Red very fine to coarse SAND, little	-	weathered rock at 178'10".
			angular fine to coarse gravel, silt, layer	4	
	181		of very fine sand and silt.	4	
				4	
	182			4	Roller bit 178'10" - 180'.
				4	NY Rock core 180' - 185'.
	183		Conglomorate/Sandstone.	4	
				4	
	184			4	
				4	
	185		End of exploration 185.0 feet.	4	
	186				
	187				
	188				
	189				
	190				
	191				
	192				
	193				
	194				
	195				
	196				
	197				
	198				
	199				
	200				

Environmental Science & Engineering, Inc.

Log of Soil Boring No. B308C

Project Old Southington Landfill Superfund

Location Southington, Connecticut

Job No. 4925534

Date 10/13/92

Sample & Type	Depth	Legend	Soil Description	Penetration Blows for 6"	Notes
SS-6			Red-brown fine SAND, trace medium sand, coarsening downward to fine to medium sand.	14	Recovery 2.5' PID 0ppm
	26			16	
				14	
	27			14	
				15	
	28			16	
				15	
	29			18	
				17	
	30			20	
SS-7				9	Recovery 2.9' PID 0ppm
	31			12	
				14	
	32			14	
				13	
	33		Red-brown fine to medium SAND.	11	
				14	
	34			16	
				16	
	35			17	
SS-8				14	Recovery 2.0' PID 0ppm
	36			13	
				13	
	37			16	
				15	
	38			18	
				18	
	39			17	
				18	
	40			19	
SS-9				10	Recovery 2.2' PID 0ppm
	41			11	
				13	
	42			14	
				14	
	43			16	
				14	
	44		Fine to medium SAND, little fine to medium gravel, subrounded to well rounded, little coarse sand, trace silt.	14	
				13	
	45			18	
SS-10				23	Recovery 2.9' PID 0ppm
	46			20	
				18	
	47		Medium SAND, little coarse sand, little fine gravel.	19	
				18	
	48			18	
				19	
	49			21	
				24	
	50			28	

Environmental Science & Engineering, Inc.

Log of Soil Boring No. B308C

Project Old Southington Landfill Superfund

Location Southington, Connecticut

Job No. 4925534

Date 10/13/92

Sample & Type	Depth	Legend	Soil Description	Penetration Blows for 6"	Notes
SS-16		LACUSTRINE	Red-brown fine SAND. One 1/4 " layer of silt near bottom of spoon.	25	Recovery 3.0' PID 0 ppm
	76			30	
				45	Note: Spoon interval 75-79.5'.
	77			63	Blow counts so high, did not try
				83	for last 6".
	78			118	
				100	Note: Switched to 300 lbs. hammer.
	79			108	
				148	
	80			-	
SS-17			Very fine to fine SAND, little mica flakes. Two, 1/3" horizontal layers of silt, approximately 4" apart, near top of spoon.	16	Recovery 3.8' PID 0 ppm
	81			17	
				24	
	82			34	
				42	
	83			56	
				57	
	84			51	
				44	
	85			43	
SS-18			Very fine to fine SAND.	17	Recovery 3.0' PID 0 ppm
	86			17	
				21	
	87			24	
				24	
	88			20	
				22	
	89			22	
				23	
	90			30	
SS-19			Very fine to fine SAND. One 1/4" band of silt, horizontal.	14	Recovery 3.6' PID 0 ppm
	91			14	
				20	
	92			18	
				22	
	93			19	
				19	
	94			17	
				20	
	95			19	
SS-20			Very fine to fine SAND, trace coarse SAND.	13	Recovery 4.8' PID 0 ppm
	96			9	
				11	
	97			15	
				27	
	98			30	
				28	
	99		Fine to coarse SAND, little fine to coarse gravel, trace cobbles. Compact.	42	
				40	
	100			54	

Environmental Science & Engineering, Inc.

Job No. 4925534

Date 10/12/92

Log of Soil Boring No. B309C

Project Old Southington Landfill Superfund

Location Southington, Connecticut

Date Started 10/12/92 Date Completed 10/20/92

Sample & Type	Depth	Legend	Soil Description	Penetration Blows for 6"	Notes
		SAND	Red, fine to coarse SAND, little fine to coarse gravel, trace little silt, trace	15	
	1			24	
				16	
	2			15	Recovery 36" PID 1 ppm
			Red, fine to coarse SAND, trace fine to coarse gravel, (graded fine to coarse), trace silt, 2 cobbles.	15	
SS-1	3			15	
				22	
	4			23	
				19	
	5			19	
			Red fine to coarse SAND, some fine to coarse gravel (graded), 2 cobbles.	15	Note: Wet (Sat.) at 6.5'.
	6			17	
				19	Recovery 44" PID 0 ppm
	7			17	
				15	
SS-2	8	Fine SAND	Red fine SAND, layered with fine sand and silt.	15	
				16	
	9			20	
			Red fine to coarse SAND, fining downward to fine sand.	17	
	10			16	
				7	
	11		Red fine to medium SAND, trace silt.	8	
				10	
	12			13	Recovery 56" PID 0 ppm
			Red fine SAND, trace coarse sand and silt.	13	
SS-3	13			10	
			Fine SAND layered with fine to medium sand.	15	
	14			23	
			Black-orange stain, fine SAND. Orange in fine to coarse SAND, trace silt, trace fine grave.	23	
	15			51	
				38	
	16			48	Note: Change to 300 lb. hammer.
				29	
	17	SAND	Red fine to coarse SAND, some fine to coarse gravel, some subrounded cobbles, trace little silt, trace clay.	36	
SS-4				39	Recovery 44" PID 0 ppm
	18			30	
				24	
	19			25	
				18	
	20		Red fine to medium SAND.	16	
				7	
	21		Red fine to coarse angular SAND.	4	Recovery 42" PID 0 ppm
			Black-brown orange fine to coarse	4	
	22			5	
			Fine to coarse SAND, trace silt.	9	
SS-5	23		Fine to coarse SAND, angular washed.	9	
				9	
	24			11	
			Fine to coarse SAND, trace gravel,	10	
	25			13	

Clarence Welti & Associates, Inc.

Groundwater encountered at 8.0 feet.

Environmental Science & Engineering, Inc.

Log of Soil Boring No. B309C

Project Old Southington Landfill Superfund

Location Southington, Connecticut

Job No. 4925534

Date 10/12/92

Sample & Type	Depth	Legend	Soil Description	Penetration Blows for 6"	Notes
		Laminated Fine SAND, SILT & CLAY	Red CLAY, little sand.	5	
	51			5	
			Fine to medium SAND.	10	
	52			12	
			CLAY, some silt, trace sand, varved.	10	Recovery 48" PID 0ppm
SS-11	53		Fine SAND.	11	
				10	
	54		CLAY, trace sand & silt, varved.	13	
				10	
	55		Fine SAND.	30	
				9	
	56			9	
				11	
	57		Brown-red fine SAND.	17	
				14	Recovery 50" PID 0ppm
SS-12	58			16	
				20	
	59			21	
			Fine SAND layered with very fine sand.	21	
	60			18	
				6	
	61			9	
			Red-brown varved SILT & CLAY, some fine sand.	10	
	62			16	
				16	
	63			17	Recovery 24" PID 0ppm
SS-13				18	
	64		Very fine SAND.	20	
				21	
	65			20	
				5	
	66			6	
				9	
	67		Red-brown fine SAND with silt interbedded with fine sand, little clay. 1/2" clay bands occuring at irregular intervals.	24	
				29	
SS-14	68			28	Recovery 48" PID 0ppm
				30	
	69			35	
				43	
	70			54	
				8	
	71			10	
				14	
	72		Red fine SAND, trace silt.	21	Recovery 45" PID 0ppm
SS-15				22	
	73			25	
				27	
	74			27	
				30	
	75			-	

TEST WELL RECORD

NEW YORK CO., INC.

TEST WELL NO. CW-15-65

DATE

FOR

LOCATION

PROPERTY OWNER

SKETCH OF LOCATION 65-15 49

GROUND SURFACE 0'

SAND AND GRAVEL

12 SAND AND GRAY CLAY

27 FINE SAND GRAY CLAY & GRAVEL

33 FINE MED COARSE RED SAND & GRAVEL, TRACE OF CLAY

45 FINE MED COARSE RED SAND AND GRAVEL

3 FINE SAND GRAVEL

59'4"

59'4" REFUSAL

DEPTH OF TEST HOLE

OBS. WELL: NO. DISTANCE DEPTH

NO. DISTANCE DEPTH

WELL SCREEN: TYPE PERF LENGTH 2' OPENING

PUMPING DATA (MEASURED FROM TOP OF PIPE) ELEVATION:

TIME	GPM	PUMP. WELL	OBS. WELL	OBS. WELL	TIME	GPM	PUMP. WELL	OBS. WELL	OBS. WELL

STATIC LEVEL 5'1" ORIFICE AIR LINE LENGTH

QUALITY: PH HARD. IRON MANGANESE

ODOR TASTE LAB. SAMPLE

PIPE LEFT IN WELL 51'11" FT., IN OBS. WELL FT.

SCREEN LEFT IN WELL FT., IN OBS. WELL FT.

NOTE (1) SKETCH MEASUREMENTS FROM GROUND LEVEL.

(2) OBS. WELL SCREEN IS OPPOSITE WELL SCREEN.

(3) DEPTH SHOWN IS MAXIMUM DEPTH OF HOLE.

FOR LAYNE - NEW YORK CO., INC.

GOLDBERG-ZOINO & ASSOCIATES, INC.
281 HARTFORD TURNPIKE, VERNON, CONNECTICUT
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Turnpike Road Landfill
Southington, CT

REPORT OF BORING No. LW-1039,N,D
SHEET 1 OF 1
FILE No. T-6020
CHKD. BY

BORING Co. East Coast Drilling Inc.
FOREMAN J. DeAngelis
GZA ENGINEER A. Biarngard

BORING LOCATION See Plan
GROUND SURFACE ELEVATION DATUM
DATE START 1-13-85 DATE END 1-17-85

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140lb. HAMMER FALLING 30 in.
CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300lb. HAMMER FALLING 24 in. 4" I.D. driven w/440 lb.
CASING SIZE: hammer falling 24" OTHER: Hole preaugered to 45'

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
1-13-85	0920	8.5	10.0	5 min.

DEPTH (ft)	CASING (blows/ft)	SAMPLE No.	PEN./REC. (in)	DEPTH (ft)	BLOWS/6"	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/20	0-2.0	3-6-20-65	Top 6" Loose gray-brown fine to coarse SAND, some Silt, trace Organics Bottom 14" Very dense red-brown fine to coarse SAND, little (+) Silt, trace fine to coarse Gravel, occasional Cobble		1.0'± TOPSOIL; FILL
5		S-2	24/16	5.0-7.0	7-5-3-2	Top 4" Medium dense red-brown fine to coarse SAND, little Silt Bottom 12" Loose red-brown fine to coarse SAND, little (-) Silt		6.0'±
10		S-3	24/14	10.0-12.0	1-1-1-2	Very loose red-brown fine to coarse SAND, little (+) Silt	1.	FINE TO COARSE SANDS
15		S-4	24/24	15.0-17.0	2-3-3-9	Loose red-brown coarse SAND, little fine Gravel, occasional Cobble, one 5" layer fine Sand, little Silt		
20		S-5	24/22	20.0-22.0	12-7-7-7	Medium dense red-brown, fine to coarse SAND, trace Silt	2.	
25		S-6	24/2	25.0-27.0	8-8-8-8	Medium dense red-brown fine to coarse SAND, trace Silt, little fine to coarse Gravel		
30		S-7	24/4	30.0-32.0	12-32-18-10	Dense red-brown fine to coarse SAND, little Silt, little fine to coarse Gravel, occasional Cobble		

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT.	DENSITY
0-4	V. LOOSE	< 2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
>50	V. DENSE	15-30	V. STIFF
		>30	HARD

REMARKS:
1. Spoon wet.
2. Five feet of blown sands inside augers.

NOTES: 1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON

GOLDBERG-ZOINO & ASSOCIATES, INC.
281 HARTFORD TURNPIKE, VERNON, CONN.
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Turnpike Road Landfill
Southington, CT

REPORT OF BORING No. LW-103S,M,D
SHEET 1 OF 1
FILE No. T-6020
CHKD. BY

DEPTH (ft)	CASING BLOWS (ft)	SAMPLE No.	PEN. (in) / REC.	DEPTH (ft)	BLOWS/6"	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
	202					No sample		FINE SAND AND SILT
	225							
	380/9							
		S-15	6/6	78.2-78.7	200	Very dense red-brown fine to coarse SAND, some (+) Silt, trace (+) Clay, little fine to coarse Gravel	3. 4.	±78.2'
					core times min/ft			
		C-1	82/24	78.7-79.7	1.5	Soft, slightly weathered, moderately fractured medium grained red-brown SANDSTONE, occasional 1" Siltstone layer RQD = 30%	5.	
				79.7-80.7	0.2			
				80.7-81.7	0.3			
				81.7-82.7	0.3			
				82.7-83.7	0.5			
				83.7-84.7	3.0			BEDROCK
				84.7-85.6	3.0/0.9'		6.	85.6'±
							7. 8.	END OF EXPLORATION

REMARKS:

3. Washed ahead of casing with roller bit from a depth of 77.7' to 78.2'.
4. Sample 15, 100 blows with 140 lb. hammer for 3.5", then 100 blows with 300 lb. hammer for 2.5", red-brown Siltstone in tip of spoon.
5. 0.4' of Glacial Till recovered in core barrel.
6. 15' of "H" casing lost at bottom of hole.
7. One 1½" PVC well installed with a screened range from 34.8 to 54.5 feet. (Screens wrapped with filter fabric sleeves). Bentonite seal installed from 31.5 to 38 feet.
8. A second 1½" PVC well installed with a screened range from 6.1 to 31.3 feet. (Screens wrapped with filter fabric sleeves). Bentonite seal from 0.5 to 2.5.
9. Clacium used to melt ice on ground surface around hole.

GZA

BORING No. LW-103

GOLDBERG-ZOINO & ASSOCIATES, INC.
281 HARTFORD TURNPIKE, VERNON, CONN.
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Turnpike Road Landfill
Southington, CT

REPORT OF BORING No. LW-103D
SHEET 2 OF 3
FILE No. T-6020
CHKD. BY

DEPTH (ft)	CASING (BL/ft)	SAMPLE No.	REC. (in)/REC.	DEPTH (ft)	BLOWS/6"	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
								FINE TO COARSE SANDS
40								41.0'±
								CLAYEY SILT
								43.0'±
								GLACIAL TILL
50								
	87							
	83							
	99							
	130							
	128							
	155							
	120							56.5'±
	78							FINE SANDS
	46							
	54							
60	31							
	41							
	40							
	47							
	56							
	49							
	66							
	99							
	98							
70	99							
	75							
	37							
	31							
	40							
	18							

REMARKS:

GZA

BORING No. LW-103D

ENT: Warzyn Engineering Project #8909	**General Borings, Inc.** P.O. BOX 7135 PROSPECT, CT 06712	SHEET 1 OF 1 HOLE NO. TW-19
B NO. 12-80	PROJECT NAME Southington	LINE
EMAN-DRILLER J.D. M.S.	LOCATION Southington, CT.	STATION
PECTOR G.K.		OFFSET
GROUND WATER OBSERVATIONS T 7.5 FT. AFTER 0 HOURS T FT. AFTER HOURS	TYPE: CASING HW, SAMPLER SS, CORE BAR. NX SIZE I.D.: 4", 1-3/8", 2-1/8" HAMMER WT.: 140 LBS BIT HAMMER FALL: 30" Carbide & Diam.	DATE Start 2/18 Finish 2/19/80 SURFACE ELEV. GROUND WATER ELEV.

CASING BLOWS PER FOOT	SAMPLE NO	TYPE	PEN	REC	DEPTH @ BOT	BLOWS PER 6" ON SAMPLER (FORCE ON TUBE) 0-6	6-12	12-18		DENSITY OR CONSIST. MOIST	STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
	1	SS	18"	6"	2.5'	16	17	12		Dry Medium	1.0'	Frost 1) Red-brown fine-coarse Sand, trace Silt, trace fine Gravel.
	2	SS	13"	4"	6.08'	10	35	50/1"		Wet Very Dense	6.08' 7.5'	2) Red-brown coarse-fine Sand, little Silt, trace fine-medium Gravel.
									4/6		Run #1 10.0'	Spoon refusal at 6.08' Casing refusal at 6.08'. Advanced tricone to 7.5' it took 1 hour to drill 1.42'.
	1	C	30"	24"	10.0'				5 8 10			
									8 15 20		Run #2 15.0'	7.5'-10.0' cored with NX 2-1/8". NOTE: 6.08'-7.0' - 40 minutes 7.0'-7.5' - 20 minutes 7.5'-8.0' - 3 minutes
	2	C	60"	28"	15.0'				25			
									9 13 25 26		Run #3 20.0'	Run #1 Cored Rock 7.5'-10.0'. Recovered 24" gray Traprock vertical seams. Run #2 Cored Rock 10.0'-15.0'. Recovered 28" gray Traprock vertical seams.
	3	C	60"	30"	20.0'				24		EOB	NOTE: Run #1 & 2 Carbide-run #3 diamond. Run #3 Cored Rock 15.0'-20.0'. Recovered 30" gray Traprock vertical seams. NOTE: High core times and poor recovery due to vertical seams wedging in core barrel.
												END OF BORING 20.0' 6.08' Soil 13.92' Rock
												Installed 22.0' Observation Well 2.58' stick-up

PE OF SAMPLES:
D = DRY W = WASHED C = CORED A = AUGER SS = SPLIT SPOON
B = UNDISTURBED BALL CHECK UP = UNDISTURBED PISTON VT = VANE SPOON
OPORTIONS USED TRACE = 0-10% LITTLE = 10-20% SOME = 20-35%, AND = 35-50%

GOLDBERG-ZOINO & ASSOCIATES, INC.
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT: Old Turnpike Road Landfill, Southington, CT.

REPORT OF BORING NUMBER GZ-2
SHEET 1 OF 2
DATE 1-15-87 FILE H-6970

BORING CO. General
FOREMAN J.D.
GZA ENGINEER Christopher J. Kopley

BORING LOCATION Benny Drive
GROUND ELEV.
DATE STARTED 1-15-87 DATE ENDED 1-16-87

CASING
SIZE: 2" pvc
HAMMER: lb.
FALL:

SAMPLER
TYPE: Split Spoon OTHER:
HAMMER: 140 lb.
FALL: 30"

GROUNDWATER READINGS

DATE	DEPTH	CASING AT	STABILIZATION TIME

DEPTH	CAS. BL. /FT.	SAMPLE NO.	PEN./REC.	DEPTH	BLOWS/6"	SAMPLE DESCRIPTION	STRTA. CHG. GEN. DESC.	EQUIPMENT INSTALLED	FIELD TESTING	RMKS.
		S-1	24/13	0-2	2-7-10-12	Dark Brown fine to coarse SAND, some medium Gravel, little Silt.	FINE TO COARSE SAND		HNU 0.0 ppm	1
5		S-2	24/12	5-7	5-10-13-12	Red fine to coarse SAND, little Silt.	±5' FINE TO COARSE SAND		0.2 ppm	
10		S-3	24-14	10-12	7-11-10-12	Red fine to coarse SAND, little Silt.			0.3 ppm	
15		S-4	24/10	15-17	7-7-12-12	Red fine to coarse SAND, little Silt.			0.4 ppm	
20		S-5	24/10	20-22	10-9-10-13	Red fine SAND, some Silt.	±20 FINE SAND		0.0 ppm	
25		S-6	24/14	25-27	12-15-15-21	Red fine SAND, some Silt.			0.6 ppm	
30		S-7	24/13	30-32	20-27-27-31	Red fine to coarse SAND, some Silt.	±30 FINE TO COARSE SAND		0.6 ppm	
35		S-8	24/12	35-37	16-20-29-22	Red fine SAND and SILT.	±35 FINE SAND AND SILT		0.2 ppm	
40		S-9	24/10	40-42	14-17-16-17	Red fine SAND and SILT.			0.2 ppm	
45		S-10	24/14	45-47	12-16-17-18	Red fine to medium SAND, some Silt.	±45 FINE TO MEDIUM SAND		0.4 ppm	
50		S-11	24/9	50-52	19-19-24-29	Red fine to medium SAND, some Silt.			0.4 ppm	

REMARKS:

1. Soil samples were screened for volatile organic compounds using an HNU Model PI-101 Organic Photoionization Analyser.

NOTES: 1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. 2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORINGS LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO FACTORS NOT ACCOUNTED FOR AT THE TIME MEASUREMENTS WERE MADE.

GOLDBERG-ZOINO & ASSOCIATES, INC.
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT: Old Turnpike Road Landfill, Southington, CT.

REPORT OF BORING NUMBER GZ-3
SHEET 1 OF 1
DATE 1-16-87 FILE H-6970

BORING CO. General
FOREMAN J.D.
GZA ENGINEER Christopher J. Kopley

BORING LOCATION Reican Drive
GROUND ELEV.
DATE STARTED 1-16-87 DATE ENDED 1-19-87

CASING
SIZE: 2" pvc
HAMMER: lb.
FALL:

SAMPLER
TYPE: Split Spoon OTHER:
HAMMER: 140 lb.
FALL: 30"

GROUNDWATER READINGS

DATE	DEPTH	CASING AT	STABILIZATION TIME

DEPTH	CAS. BL. /FT.	SAMPLE NO.	PEN./REC.	DEPTH	BLOWS/6"	SAMPLE DESCRIPTION	STRTA. CHG. & GEN. DESC.	EQUIPMENT INSTALLED	FIELD TESTING	RMKS.
		S-1	24/12	0-2	1-4-9-13	Brown fine to coarse SAND, little medium Gravel, trace Silt.	BROWN FINE TO COARSE SAND		HNU 0.3 ppm	1
5		S-2	24/9	5-7	6-7-9-17	Red fine to coarse SAND, some fine to medium Gravel and Silt.	± 5' RED FINE TO COARSE SAND		0.7 ppm	
10		S-3	24/12	10-12	4-4-7-6	Red fine to coarse SAND, some fine to medium Gravel and Silt.			0.5 ppm	
15		S-4	24/16	15-17	11-22-11-10	Red fine to coarse SAND, some fine to medium Gravel and Silt.			0.6 ppm	
20		S-5	24/7	20-22	21-20-10-11	Red fine to coarse SAND, little Silt.			0.4 ppm	
25						End of Boring ±25'				2

REMARKS:

1. Soil samples were screened for volatile organic compounds using an HNU Model PI-101 Organic Photoionization Analyser.

2. GZ-3
   Screen: 15' of 10 slot, threaded flush joint, scheduled 40 pvc.
   Setting: 10 to 25 feet.
   Gravel pack: #10 silica sand: 5 to 25 feet.
   Seal: bentonite pellets; 3 to 5 feet.
   Development: Airlift for ± 1 hr.

NOTES: 1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. 2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORINGS LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO FACTORS NOT ACCOUNTED FOR AT THE TIME MEASUREMENTS WERE MADE.

GOI BERG-ZOINO & ASSOCIATES, INC.
20 SPRING HILL ROAD, TRUMBULL, CT 06611
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Southington Landfill
Southington, Connecticut

REPORT OF BORING No. GZ-5M
SHEET 1 OF 2
FILE No. 50124.10
CHKD. BY ML

BOR NG Co. Clarence Welti & Associates
FOR MAN Dave Gromley
GZ ENGINEER Linda McKee

BORING LOCATION 10 feet south of GZ-5D
GROUND SURFACE ELEVATION 162.9 DATUM 164.72
DATE START 5/17/90 DATE END 5/17/90

S. : SAMPLER CONSISTS OF A 2" X 24" SPLIT SPOON DRIVEN USING A 300 lb. HAMMER FALLING 30 in.

DRILLING METHOD: 3 3/4" HSA

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
5/17/90	0905	17'	20'	0 hours
5/21/90	1015	17.15'	out	4 days

DEPTH	BLOWS	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION Burmister CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING	REMKS
						See boring log GZ-5D for description	FINE TO MEDIUM SAND			
5										
1							10' FINE SAND			
15							15' FINE SAND AND SILT			1
							19.5' FINE SAND			
--							25' FINE TO MEDIUM SAND			
30										
5							35' FINE SAND			

MARKS:
Sample wet at approximately 17 feet below ground surface.

OTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING No. GZ-5M

3ZA

GOLDBERG-ZOINO & ASSOCIATES, INC.
2 SPRING HILL ROAD, TRUMBULL, CT 06611
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Southington Landfill
Southington, Connecticut

REPORT OF BORING No. GZ-7D
SHEET 1 OF 4
FILE No. 50T24.10
CHKD. BY ML

BORING Co. Clarence Welti & Associates
FOREMAN Don Moodie
ENGINEER Linda McKee

BORING LOCATION West of Meridan Box Company
GROUND SURFACE ELEVATION 155.9 DATUM 157.58
DATE START 3/26/90 DATE END 4/4/90

HAMMER: SAMPLER CONSISTS OF A 2" X 60" SPLIT SPOON DRIVEN USING A 300 lb. HAMMER FALLING 30 In.

DRILLING METHOD: 4" CASING DRIVEN USING A 300 lb. HAMMER FALLING 24 In.

ROCK CORE OBTAINED USING 4-INCH STEEL CASING NX DIAMOND CORE BARREL

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
3/26/90	1040	8'	10'	0 hours

DEPTH	CASING	BLOWS	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING HNU (ppm)	REMKS
			S-1	60/30	0-5.0		Red-brown fine to coarse GRAVEL, and fine to coarse SAND, little Silt, trace Slag (FILL).			a) 0.2/0.2 b) 0.6/0.2 c) 1.2/0.4	1
5			S-2	60/24	5.0-10.0		Top 12": Red-brown fine to coarse GRAVEL and fine to coarse SAND, little Silt (FILL). Middle 10": Red-brown fine to coarse SAND. Some fine to coarse GRAVEL, little Silt (possible petroleum odor). Bottom 2": Red-brown fine to coarse SAND and REFUSE (Plastic, Glass).	GRAVEL, SAND AND REFUSE		a) 3.2/1.0 b) 4.8/1.2 c) 4.6/1.2 a) 2.8/1.2	2
10			S-3	60/24	10.0-15.0		Red-brown fine to medium SAND, little fine to coarse Gravel, trace Refuse (Plastic).			b) 4.2/1.2	
15			S-4	60/30	15.0-20.0		Brown PEAT, trace Metal Chips, Wire.	15.0' PEAT		a) 2.6/1.0 b) 2.8/1.0	
20			S-5	60/35	20.0-25.0		Top 12": BROWN PEAT 12-13": Light brown GRAVEL, and fine to coarse SAND. 13-19": BROWN PEAT 19-35": Gray fine to medium SAND, some Silt, trace Metal.			a) 1.2/1.0 b) 2.2/1.2	
25			S-6	60/50	25.0-30.0		Top 45": Gray fine to medium SAND, some Silt. Bottom 5": Brown fine SAND and SILT, trace Clay.	24.0' GRAY SAND		a) 2.8/1.2 b) 2.0/1.2	
30			S-7	60/40	30.0-35.0		Red-brown fine to coarse SAND, little Silt, trace fine Gravel.	29.5' SAND AND GRAVEL		a) 1.2/1.0 b) 1.8/1.2	
35			S-8	36/22	35.0-38.0		Red-brown fine to coarse GRAVEL and fine to coarse SAND, some Silt.			a) 2.4/1.0 b) 1.2/1.0	

REMARKS:
1) Soil samples field screened for volatile organic compounds with 11.7 eV HNU Model PI-101 photoionization detector. 4.8/0.2=Total HNU reading/background value prior to reading. Letters denote specific soil jars screened.
2) Sample wet at approximately 8 feet below grade.
ppm= parts per million

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING No. GZ-7D

GZA

DBERG-ZOINO & ASSOCIATES, INC.
SPRING HILL ROAD, TRUMBULL, CT 06611
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Southington Landfill
Southington, Connecticut

REPORT OF BORING No. GZ-7D
SHEET 3 OF 4
FILE No. 50124.10
CHKD. BY ML

BLOWS	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION / Burmister CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING HNU (ppm)	REMKS
						FINE TO COARSE SAND AND GRAVEL			
	S-19	60/20	87.0-92.0		Red-brown fine to coarse SAND, some fine to coarse Gravel, trace Silt.	87.0'		a) 0.8/0.6 b) 1.2/0.8	
90						FINE TO COARSE SAND			
	S-20	60/3	92.0-97.0		Red-brown coarse GRAVEL, some fine to coarse Sand, trace Silt.	92.0'		a) 6.4/0.8	
95						BOULDER			3
	S-21	60/10	97.0-102.0		Red-brown Arkosic SANDSTONE (Boulder).				
100									
	S-22	60/28	102.0-107.0		Red-brown fine to coarse SAND, some fine to coarse Gravel, trace Silt.	102.0'		a) 2.4/0.8 b) 5.2/0.8	
105									
	S-23	60/25	107.0-112.0		Red-brown fine to coarse SAND, some fine to coarse Gravel, trace Silt.	FINE TO COARSE SAND		a) 10.2/1.2 b) 8.2/0.8	
110									
	S-24	36/25	112.0-115.0		Red-brown fine to coarse SAND, some fine to coarse Gravel, little Silt, trace Clay.			a) 7.2/1.2 b) 6.8/1.0	
115						115.0'			
	S-25	60/12	115.0-120.0		Red-brown fine to medium SAND, some fine to coarse Gravel, trace Silt.	FINE TO MEDIUM SAND		a) 5.8/1.0 b) 5.0/1.2	
120									
	S-26	54/20	120.0-124.5		Red-brown fine to coarse GRAVEL, little fine to coarse Sand, trace Silt.			a) 3.8/0.6 b) 3.6/0.8	
125						125.0'			
	S-27	60/1	125.0-130.0		Red-brown Arkosic SANDSTONE (Boulder).	BOULDER			3
130									

REMARKS:
3) Cored through boulder.

NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

GZA

BORING No. GZ-7D

GZA BERG-ZDINO & ASSOCIATES, INC.
20 SPRING HILL ROAD, TRUMBULL, CT 06611
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Southington Landfill
Southington, Connecticut

REPORT OF BORING NO. GZ-11D
SHEET 1 OF 2
FILE No. 50T24.10
CHKD. BY ML

BORING LOCATION Northwest corner of Lori Corp.
GROUND SURFACE ELEVATION 148.1 DATUM 149.67
DATE START 4/23/90 DATE END 4/24/90

DRILLING CO. Clarence Welti & Associates
FOREMAN Don Moodie
GEOTECHNICAL ENGINEER Linda McKee

HAMMER: SAMPLER CONSISTS OF A 2" X 60" SPLIT SPOON DRIVEN USING A 300 lb. HAMMER FALLING 30 In.

DRILLING METHOD: 3 3/4" HSA
ROCK CORE OBTAINED WITH NX DIAMOND CORE BARREL.

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
4/23/90	1300	11'	15	0 Hours
4/30/90	1218	3.9'	out	7 Days

DEPTH	CASING BLOWS	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION Burmister CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING HNU (ppm)	REMKS
		S-1	60/20	0-5.0		Top 14": Red-brown fine to coarse SAND, little fine to coarse Gravel, Silt. Bottom 6": Gray SILT and fine to coarse SAND, little fine to coarse Gravel, Clay.	FINE TO COARSE SAND		0.8/0.6	1
5		S-2	60/16	5.0-10.0		Top 8": Brown, fine to coarse SAND, some fine Gravel, some Silt. Bottom 8": Black PEAT.			a) 1.0/0.6 b) 0.2/0.6	
							9.0' PEAT			2
		S-3	60/30	10.0-15.0		Top 4": Black PEAT. Bottom 26": Gray fine to medium SAND.	11.0'		0.6/0.6	
15		S-4	60/40	15.0-20.0		Gray fine SAND, trace Silt.			a) 0.6/0.6 b) 0.6/0.6	
20		S-5	60/48	20.0-25.0		Gray fine SAND, little silt.	FINE TO MEDIUM SAND		a) 0.8/0.6 b) 0.6/0.6	
25		S-6	60/48	25.0-30.0		Gray fine SAND, little Silt, interlayered with 1-inch thick red-brown SILT and fine SAND.			a) 0.6/0.6 b) 0.6/0.6	
30		S-7	60/48	30.0-35.0		Top 10": Gray fine to medium SAND, little Silt. Bottom 38": Gray Silty CLAY.	31.0' SILTY CLAY		a) 0.8/0.8 b) 1.2/1.0 c) 0.8/0.8	
35		S-8	60/40	35.0-40.0		Top 6": Gray Clayey SILT, trace fine Sand. Middle 30": Gray and light brown SILT and CLAY, trace fine Sand. Bottom 4": Red-brown fine to coarse SAND, some fine to coarse Gravel, little Silt.	35.5' SILT AND CLAY 39.5'		a) 0.6/0.6 b) 0.8/0.6 c) 0.6/0.6 d) 0.6/0.6	

REMARKS:
1) Soil samples field screened for volatile organic compounds with 11.7 eV HNU Model PI-101 photoionization detector. 0.8/0.6= total HNU reading/background value prior to reading. Letters denote specific soil jars screened.
2) Sample wet at approximately 11 feet below grade.
ppm= parts per million

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING No. GZ-11D

GZA

GZA GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS GZA ...BERG-ZOINO & ASSOCIATES, INC. ...2 SPRING HILL ROAD, TRUMBULL, CT 06611	PROJECT Old Southington Landfill Southington, Connecticut	REPORT OF BORING No. GZ-12M SHEET 1 OF 2 FILE No. 50124.10 CHKD. BY MC

DRILLING CO. Clarence Welti & Associates
FOREMAN Don Moodie
ENGINEER Linda McKee

BORING LOCATION 5' west of GZ-12D
GROUND SURFACE ELEVATION 156.5 DATUM 157.79
DATE START 4/10/90 DATE END 4/11/90

SAMPLER: SAMPLER CONSISTS OF A 2" X 24" SPLIT SPOON DRIVEN USING A 300 lb. HAMMER FALLING 30 in.

DRILLING METHOD: 3 3/4" HSA

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
4/10/90	1345	11'	15'	0 hours
4/11/90	0800	11.2'	out	1 day
4/23/90	0830	11.6'	out	13 days

DEPTH	CASING	BLOWS	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION Burmister CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING	REMKS
							See GZ-12D Boring Log.	FINE TO COARSE SAND			
5											
								10.0'			
10											
15								FINE TO MEDIUM SAND			
20											
25								25.0' FINE TO COARSE SAND			
								29.0' FINE TO COARSE GRAVEL			
30											
35								35.0' FINE TO COARSE SAND			
								37.0' FINE TO COARSE GRAVEL			

REMARKS:

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

GZA

BORING No. GZ-12M

GOBERG-ZOINO & ASSOCIATES, INC.
2 SPRING HILL ROAD, TRUMBULL, CT 06611
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Southington Landfill
Southington, Connecticut

REPORT OF BORING No. GZ-12D
SHEET 1 OF 3
FILE No. 50T24.10
CHKD. BY ML

Co. Clarence Welti & Associates
INEER Don Moodie
Linda McKee

BORING LOCATION West of WNTY
GROUND SURFACE ELEVATION 156.4 DATUM 158.25
DATE START 4/5/90 DATE END 4/10/90

SAMPLER: SAMPLER CONSISTS OF A 2" X 60" SPLIT SPOON DRIVEN USING A 300 lb. HAMMER FALLING 30 In.

DRILLING METHOD: 3 3/4" HSA
ROCK CORE OBTAINED USING NX DIAMOND CORE BARREL

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
4/5/90	1315	15'	10'	0 hours
4/12/90	0900	11.4'	out	7 days

DEPTH	CASING	BLOWS	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION Burmister CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING HNU (ppm)	REMARKS
			S-1	60/25	0-5.0		Red-brown fine to coarse SAND, some fine to coarse Gravel, some Silt.	FINE TO COARSE SAND		a) 1.0/0.2 b) 2.8/0.2 a) 5.0/0.4	1
5			S-2	60/26	0.5-10.0		Red-brown fine to coarse SAND, some fine to coarse Gravel, some Silt.			a) 2.6/0.4	
0			S-3	60/20	10.0-15.0		Red-brown fine to medium SAND, some Silt, little fine to coarse Gravel.	10.0'		a) 5.0/0.8 b) 4.2/0.6	2
			S-4	60/34	15.0-20.0		Top 4": Red-brown coarse SAND. Middle 28": Red-brown fine to medium SAND, little fine to coarse Gravel, trace Silt. Bottom 2": Red-brown GRAVEL.	FINE TO MEDIUM SAND		a) 4.8/0.4	
20			S-5	60/15	20.0-25.0		Red-brown fine to medium SAND, little Silt, trace fine Gravel.			a) 4.0/0.4 b) 4.2/0.4	
25			S-6	60/55	25.0-30.0		Top 50": Red-brown fine to coarse SAND, little Silt. Bottom 5": Red-brown fine to coarse GRAVEL, some fine Sand, little Silt.	25.0' FINE TO COARSE SAND			
30			S-7	60/14	30.0-35.0		Red-brown fine to coarse GRAVEL, some fine Sand, Silt.	29.0' FINE TO COARSE GRAVEL		a) 3.8/0.4	
35			S-8	60/30	35.0-40.0		Top 5": Red-brown fine to medium SAND, some Silt. Middle 12": Red-brown medium to coarse SAND, some Silt. Bottom 13": Red-brown fine to coarse GRAVEL, trace Silt.	35.0' FINE TO COARSE SAND 37.0' FINE TO COARSE GRAVEL		a) 1.8/0.4	

REMARKS:
1) Soil samples field screened for volatile organic compounds with 11.7 eV HNU Model PI-101 photoionization detector. 2.8/0.2= Total HNU reading/background value prior to reading. Letters denote specific soil jars screened.
2) Sample wet at approximately 15 feet below grade.
ppm= parts per million

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING No. GZ-12D

LDBERG-ZOINO & ASSOCIATES, INC.
4 SPRING HILL ROAD, TRUMBULL, CT 06611
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Southington Landfill
Southington, Connecticut

REPORT OF BORING No. GZ-12D
SHEET 3 OF 3
FILE No. 50124.10
CHKD. BY MC

CASING BLOWS	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING HNU (ppm)	REMARKS
	S-18	60/50	85.0-90.0		Red-brown fine SAND, some Silt.	FINE SAND		a) 4.6/1.0	3
90	S-19	36/22	90.0-93.0		Top 6": Red-brown fine to medium SAND. Middle 4": Red-brown fine SAND. Bottom 12": Red-brown fine to coarse SAND and fine to coarse GRAVEL, some Silt, trace Clay. (TOC sample)	90.0' SAND AND GRAVEL		a) 6.2/0.8	
95	S-20	12/6	95.0-96.0		Red-brown fine to coarse SAND and fine to coarse GRAVEL, some Silt. Red SANDSTONE.	96.0' RED SANDSTONE		a) 4.6/0.8	4
	C-1	60/12	96.0-101.0						5
100	C-2	60/53	101.0-106.0		Red SANDSTONE.				6
105						106.0' E.O.B.			7
110									
115									
120									
125									
130									

REMARKS:
3) Ten feet of 2-inch, Schedule 40 threaded, flush-joint 10-slot pvc well screen set at approximately 89 feet below grade. Well completed with 2-inch, Schedule 40 pvc riser to approximately 2 feet above grade. No. 12 quartz sand placed around well from 76.5 to 90.5 feet below grade. Bentonite seal (pellets) placed around well from 71.5 to 76.5 feet. Annulus around well from 8 to 71.5 feet backfilled with bentonite/cement grout. Well capped with locking steel pipe cemented in place. Well developed for approximately 6.5 hours.
4) Auger refusal at approximately 96 feet below grade.
5) Bedrock cored with NX diamond core barrel. Bedrock sealed with bentonite slurry.
6) Boring ended at approximately 106 feet below grade. No blow counts recorded.
7) RQD 15% at rock interval 96'-101', RQD 52% at rock interval 101'-106'.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

GZA

BORING No. GZ-12D

GOLDBERG-ZOINO & ASSOCIATES, INC.
204 SPRING HILL ROAD, TRUMBULL, CT 06611
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Southington Landfill
Southington, Connecticut

REPORT OF BORING No. GZ-13M
SHEET 1 OF 3
FILE No. 5012A.10
CHKD. BY ML

BORING Co.: Clarence Welti & Associates
FOREMAN: Dave Bromley
ENGINEER: Linda McKee

BORING LOCATION: 15 feet east of GZ-13D
GROUND SURFACE ELEVATION: 179.6 DATUM: 181.92
DATE START: 4/18/90 DATE END: 4/19/90

SAMPLER: SAMPLER CONSISTS OF A 2" X 60" SPLIT SPOON DRIVEN USING A 300 lb. HAMMER FALLING 30 in.

DRILLING METHOD: 3 3/4" HSA

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
4/20/90	1020	32.8'	Out	1 Day

DEPTH	CASING	BLOWS	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION / Burmister CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING	REMKS
							See GZ-13D boring log.	FINE TO COARSE SAND			
5											
10											
								13.0'			
20								FINE GRAVEL			
25											
30								29.0'			
								FINE TO COARSE SAND			
35											

REMARKS:

NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

GOLDBERG-ZOINO & ASSOCIATES, INC.
204 SPRING HILL ROAD, TRUMBULL, CT 06611
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Southington Landfill
Southington, Connecticut

REPORT OF BORING No. GZ-13M
SHEET 3 OF 3
FILE No. 50124.10
CHKD. BY ML

D	CASING	BLOWS	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION Burmister CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING HNU (ppm)	REMKS
							See boring log GZ-13D.				
90											
95								FINE TO MEDIUM SAND			
100			S-1	60/60	100.0-105.0		Red-brown fine to medium SAND, trace Silt.			a) 1.0/0.8 b) 1.0/0.8	2
105											3
								108.0' E.O.B.			4
110											
115											
120											
125											
130											

REMARKS:
Soil sample field-screened for volatile organic compounds with 11.7 eV HNU Model PI-101 photoionization detector.
a) 1.0/0.8=Total HNU reading/background value prior to reading. Letters denote specific soil jar screened.
Ten feet of 2-inch, schedule 40, 10-slot pvc well screen set at approximately 98 to 108 feet below grade. Well completed with 2-inch, schedule 40 pvc riser to approximately 2 feet above grade. Sand backfilled to approximately 96 feet. Bentonite seal 90.5 to 96 feet. Well annulus backfilled with bentonite/cement grout. Well capped with locking steel pipe cemented in place. Well developed for 4 hours.
ppm=parts per million.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

GZA

GOLDBERG-ZOINO & ASSOCIATES, INC.
204 SPRING HILL ROAD, TRUMBULL, CT 06611
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Southington Landfill
Southington, Connecticut

REPORT OF BORING No. GZ-13D
SHEET 2 OF 5
FILE No. 5UT24.10
CHKD. BY ML

CASING BLOWS	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION Burmister CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING	REMARKS
					See boring log GZ-13DA	SAND AND GRAVEL			
						43.5'			
45									
50									
55									
60									
						FINE TO MEDIUM SAND			
65									
70									
75									
80									
85									

REMARKS:

NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

GZA

BORING No. GZ-13D

GOLDBERG-ZOINO & ASSOCIATES, INC.
204 SPRING HILL ROAD, TRUMBULL, CT 06611
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Southington Landfill
Southington, Connecticut

REPORT OF BORING No. GZ-13D
SHEET 4 OF 5
FILE No. 50124.10
CHKD. BY ML

DEPTH	CASING	BLOWS	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING	REMKS
							See boring log GZ-13DA			None	
135											
140								FINE TO MEDIUM SAND			
								144.0'			
145								FINE TO COARSE SAND			
150								150.0'			
								FINE SAND AND SILT			
155								155.0'			
								SILT			
160								161.0'			
								FINE TO COARSE SAND			
165								167.0'			
								COBBLES			1
170			S-31	50/16	170.0-175.0		Top 4": Fine to coarse GRAVEL. Bottom 12": Red-brown fine SAND, some Silt.				2
								FINE TO COARSE GRAVEL			
175											

REMARKS:
1) No blow counts recorded.
Ten feet of 2-inch schedule 40, 10-slot pvc well screen set at approximately 162 to 172 feet below grade. Well completed with 2-inch schedule 40 pvc riser pipe to approximately 2 feet above grade. Quarty sand backfilled approximately 158 to 174 feet, Bentonite placed 135 to 158 and 174 to 185 feet below grade. Well capped with locking steel pipe cemented in place. Well developed for 6 hours. Grout installed from grade to 158 feet below grade.

NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

GZA

BORING No. GZ-13D

LDBERG-ZOINO & ASSOCIATES, INC.
204 SPRING HILL ROAD, TRUMBULL, CT 06611
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Southington Landfill
Southington, Connecticut

REPORT OF BORING No. GZ-14S
SHEET 1 OF 1
FILE No. 50124.10
CHKD. BY ME

DRILLING Co. Clarence Welti & Associates
FOREMAN Dave Bromley
ENGINEER David Swetland

BORING LOCATION Southwestern corner of Chuck & Eddies property
GROUND SURFACE ELEVATION 178.6 DATUM 178.29
DATE START 5/4/90 DATE END 5/4/90

SAMPLER: SAMPLER CONSISTS OF A 2" X 60" SPLIT SPOON DRIVEN USING A 300 lb. HAMMER FALLING 30 In.

DRILLING METHOD: 3 3/4" HSA

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
5/4/90	1200	32.9' below PVC		1.5 hours

DEPTH	CASING	BLOWS	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION Burmister CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING	REMARKS
							See boring log GZ-14D.			None	
5											
10											
								SAND			
20											
25											
30			S-1	60/37	30.0-36.0		Top 10": Red-brown fine to coarse SAND, some fine Gravel, trace Silt. Middle 10": Lt. gray fine to medium SAND, trace Silt. Bottom 17": Red-brown fine to medium SAND, little Silt.				1 2
35								36' E.O.B.			3
37											

REMARKS:
Sampled for physical parameters at 30-35 feet below grade.
Sample wet at approximately 30 feet below grade.
Ten feet of 2-inch schedule 40, 10-slot pvc well screen set at approximately 26 to 36 feet below grade. Well completed with 2-inch, schedule 40, threaded, flush-joint pvc riser to approximately 2 feet above grade. No. 12 quartz sand placed around well from approximately 23 to 36 feet. Bentonite seal 21 to 23 feet. Well annulus backfilled with bentonite/cement grout. Well capped with locking steel pipe cemented in place. Well developed for 6 hours.
3) Boring ended at approximately 36 feet below grade. No blow counts recorded.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

GZA

BORING No. GZ-14S

GZA DBERG-ZOINO & ASSOCIATES, INC.
SPRING HILL ROAD, TRUMBULL, CT 06611
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Southington Landfill
Southington, Connecticut

REPORT OF BORING No. GZ-14M
SHEET 2 OF 5
FILE No. 50124.10
CHKD. BY ML

DEPTH	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING HNU (ppm)	REMARKS
								1.8/1.8	2
	S-1	60/36	45.0-50.0		Top 12": Red-brown, fine to coarse GRAVEL, trace Silt. Bottom 24": fine to medium SAND, trace Silt.				
								1.7/1.7	
50	S-2	48/24	50.0-55.0		Red-brown fine to medium SAND, trace Silt.				
								1.8/1.8	
55	S-3	60/20	55.0-60.0		Red-brown fine to medium SAND, trace Silt.				
						SAND		4.2/0.8	
60	S-4	50/25	60.0-65.0		Red-brown fine SAND, little Silt.				
65									
70									
75									
						77.0' SILT AND CLAY			
80	S-5	50/28	80.0-85.0		Top 16": Brown, plastic SILT and CLAY. Bottom 12": Brown fine SAND, little Silt, little fine Gravel.			4.0/1.0	
						82.0' SAND		0.9/1.0	3
85									

REMARKS:
2) No blow counts recorded.
3) At 81.0' sample collected for cation exchange capacity.

NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

GZA

BORING No. GZ-14M

DBERG-ZOINO & ASSOCIATES, INC.
SPRING HILL ROAD, TRUMBULL, CT 06611
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Southington Landfill
Southington, Connecticut

REPORT OF BORING No. GZ-140
SHEET 1 OF 4
FILE No. 50124.10
CHKD. BY ML

ING Co. Clarence Welti & Associates
EMAN Dave Bromley
ENGINEER David Swetland

BORING LOCATION Southwestern corner of Chuck & Eddies property
GROUND SURFACE ELEVATION 176.3 DATUM 177.90
DATE START 4/25/90 DATE END 5/1/90

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
5/1/90		31.5'	out	2 hours

SAMPLER: SAMPLER CONSISTS OF A 2" X 60" SPLIT SPOON DRIVEN USING A 300 lb. HAMMER FALLING 30 in.

DRILLING METHOD: 4 INCH CASING SPUN USING A CHRISTIANSEN SAMPLER.

DEPTH	CASING BLOWS	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION Burmister CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING HNU (ppm)	REMKS
									0.6/0.6	1 2
		S-1	48/24	0.1-5.0		Red-brown, fine to coarse SAND, trace Silt.				
									0.6/0.6	
5		S-2	60/30	5.0-10.0		Red-brown, fine to medium SAND, trace Silt.				
									0.5/0.5	
10		S-3	60/30	10.0-15.0		Red-brown, fine to medium SAND, trace Silt.				
									0.5/0.5	
15		S-4	60/36	15.0-20.0		Top 18": Red-gray fine to coarse SAND, trace Silt, Gravel. Bottom 18": Red-gray fine SAND, little Silt.				
							SAND		0.5/0.5	
20		S-5	60/34	20.0-25.0		Red-gray fine SAND, trace Silt.				
									0.4/0.4	
25		S-6	60/35	25.0-30.0		Red-gray fine SAND, trace Silt.				
									0.4/0.4	3
30		S-7	60/22	30.0-35.0		Red-brown fine to medium SAND, little Silt.				
									0.4/0.4	
35		S-8	60/34	35.0-40.0		Red-brown fine to medium SAND, little Silt.				

REMARKS:
Soil samples field screened for volatile organic compounds with 11.7 eV HNU Model PI-101 photoionization detector.
0.6/0.6=Total HNU reading/background value prior to reading. Letters denote specific soil jars screened.
2) No blow counts recorded.
3) Sample wet at approximately 30 feet below ground surface.
ppm= parts per million.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING No. GZ-140

GZA

DBERG-ZOINO & ASSOCIATES, INC.
SPRING HILL ROAD, TRUMBULL, CT 06611
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Southington Landfill
Southington, Connecticut

REPORT OF BORING No. GZ-14D
SHEET 3 OF 4
FILE No. 5012410
CHKD. BY MC

CASING BLOWS	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION Burmister CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING HNU (ppm)	REMARKS
		60/0	85.0-90.0		No recovery.	SAND			
						87.0'			
								13.2/1.0	
90	S-13	60/29	90.0-95.0		Brown SILT and CLAY, little fine Sand.	SILT AND CLAY			
								3.2/0.6	
95	S-14	60/50	95.0-100.0		Brown SILT and fine SAND.	95.0'			
								1.8/0.6	
100	S-15	60/35	100.0-105.0		Brown fine SAND and SILT, little CLAY.	SILT AND SAND			
								1.7/0.6	
105	S-16	60/20	105.0-110.0		Brown fine SAND and SILT, little CLAY.				
						109.0' SILT AND CLAY		2.6/0.7	
110	S-17	60/45	110.0-115.0		Top 12": Brown SILT and CLAY, little fine SAND. Bottom 33": SAND and SILT, little Clay.	111.0' SAND AND SILT			
								3.0/0.7	4
115	S-18	60/37	115.0-120.0		Brown fine SAND, some Silt, little Clay.	115.0' SAND			
						119.0'			
120		60/0	120.0-125.0		No recovery.	SAND AND SILT			
								3.4/0.7	
125	S-19	60/60	125.0-130.0		Brown fine SAND and SILT, trace Clay.				
130									

REMARKS:
4) Drilled through hard sediment or rock 117'-119'.

NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

GZA

BORING No. GZ-14D

LDBERG-ZOINO & ASSOCIATES, INC.
204 SPRING HILL ROAD, TRUMBULL, CT 06611
EOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Southington Landfill
Southington, Connecticut

REPORT OF BORING No. GZ-17M
SHEET 1 OF 2
FILE No. 50T24.10
CHKD. BY MC

G Co. Clarence Welti & Associates
AN Don Moodie
ENGINEER Linda McKee

BORING LOCATION 7 feet west of GZ-17D
GROUND SURFACE ELEVATION 155.2 DATUM 157.13
DATE START 4/4/90 DATE END 4/5/90

MPLER: SAMPLER CONSISTS OF A 2" X 24" SPLIT SPOON DRIVEN USING A 300 lb. HAMMER FALLING 30 In.

ILLING METHOD: 3 3/4" HSA OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
4/4/90	1230	11'	15'	0 hours
4/13/90	0810	10'	out	9 days

DEPTH	CASING	BLOWS	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION Burmister CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING	REMARKS
							See boring log LW-17D	FINE TO COARSE SAND			1
5											
10											
20											
25											
30											
35								37.0' SAND AND GRAVEL			
40											

REMARKS:
1) Sample wet at approximately 11 feet below ground surface.

NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING No. GZ-17M

DBERG-ZOINO & ASSOCIATES, INC.
4 SPRING HILL ROAD, TRUMBULL, CT 06611
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Southington Landfill
Southington, Connecticut

REPORT OF BORING No. GZ-17D
SHEET 1 OF 3
FILE No. 5UT24.10
CHKD. BY MC

BORING LOCATION 5 feet west of LW-17D
GROUND SURFACE ELEVATION 155.3 DATUM 157.25
DATE START 4/2/90 DATE END 4/4/90

BORING Co. Clarence Welti & Associates
REMAN Don Moodie
A ENGINEER Linda McKee

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
4/4/90	1405	10'	15'	0 hours
4/13/90	0810	10.2'	out	9 days

:R: SAMPLER CONSISTS OF A 2" X 24" SPLIT SPOON DRIVEN USING A 300 LB. HAMMER FALLING 30 In.

DRILLING METHOD: 3 3/4" HSA

TIME	CASING BLOWS	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION Burmister CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING	REMARKS
						See boring log LW-17D for description.	FINE TO COARSE SAND			1
							37.0' SAND AND GRAVEL			

REMARKS:
Sample wet approximately 10 feet below ground surface.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING No. GZ-17D

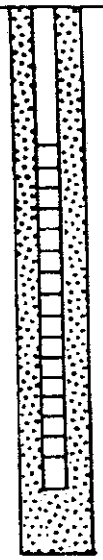
GZA

GOLDBERG-ZOINO & ASSOCIATES, INC.
204 SPRING HILL ROAD, TRUMBULL, CT 06611
GEOTECHNICAL/GEOHYDROLOGICAL CONSULTANTS

PROJECT
Old Southington Landfill
Southington, Connecticut

REPORT OF BORING No. GZ-17D
SHEET 3 OF 3
FILE No. 5012A.10
CHKD. BY ML

DEPTHS	CASING BLOWS	SAMPLE No.	PEN./REC.	DEPTH (Ft.)	BLOWS/6"	SAMPLE DESCRIPTION Burmister CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING HNU (ppm)	REMARKS
90							FINE SAND			
95		S-1	24/18	95.0-97.0		Red-brown fine SAND, little Silt.			7.2/4.8	2
										3
100		S-2	18/16	100.0/101.5		Red-brown fine SAND, little Silt.			5.6/4.2	4
							101.5' E.O.B.			
105										
110										
115										
120										
125										
130										



REMARKS:
2) Soil samples field screened for volatile organic compounds with 11.7 eV HNU Model PI-101 photoionization detector. 7.2/4.8= Total HNU reading/background value prior to reading. ppm = parts per million
Ten feet of 2-inch Schedule 40 10-slot pvc well screen set at approximately 99 feet below grade. Well completed with 2-inch schedule 40 threaded flush-joint pvc riser to approximately 1.5 feet above ground surface. No. 12 quartz sand placed around the well from approximately 84 to 101.5 feet. Bentonite pellets placed around the well from 79.5 to 84 feet. Well annulus backfilled with bentonite/cement slurry. Well capped with locking steel pipe cemented in place. Well developed for approximately 1 hour and 20 minutes.
4) Boring ended at approximately 101.5 feet below ground surface. No blow counts recorded.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

GZA

BORING No. GZ-17D

APPENDIX B

Environmental Science & Engineering, Inc.
A Weston Company
410 Amherst Street, Suite 100 — Nashua, New Hampshire 03063

ROCK CORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill — SITE LOCATION: Southington, CT
ESE PROJECT NUMBER: 7197561

BORING NUMBER: BR-104 — DATE STARTED: 12/20/99
WELL NUMBER: BR-104 — COMPLETED: 12/21/99

CONTRACTOR: Boart Longyear — ESE FIELD INSPECTOR: D. Stanton
DRILLER: C. Carroll — BORING LOG PREPARED BY: D. Stanton

DEPTH TO GROUNDWATER: — DEPTH TO BOTTOM OF BORING: 195
SCREENED INTERVAL: 183-193 — DEPTH TO BOTTOM OF WELL: 193

	CASING	CASING	CORE BARREL
TYPE			
DIAMETER (ID/OD)			
DEPTH INTERVAL	188	195	4.508

WC = WELDED CASING — N = 3.0" OD
FJ = FLUSH JOINT CASING — H = 3.75" OD

DEPTH INTERVAL (IN FEET)	CORE TIME	RUN NO.	ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	RECOVERY IN.	RECOVERY %	RQD IN.	RQD %	REMARKS
188	*	C 1	Hard, fresh, slightly to moderately fractured, red, fine to medium grained sandstone (Arkose) several shallow angle fractures and numerous drill breaks.		24	100	14	58	188' top of competent rock
189									
190		C 2	Same as above (C1).	Well set @ 193'	60	100	27	45	
191									
192									
193									
194									
195									

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

* Cores were collected using RotoSonic technology. Core time ranged from 20 to 60 seconds per foot.

0-188' unconsolidated overburden/weathered bedrock.
10' screen set 5' into competent bedrock.

CORE104.DWG

Environmental Science & Engineering, Inc.
A MASTEC Company

ROCK CORING LOG AND WELL INSTALLATION DETAILS

PROJECT NAME: Old Southington Landfill
SITE LOCATION: Southington, CT
ESE PROJECT NUMBER: 7197561

	CASING	CASING	CORE BARREL
TYPE			
DIAMETER (ID/OD)			
DEPTH INTERVAL	175	185	4.508

WC = WELDED CASING N = 3.0" OD
FJ = FLUSH JOINT CASING H = 3.75" OD

BORING NUMBER: BR-102
WELL NUMBER: BR-102
DATE STARTED: 12/11/99
COMPLETED: 12/14/99

CONTRACTOR: Boart Longyear
DRILLER: C. Carroll
ESE FIELD INSPECTOR: J. Bannon
BORING LOG PREPARED BY: D. Stanton

DEPTH TO GROUNDWATER:
SCREENED INTERVAL: 173-183
DEPTH TO BOTTOM OF BORING: 185'
DEPTH TO BOTTOM OF WELL: 183'

DEPTH INTERVAL (IN FEET)	CORE TIME	RUN NO.	ROCK DESCRIPTION	WELL CONSTRUCTION DETAILS	RECOVERY IN.	RECOVERY %	RQD IN.	RQD %	REMARKS
175	*		Soft, moderately severely weathered, moderately to extremely fractured, fine-coarse grained red sandstone (Arkose).						
176									
177		C 1	Hard, fresh, slightly fractured, fine to very fine coarse grained red sandstone (Arkose) several horizontal fractures.						177' top of competent rock
178									
179					60	100	30	50	
180			180-183' same as 177-180'.						
181									
182		C 2							
183			Hard, fresh, moderately fractured fine to coarse grained red sandstone (Arkose) numerous close, horizontal joints.	Well set @ 183'					
184					60	100	30	50	
185									

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

* Cores were collected using RotoSonic technology. Core time ranged from 20 to 60 seconds per foot.

0-175' unconsolidated overburden overlying incompetent bedrock.
10' screen det 6' into competent bedrock.

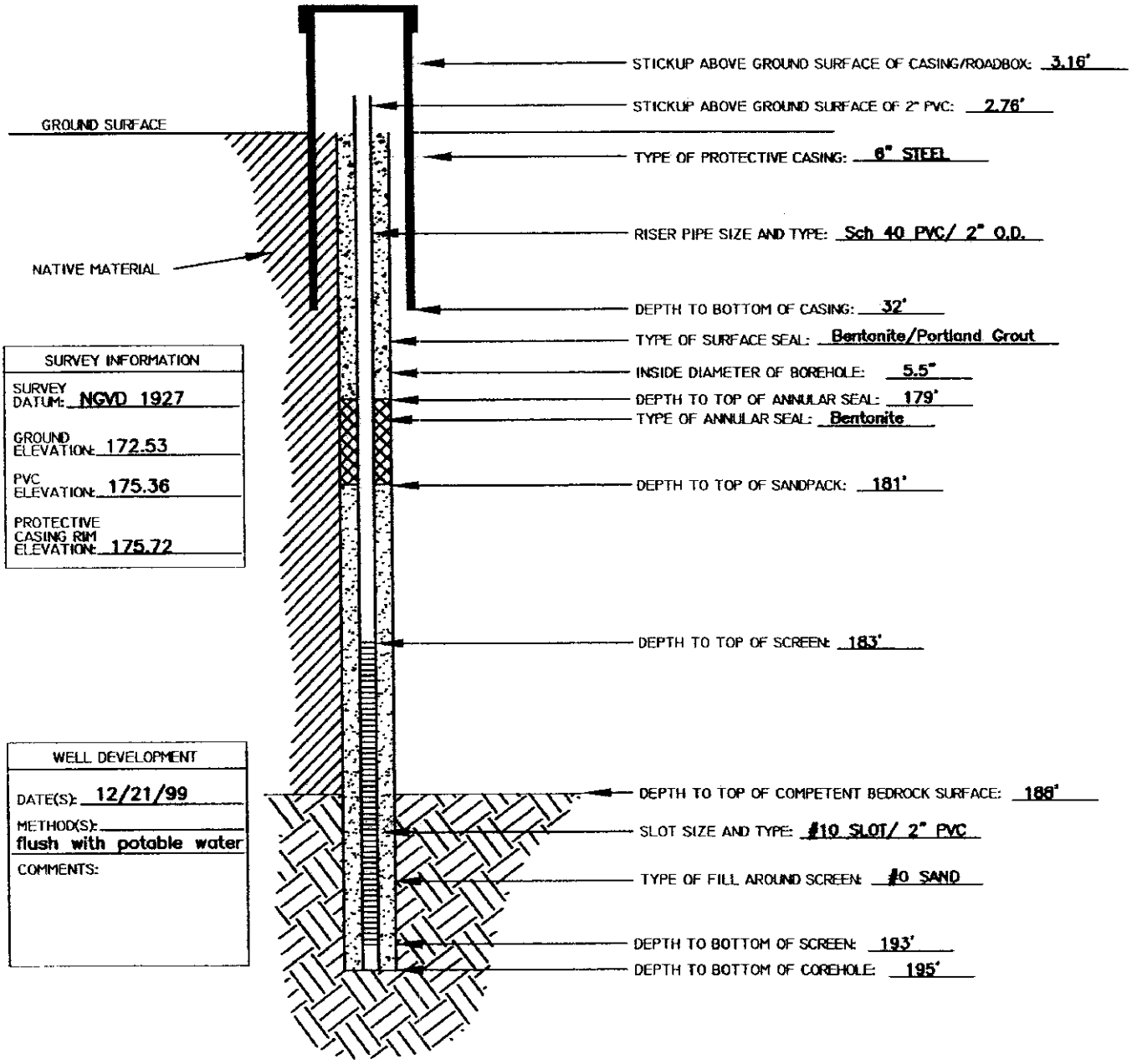
CORE102.DWG

Environmental Science & Engineering, Inc.
A MACTEC Company
410 AMHERST STREET SUITE 100 NASHUA, NEW HAMPSHIRE 03063

BEDROCK MONITORING WELL REPORT

PROJECT NAME: Old Southington Landfill
SITE LOCATION: Southington, CT
ESE PROJECT NUMBER: 7197561.0051

WELL NUMBER: BR-104
COMPLETION DATE: 12/21/99
CONTRACTOR: Boart Longyear
DRILLER: C. Carroll
ESE FIELD INSPECTOR: J. Bannon
PADLOCK NUMBER:



SURVEY INFORMATION	
SURVEY DATUM:	NGVD 1927
GROUND ELEVATION:	172.53
PVC ELEVATION:	175.36
PROTECTIVE CASING RIM ELEVATION:	175.72

WELL DEVELOPMENT	
DATE(S):	12/21/99
METHOD(S):	flush with potable water
COMMENTS:	

SCHEMATIC FIGURE-NOT TO SCALE

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

BR104.DWG

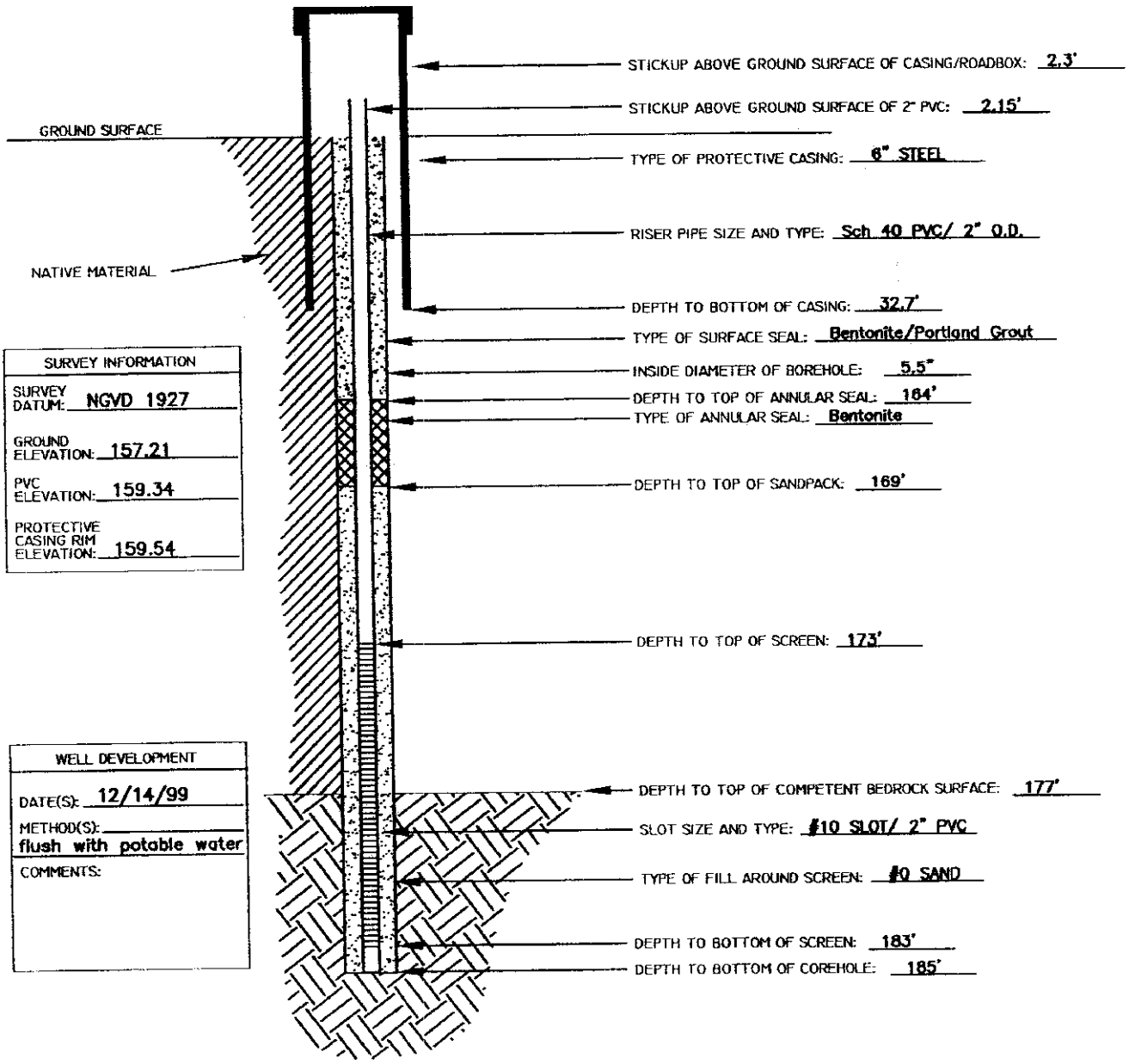
Environmental Science & Engineering, Inc.
A MACTEC Company

BEDROCK MONITORING WELL REPORT

PROJECT NAME: Old Southington Landfill
ESE PROJECT NUMBER: 7197561.0051
SITE LOCATION: Southington, CT

WELL NUMBER: BR-102
COMPLETION DATE: 12/14/99

CONTRACTOR: Boart Longyear
DRILLER: C. Carroll
ESE FIELD INSPECTOR: J. Bannon
PADLOCK NUMBER:



SURVEY INFORMATION	
SURVEY DATUM:	NGVD 1927
GROUND ELEVATION:	157.21
PVC ELEVATION:	159.34
PROTECTIVE CASING RIM ELEVATION:	159.54

WELL DEVELOPMENT	
DATE(S):	12/14/99
METHOD(S):	flush with potable water
COMMENTS:	

SCHEMATIC FIGURE-NOT TO SCALE

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

BR102.DWG

MACTEC

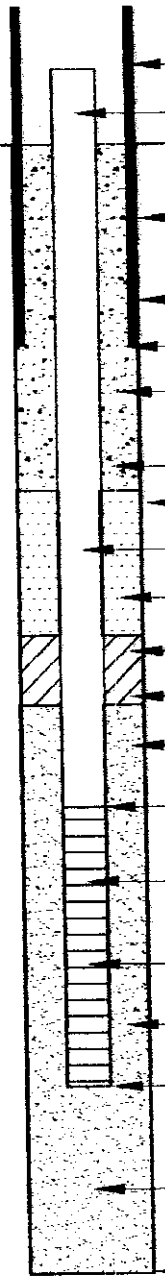
32 DANIEL WEBSTER HIGHWAY SUITE 23 MERRIMACK, NEW HAMPSHIRE 03054

GROUNDWATER MONITORING WELL REPORT

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT

WELL NUMBER: G318C
COMPLETION DATE: 9/30/03

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: Mike Faith
PADLOCK NUMBER: N/A



GROUND SURFACE

STICKUP ABOVE GROUND SURFACE OF CASING/ROADBOX: Flush
(+ INDICATES ABOVE, - INDICATES BELOW)

STICKUP ABOVE GROUND SURFACE OF RISER PIPE: _____
(+ INDICATES ABOVE, - INDICATES BELOW)

TYPE OF PROTECTIVE CASING: Flush-mount roadbox

INSIDE DIAMETER OF CASING: _____

DEPTH TO BOTTOM OF CASING/ROADBOX: 1'

TYPE OF SURFACE SEAL: Cement

THICKNESS OF SURFACE SEAL: 1'

INSIDE DIAMETER OF BOREHOLE: 6"

RISER PIPE SIZE AND TYPE: 2" / Sch. 40 PVC

TYPE OF FILL AROUND RISER PIPE: Grout

DEPTH TO TOP OF ANNULAR SEAL: 121'

TYPE OF ANNULAR SEAL: Bentonite

DEPTH TO TOP OF SAND/GRAVEL PACK: 123'

DEPTH TO TOP OF WELL SCREEN: 125'

WELL SCREEN SIZE AND TYPE: 2" / Continuous

SLOT SIZE AND TYPE: 0.010" / Stainless steel

TYPE OF FILL AROUND WELL SCREEN: #00 Sand

DEPTH TO BOTTOM OF WELL SCREEN: 135'

TYPE(S) OF FILL BELOW WELL SCREEN: Bentonite rock core

DEPTH TO BOTTOM OF BOREHOLE: 135'

SURVEY INFORMATION
SURVEY DATUM: _____
GROUND ELEVATION: _____
PVC ELEVATION: _____
PROTECTIVE CASING RIM ELEVATION: _____

WELL DEVELOPMENT
DATE(S): 10/2/03
METHOD(S): Grundfos pump
COMMENTS: Purge water initially turbid, cleared up after ~15 mins.

SCHEMATIC FIGURE-NOT TO SCALE

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

318CLOG.DWG

MACTEC

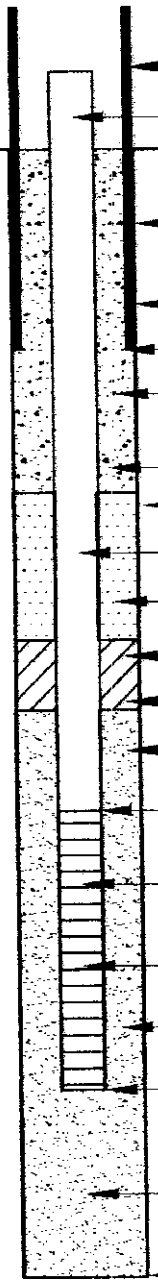
32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

GROUNDWATER MONITORING WELL REPORT

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT

WELL NUMBER: G318A
COMPLETION DATE: 9/30/03

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: Mike Faith
PADLOCK NUMBER: N/A



GROUND SURFACE

STICKUP ABOVE GROUND SURFACE OF CASING/ROADBOX: Flush
(+ INDICATES ABOVE, - INDICATES BELOW)

STICKUP ABOVE GROUND SURFACE OF RISER PIPE: _____
(+ INDICATES ABOVE, - INDICATES BELOW)

TYPE OF PROTECTIVE CASING: Flush-mount roadbox

INSIDE DIAMETER OF CASING: _____

DEPTH TO BOTTOM OF CASING/ROADBOX: 1'

TYPE OF SURFACE SEAL: Cement

THICKNESS OF SURFACE SEAL: 1'

INSIDE DIAMETER OF BOREHOLE: 6"

RISER PIPE SIZE AND TYPE: 2" / Sch. 40 PVC

TYPE OF FILL AROUND RISER PIPE: Grout

DEPTH TO TOP OF ANNULAR SEAL: 10'

TYPE OF ANNULAR SEAL: Bentonite

DEPTH TO TOP OF SAND/GRAVEL PACK: 12'

DEPTH TO TOP OF WELL SCREEN: 14'

WELL SCREEN SIZE AND TYPE: 2" / Continuous

SLOT SIZE AND TYPE: 0.010" / Sch. 40 PVC

TYPE OF FILL AROUND WELL SCREEN: #00 Sand

DEPTH TO BOTTOM OF WELL SCREEN: 24'

TYPE(S) OF FILL BELOW WELL SCREEN: N/A

DEPTH TO BOTTOM OF BOREHOLE: 24'

SURVEY INFORMATION
SURVEY DATUM: _____
GROUND ELEVATION: _____
PVC ELEVATION: _____
PROTECTIVE CASING RIM ELEVATION: _____

WELL DEVELOPMENT
DATE(S): 10/2/03
METHOD(S): Grundfos pump
COMMENTS: Purge water initially turbid, went dry after 7 min. Wait for recharge & continue purge.

SCHEMATIC FIGURE-NOT TO SCALE

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

318ALOG.DWG

MACTEC

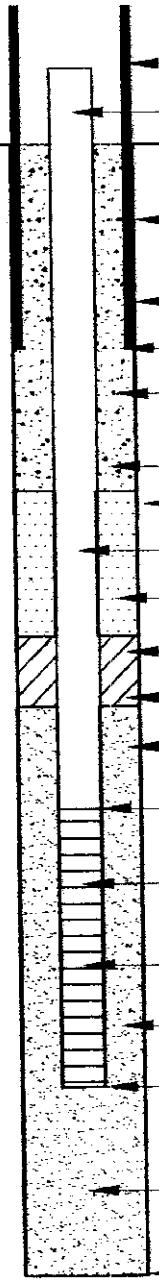
32 DANIEL WEBSTER HIGHWAY SUITE 25 MERRIMACK, NEW HAMPSHIRE 03054

GROUNDWATER MONITORING WELL REPORT

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT

WELL NUMBER: G317B
COMPLETION DATE: 9/15/03

CONTRACTOR: Dragin Drilling
DRILLER: Steve Fernandes
FIELD INSPECTOR: Steve Cap
PADLOCK NUMBER: N/A



GROUND SURFACE

STICKUP ABOVE GROUND SURFACE OF CASING/ROADBOX: Flush
(+ INDICATES ABOVE, - INDICATES BELOW)

STICKUP ABOVE GROUND SURFACE OF RISER PIPE: _____
(+ INDICATES ABOVE, - INDICATES BELOW)

TYPE OF PROTECTIVE CASING: Flush-mount roadbox

INSIDE DIAMETER OF CASING: _____

DEPTH TO BOTTOM OF CASING/ROADBOX: 1'

TYPE OF SURFACE SEAL: Cement

THICKNESS OF SURFACE SEAL: 1'

INSIDE DIAMETER OF BOREHOLE: 6"

RISER PIPE SIZE AND TYPE: 2" / Sch. 40 PVC

TYPE OF FILL AROUND RISER PIPE: Grout

DEPTH TO TOP OF ANNULAR SEAL: 59'

TYPE OF ANNULAR SEAL: Bentonite

DEPTH TO TOP OF SAND/GRAVEL PACK: 62'

DEPTH TO TOP OF WELL SCREEN: 65'

WELL SCREEN SIZE AND TYPE: 2" / Continuous

SLOT SIZE AND TYPE: 0.010" / Sch. 40 PVC

TYPE OF FILL AROUND WELL SCREEN: #2 Sand

DEPTH TO BOTTOM OF WELL SCREEN: 75'

TYPE(S) OF FILL BELOW WELL SCREEN: #2 Sand

DEPTH TO BOTTOM OF BOREHOLE: 76'

SURVEY INFORMATION
SURVEY DATUM: _____
GROUND ELEVATION: _____
PVC ELEVATION: _____
PROTECTIVE CASING RIM ELEVATION: _____

WELL DEVELOPMENT
DATE(S): 9/15/03
METHOD(S): Grundfos pump
COMMENTS: Purge water turbid/red to start, cleared after 2 hours.

SCHEMATIC FIGURE-NOT TO SCALE

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

317BLOG.DWG

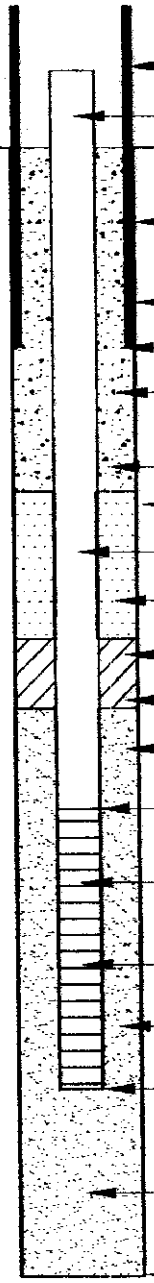
MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

GROUNDWATER MONITORING WELL REPORT

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT

WELL NUMBER: G316A
COMPLETION DATE: 9/30/03
CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: Mike Faith
PADLOCK NUMBER: N/A



GROUND SURFACE

STICKUP ABOVE GROUND SURFACE OF CASING/ROADBOX: Flush
(+ INDICATES ABOVE, - INDICATES BELOW)

STICKUP ABOVE GROUND SURFACE OF RISER PIPE: _____
(+ INDICATES ABOVE, - INDICATES BELOW)

TYPE OF PROTECTIVE CASING: Flush-mount roadbox

INSIDE DIAMETER OF CASING: _____

DEPTH TO BOTTOM OF CASING/ROADBOX: 1'

TYPE OF SURFACE SEAL: Cement

THICKNESS OF SURFACE SEAL: 1'

INSIDE DIAMETER OF BOREHOLE: 6"

RISER PIPE SIZE AND TYPE: 2" / Sch. 40 PVC

TYPE OF FILL AROUND RISER PIPE: Grout

DEPTH TO TOP OF ANNULAR SEAL: 26'

TYPE OF ANNULAR SEAL: Bentonite

DEPTH TO TOP OF SAND/GRAVEL PACK: 28'

DEPTH TO TOP OF WELL SCREEN: 30'

WELL SCREEN SIZE AND TYPE: 2" / Continuous

SLOT SIZE AND TYPE: 0.010" / Stainless steel

TYPE OF FILL AROUND WELL SCREEN: #00 Sand

DEPTH TO BOTTOM OF WELL SCREEN: 40'

TYPE(S) OF FILL BELOW WELL SCREEN: N/A

DEPTH TO BOTTOM OF BOREHOLE: 40'

SURVEY INFORMATION
SURVEY DATUM:
GROUND ELEVATION:
PVC ELEVATION:
PROTECTIVE CASING RIM ELEVATION:

WELL DEVELOPMENT
DATE(S): 10/2/03
METHOD(S): Grundfos pump
COMMENTS:

SCHEMATIC FIGURE-NOT TO SCALE

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

316ALOG.DWG

MACTEC

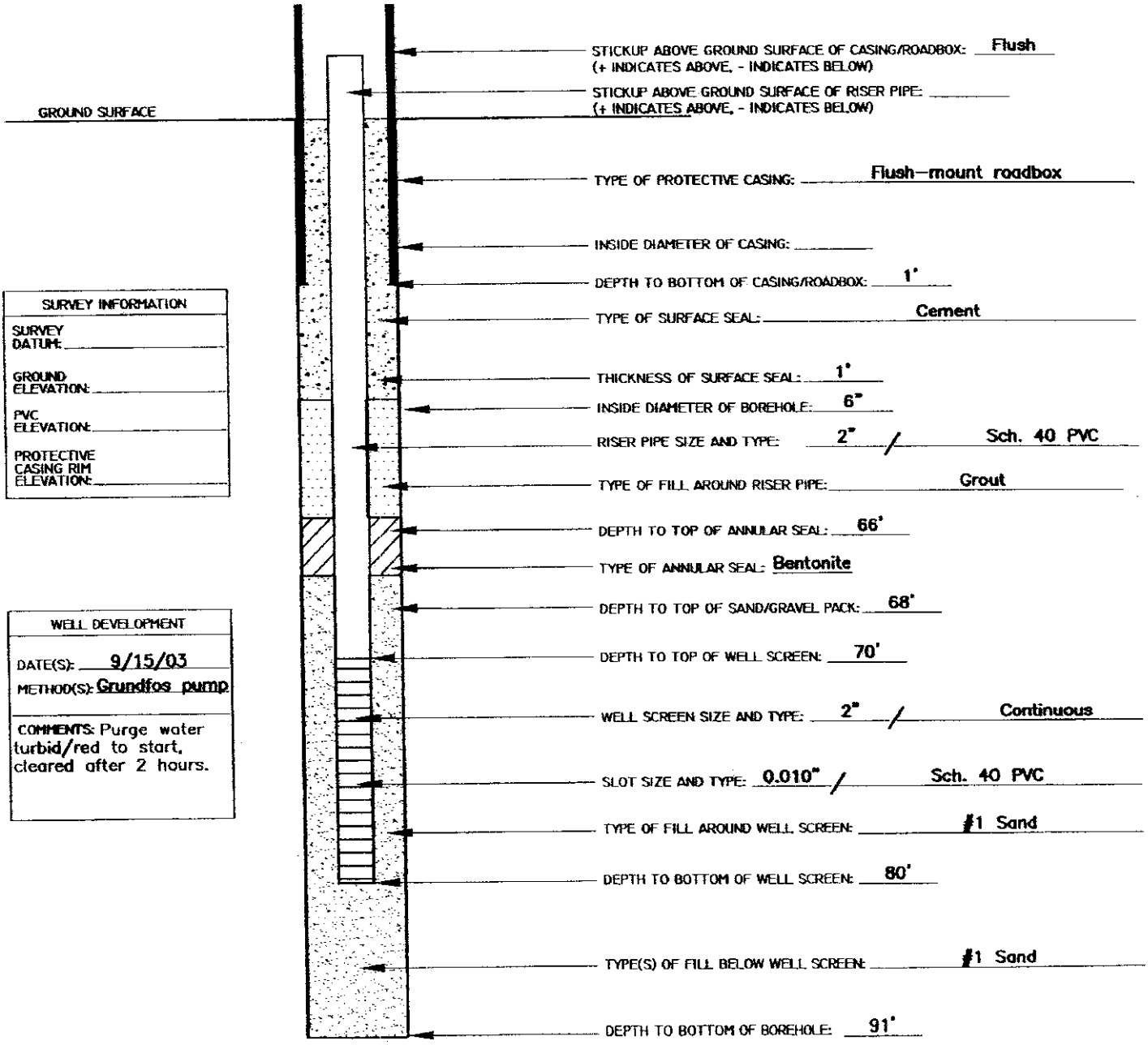
32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

GROUNDWATER MONITORING WELL REPORT

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT

WELL NUMBER: G315B
COMPLETION DATE: 9/15/03

CONTRACTOR: Dragin Drilling
DRILLER: Steve Fernandes
FIELD INSPECTOR: Steve Cap
PADLOCK NUMBER: N/A



SURVEY INFORMATION
SURVEY DATUM:
GROUND ELEVATION:
PVC ELEVATION:
PROTECTIVE CASING RIM ELEVATION:

WELL DEVELOPMENT
DATE(S): 9/15/03
METHOD(S): Grundfos pump
COMMENTS: Purge water turbid/red to start, cleared after 2 hours.

SCHEMATIC FIGURE-NOT TO SCALE

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

315BLOG.DWG

MACTEC

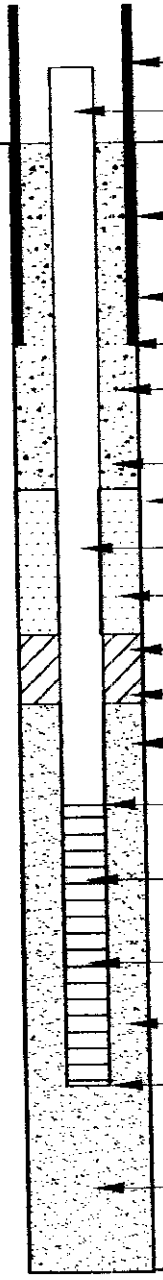
32 DANIEL WEBSTER HIGHWAY SUITE 23 — MERRIMACK, NEW HAMPSHIRE 03054

GROUNDWATER MONITORING WELL REPORT

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT

WELL NUMBER: G314C
COMPLETION DATE: 9/24/03

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: Steve Cap
PADLOCK NUMBER: N/A



GROUND SURFACE

STICKUP ABOVE GROUND SURFACE OF CASING/ROADBOX: Flush
(+ INDICATES ABOVE, - INDICATES BELOW)

STICKUP ABOVE GROUND SURFACE OF RISER PIPE: _____
(+ INDICATES ABOVE, - INDICATES BELOW)

TYPE OF PROTECTIVE CASING: Flush-mount roadbox

INSIDE DIAMETER OF CASING: _____

DEPTH TO BOTTOM OF CASING/ROADBOX: 1'

TYPE OF SURFACE SEAL: Cement

THICKNESS OF SURFACE SEAL: 1'

INSIDE DIAMETER OF BOREHOLE: 6"

RISER PIPE SIZE AND TYPE: 2" / Sch. 40 PVC

TYPE OF FILL AROUND RISER PIPE: Grout

DEPTH TO TOP OF ANNULAR SEAL: 129'

TYPE OF ANNULAR SEAL: Bentonite

DEPTH TO TOP OF SAND/GRAVEL PACK: 131'

DEPTH TO TOP OF WELL SCREEN: 133'

WELL SCREEN SIZE AND TYPE: 2" / Continuous

SLOT SIZE AND TYPE: 0.010" / Stainless steel

TYPE OF FILL AROUND WELL SCREEN: #00 & #1 Sand

DEPTH TO BOTTOM OF WELL SCREEN: 143'

TYPE(S) OF FILL BELOW WELL SCREEN: Bentonite

DEPTH TO BOTTOM OF BOREHOLE: 148' (rock core)

SURVEY INFORMATION
SURVEY DATUM: _____
GROUND ELEVATION: _____
PVC ELEVATION: _____
PROTECTIVE CASING RIM ELEVATION: _____

WELL DEVELOPMENT
DATE(S): 9/26/03
METHOD(S): Grundfos pump
COMMENTS:

SCHEMATIC FIGURE-NOT TO SCALE

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

314CLOG.DWG

MACTEC

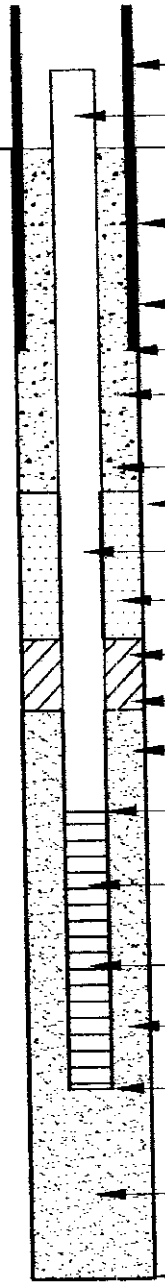
32 DANIEL WEBSTER HIGHWAY SUITE 25 MERRIMACK, NEW HAMPSHIRE 03054

GROUNDWATER MONITORING WELL REPORT

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT

WELL NUMBER: G314A
COMPLETION DATE: 9/23/03

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: Steve Cap
PADLOCK NUMBER: N/A



GROUND SURFACE

STICKUP ABOVE GROUND SURFACE OF CASING/ROADBOX: Flush
(+ INDICATES ABOVE, - INDICATES BELOW)

STICKUP ABOVE GROUND SURFACE OF RISER PIPE: _____
(+ INDICATES ABOVE, - INDICATES BELOW)

TYPE OF PROTECTIVE CASING: Flush-mount roadbox

INSIDE DIAMETER OF CASING: _____

DEPTH TO BOTTOM OF CASING/ROADBOX: 1'

TYPE OF SURFACE SEAL: Cement

THICKNESS OF SURFACE SEAL: 1'

INSIDE DIAMETER OF BOREHOLE: 6"

RISER PIPE SIZE AND TYPE: 2" / Sch. 40 PVC

TYPE OF FILL AROUND RISER PIPE: Grout

DEPTH TO TOP OF ANNULAR SEAL: 2'

TYPE OF ANNULAR SEAL: Bentonite

DEPTH TO TOP OF SAND/GRAVEL PACK: 3'

DEPTH TO TOP OF WELL SCREEN: 4'

WELL SCREEN SIZE AND TYPE: 2" / Continuous

SLOT SIZE AND TYPE: 0.010" / Sch. 40 PVC

TYPE OF FILL AROUND WELL SCREEN: #00 & #1 Sand

DEPTH TO BOTTOM OF WELL SCREEN: 14'

TYPE(S) OF FILL BELOW WELL SCREEN: N/A

DEPTH TO BOTTOM OF BOREHOLE: 14'

SURVEY INFORMATION
SURVEY DATUM: _____
GROUND ELEVATION: _____
PVC ELEVATION: _____
PROTECTIVE CASING RIM ELEVATION: _____

WELL DEVELOPMENT
DATE(S): 9/26/03
METHOD(S): Grundfos pump
COMMENTS: Well went dry a few times during development.

SCHEMATIC FIGURE-NOT TO SCALE

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

314ALOG.DWG

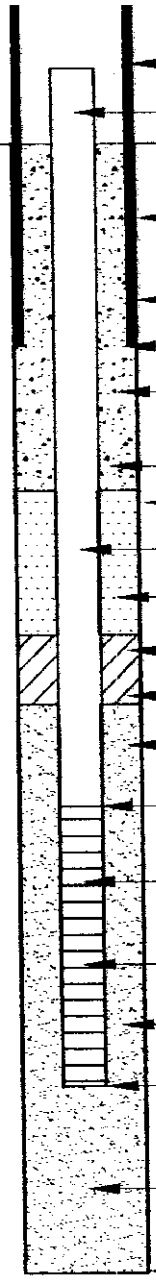
MACTEC

32 DANIEL WEBSTER HIGHWAY SUITE 25 MERRIMACK, NEW HAMPSHIRE 03054

GROUNDWATER MONITORING WELL REPORT

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT

WELL NUMBER: G313A
COMPLETION DATE: 9/25/03
CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: Steve Cap
PADLOCK NUMBER: N/A



GROUND SURFACE

STICKUP ABOVE GROUND SURFACE OF CASING/ROADBOX: Flush
(+ INDICATES ABOVE, - INDICATES BELOW)

STICKUP ABOVE GROUND SURFACE OF RISER PIPE: _____
(+ INDICATES ABOVE, - INDICATES BELOW)

TYPE OF PROTECTIVE CASING: Flush-mount roadbox

INSIDE DIAMETER OF CASING: _____

DEPTH TO BOTTOM OF CASING/ROADBOX: 1'

TYPE OF SURFACE SEAL: Cement

THICKNESS OF SURFACE SEAL: 1'

INSIDE DIAMETER OF BOREHOLE: 6"

RISER PIPE SIZE AND TYPE: 2" / Sch. 40 PVC

TYPE OF FILL AROUND RISER PIPE: Grout

DEPTH TO TOP OF ANNULAR SEAL: 7'

TYPE OF ANNULAR SEAL: Bentonite

DEPTH TO TOP OF SAND/GRAVEL PACK: 9'

DEPTH TO TOP OF WELL SCREEN: 11'

WELL SCREEN SIZE AND TYPE: 2" / Continuous

SLOT SIZE AND TYPE: 0.010" / Sch. 40 PVC

TYPE OF FILL AROUND WELL SCREEN: #00 & #1 Sand

DEPTH TO BOTTOM OF WELL SCREEN: 21'

TYPE(S) OF FILL BELOW WELL SCREEN: #00 & #1 Sand

DEPTH TO BOTTOM OF BOREHOLE: 22'

SURVEY INFORMATION
SURVEY DATUM: _____
GROUND ELEVATION: _____
PVC ELEVATION: _____
PROTECTIVE CASING RIM ELEVATION: _____

WELL DEVELOPMENT
DATE(S): 9/26/03
METHOD(S): Grundfos pump
COMMENTS: Well went dry a few times during development.

SCHEMATIC FIGURE-NOT TO SCALE

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

313ALOG.DWG

MACTEC

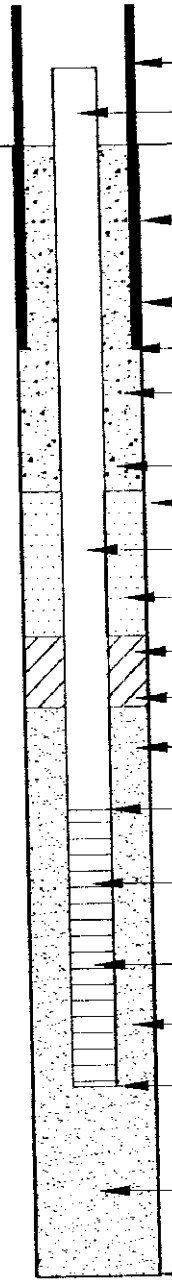
32 DANIEL WEBSTER HIGHWAY SUITE 25 — MERRIMACK, NEW HAMPSHIRE 03054

GROUNDWATER MONITORING WELL REPORT

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT

WELL NUMBER: G312B
COMPLETION DATE: 9/18/03

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: S. J. O'Brien
PADLOCK NUMBER: N/A



GROUND SURFACE

STICKUP ABOVE GROUND SURFACE OF CASING/ROADBOX: Flush
(+ INDICATES ABOVE, - INDICATES BELOW)

STICKUP ABOVE GROUND SURFACE OF RISER PIPE: _____
(+ INDICATES ABOVE, - INDICATES BELOW)

TYPE OF PROTECTIVE CASING: Flush-mount roadbox

INSIDE DIAMETER OF CASING: _____

DEPTH TO BOTTOM OF CASING/ROADBOX: 1'

TYPE OF SURFACE SEAL: Cement

THICKNESS OF SURFACE SEAL: 1'

INSIDE DIAMETER OF BOREHOLE: 6"

RISER PIPE SIZE AND TYPE: 2" / Sch. 40 PVC

TYPE OF FILL AROUND RISER PIPE: Grout

DEPTH TO TOP OF ANNULAR SEAL: 69'

TYPE OF ANNULAR SEAL: Bentonite

DEPTH TO TOP OF SAND/GRAVEL PACK: 71'

DEPTH TO TOP OF WELL SCREEN: 75'

WELL SCREEN SIZE AND TYPE: 2" / Continuous

SLOT SIZE AND TYPE: 0.010" / Sch. 40 PVC

TYPE OF FILL AROUND WELL SCREEN: #00 Sand

DEPTH TO BOTTOM OF WELL SCREEN: 85'

TYPE(S) OF FILL BELOW WELL SCREEN: #00 Sand

DEPTH TO BOTTOM OF BOREHOLE: 86'

SURVEY INFORMATION
SURVEY DATUM: _____
GROUND ELEVATION: _____
PVC ELEVATION: _____
PROTECTIVE CASING RIM ELEVATION: _____

WELL DEVELOPMENT
DATE(S): 9/25/03
METHOD(S): Grundfos pump
COMMENTS: Purge water turbid/red to start, cleared after 1 hour.

SCHEMATIC FIGURE-NOT TO SCALE

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

312BLOG.DWG

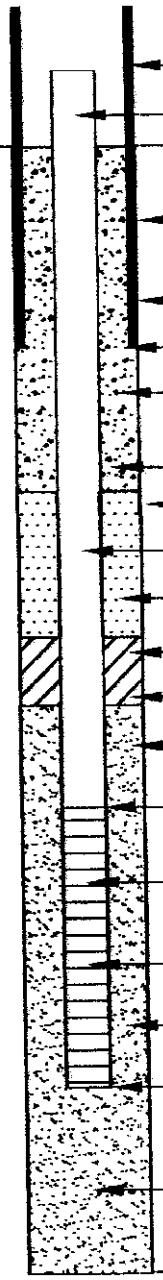
Environmental Science & Engineering, Inc.
A MACTEC Company

GROUNDWATER MONITORING WELL REPORT

PROJECT NAME: Old Southington Landfill
ESE PROJECT NUMBER: 7197561
SITE LOCATION: Southington, CT

WELL NUMBER: G311C
COMPLETION DATE: 4/18/00

CONTRACTOR: Connecticut Test Borings
DRILLER: Steve
ESE FIELD INSPECTOR: J. Harshman
PADLOCK NUMBER:



GROUND SURFACE

STICKUP ABOVE GROUND SURFACE OF CASING/ROADBOX: +2'
(+ INDICATES ABOVE, - INDICATES BELOW)

STICKUP ABOVE GROUND SURFACE OF RISER PIPE: +1.5'
(+ INDICATES ABOVE, - INDICATES BELOW)

TYPE OF PROTECTIVE CASING: Steel with locking cap

INSIDE DIAMETER OF CASING: 6"

DEPTH TO BOTTOM OF CASING/ROADBOX: 3'

TYPE OF SURFACE SEAL: Cement

THICKNESS OF SURFACE SEAL: 1'

INSIDE DIAMETER OF BOREHOLE: 6"

RISER PIPE SIZE AND TYPE: 2" / Sch. 40 PVC

TYPE OF FILL AROUND RISER PIPE: Bentonite/Portland Cement Grout

DEPTH TO TOP OF ANNULAR SEAL: 85.5'

TYPE OF ANNULAR SEAL: Bentonite chips

DEPTH TO TOP OF SAND/GRAVEL PACK: 88'

DEPTH TO TOP OF WELL SCREEN: 90'

WELL SCREEN SIZE AND TYPE: 2" / Sch. 40 PVC V-wire

SLOT SIZE AND TYPE: 0.01 / Continuous slot

TYPE OF FILL AROUND WELL SCREEN: Silica filter sand

DEPTH TO BOTTOM OF WELL SCREEN: 100'

TYPE(S) OF FILL BELOW WELL SCREEN: Bentonite chips with 1" silica sand

DEPTH TO BOTTOM OF BOREHOLE: 110'

SURVEY INFORMATION
SURVEY DATUM:
GROUND ELEVATION:
PVC ELEVATION:
PROTECTIVE CASING RIM ELEVATION:

WELL DEVELOPMENT
DATE(S): 4/21/00
METHOD(S): inertial pumping
COMMENTS: poor recharge; very silty; did not clear up; 50 gallons purged.

SCHEMATIC FIGURE-NOT TO SCALE

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

ML311C.DWG

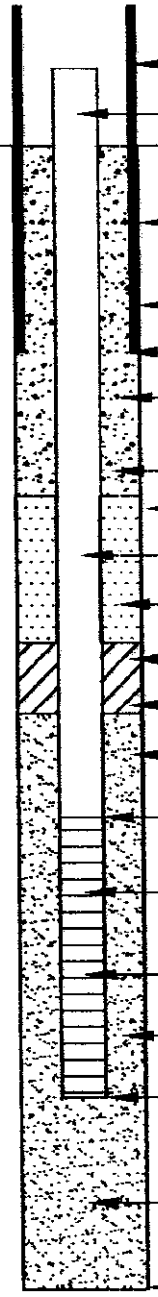
Environmental Science & Engineering, Inc.
A MACTEC Company

GROUNDWATER MONITORING WELL REPORT

PROJECT NAME: Old Southington Landfill
ESE PROJECT NUMBER: 7197561
SITE LOCATION: Southington, CT

WELL NUMBER: G311A
COMPLETION DATE: 4/19/00

CONTRACTOR: Connecticut Test Borings
DRILLER: Steve
ESE FIELD INSPECTOR: J. Harshman
PADLOCK NUMBER:



GROUND SURFACE

STICKUP ABOVE GROUND SURFACE OF CASING/ROADBOX: +1.5'
(+ INDICATES ABOVE, - INDICATES BELOW)

STICKUP ABOVE GROUND SURFACE OF RISER PIPE: +1.0'
(+ INDICATES ABOVE, - INDICATES BELOW)

TYPE OF PROTECTIVE CASING: Steel with locking cap

INSIDE DIAMETER OF CASING: 6"

DEPTH TO BOTTOM OF CASING/ROADBOX: 3'

TYPE OF SURFACE SEAL: Cement

THICKNESS OF SURFACE SEAL: 1'

INSIDE DIAMETER OF BOREHOLE: 6"

RISER PIPE SIZE AND TYPE: 2" / Sch. 40 PVC

TYPE OF FILL AROUND RISER PIPE: Bentonite/Portland Cement Grout

DEPTH TO TOP OF ANNULAR SEAL: 16'

TYPE OF ANNULAR SEAL: Bentonite chips

DEPTH TO TOP OF SAND/GRAVEL PACK: 18'

DEPTH TO TOP OF WELL SCREEN: 20'

WELL SCREEN SIZE AND TYPE: 2" / Sch. 40 PVC V-wire

SLOT SIZE AND TYPE: 0.01 / Continuous slot

TYPE OF FILL AROUND WELL SCREEN: Silica filter sand

DEPTH TO BOTTOM OF WELL SCREEN: 30'

TYPE(S) OF FILL BELOW WELL SCREEN: Native

DEPTH TO BOTTOM OF BOREHOLE: 30'

SURVEY INFORMATION
SURVEY DATUM:
GROUND ELEVATION:
PVC ELEVATION:
PROTECTIVE CASING RIM ELEVATION:

WELL DEVELOPMENT
DATE(S): 4/21/00
METHOD(S): centrifugal pump
COMMENTS: cleared nicely; very good recharge and yield; purged 150 gallons.

SCHEMATIC FIGURE-NOT TO SCALE

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

ML311A.DWG

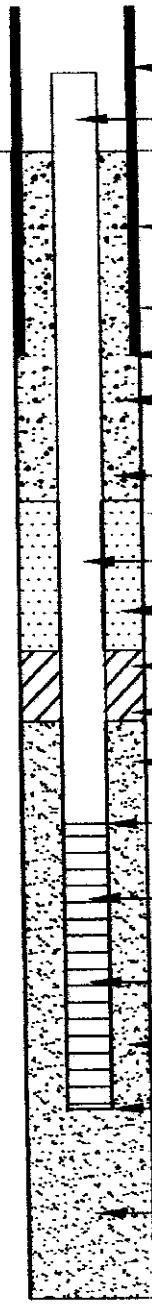
Environmental Science & Engineering, Inc.
A MACTEC Company

GROUNDWATER MONITORING WELL REPORT

PROJECT NAME: Old Southington Landfill
SITE LOCATION: Southington, CT
ESE PROJECT NUMBER: 7197561

WELL NUMBER: G310B
COMPLETION DATE: 4/14/00

CONTRACTOR: Connecticut Test Borings
DRILLER: Steve
ESE FIELD INSPECTOR: J. Harshman
PADLOCK NUMBER:



GROUND SURFACE

STICKUP ABOVE GROUND SURFACE OF CASING/ROADBOX: N/A
(+ INDICATES ABOVE, - INDICATES BELOW)

STICKUP ABOVE GROUND SURFACE OF RISER PIPE: N/A
(+ INDICATES ABOVE, - INDICATES BELOW)

TYPE OF PROTECTIVE CASING: Flush mount Road Box

INSIDE DIAMETER OF CASING: 6"

DEPTH TO BOTTOM OF CASING/ROADBOX: 1'

TYPE OF SURFACE SEAL: Cement

THICKNESS OF SURFACE SEAL: 1'

INSIDE DIAMETER OF BOREHOLE: 6"

RISER PIPE SIZE AND TYPE: 2" / Sch. 40 PVC

TYPE OF FILL AROUND RISER PIPE: Bentonite/Portland Cement Grout

DEPTH TO TOP OF ANNULAR SEAL: 57'

TYPE OF ANNULAR SEAL: Bentonite chips

DEPTH TO TOP OF SAND/GRAVEL PACK: 59'

DEPTH TO TOP OF WELL SCREEN: 62'

WELL SCREEN SIZE AND TYPE: 2" / Sch. 40 PVC V-wire

SLOT SIZE AND TYPE: 0.01 / Continuous slot

TYPE OF FILL AROUND WELL SCREEN: Silica filter sand

DEPTH TO BOTTOM OF WELL SCREEN: 72'

TYPE(S) OF FILL BELOW WELL SCREEN: Native

DEPTH TO BOTTOM OF BOREHOLE: 72'

SURVEY INFORMATION
SURVEY DATUM:
GROUND ELEVATION:
PVC ELEVATION:
PROTECTIVE CASING RIM ELEVATION:

WELL DEVELOPMENT
DATE(S): 4/20/00
METHOD(S): centrifugal pump
COMMENTS: cleared nicely; excellent yield; purged 110 gallons.

SCHEMATIC FIGURE-NOT TO SCALE

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

ML310B.DWG

MACTEC

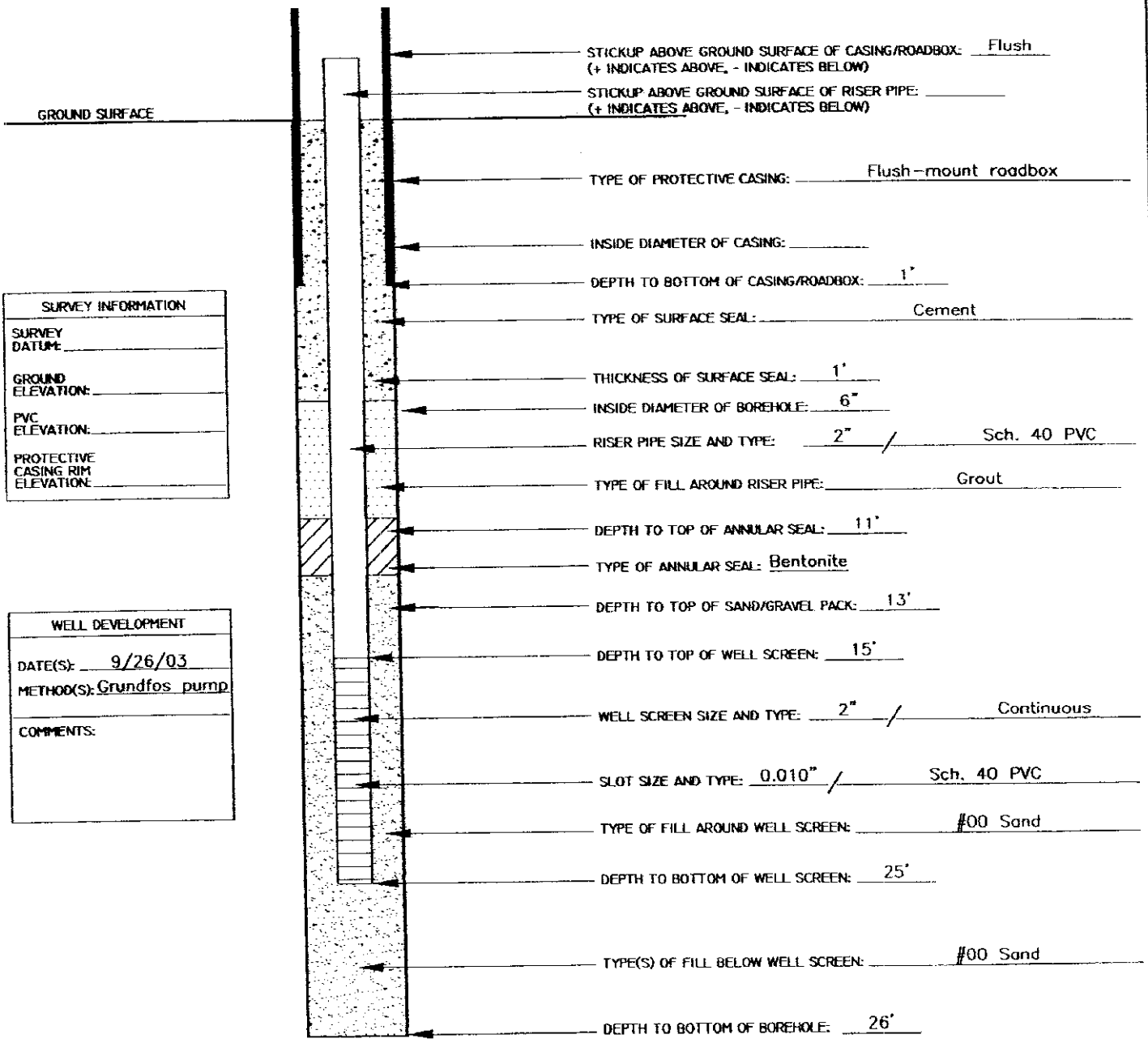
32 DANIEL WEBSTER HIGHWAY SUITE 23 MERRIMACK, NEW HAMPSHIRE 03054

GROUNDWATER MONITORING WELL REPORT

PROJECT NAME: Old Southington Landfill
PROJECT NUMBER: 717561
SITE LOCATION: Southington, CT

WELL NUMBER: G310S
COMPLETION DATE: 9/25/03

CONTRACTOR: Dragin Drilling
DRILLER: Brett Swiatek
FIELD INSPECTOR: Steve Cap
PADLOCK NUMBER: N/A



SURVEY INFORMATION
SURVEY DATUM:
GROUND ELEVATION:
PVC ELEVATION:
PROTECTIVE CASING RIM ELEVATION:

WELL DEVELOPMENT
DATE(S): 9/26/03
METHOD(S): Grundfos pump
COMMENTS:

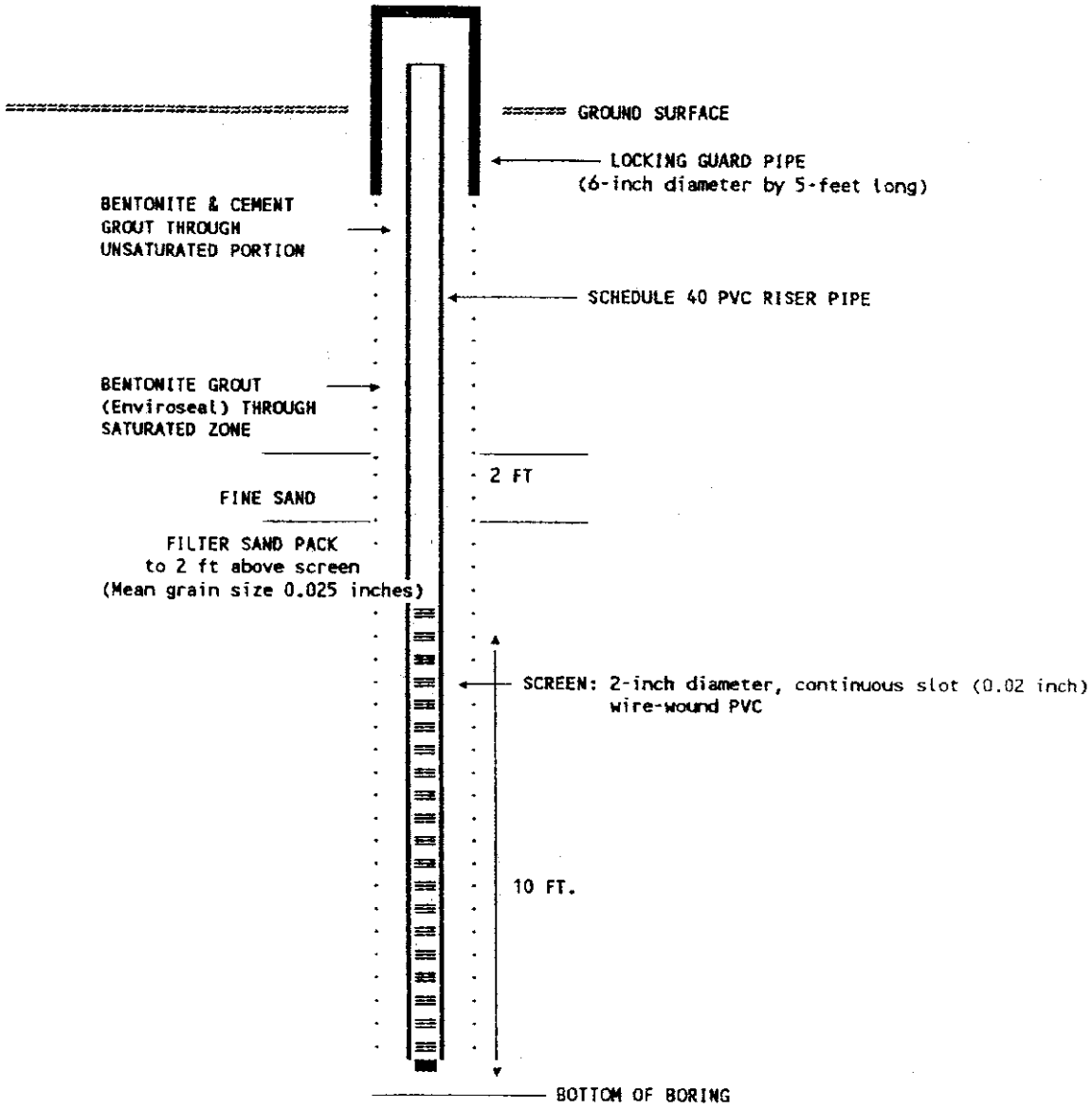
SCHEMATIC FIGURE-NOT TO SCALE

NOTE: ALL DEPTHS ARE FROM GROUND SURFACE.

310SLOG.DWG

B301-B309

INTERMEDIATE WELL
GENERALIZED CONSTRUCTION DIAGRAM



(FIGURE NOT TO SCALE)

File:interwell

SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT

Vol. 2 of 2: Plates

Old Southington Landfill Superfund Site

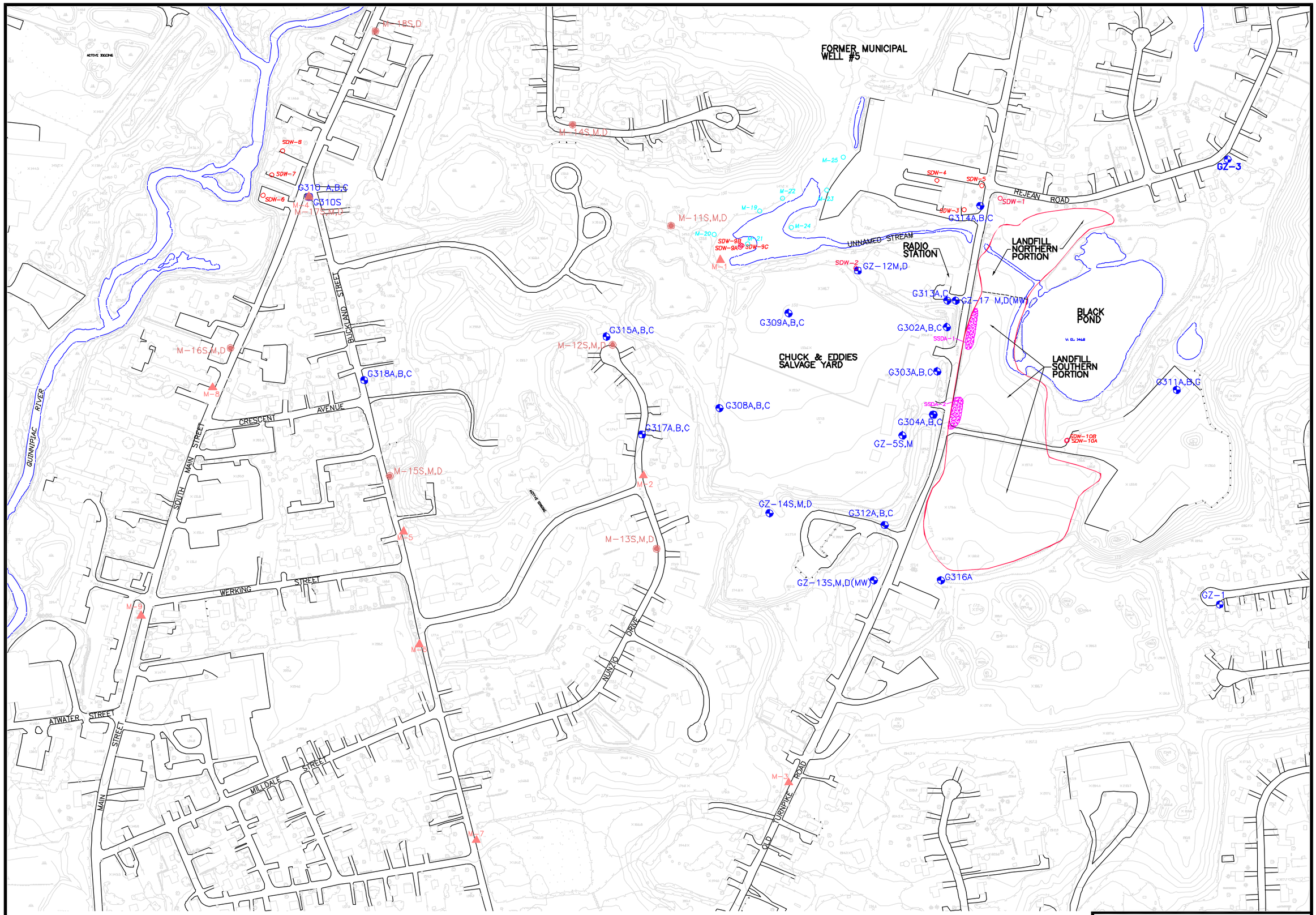
Prepared on behalf of:

The Settling Defendants for the Old Southington Landfill Superfund Site

Prepared for:

U.S. Environmental Protection Agency
Region I
Boston, Massachusetts

Draft: February 4, 2005
Revised: May 5, 2006



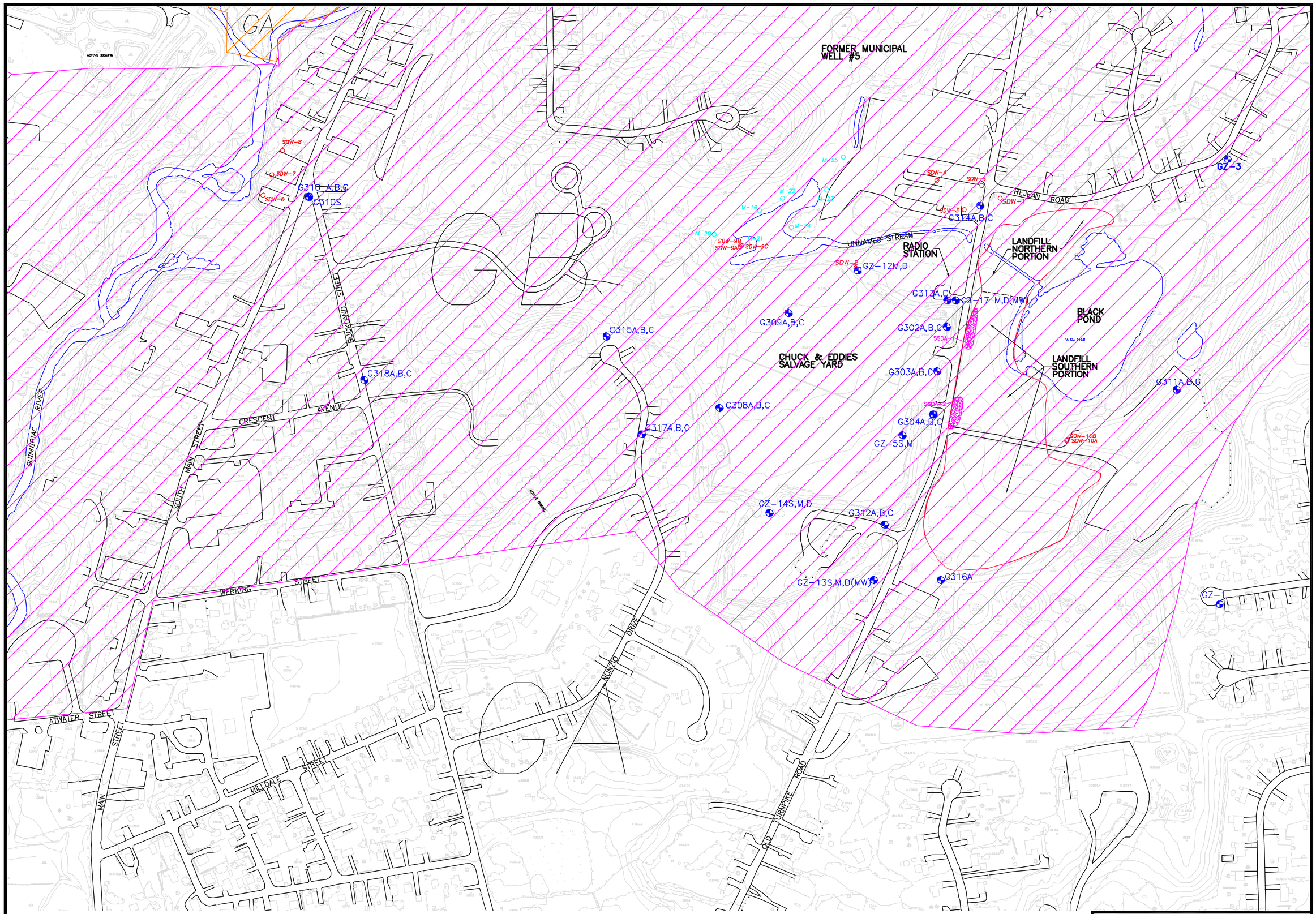
KEY

M-19 ○	AUGUST 2004 MICROWELLS
M-4 ▲	PHASE 1A MICROWELLS
M-13S,,M,D ◉	PHASE 1B MICROWELLS
◆	EXISTING MONITORING WELLS
SDW-9A○	SMALL DIAMETER WELLS
———	EXTENT OF STUDY AREA

PLATE 1
STUDY AREA
OLD SOUTHING LANDFILL SUPERFUND PROJECT
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI PEROPT

GSC REF.:060201.02STUDYAREA	CHECKED BY:
DRAFTED BY: ANG	DATE: 5/4/06
REVISED BY:	DATE:
SOURCE: MACTEC FILE# 717561	

KLEINFELDER
Employee-owned
30 Porter Road • Littleton, MA 01460 • (978) 486-0060



KEY

- EXISTING MONITORING WELLS
- SDW-9A SMALL DIAMETER WELLS
- EXTENT OF STUDY AREA
- AREA OF GB GROUNDWATER CLASSIFICATION
- AREA OF GA NOT MEETING CROTERIA GROUNDWATER CLASSIFICATION

0 250
Scale in feet

N

PLATE 2
GROUNDWATER CLASSIFICATION BOUNDARIES
OLD SOUTHING LANDFILL SUPERFUND PROJECT
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI PERORT

GSC REF.:060201.02GWCLASS	CHECKED BY:
DRAFTED BY: ANG	DATE: 5/10/06
REVISED BY:	DATE:
SOURCE: MACTEC FILE# 717561	

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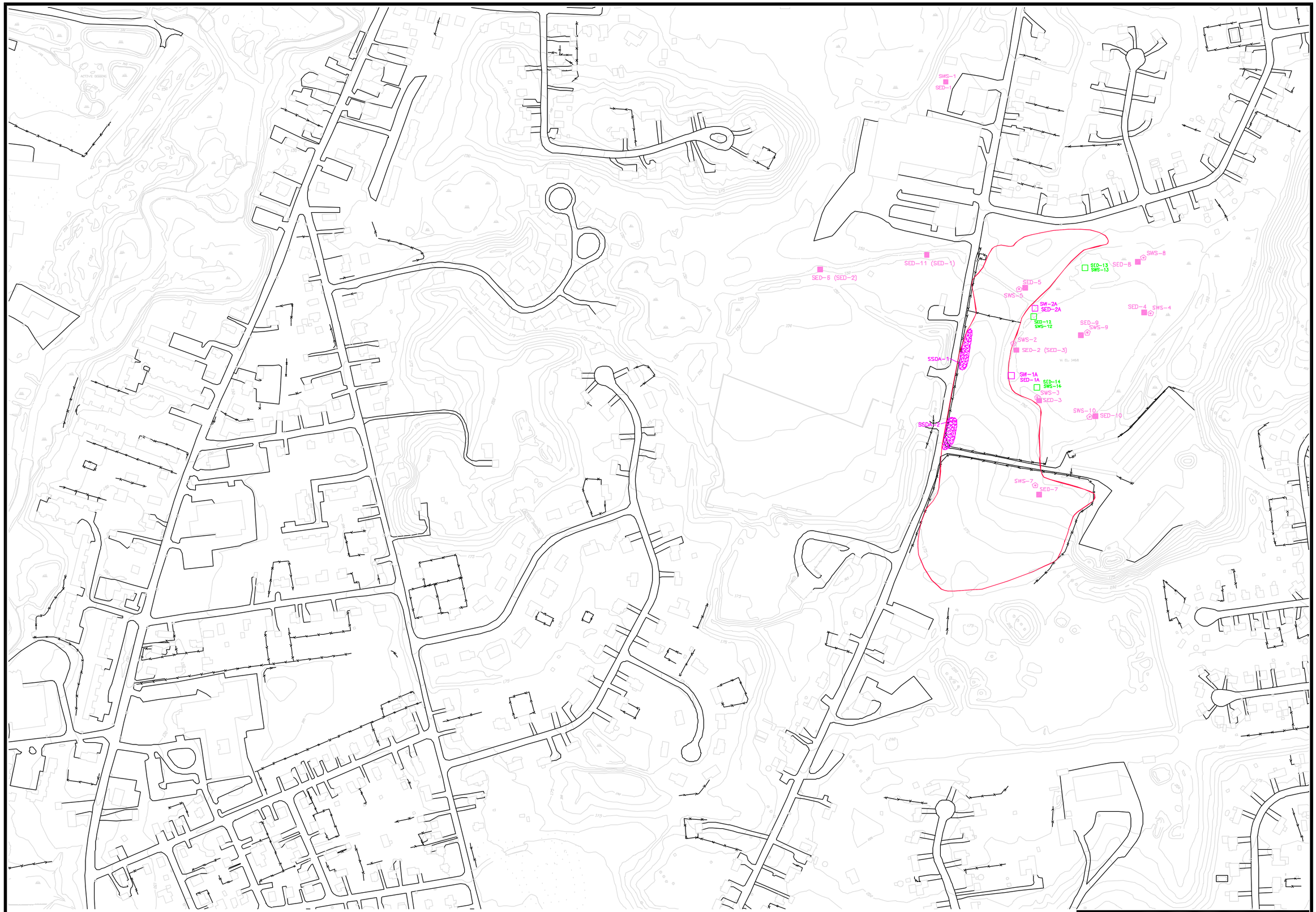

KEY

- SW-2A / SED-2A — SURFACE WATER/SEDIMENT LOCATIONS (RD/RA: 2001/2002)
- SED-12 / SWS-12 — SURFACE WATER/SEDIMENT LOCATIONS (SEPTEMBER 2004)
- SED-9 / SED-9 — SURFACE WATER/SEDIMENT LOCATIONS (RI/FS))
- EXTENT OF STUDY SITE

0 250
Scale in feet

N

PLATE 3
SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS
OLD SOUTHINGTON LANDFILL SUPERFUND PROJECT
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF.:060201.01ALL SURF SED LOCS	
DRAFTED BY: CD	CHECKED BY:
REVISED BY:	DATE: 6/28/97
SOURCE: GSC Field Reconnaissance	

GSC KLEINFELDER
Employee-owned
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Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G310S	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G310A	Dec-04	20	61	3	111	10
	Mar-05	29	78	4	145	14
	Jun-05	9	31	1	55	1
	Sep-05	5	27		42	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G310B	Dec-04	78	99	9	241	21
	Mar-05	43	58	5	137	13
	Jun-05	70	97	6	223	20
	Sep-05	66	83	4	195	18

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G310C	Dec-04	12	2		15	0
	Mar-05	12	2		15	0
	Jun-05	12	3		16	0
	Sep-05	10	2		13	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G315A	Dec-04				0	0
	Mar-05	1	1		2	0
	Jun-05	1			1	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G315B	Dec-04	44	67	3	144	19
	Mar-05	36	58	4	125	23
	Jun-05	28	42	2	91	8
	Sep-05	34	40		91	10

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G315C	Dec-04	160	280	28	617	86
	Mar-05	200	350	30	755	76
	Jun-05	130	210	14	454	39
	Sep-05	160	260	10	550	19

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G308A	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G308B	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G308C	Dec-04	180	130	22	432	19
	Mar-05	180	130	26	436	21
	Jun-05	170	110	18	380	17
	Sep-05	170	120	21	399	14

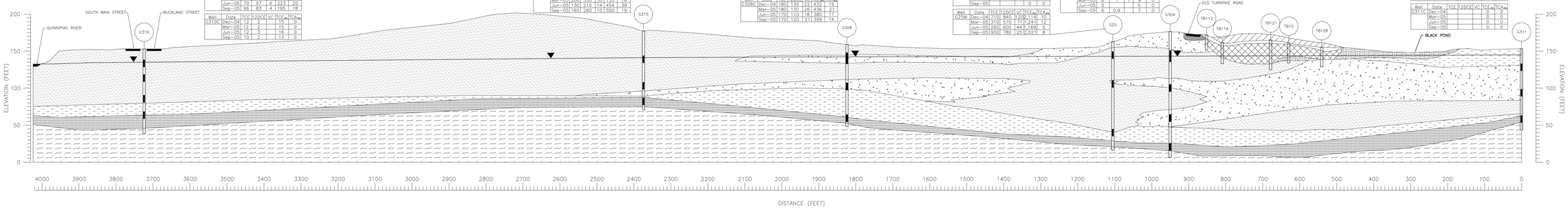
Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G25S	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G25M	Dec-04	710	840	120	2,114	10
	Mar-05	310	570	71	1,241	12
	Jun-05	260	600	44	1,169	0
	Sep-05	900	780	25	2,021	8

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G304A	Dec-04	1	5,200	800	8,808	401
	Mar-05	1	2,700	810	5,373	342
	Jun-05		3,200	560	5,513	281
	Sep-05		31,000	6,000	18,268	406

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G304B	Dec-04				0	0
	Mar-05		1	2	6	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G304C	Dec-04	7	7		7	0
	Mar-05	6	1	1	9	0
	Jun-05	5			5	0
	Sep-05	6	0.9		7	0



Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G311A	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G311B	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G311C	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G315A	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G315B	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G315C	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G317A	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G317B	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G317C	Dec-04	27	4		35	0
	Mar-05	7	1		8	0
	Jun-05	8	2		11	0
	Sep-05	3	0.9		4	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
GZ14S	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

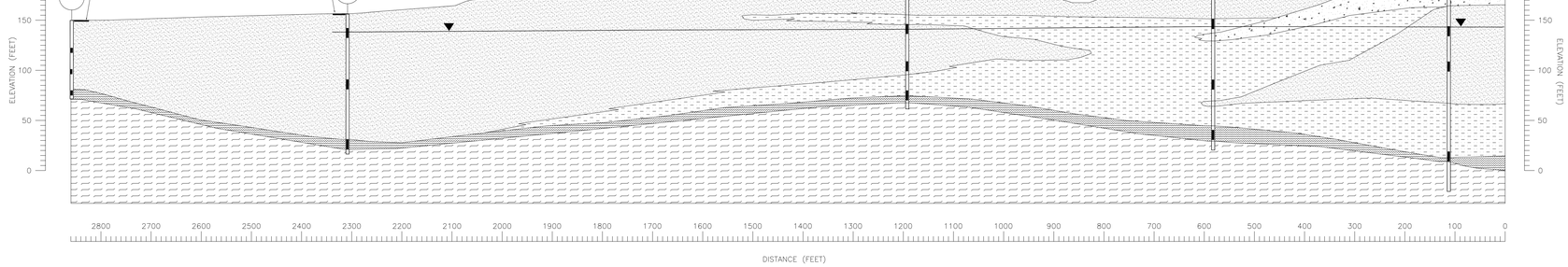
Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
GZ14M	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
GZ14D	Dec-04	100	65	5	218	4
	Mar-05	92	57	4	196	5
	Jun-05	82	50	3	173	3
	Sep-05	57	40	3	131	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G312A	Dec-04	12			12	0
	Mar-05	8			8	0
	Jun-05	18	2		21	0
	Sep-05	7			7	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G312B	Dec-04				2	0
	Mar-05	1	1		3	0
	Jun-05	2			4	0
	Sep-05	2			1	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G312C	Dec-04				0	8
	Mar-05				0	10
	Jun-05				0	10
	Sep-05				0	10



Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
GZ13S	Dec-04				0	6
	Mar-05				0	6
	Jun-05				0	6
	Sep-05				0	6

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
GZ13M	Dec-04				0	6
	Mar-05				0	6
	Jun-05				0	6
	Sep-05				0	6

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
GZ13D	Dec-04				0	6
	Mar-05				0	6
	Jun-05				0	6
	Sep-05				0	6

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G312A	Dec-04	12			12	0
	Mar-05	8			8	0
	Jun-05	18	2		21	0
	Sep-05	7			7	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G312B	Dec-04				2	0
	Mar-05	1	1		3	0
	Jun-05	2			4	0
	Sep-05	2			1	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G312C	Dec-04				0	8
	Mar-05				0	10
	Jun-05				0	10
	Sep-05				0	10

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G25S	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G25M	Dec-04	710	840	120	2,114	10
	Mar-05	310	570	71	1,241	12
	Jun-05	260	600	44	1,169	0
	Sep-05	900	780	25	2,021	8

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G304A	Dec-04	1	5,200	800	8,808	401
	Mar-05	1	2,700	810	5,373	342
	Jun-05		3,200	560	5,513	281
	Sep-05		31,000	6,000	18,268	406

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G304B	Dec-04				0	0
	Mar-05		1	2	6	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G304C	Dec-04	7	7		7	0
	Mar-05	6	1	1	9	0
	Jun-05	5			5	0
	Sep-05	6	0.9		7	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G303A	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G303B	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G303C	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G302A	Dec-04				46	97	21
	Mar-05	1	4	37	84	9
	Jun-05			8	17	0
	Sep-05			30	63	4

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G302B	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G302C	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G313A	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G313C	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

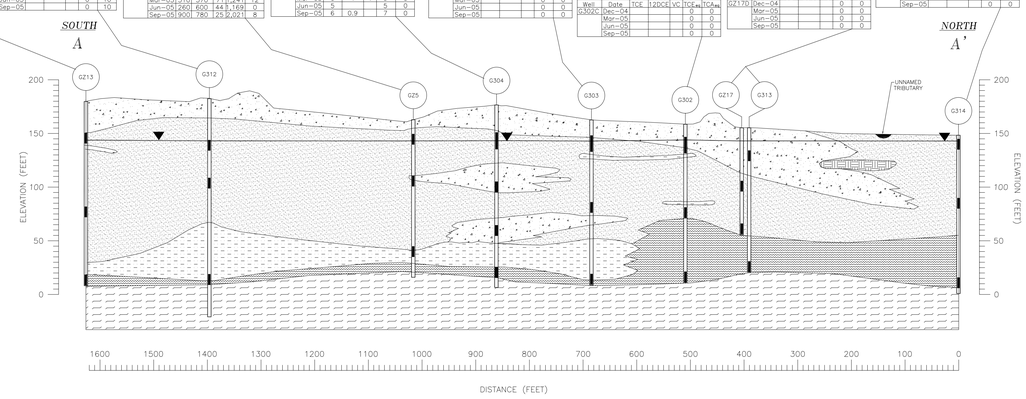
Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
GZ17U	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

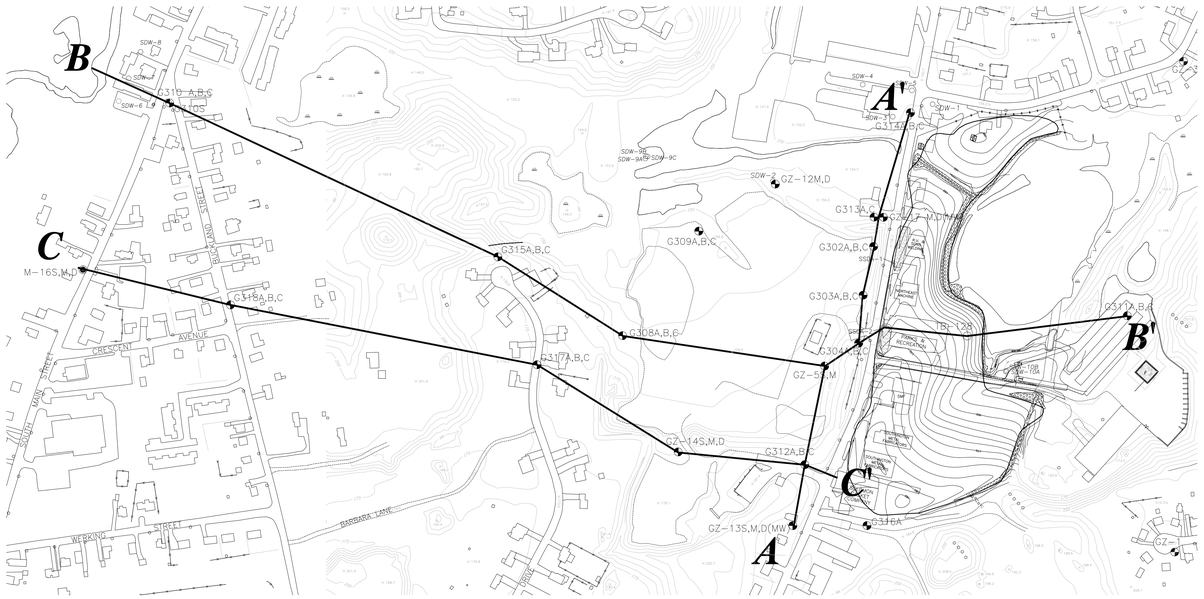
Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
GZ17D	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G314A	Dec-04			2	4	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05			2	4	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G314B	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0

Well	Date	TCE	1,2DCE	VC	TCE$_{eq}$	TCA$_{eq}$
G314C	Dec-04				0	0
	Mar-05				0	0
	Jun-05				0	0
	Sep-05				0	0





KEY

- LANDFILL CAP
- SOLID WASTE
- PEAT
- SAND AND GRAVEL (UNDIFFERENTIATED)
- SAND (UNDIFFERENTIATED)
- SAND AND SILT (UNDIFFERENTIATED)
- FILL
- TILL
- BEDROCK (NEW HAVEN ARKOSE)

B204 — LOCATION OF BORING
BORING NUMBER
MEASURED WATER LEVEL 11/30/05
WELL SCREEN
BORING DEPTH

NOTES:

1. GEOLOGY BELOW TERMINATION POINT OF BORINGS INFERRED FROM ADJACENT BORINGS AND OTHER CROSS SECTIONS.
2. WATER TABLE APPROXIMATE EXCEPT WHERE MEASURED.

50 FT.
100 FT.

SCALE

HORIZONTAL: 1 INCH EQUALS 100 FEET
VERTICAL: 1 INCH EQUALS 50 FEET
VERTICAL EXAGGERATION = 2
ELEVATIONS IN FEET, NGVD 1929

PLATE 4
GEOLOGIC CROSS SECTIONS A–B–C
OLD SOUTHINGTON LANDFILL SUPERFUND PROJECT
SOUTHINGINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF: 060201.01XSEC	CHECKED BY:
DRAFTED BY: ANG	DATE: 4/20/06
REVISED BY:	DATE:
SOURCE: MACTEC FILE# 719-7561	

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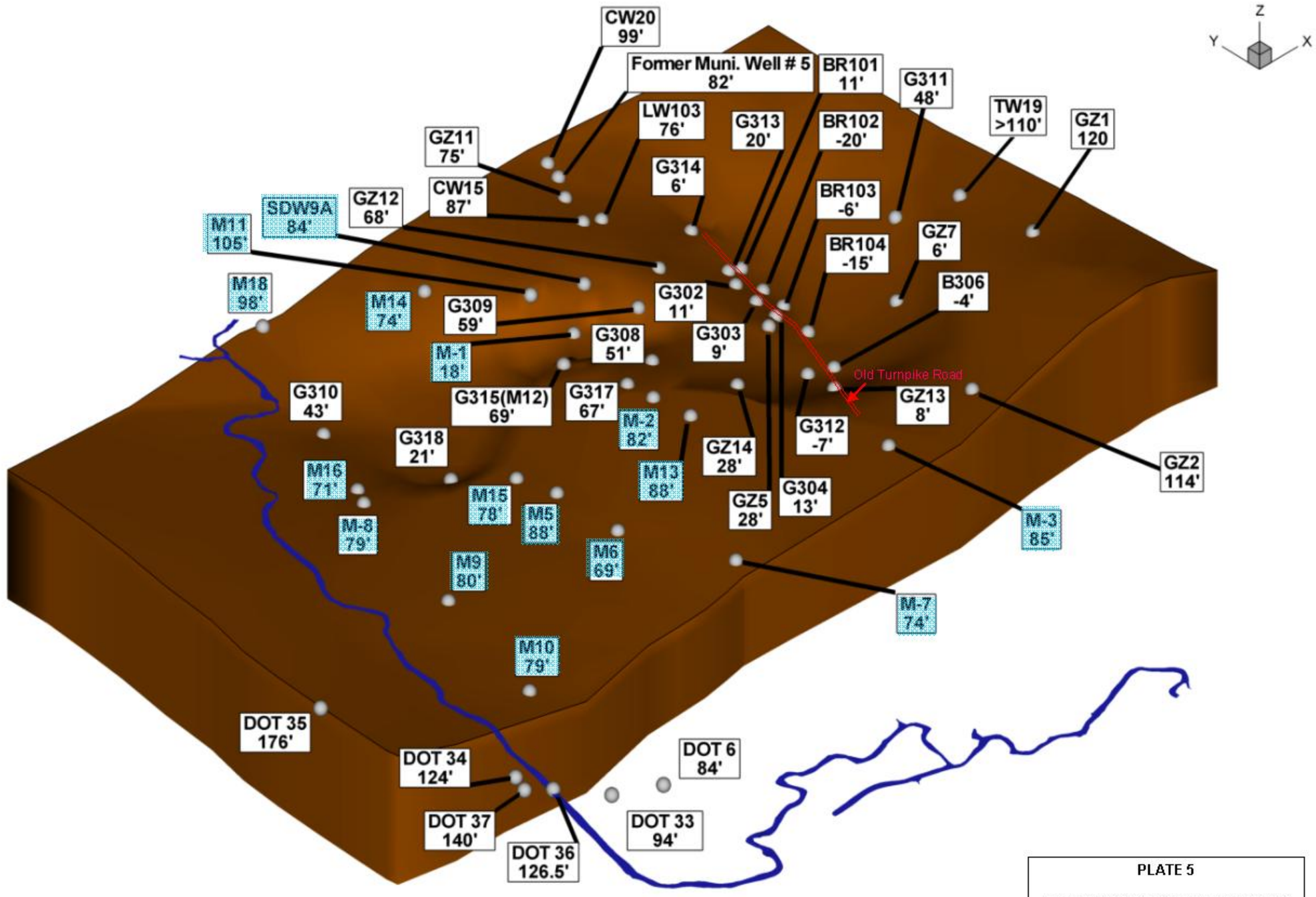

PLATE 5

BEDROCK SURFACE DATA POINTS

SUPPLEMENTAL RI REPORT
OLD SOUHTINGTON LANDFILL
SUPERFUND SITE

BEDROCK ELEVATIONS – FEET ABOVE MEAN SEA LEVEL

M-7
74'

Locations where depth to bedrock was not confirmed; depth based on refusal.

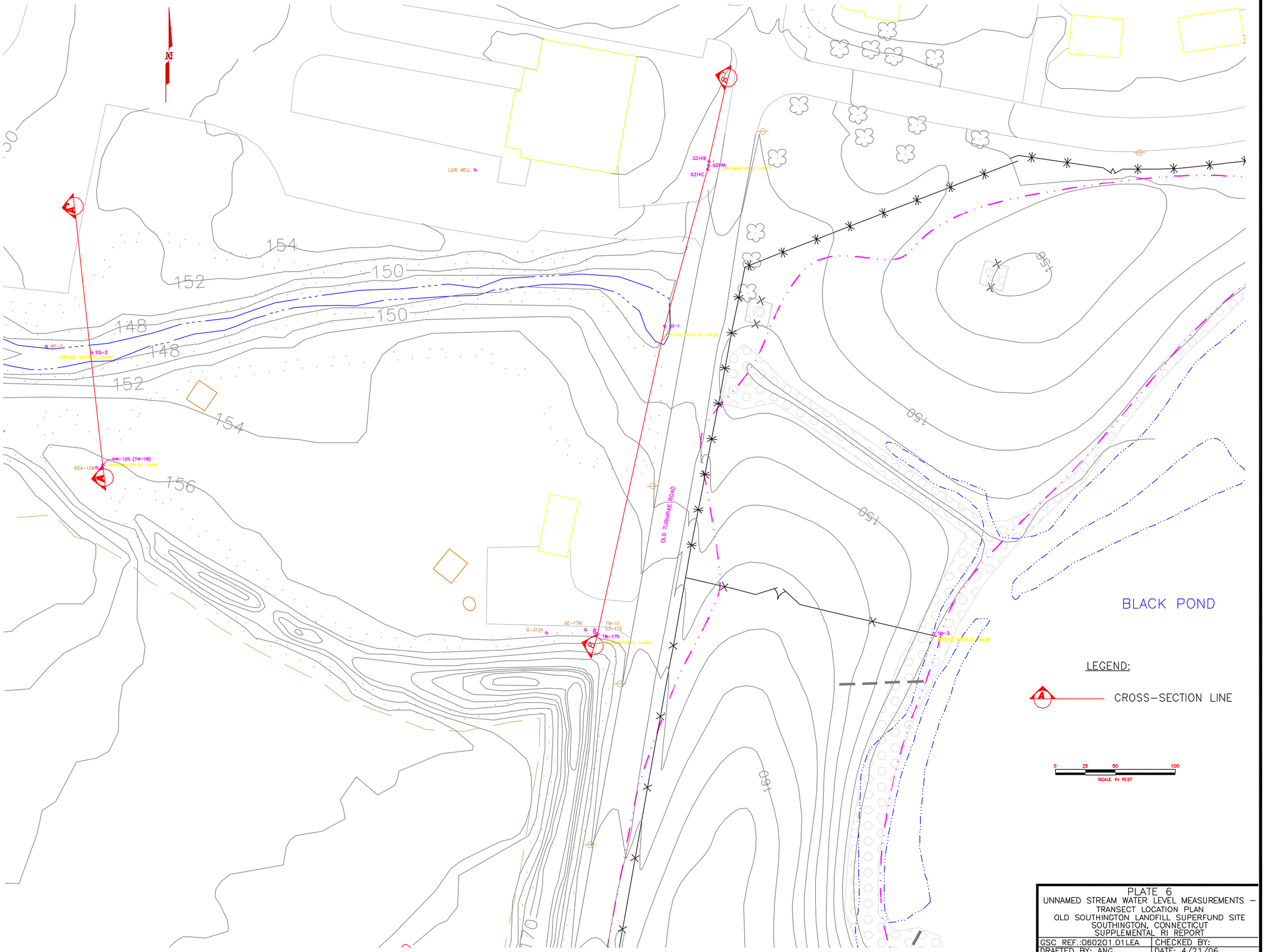

PLATE 6
UNNAMED STREAM WATER LEVEL MEASUREMENTS – TRANSECT LOCATION PLAN
OLD SOUTHINGTON LANDFILL SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF.:060201.01LEA	CHECKED BY:
DRAFTED BY: ANG	DATE: 4/21/06
REVISED BY:	DATE:
SOURCE: MACTEC FILE# 717561	

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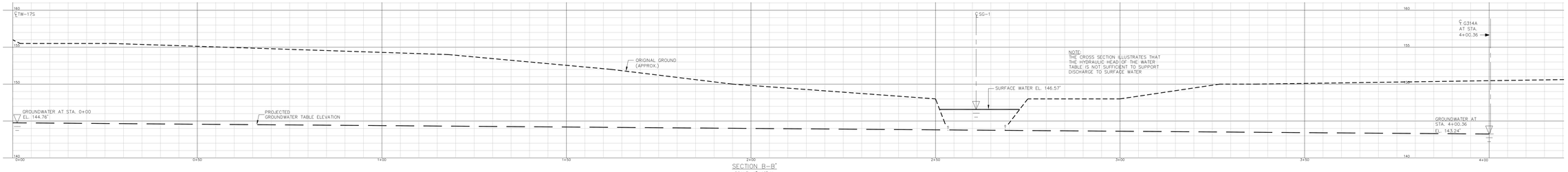
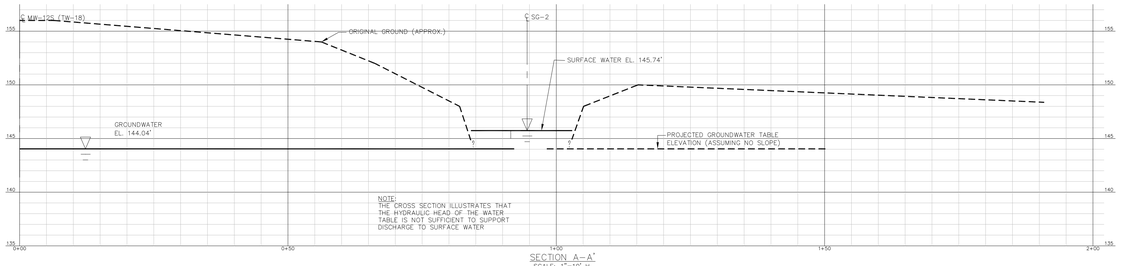
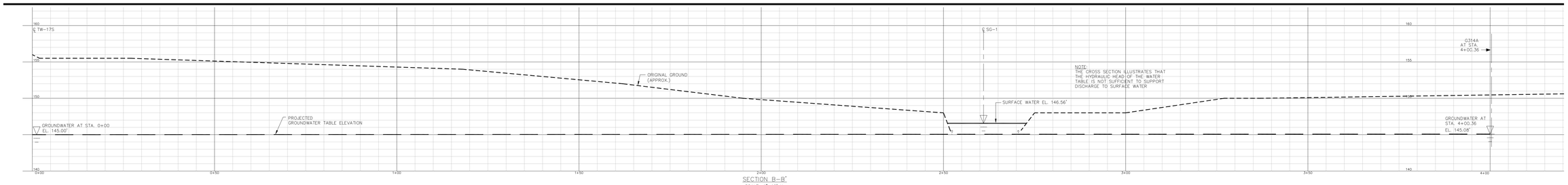


SECTION B–B'
SCALE: 1"=10' H.
1"=5' V.

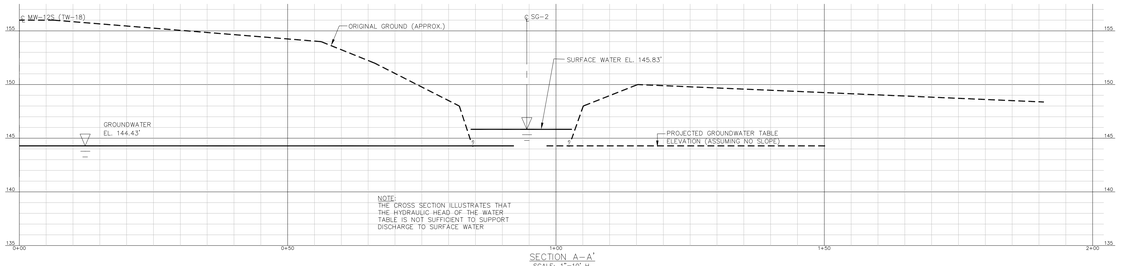


SECTION A–A'
SCALE: 1"=10' H.
1"=5' V.

WATER ELEVATIONS OBTAINED JANUARY 29, 2004

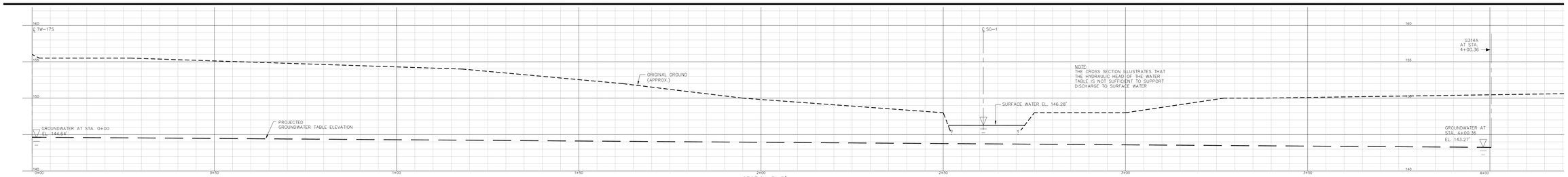


SECTION B–B'
SCALE: 1"=10' H.
1"=5' V.

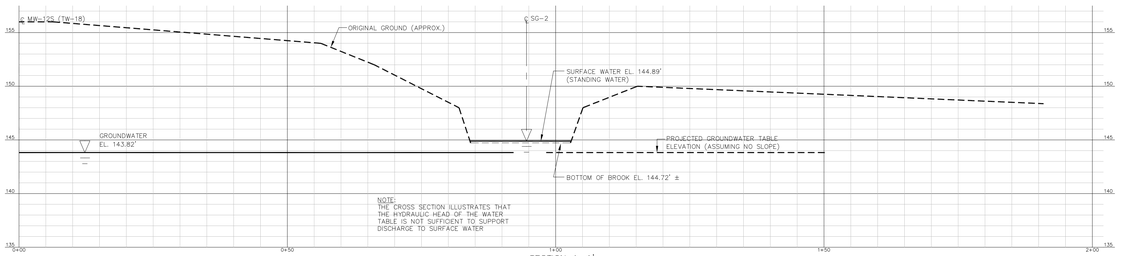


SECTION A–A'
SCALE: 1"=10' H.
1"=5' V.

WATER ELEVATIONS OBTAINED APRIL 5, 2004



SECTION B–B'
SCALE: 1"=10' H.
1"=5' V.



SECTION A–A'
SCALE: 1"=10' H.
1"=5' V.

WATER ELEVATIONS OBTAINED JUNE 30, 2004

PLATE 7
UNNAMED STREAM CROSS-SECTION
OLD SOUTHINGTON LANDFILL SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

OSC REF.01HSTXSEC	CHECKED BY:
DRAFTED BY: ANG	DATE: 4/21/06
REVISED BY:	DATE:
SOURCE: MACTEC FILE# 717561	

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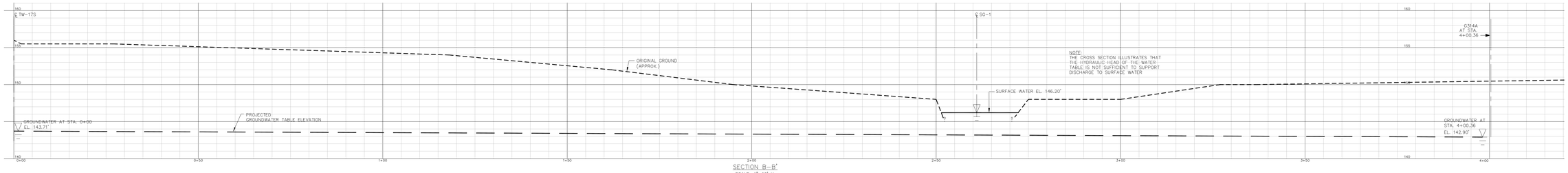
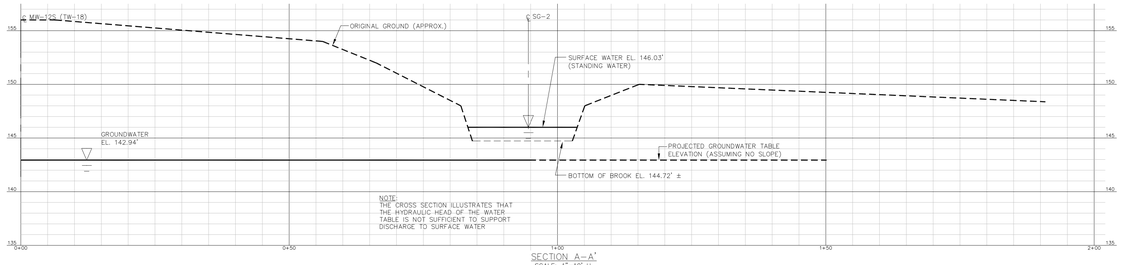
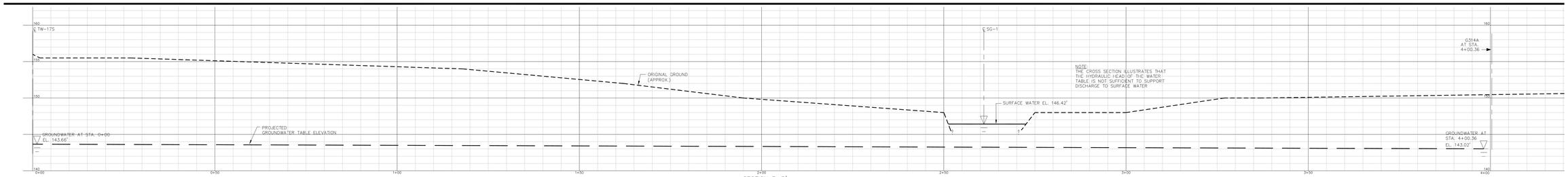


SECTION B–B'
SCALE: 1"=10' H.
1"=5' V.

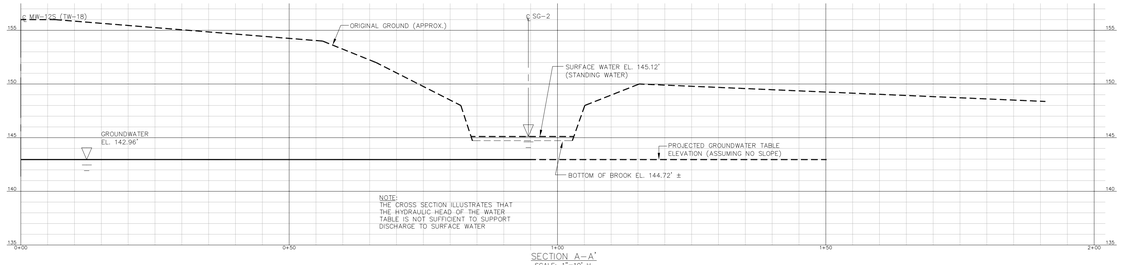


SECTION A–A'
SCALE: 1"=10' H.
1"=5' V.

WATER ELEVATIONS OBTAINED SEPTEMBER 14, 2004

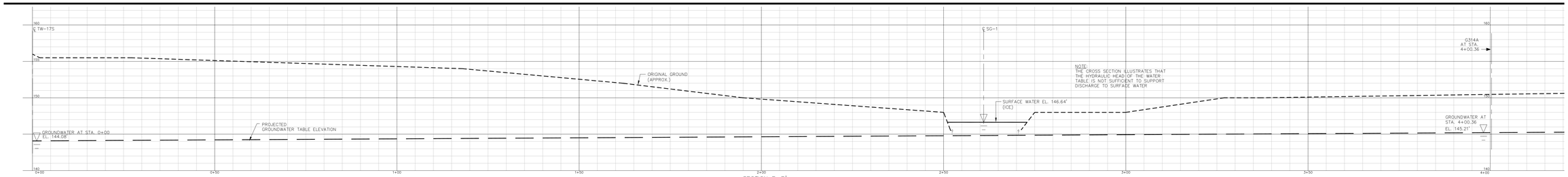


SECTION B–B'
SCALE: 1"=10' H.
1"=5' V.

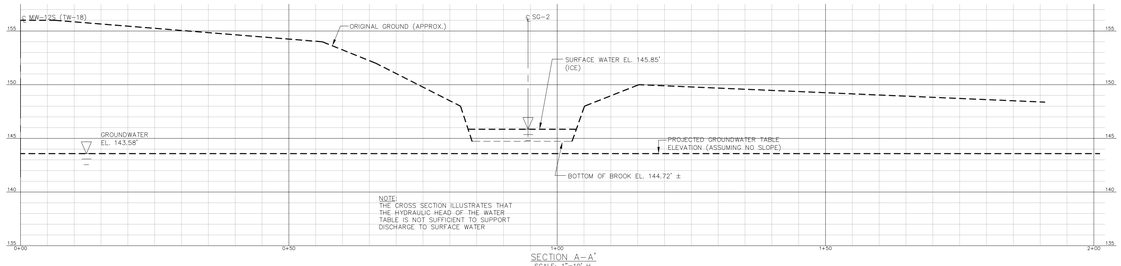


SECTION A–A'
SCALE: 1"=10' H.
1"=5' V.

WATER ELEVATIONS OBTAINED NOVEMBER 8, 2004



SECTION B–B'
SCALE: 1"=10' H.
1"=5' V.



SECTION A–A'
SCALE: 1"=10' H.
1"=5' V.

WATER ELEVATIONS OBTAINED DECEMBER 28, 2004

PLATE 8
UNNAMED STREAM CROSS-SECTION
OLD SOUTHINGTON LANDFILL SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF: 060201.02HISTXSEC	CHECKED BY:
DRAFTED BY: ANG	DATE: 4/21/06
REVISED BY:	DATE:
SOURCE: MACTEC FILE# 717561	

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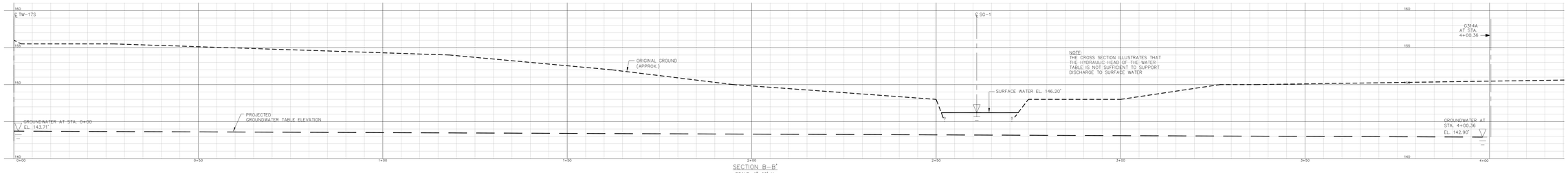
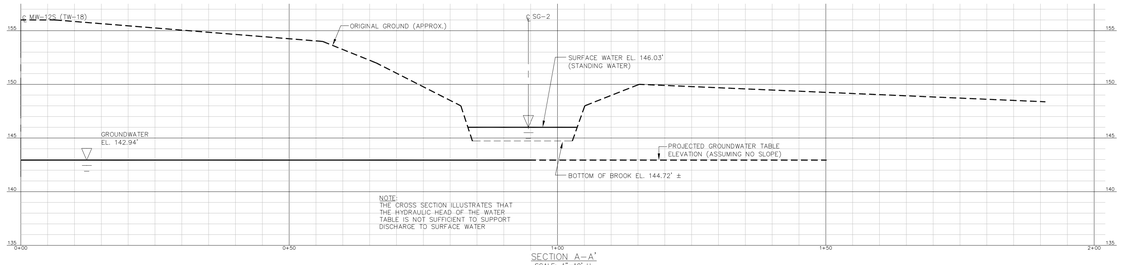
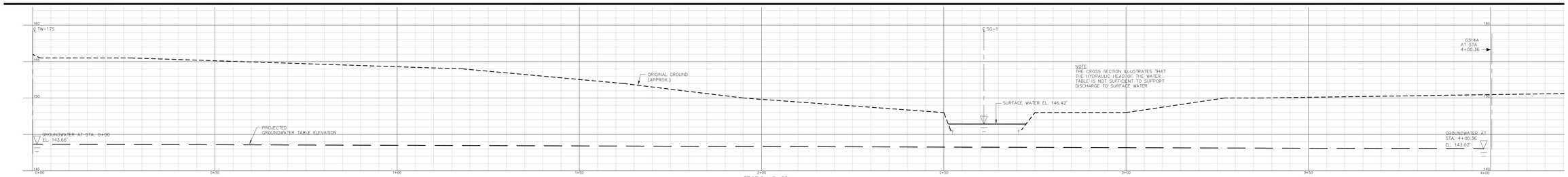


SECTION B–B'
SCALE: 1"=10' H.
1"=5' V.

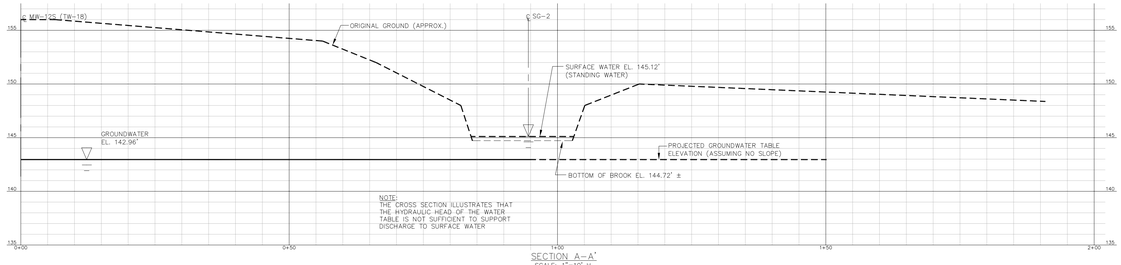


SECTION A–A'
SCALE: 1"=10' H.
1"=5' V.

WATER ELEVATIONS OBTAINED SEPTEMBER 14, 2004

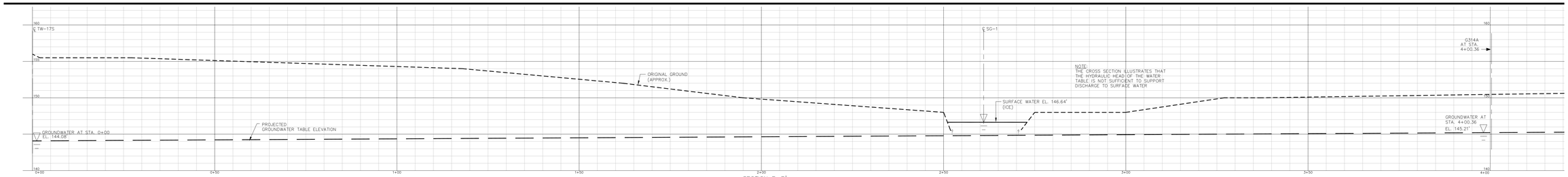


SECTION B–B'
SCALE: 1"=10' H.
1"=5' V.

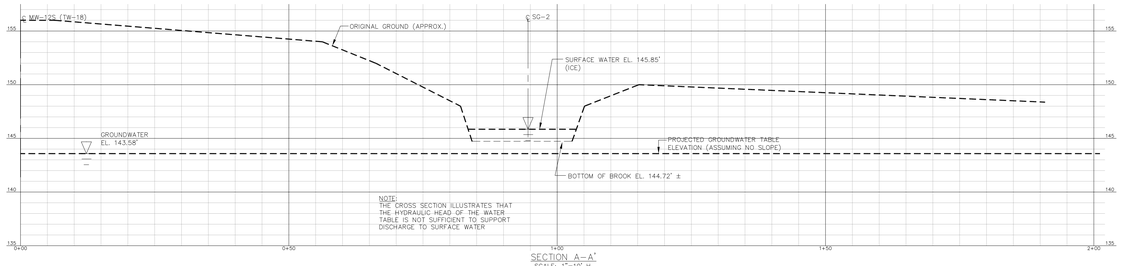


SECTION A–A'
SCALE: 1"=10' H.
1"=5' V.

WATER ELEVATIONS OBTAINED NOVEMBER 8, 2004



SECTION B–B'
SCALE: 1"=10' H.
1"=5' V.



SECTION A–A'
SCALE: 1"=10' H.
1"=5' V.

WATER ELEVATIONS OBTAINED DECEMBER 28, 2004

PLATE 8
UNNAMED STREAM CROSS-SECTION
OLD SOUTHINGTON LANDFILL SUPERFUND SITE
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF: 060201.02HISTXSEC	CHECKED BY:
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REVISED BY:	DATE:
SOURCE: MACTEC FILE# 717561	

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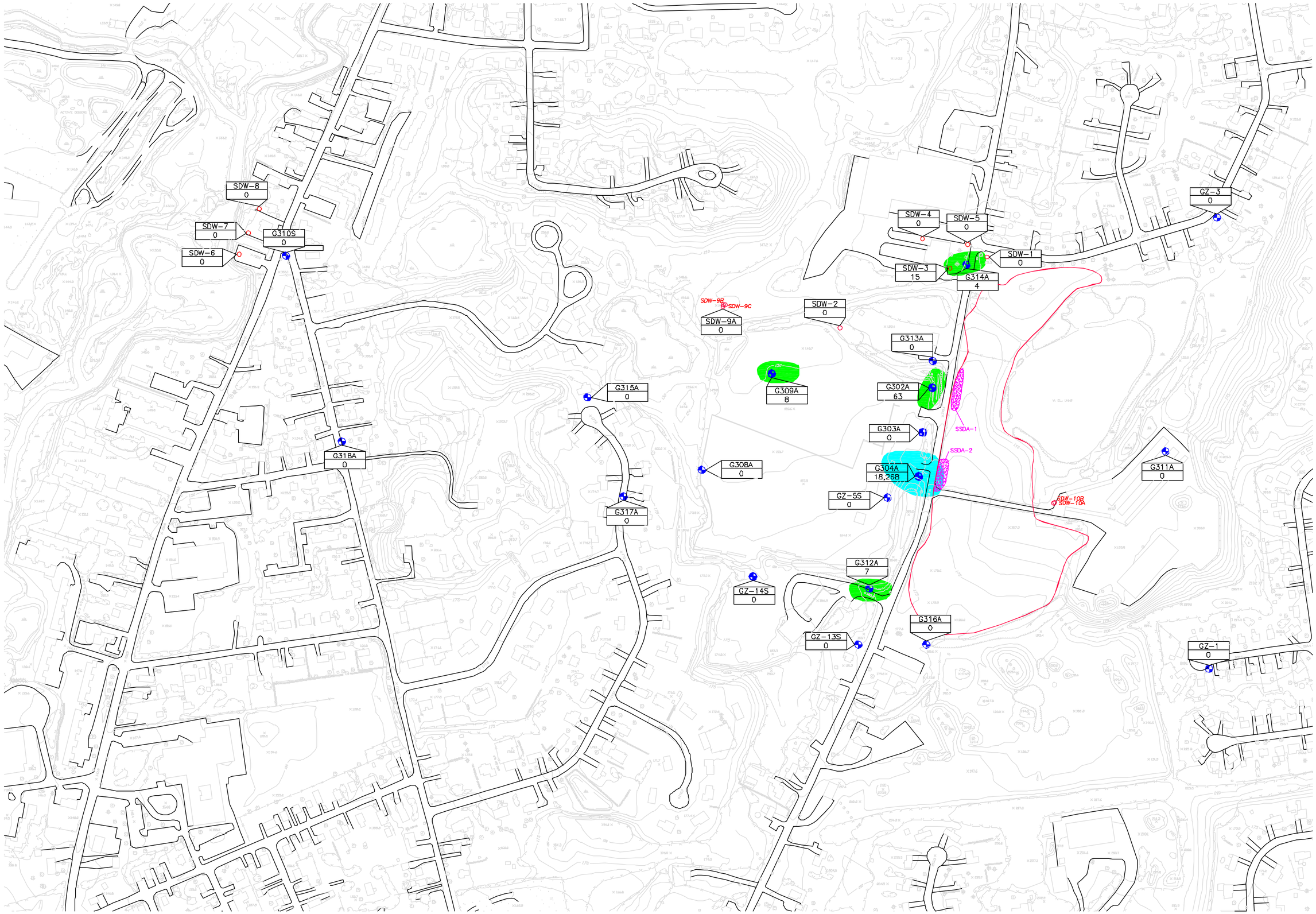

KEY

- EXISTING MONITORING WELLS
- SMALL DIAMETER MONITORING WELLS
- GZ-13S / 0 — WELL IDENTIFICATION / TCE EQUIVALENT ug/l
- TCE EQUIVALENT PLUME >1 TO 1,000 PPB
- TCE EQUIVALENT PLUME > 1,000 PPB

N

0 250
Scale in feet

PLATE 10A
SHALLOW WELL TCE EQUIVALENTS
SEPTEMBER 2005 DATA
OLD SOUTHINGTON LANDFILL SUPERFUND PROJECT
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF.:060201.TCE 10A	CHECKED BY:
DRAFTED BY: ANG	DATE: 4/18/06
REVISED BY:	DATE:
SOURCE: MACTEC FILE# 719-7561	

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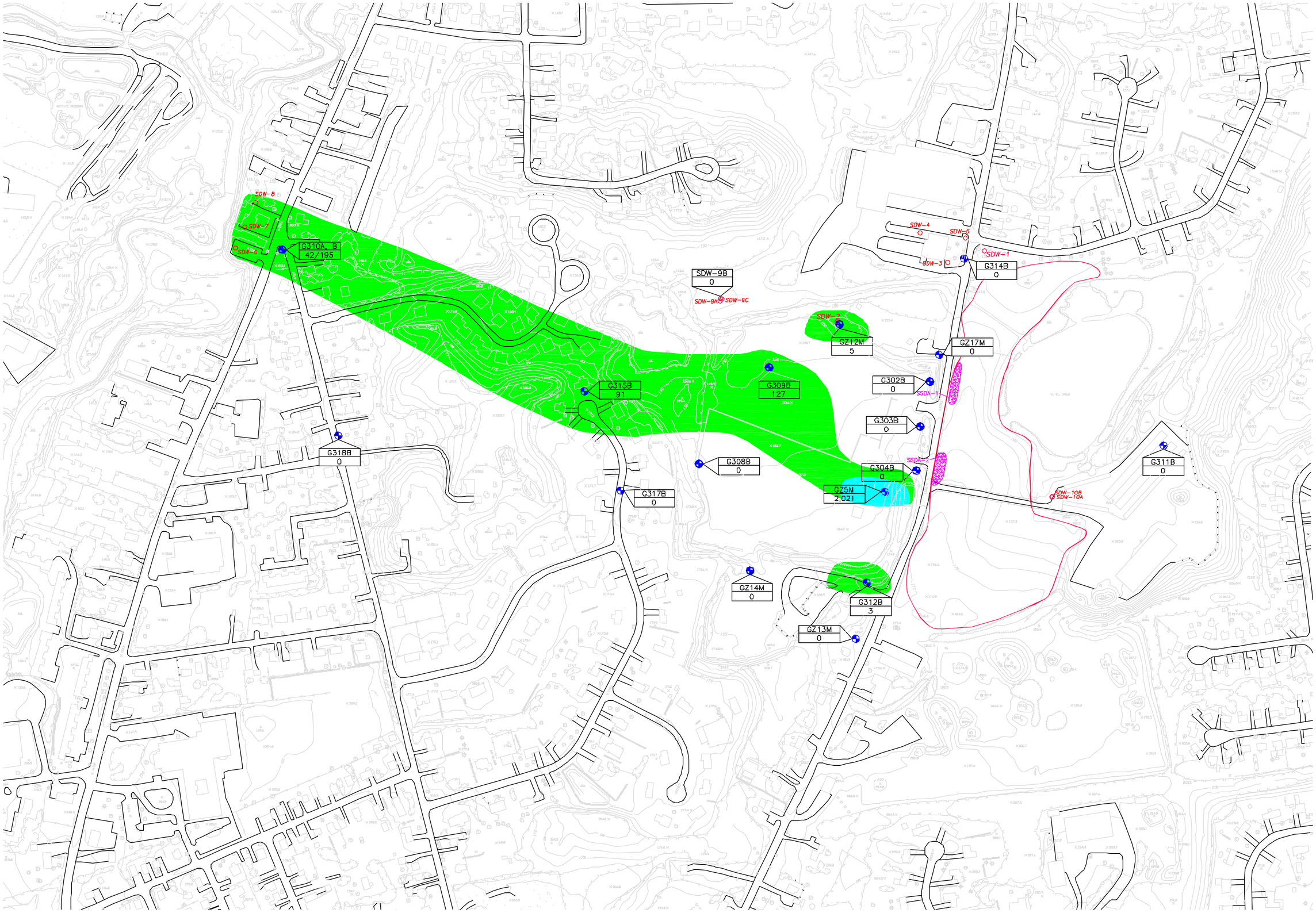

KEY

EXISTING MONITORING WELLS

SMALL DIAMETER MONITORING WELLS

GZ13M — WELL IDENTIFICATION
0 — TCE EQUIVALENT ug/l

TCE EQUIVALENT PLUME >1 TO 1,000 PPB

TCE EQUIVALENT PLUME > 1,000 PPB

N

0 250
Scale in feet

PLATE 10B
MEDIUM WELL TCE EQUIVALENTS
SEPTEMBER 2005 DATA
OLD SOUTHINGTON LANDFILL SUPERFUND PROJECT
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF.: 060201.TCE 10B	CHECKED BY:
DRAFTED BY: ANG	DATE: 6/28/97
REVISED BY:	DATE:
SOURCE: MACTEC FILE# 719-7561	

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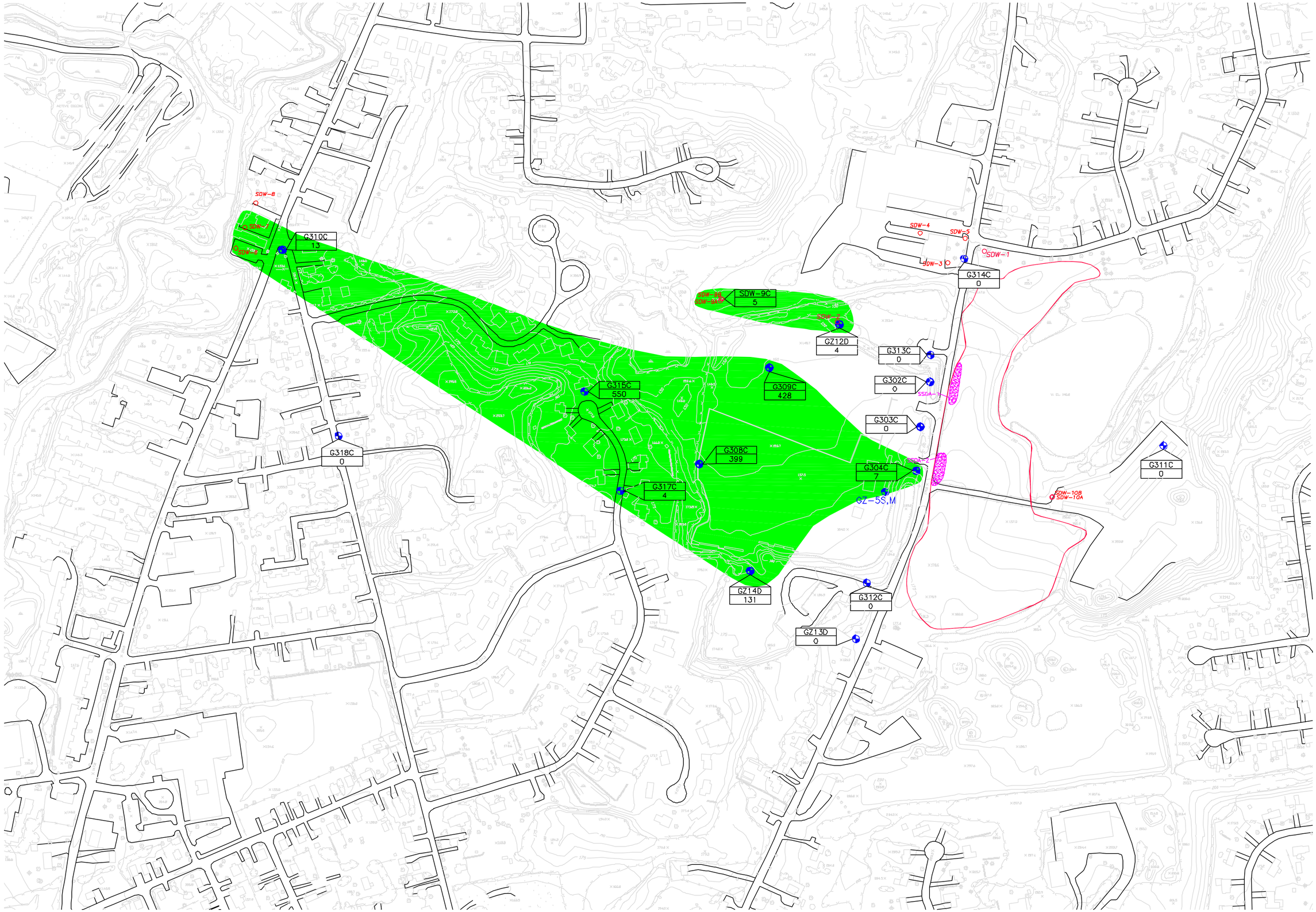

KEY

EXISTING MONITORING WELLS

SMALL DIAMETER MONITORING WELLS

GZ-13D WELL IDENTIFICATION
0 TCE EQUIVALENT ug/l

TCE EQUIVALENT PLUME >1 TO 1,000 PPB

N

0 250
Scale in feet

PLATE 10C
DEEP WELL TCE EQUIVALENTS
SEPTEMBER 2005 DATA
OLD SOUTHINGTON LANDFILL SUPERFUND PROJECT
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF.:060201.TCE 10C	CHECKED BY:
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REVISED BY:	DATE:
SOURCE: MACTEC FILE# 719-7561	

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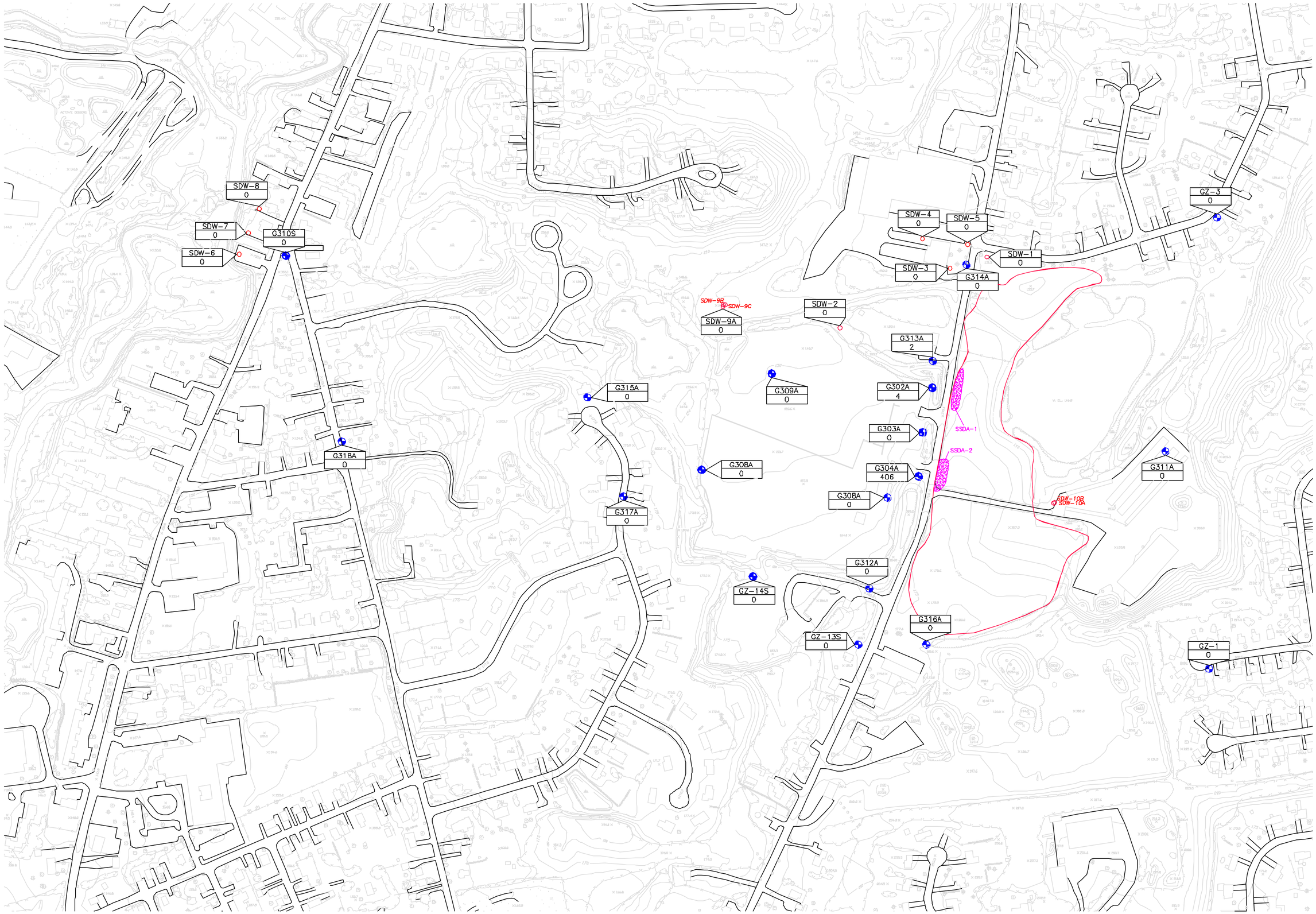

KEY

EXISTING MONITORING WELLS

SMALL DIAMETER MONITORING WELLS

GZ-13S — WELL IDENTIFICATION
0 — TCA EQUIVALENT ug/l

N

0 250
Scale in feet

PLATE 11A
SHALLOW WELL TCA EQUIVALENTS
SEPTEMBER 2005 DATA
OLD SOUTINGTON LANDFILL SUPERFUND PROJECT
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF.:060201.TCA 11A	CHECKED BY:
DRAFTED BY: ANG	DATE: 4/18/06
REVISED BY:	DATE:
SOURCE: MACTEC FILE# 719-7561	

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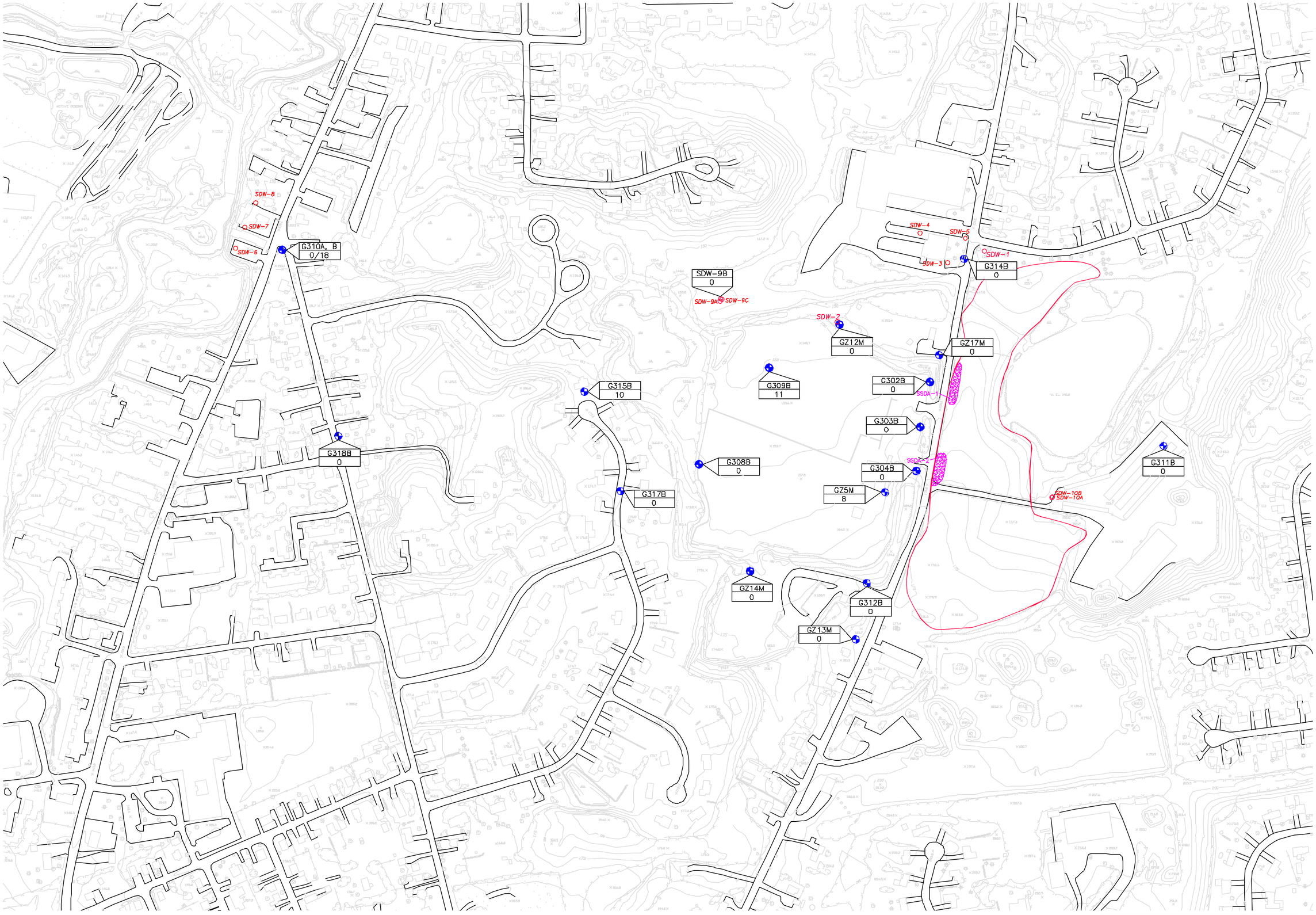

KEY

EXISTING MONITORING WELLS

SMALL DIAMETER MONITORING WELLS

GZ13M — WELL IDENTIFICATION
0 — TCA EQUIVALENT ug/l

N

0 250
Scale in feet

PLATE 11B
MEDIUM WELL TCA EQUIVALENTS
SEPTEMBER 2005 DATA
OLD SOUTHINGTON LANDFILL SUPERFUND PROJECT
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF.: D60201.TCA 11B	CHECKED BY:
DRAFTED BY: ANG	DATE: 6/28/97
REVISED BY:	DATE:
SOURCE: MACTEC FILE# 719-7561	

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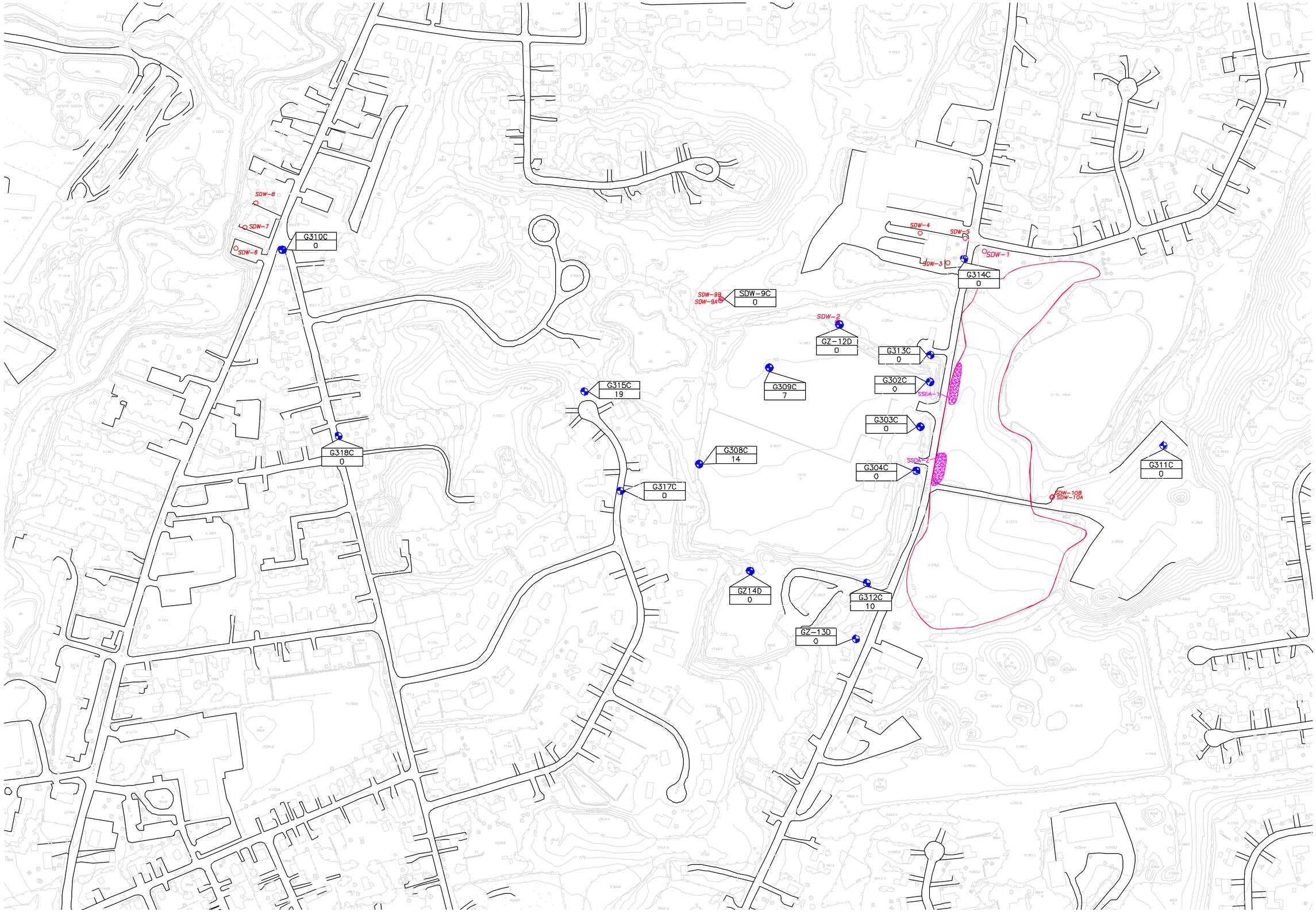

KEY

EXISTING MONITORING WELLS

SMALL DIAMETER MONITORING WELLS

GZ-13D — WELL IDENTIFICATION

0 — TCA EQUIVALENT ug/l

N

0 250

Scale in feet

PLATE 11C
DEEP WELL TCA EQUIVALENTS
SEPTEMBER 2005 DATA
OLD SOUTHINGTON LANDFILL SUPERFUND PROJECT
SOUTHINGTON, CONNECTICUT
SUPPLEMENTAL RI REPORT

GSC REF.:060201.TCA 11C	CHECKED BY:
DRAFTED BY: ANG	DATE: 4/18/06
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