MacDermid, Incorporated
526 Huntingdon Avenue
Waterbury, Connecticut

Prepared November 2002
Revised January 2004
Revised August 2004

RCRA RECORDS CENTER
FACILITY
I.D. NO.
FILE LOC.
OTHER

PREPARED FOR

MacDermid, Incorporated
245 Freight Street
Waterbury, Connecticut

RDMS DocID 102733

PREPARED BY

Loureiro Engineering Associates, Inc.
100 Northwest Drive
Plainville, Connecticut
An Employee Owned Company

Comm. No. 91MH401.001

FedEx Priority Overnight

Loureiro Engineering Associates, Inc.

TRANSMITTAL

TO:	Region I, New England	DATE	8/26/2004
	One Congress Street	PROJECT	Revised Human Health EI
	Suite 1100 (Mail Code **HBT**)	LOCATION:	Waterbury, CT
	Boston, MA 02114-2023	COMM. NO.:	91MH401
ATTN:	Ms. Carolyn Casey	PHONE #	(617) 918-1368

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2	August 2004	Revised Human Health EI (CA725)
		MacDermid, 526 Huntingdon Ave, Waterbury, CT

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REMARKS:

Carolyn-

We have attached two copies of the revised Human Health EI for MacDermid at 526 Huntingdon Avenue, Waterbury, CT. Please don't hesitate to contact me with any questions.

Thanks

BY: Barbara Heemink, P.G.

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RCRA RECORDS CENTER
FACILITY MacDermid Inc.
I.D. NO. CTD 001164599
FILE LOC. R-13
OTHER 102733

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)
Current Human Exposures Under Control

Facility Name: MacDermid Incorporated
Facility Address: 526 Huntingdon Avenue, Waterbury, Connecticut
Facility EPA ID #: CTD001164599

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   X* If yes - check here and continue with #2 below.
   _____ If no - re-evaluate existing data, or
   _____ If data are not available skip to #6 and enter "IN" (more information needed) status code.

*Note: **According to a February 11, 2002 correspondence from the United States Environmental Protection Agency (EPA), groundwater monitoring was reportedly performed in 8/87, 1/88, 10/88, 10/92, 2/93 and twice in 1/94; however, this data was not available for review and was not used in development of this EID.**

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., Site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale/Key Contaminants
Groundwater	X			1,1,-DCA, 1,1,-DCE, PCE, TCE, Cu, and Zn exceeded one or more of the following regulatory criteria: EPA Maximum Contaminant Levels and Surface Water Protection Criteria (SWPC) as tabulated in the Connecticut Department of Environmental Protection (CT DEP)Remediation Standard Regulations (RSR).
Air (indoors)[2]		X		Operations have ceased and there is no intent to resume operations at this facility, the absence of workers at this facility eliminates a complete exposure pathway for indoor air, as long as the building remains vacant. In addition, contaminant concentrations in the most recent groundwater sampling event did not exceed the revised industrial/commercial VC. Also, the direction of groundwater flow to the southeast precludes contaminated groundwater at the Site from potentially impacting abutting residential properties located to the north and west of the Site.
Surface Soil (e.g., <2 ft)		X		No exceedances of the Residential Direct Exposure Criteria (RDEC) per the RSRs were observed for the surface soil samples collected at the Site.
Surface Water		X		PCE was detected in groundwater beneath the Site at concentrations that exceeded the respective SWPC. An alternative SWPC was calculated. PCE concentrations did not exceed the alternative SWPC. Groundwater beneath the Site discharges to the Naugatuck River.
Sediment	X			Sediment in Steele Brook is reasonably expected to be impacted with Cu as a result of a release of copper etchant to a stormwater system in 1994, but inaccessibility makes this water body an incomplete pathway. PCE was detected in groundwater beneath the Site in a groundwater sample collected from one downgradient monitoring well. An alternative SWPC was calculated. PCE concentrations did not exceeded the alternative SWPC. Groundwater beneath the Site discharges to the Naugatuck River.
Subsurf. Soil (e.g., >2 ft)	X			Though subsurface soil at portions of the Site is reasonably expected to be contaminated, exposure to subsurface soil is controlled through the Project Activity Analysis (PAA), an institutional control, to ensure analytical data for subsurface soils are reviewed or generated/evaluated prior to exposure.
Air (outdoors)	X			Exposure to outdoor air (trench air) is considered applicable to Excavation Laborers. As the subsurface soil at portions of the Site is reasonably expected to be contaminated, it is similarly reasonably expected that excavation laborers may be exposed to contaminated air during performance of excavations. The exposure to air by excavation laborers is limited through the implementation of an institutional control, the PAA, to ensure analytical data for subsurface soils and/or groundwater are reviewed or generated/evaluated prior to exposure.

____ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

_X_ If yes (for any media) - continue after identifying key contaminants in each

"contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and References:

The Site is located at 526 Huntingdon Avenue in Waterbury, Connecticut (Figure 1 in Attachment 1) and includes two parcels of land (i.e. the SOUTH parcel and the NORTH parcel). The first parcel is located on the southern side of Huntingdon Avenue and encompasses approximately 11 acres. For the purposes of clarity in this document, the 11-acre parcel will be referred to as the SOUTH parcel (Drawing 1 in Attachment 2). The SOUTH parcel is improved with three interconnected buildings having a total footprint of approximately 182,500 square feet. These buildings are referred to as the Gear Street Building, East Aurora Street Building, and the Huntingdon Avenue Building. There is little topographic relief on the SOUTH portion of the Site, which lies at approximately 300 feet above mean sea level (MSL). The Site is located approximately 1,000 feet northwest of the Naugatuck River, which lies at approximately 260 feet above MSL. The Site and immediately surrounding area are zoned for industrial use.

The second parcel is located on the northern side of Huntingdon Avenue, and encompasses approximately 30 acres. For the purpose of clarity in this document, the 30-acre parcel will be referred to as the NORTH parcel (Drawing 2 in Attachment 2). The NORTH parcel is primarily covered with grass and other native vegetation. Two paved areas are located on the southern and southeastern portions of the NORTH parcel. The first paved area is located immediately along the north side of Huntingdon Avenue and was used for parking by employees of the MacDermid facility located on the southern side of Huntingdon Avenue. The second paved area, located approximately 400 feet north of Huntingdon Avenue, serves as an asphalt cap to a sludge disposal area. Historical information pertaining to the sludge disposal area is presented in a subsequent portion of this section.

The MacDermid facility was primarily engaged in blending and/or compounding chemical materials used in the metal finishing, plating on plastics and printed circuit industries. In particular, MacDermid manufactured inks and electroless nickel plating solutions for these industries. The Standard Industrial Classification (SIC) Code for the facility is 2899. Ancillary activities conducted by MacDermid at the facility included reprocessing copper etchant solution received in bulk from their customers or off-site MacDermid facilities.

In order to determine a general history of the Site, Sanborn Fire Insurance Maps and aerial photographs pertaining to the Site were reviewed. The Sanborn Fire Insurance Maps obtained from the Connecticut State Library archives indicated that the Waterbury Steel Ball Company occupied the Gear Street Building and the Carroll Wire Company occupied the Huntingdon Avenue Building in 1921. Mapping prior to 1921 was not available. Also, the Sanborn Map indicated that MacDermid occupied the Huntingdon Avenue Facility in 1930. Aerial photographs of the Site obtained from the DEP depict a drum storage area of approximately 30 drums behind a shed outside the Huntingdon Avenue Building in the 1965 photograph that did not appear in the 1970 photograph. Aerial photographs also indicate a lagoon was added between 1970 and 1975 west of the Huntingdon Avenue Building near Huntingdon Avenue. This lagoon and a second adjacent lagoon were used for disposal of organic and inorganic process waste generated at the facility by MacDermid. The lagoons were removed between approximately 1980 and 1986 and the East Aurora Street Building was constructed such that the Huntingdon Avenue Building was connected to the Gear Street Building. The Site remained generally unchanged from 1986 to 2002.

According to historical environmental investigation reports, between 1978 and 1979, approximately 1,000-cubic yards of metal hydroxide sludge was removed from the aforementioned waste lagoons and disposed of in an excavated area on the southeastern portion of the MacDermid NORTH parcel located on the northern side of Huntingdon Avenue. In addition to metal hydroxide sludge, potentially-contaminated soil from the same waste lagoons from the SOUTH parcel was reportedly also disposed of in the same excavated area. Prior to emplacement on the MacDermid NORTH parcel, the waste materials were mixed with Site sand and gravel to increase load-bearing characteristics. In 1986, the material was covered with approximately nine inches of processed aggregate and three inches of asphalt. MacDermid personnel indicated that the information contained in the historical environmental investigation reports regarding the disposal of sludge was incorrect. Instead, MacDermid personnel assert that the metal hydroxide sludge was not disposed of on the NORTH parcel, but rather off-site at a licensed disposal facility. Further, MacDermid states that this area was used only for the disposal and subsequent capping of potentially-contaminated soil from the SOUTH parcel waste lagoons.

In 2002, manufacturing activities at the facility ceased. At the time of this submittal, MacDermid conducts limited shipping and receiving of raw product (from other MacDermid facilities) in the East Aurora Street Building. With the exception of minor shipping and receiving activity, all product and waste materials have been removed from the facility.

A report entitled *Conceptual Site Model (CSM) and Screening Levels, MacDermid Incorporated* was prepared in May 2002 by LEA. EPA comments to the CSM were addressed in the cover letter included with the November 2002 environmental indicator determination submittal. The CSM provides a description of exposure media and exposure pathways, a description of potential receptors, a rationale and approach to screening analytical data generated for exposure media, and screening levels for exposure media. For the facility, the model also identifies the applicable receptors, exposure media and pathways that require screening as shown on Drawings 1, 2, and 5 in Attachment 2 and depicted graphically on Figure 2 in Attachment 1. Since submittal of the CSM in May 2002 and MacDermid's response to EPA comments in November 2002, activities at the Site have changed and additional evaluation of receptors, exposure pathways, and media has been completed. Based on the additional evaluations, an updated summary of the receptors, exposure pathways and media include:

On-Site Receptors

On-Site Workers

- Excavating laborers: Surficial and subsurface soils by ingestion and dermal contact, inhalation of trench air;
- Groundskeepers: Surface soil by ingestion and dermal contact;
- Indoor workers: Indoor air inhalation;
- Environmental samplers: Ingestion and dermal contact with surficial and subsurface soils and groundwater;

Off-Site Receptors

Off-Site Workers

- Utility Repair Workers: Ingestion and dermal contact with surficial and subsurface soils and inhalation of trench air. However, any contamination present in shallow off-site soils would not be the result of MacDermid activities because shallow soil contamination typically occurs when a release of contaminants has occurred. There is no documentation of an off-site release to soil associated with MacDermid activities.

- Residents: Indoor air inhalation.

- Recreators: Ingestion and dermal contact with surface water and sediment in the Naugatuck River and Steele Brook that is contaminated by groundwater discharging from the Site.

This documentation of environmental indicator determination is based on a review of all available relevant/significant data as it applies to these receptors for the identified exposure media and pathways. Notably, according to a February 11, 2002 correspondence from the United States Environmental Protection Agency (EPA), groundwater monitoring was performed August 1987, January 1988, October 1988, October 1992, February 1993 and twice in January 1994; data from these events were not available for review and were not used in development of this EID.

Groundwater

Through 2001, monitoring wells MW-101, MW-102, MW-103, MW-104, MW-105, MW-106, MW-107, MW-108, MW-109, MW-110, MW-111, MW-112, and MW-113 were installed at the Site by prior environmental consultants. On-site monitoring wells MW-114, MW-115, and nested monitoring wells MW-116S and MW-116D were installed by LEA in August 2002 and September 2003. Drawings 1 and 2 in Attachment 2 depict all the monitoring well locations. Monitoring well completion reports and geologic boring logs for the wells installed by LEA in August 2002 and September 2003 are provided in Attachments 3 and 4, respectively. In response to a request from the EPA, documented in the April 9, 2004 EPA Comments to the Documentation of Environmental Indicator (CA725), a report entitled *Additional Investigations Work Plan and Quality Assurance Project Plan for Documentation of Environmental Indicator Determination (CA725) Current Human Exposures Under Control, MacDermid, Incorporated, Waterbury, CT* (Work Plan) was prepared by LEA on behalf of MacDermid, Incorporated and submitted to the EPA on June 24, 2004. The subsurface investigations proposed in the Work Plan included the installation of four piezometers for the measurement of water levels, four groundwater monitoring wells installed in two clusters (with each cluster composed of a shallow and a deep well), the collection of one round of groundwater sampling from all existing and newly installed monitoring wells at the Site, and measurement of water levels existing and newly installed monitoring wells and piezometers. The additional subsurface investigations were completed in August 2004.

Two locations along the western Site boundary (along Gear Street) were selected for the installation of the two sets of cluster wells, identified as MW117S/MW-117D and MW-118S/MW-118D (Drawing 1 in Attachment 2). Three previously existing groundwater monitoring wells, MW-104, MW-106, and MW-107, had either been destroyed or damaged and one monitoring well, MW-108, was found to contain separate-phase product, such as petroleum product. As the locations of these monitoring wells were considered important for developing a representative

groundwater contour map, it was determined that piezometers would be placed in the vicinity of these monitoring wells, and water levels from these locations would be utilized in calculating the groundwater flow across the Site. Piezometers PZ-01, PZ-02, PZ-03, and PZ-04 were advanced either upgradient or sidegradient of monitoring wells MW-104, MW-106, MW-107, and MW-108, respectively (Drawing 1 in Attachment 2). These piezometers were constructed similarly to permanent groundwater monitoring wells.

A report entitled *Technical Memorandum, Additional Subsurface Investigations, August 2004, MacDermid, 526 Huntingdon Avenue, Waterbury, CT* (Technical Memorandum) was prepared by LEA to document the August 2004 additional investigation activities and results. A copy of this report is provided in Attachment 5. The Technical Memorandum describes in further detail the monitoring well and piezometer installation methodology, the groundwater sample collection activities, and the groundwater sample analytical laboratory results. The Work Plan is provided in Exhibit A of the Technical Memorandum (Attachment 5). Field documentation, well completion reports, and geologic boring logs associated with the August 2004 additional investigations are provided in Exhibits C, D, and F of the Technical Memorandum.

Site geology has been evaluated during the course of investigation activities completed at the Site by LEA and others. Geologic conditions encountered at the Site are variable. The unconsolidated vadose zone sediments beneath the Site range from grey brown and brown, fine to coarse sand with traces of gravel; a fill layer consisting of medium to coarse sand and building debris was identified in some boring locations to depths of approximately five feet below grade; to heterogeneous glacial outwash material (sub-rounded cobbles, gravels, and coarse-grained sand). These vadose zone deposits overlie a very uniform deposit of fine to very fine sand and silt that was encountered at a depth of approximately 17 to 60 feet below ground surface (bgs). The water table was encountered at depths of approximately 30 feet bgs within the very fine sand and silt stratum.

With the installation of two groundwater monitoring wells along the southeastern Site boundary in August 2002, one shallow and one deep monitoring well to the southwestern Site boundary in September 2003, two cluster monitoring wells and four piezometers in August 2004, and the existing monitoring wells, the groundwater monitoring well network at the Site is determined to be adequate in number and spatial distribution to assess the quality and flow direction of groundwater at the Site. A synoptic water-level measurement event and well survey was completed on all existing and newly installed monitoring wells and piezometers in August 2004, as described in the Work Plan (Exhibit 1 of the Technical Memorandum provided in Attachment 5). During the water-level measurement event, separate-phase product was observed in monitoring well MW-108 and piezometer PZ-04 above the groundwater table, indicating a light non-aqueous phase liquid (LNAPL) characteristic of a petroleum product. The thickness of product in monitoring well MW-108 was measured at 0.67 feet. The product thickness in piezometer PZ-04 was measured at 3.99 feet. Water levels measured in each of the wells during the water-level measurement event are provided on Table 4 of Exhibit E of the Technical Memorandum (Attachment 5).

During the well survey activities completed in August 2004 for all the existing monitoring wells and piezometers, the use of a magnetic locator was employed to locate monitoring well MW-103, which was found beneath heavy foliage and subsequently included as part of the well survey activities. Water-level measurements were obtained from all existing wells and piezometers.

Based on the well survey and water-level measurements completed in August 2004, a more accurate and refined groundwater contour map was developed. The calculated groundwater contours indicate that groundwater flow across the Site trends in a southeasterly towards the Naugatuck River. The groundwater contours associated with the August 2004 well survey and water-level measurements are illustrated on Drawing 3 – Groundwater Contour Map August 17, 2004, provided in Attachment 2.

Groundwater samples were collected from existing and newly installed monitoring wells (i.e., MW-101, MW-102, MW-103, MW-105, MW-109, MW-110, MW-111, MW-112, MW-113, MW-114, MW-115, MW-116S, MW-116D, MW117S, MW-117D, MW-118S, MW-118D) on August 12, 13, and 16, 2004 for laboratory analysis of volatile organic compounds (VOCs), cyanide, and RCRA 8 metals plus copper, nickel, and zinc. Tables 1 through 3 in Exhibit E of the Technical Memorandum summarize the analytical and sampling data for constituents detected in the August 2004 groundwater sample event. Analytical laboratory reports for the August 2004 groundwater sampling event are provided in Exhibit G of the Technical Memorandum (Attachment 5).

To address potential exposures to Environmental Samplers from contact with groundwater while collecting samples at the Site, the groundwater data collected from the Site in August 2004 were compared to the Federal Maximum Contaminant Levels (MCLs). Exceedances of the MCLs identified for the most recent sampling round include chromium, nickel, 1,1-dichloroethylene (1,1,-DCE), 1,2-dichloroethane (1,2-DCA), tetrachloroethylene (PCE), and trichloroethylene (TCE) in monitoring well MW-115. PCE concentrations exceeded the MCLs in monitoring wells MW-105, MW-109, and MW-110. With the exception of monitoring well MW-115, no other downgradient monitoring wells of MW-105, MW-109, and MW-110 exhibited constituents at concentrations that exceeded the MCLs. Concentrations of all other constituents were similar or less than previously detected in wells during the 2001, 2002, and 2003 sampling events. This includes cadmium, which exceeded the MCLs in prior sampling events, but not the most recent groundwater sampling event. A decrease in concentrations, particularly metals, may be due to the use of modified low-flow groundwater sampling techniques utilized during the August 2004 groundwater sample collection event, versus the use of bailers in the 2002 and 2003 groundwater sample events.

Analytical laboratory reports for the 2002 and 2003 groundwater sampling events are provided in Attachment 7. Table 2, provided in Attachment 6, includes a summary of exceedances of the MCLs for groundwater collected at the Site.

Per the Work Plan, additional research and evaluations to address the presence of downgradient industrial groundwater supply wells were completed to verify if the wells are still in use (despite public water supply connections) and if the use of the groundwater poses a health risk. In February 2001, HRP Associates, Inc. completed a report entitled *Well Receptor Survey, MacDermid, Inc., 526 Huntingdon Avenue, Waterbury, Connecticut (*2001 Well Receptor Survey*)*, which was included in the January 2004 EI, and is provided in Attachment 8. This 2001 Well Receptor Survey was conducted to identify public and private water supply sources (potential receptors) in what was deemed to be downgradient and sidegradient areas of the Site. The extent of the 2001 Well Receptor Survey encompassed the area within: 1,400 feet to the south (Steele Brook and Naugatuck River); 1,000 feet to the northeast (Route 8); 700 feet to the east (Naugatuck River); and, 1,000 feet to the west (Steele Brook). Five water supply wells and four industrial water supply wells were identified, but the operational status of these wells was not defined. These wells are described in the 2001 Well Receptor Survey as follows:

- Wells 12 and 12A located at 526 Huntingdon Avenue (formerly Waterbury Steel Ball Co.) were completed in 1925 and 1947, respectively. Well 12 was listed as currently unused and well 12A was listed as being a well used to withdraw water for air conditioning.

- Wells 341, 341A, and 341B located at 237 E. Aurora Street, LEA Manufacturing Company, were completed in 1957, 1966, and 1967, respectively. Well 341 was listed as currently unused, and wells 341A and 341B were listed as used for industrial purposes.

- Well 343, located at 000 East Aurora Street (formerly Brock-Hall Dairy Company), was completed as a well used to withdraw water in 1945 for air conditioning purposes.

In July 2004, LEA completed a more extensive well survey that attempted to identify the current use of the public/industrial wells identified in the 2001 Well Receptor Survey. The first step in identifying the current use of these public/industrial water supply wells was the completion of a document search comprising well completion reports, well abandonment reports, and any analytical data records filed at the Waterbury Department of Public Health. According to Mr. Paul Vitterelli of the Environmental Health Division of the Waterbury Department of Public Health, no information regarding groundwater related issues was found in any documentation kept on file for Wells 12, 12A, 341, 341A, 341B, and 343, or 240 Huntingdon Avenue.

A further search was performed at the State of Connecticut Department of Public Health (DPH). Mr. Raymond Jermana of the DPH informed LEA personnel on July 15, 2004 that private well records were not typically kept on file at DPH and indicated that the local city health department should be contacted for such information. Mr. Jermana did indicate that potable water supply well information was kept on file at DPH, Drinking Water Division. LEA personnel contacted the DPH Drinking Water Division on July 15, 2004 and was informed that, as part of the DPH Drinking Water Division Source Water Assessment Program, water supplies utilized for potable water were tested at least annually by DPH. Such testing also involved backflow prevention inspections for well supplies at sites that are cross connected to a public water supply system.

According to the DPH website, the only community water supply system located in Waterbury is operated by the Waterbury Water Department. There were no transient non-community (TCN) water supplies located in Waterbury and only five non-transient, non-community (NTNC) water supplies located in Waterbury, but none near the Site. A TCN is defined by DPH as a water system which provides water to a facility, such as a gas station or campground, where use or residence by fewer than 25 people occurs over a short period of time. These systems do not have to test or treat their potable water supply for contaminants that pose long-term health risks because fewer than 25 people drink the water over a long period of time. A NTNC water system is defined by DPH as a water system which supplies potable water to 25 or more of the same people over a period of at least six months per year in non-residential facilities such as schools, factories, office buildings, and hospitals with private water supply systems.

The Waterbury Water Department was contacted on July 15, 2004. According to Mr. Tom Caviello of the Waterbury Water Department, any backflow prevention inspections performed by the Water Department are submitted to DPH. As such, any inspections on file at the Waterbury Water Department would also be on file at the DPH.

Subsequently, files were reviewed at the State Department of Environmental Protection (DEP) and United States Geologic Survey (USGS). P-5 inspection files and permit applications for discharges to surface water or the sanitary sewer were reviewed at the DEP for sites known to have industrial water supply wells. The DEP file reviews confirmed that a P-5 inspection report had previously been completed for the property located at 237 East Aurora Street (LEA Manufacturing). In addition, a report entitled *Engineering Report on Modifications to Meet Acute Toxicity Limits at Waterbury Rolling Mills, Waterbury, CT*, prepared by Fuss & O'Neill and dated December 30, 1989, was reviewed at the DEP. The report contained a drawing, entitled "Water Flow Diagram – Sheet 1 of 2", that depicted a groundwater water supply well as a source for industrial use at the 240 Huntingdon Avenue (Rolling Mills Company) property.

A USGS file review did not reveal any new information, regarding Wells 12, 12A, 341, 341A, 341B, and 343, or the well located at 240 Huntingdon Avenue, Waterbury Rolling Mills. The only documentation found for these wells at the USGS is provided in the 2001 Well Receptor Survey.

Based on LEA's 2004 industrial/public well survey, it appears that the industrial supply wells at 237 East Aurora Street and 240 Huntingdon Avenue are used solely for industrial use. The water wells located at 526 Huntingdon Avenue, 420 Huntingdon Avenue, and at least a portion of 000 East Aurora Street are now owned by MacDermid. The industrial supply wells at the Site are not used for potable water supply. Therefore, the wells identified in the 2001 Well Survey do not appear to be used for potable water supply and as such, groundwater in these wells does not pose a health risk.

The potential for exposure to residents by indoor air impacted by volatile organic compounds in groundwater was indeterminate at the time of the submittal of the *Conceptual Site Model and Screening Levels, MacDermid Incorporated* in May 2002, due to the lack of data to verify groundwater flow direction, depth to groundwater, and potential for volatilization of contaminants from Site groundwater. Since that time, a pair of nested monitoring wells (MW-116S and MW-116D) was installed in September 2003, and two on-site cluster wells (MW-117S/MW-117D and MW-118S/MW-118D) were installed in August 2004. The nested and cluster wells were advanced along the Site boundary facing Huntingdon Place in order to determine the potential for off-site residents to the west of the Site to be exposed to contamination via indoor air inhalation. These wells were installed to span the water table (MW-116S, MW-117S, MW-118S) and at the bedrock surface (MW-116D, MW-117D, MW-118D). Groundwater contours were created from the data collected during the August 2004 groundwater sampling event. These contours show that groundwater beneath the Site flows to the southeast toward the Naugatuck River, and parallel to the residential properties (Drawing 3 in Attachment 2).

In September 2003, vinyl chloride was present in monitoring well MW-116D at a concentration of 5.5 micrograms per liter (μg/l) which exceeded the current residential Volatilization Criteria (VC) of the Connecticut Department of Environmental Protection (CT DEP) Remediation Standard Regulations (RSRs). Exceedances of the current residential VC are provided in Table 3a of Attachment 6. Groundwater samples collected from MW-116S, MW-116D, MW-117S, MW-117D, MW-118S, and MW-118D in August 2004 were compared to the residential (VC) and the revised residential VC tabulated within the report entitled *Proposed Revisions, Connecticut's Remediation Standard Regulations, Volatilization Criteria,* prepared by the Permitting, Enforcement and Remediation Division, Bureau of Water Management, Connecticut Department of Environmental Protection, dated March 2003, and provided in Attachment 6. The CT DEP's proposed revised residential (VC) were promulgated to be more consistent with the EPA Draft Guidance *Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soil* that was issued in November 2002.

In addition, the CT DEP's proposed revisions indicate that "the depth to groundwater in which these criteria (proposed) should be applied as has been increased to 30 feet...". Depth to water at all the monitoring wells along the western boundary (MW-116S, MW-116D, MW-117S, MW-117D, MW-118S, and MW-118D) are greater than 30 feet below ground surface (Table 4 in Exhibit E of the Technical Memorandum) and as such, the VC would not apply.

Based on a review of groundwater analytical data collected in July 2002, September 2002, September 2003, and August 2004, the depth to water in monitoring wells MW-116S, MW-116D, MW-117S, MW-117D, MW-118S, and MW-118D at greater than 30 feet bgs, and groundwater flow across the Site in a southeasterly toward the Naugatuck River, it is concluded that contaminated groundwater at the Site does not have the potential to impact abutting residential properties to the southwest. Therefore, the exposure pathway between nearby residents and impacted indoor air from volatilization of contaminants is not considered a complete and as such, groundwater does not pose a risk to human health.

There are several commercial facilities situated southeast of the Site, downgradient of flow direction. A comparison of the VOC concentrations in groundwater samples collected from downgradient monitoring wells along the south, southeastern and eastern monitoring wells (MW-111, MW-113, MW-114, and MW-115) was performed against the CT DEP's current and proposed revised industrial/commercial VC criteria (industrial/commercial VC were used fro comparison since there are no residential properties downgradient of the Site). The results of the comparison indicate there were no VOC concentrations that exceeded the revised industrial/commercial VC CT DEP. Although 1,1-DCE in monitoring well MW-115 does exceed the current industrial/commercial VC (Table 3b of Attachment 6) identified in the RSRs, the revised industrial/commercial VC is more representative of the EPA's guidance document and is considered to be applicable to this EI.

Although groundwater at the time of the most recent measurement of water levels is at depths greater than 30 feet bgs, changes to topography and/or changes in water level can bring groundwater depths to less than 30 feet. Groundwater discharging from the Site is considered a complete exposure pathway. However, VOC concentrations downgradient of the Site are below the revised industrial/commercial VC, and as such, do not pose a human health risk to off-site workers (receptors) in the commercial facilities situated along southeast (and south) of the Site.

Air (Indoor)

Volatilization of contaminants in groundwater is unlikely because depth to groundwater measurements indicate groundwater is approximately 30 feet below grade to 37 feet below grade as shown on Table 4 in the Technical Memorandum. The potential human pathway in this instance would involve volatilization of contaminants from impacted groundwater into the vadose zone, migration through the soil column into indoor air space and inhalation by the receptor. However, according to the EPA *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater to Soils*, exposure to volatile organic compounds from depths of 100 feet should be considered a potential pathway for air exposure.

Monitoring well MW-115 is located downgradient of one building structure at the Site (Drawing 1 in Attachment 2). As stated in the previous section, the VC are appropriately applied to groundwater at the Site at depths up to 30 feet below grade. Based on the locations of these wells and the EPA Guidance document, the potential for indoor air exposure from volatilization of these compounds in groundwater should be considered. However, MacDermid has substantially closed this facility and the building is vacant. Because operations have ceased and there is no intent to resume operations at this facility, the absence of workers at this facility eliminates a complete exposure pathway for indoor air, as long as the building remains vacant. In addition, contaminant concentrations in the most recent groundwater sampling event did not exceed the revised industrial/commercial VC. Also, the direction of groundwater flow to the southeast precludes contaminated groundwater at the Site from potentially impacting abutting residential properties located to the north and west of the Site, as discussed above.

Surface Soil

Four soil samples were collected from locations in exposed areas on the northwest and the southwest corners of the Site. These samples were collected at a depth of 0 to 0.5 feet below ground surface on July 30, 2002. The soil data obtained from this surface soil sampling conducted at the Site were compared to the Connecticut RSR Residential Direct Exposure Criteria (RDEC). Soil sampling conducted as part of the Voluntary Corrective Action Program (VCAP) was completed in areas where an exposure pathway exists (i.e. exposed soil, grass, and landscaped areas) and from areas possessing the greatest potential for impact, due to former active manufacturing operations (on the SOUTH parcel).

A consideration of activities conducted on the NORTH parcel was completed as part of the evaluation of potential contamination in Site surface soil. In particular, the use of a portion of the NORTH parcel for the disposal and subsequent capping of potentially-contaminated soil that emanated from metal hydroxide lagoons on the SOUTH parcel combined with the identification of drum disposal on the NORTH parcel were considered. During the period from 1978 to 1979, metal hydroxide sludge and soil from lagoons operated on the SOUTH parcel was excavated. Although conflicting information exists, MacDermid personnel have affirmed that only the soil removed from the lagoons was placed on the NORTH parcel; the sludge was shipped off-site for disposal. In 1986, the soil staging area on the NORTH parcel was capped in its entirety with a twelve-inch cover of processed aggregate (9-inches) and asphalt (3-inches). In 1981, metal hydroxide sludge material was sampled and analyzed for EP Toxicity (EPTOX) and in 1986, the potentially-contaminated soil excavated from the MacDermid property was sampled and analyzed for EPTOX. Silver was detected in the extract of two samples collected from potentially-contaminated soil collected from the sludge cell in 1986 at concentrations of 0.13 milligrams per liter (mg/l) and 0.14 mg/l. No other metals were detected in the two soil samples. EPTOX cadmium (0.02 mg/l to 0.04 mg/l) and chromium (0.19 mg/l to 0.24 mg/l) were detected in the extract of three composite sludge samples taken from drums at the MacDermid property located south of Huntingdon Avenue in 1981. No other metals were detected in the sludge samples collected for analysis.

Additionally, during relatively recent Site inspections of the NORTH parcel, two drums were identified in an upland area located north of the soil cap. Numerous other drums were also identified on what was thought to be the MacDermid-owned parcel; however subsequent survey data confirmed that only two of the drums were located on the MacDermid parcel. The drums that were identified on the NORTH parcel were found without covers, crushed, and free of content. MacDermid personnel confirmed that these empty drums were not placed on the NORTH parcel as a result of MacDermid activity, but rather were disposed of by others. Based on the as-found condition, upland location of the drums, and the remote, steep terrain conditions, it is unlikely that the drums could have been disposed of intact and containing material; therefore, soil sampling beneath the drums was deemed unnecessary and these areas are not considered to be a potential source of soil contamination.

The majority of the NORTH parcel has historically been vacant and undeveloped with the exception of a residence on the southernmost portion of the Site. MacDermid began using the 50 foot by 95 foot section of the NORTH parcel as the Former Disposal Area in 1978. The remainder of the NORTH parcel has remained undeveloped and unused by MacDermid. Because the only potential source of exposure from surficial soil on the NORTH parcel has been capped since 1986, there is not a risk of exposure from this area. Photographs of the condition of the bituminous asphalt covering the Soil Disposal Area and condition and location of the drums are included in Attachment 9.

The sample data set is adequate to assess the quality of surface soil in those areas likely to be encountered by Excavating Laborers, Groundskeepers, Environmental Samplers and Trespassers. Furthermore, that data set was collected from areas of the Site possessing the greatest potential to have been impacted by former Site manufacturing operations. No exceedances of the RDEC were noted for the surface soil samples collected at the Site. The locations of historic and recent soil sampling locations are depicted on Drawing 4 in Attachment 2. This drawing also provides a summary of analytical data collected for soil sampling conducted at the Site.

Surface Water

Two surface water bodies located near the Site, the Naugatuck River and Steele Brook are approximately 1,000 feet southeast and southwest of the Site, respectively. With the recent installation of overburden groundwater monitoring wells along the southwest portion of the Site, and piezometers, groundwater flow across the Site trends

in a southeasterly direction towards the Naugatuck River. With the exception of a 1994 release of copper etchant to the storm drain system that discharges to Steele Brook, there is no potential for impact to Steele Brook. Following this release of copper etchant into the Steel Brook through the stormwater catchbasins, 30,000-gallons of water and etchant were removed from Steele Brook under the supervision of the CT DEP.

An evaluation was completed by the Connecticut DPH for the Chase Brass Copper Site, which is located approximately 1 mile upstream of the MacDermid site on the Naugatuck River, and summarized in a report entitled, Chase Brass and Copper Site, Waterbury, New Haven County, Connecticut, EPA Facility ID: CTD000856708, prepared by the Connecticut Department of Public Health, and dated March 7, 2002 (DPH Report). The DPH Report stated that "common eel, brown trout, fall fish, brook trout, dace and clams live in the river and fishing is popular in the area [of the Chase Brass Copper Site]." Furthermore, the DPH Report indicated that the Naugatuck River was used for fishing from the shoreline at the Chase Brass and Copper facility by trespassers.

To further assess whether a full survey of upgradient and downgradient sections of the waterbody have been conducted by MacDermid to determine accessibility, or whether the local health board or other agency has been contacted with regards to recreator use of the surface water bodies in the vicinity of the site, a detailed evaluation was completed. This evaluation encompassed a physical survey of the environment surrounding the Naugatuck River and interviews with applicable agencies.

The physical survey was completed along the stretch of the Naugatuck River from the point where Hancock Brook merges with the Naugatuck River to the West Main Street Bridge at Route 8 to determine the potential locations of accessible paths and docks, and the potential presence of recreators fishing or operating water crafts. This particular stretch of the Naugatuck River was chosen for the physical survey based on the determination that groundwater discharged from the Site to surface water along this area. Of immediate note was the infeasibility to access the Naugatuck River from the west bank due to the presence of a major interstate highway identified as Route 8. The topography of land between Route 8 and the west bank of the Naugatuck River is steeply sloped and heavily vegetated. Similarly, industrial and commercial development, heavy foliage, and lack of pathways along the eastern bank of the Naugatuck River provide extensive limitations for recreator access. In addition, it was observed that there did not appear to be any docks that could potentially be used by recreators to dock crafts or complete any recreational fishing activities. Photographic documentation of the Naugatuck River is provided in Attachment 9.However, that does not eliminate the potential for boaters to navigate through the stretch of the Naugatuck River from upgradient or downgradient areas not identified in the physical survey.

An interview was conducted with Mr. Bob Orciari, a fisheries biologist, with the Connecticut Department of Environmental Protection (DEP) Bureau of Natural Resources Fisheries Division on July 22, 2004. The interview incorporated queries as to recreator fishing and accessibility to the Naugatuck River along the stretch of the River mentioned above. Mr. Orciari confirmed that recreator fishing along the shoreline did occur along this stretch. In addition, there is only one access point along this stretch, located adjacent to the eastern bank of the Naugatuck River along Thomaston Avenue. Mr. Orciari also indicated that at one time in the past, Trout Unlimited hosted a small fishing gathering. Since that time, there haven't been any fishing tournaments or gathering hosted by associations or companies.

To further determine if groundwater that discharges to the surface water of the Naugatuck River may be contaminated from former Site operations, existing and newly installed monitoring wells were sampled for VOCs, cyanide, and RCRA 8 metals plus copper, nickel, and zinc in August 2004. A comparison of the August 2004 groundwater sample analytical laboratory results was performed against the Surface Water Protection Criteria (SWPC) tabulated in the CT DEP RSRs. It was determined that only one VOC constituent was detected in one

downgradient monitoring well (based on groundwater flow direction) along the southeastern Site boundary that exceeded the SWPC. Tetrachloroethylene (PCE) was present in monitoring well MW-115 at a concentration of 280 micrograms per liter (µg/l). Table 5 in Attachment 6 tabulates constituent concentrations exceeded the SWPC.

An alternative SWPC criterion was calculated for PCE in accordance with the methodology described in the RSRs using the human health criterion for "organisms only", as tabulated in Appendix D of the State of Connecticut Water Quality Standards. For PCE, the human health criteria for "organisms only" is 8.85 µg/l. According to the RSR, an alternative, site-specific SWPC may be calculated for a site in order to determine whether groundwater discharging from a specific site has the potential to affect water quality in the surface water body to which such groundwater discharges. In this case, groundwater flowing beneath the Site discharges to the Naugatuck River, located approximately 1,000 feet southeast of the Site. Calculations to determine an alternative SWPC were performed in accordance with the methodology provided in Section 22a-133k-3 (b)(3)(A) of the RSR. The 7Q10 for the Naugatuck River was obtained from report entitled, *Total Maximum Daily Load Analysis for the Upper Naugatuck River, Thomaston, CT*", prepared by the Connecticut Department of Environmental Protection. The value of 12.6 cubic feet per second given in that report for the 7Q10 of the Naugatuck River at Thomaston, Connecticut, was actually a very conservative value in terms of the actual 7Q10 for the Naugatuck River in the vicinity of the MacDermid facility, since Thomaston is located a considerable distance upstream of Waterbury. Therefore, if the concentrations at the site are below the conservatively calculated alternative SWPC, there can be a high level of assurance that the groundwater discharging from the Site to the Naugatuck River will not result in a condition that would pose a risk to human health.

To further increase the conservative nature of the assessment of the potential risk associated with groundwater discharging from the Site to the Naugatuck River, the plume of groundwater exiting the Site exhibiting contamination due to the PCE was estimated conservatively to exhibit a width of approximately 970 feet along the southeastern property boundary. The more likely width of the plume for which elevated PCE concentrations (concentrations in excess of the tabulated SWPC identified in the RSRs) are believed to be present is closer to 280 feet.

According to *The Bedrock Geology of the Waterbury Quadrangle* published in 1967 by the State Geological and Natural History Survey of Connecticut and the depths at which refusal was reached at locations on the Site where deep monitoring wells were installed, the approximate depth to bedrock near the Site is 60 feet below grade. This was conservatively established as the lower bound of the plume of groundwater exiting the Site at a concentration of 280 µg/l. As the depth to groundwater below the Site is approximately 30 feet, an estimated saturated thickness of contamination in groundwater below the site is 30 feet. The groundwater discharge in this area was calculated conservatively using the dimensions of the plume and an average hydraulic conductivity (K) of 56 feet per day, which was determined based upon the nature of the unconsolidated materials in the saturated zone -- a very fine to fine sand. The average horizontal hydraulic gradient was calculated using the groundwater contours from the August 2004 groundwater sampling event and was calculated to be 0.004 feet/foot. The groundwater discharge (K * hydraulic gradient * area of the plume) for the Site was calculated to be 272, 160 cubic feet/day. As described in the RSRs, 25% of the 7Q10 for the river was then divided by the volume of plume discharging to the river, which resulted in a dilution factor of 41.7, which is again, a very conservative value for this Site.

To calculate an alternative SWPC for the Site, the human health criteria for "organisms only" of 8.85 µg/l was multiplied by the calculated dilution factor of 41.7, resulting in a very conservative estimate for an alternative SWPC for PCE discharging from the Site of 369 µg/l. Consequently, the PCE concentration of 280 µg/l that was detected in groundwater from monitoring well MW-115 is less than the calculated alternative SWPC of 369 µg/l,

indicating that groundwater discharging from the Site does not pose a risk to human health via a surface water pathway.

Based on the DPH report, the physical survey, and the interview with Mr. Orciari of the DEP, there is one access point along the stretch of the Naugatuck River where the physical survey was completed, and that recreator fishing from the shoreline does occur along this stretch. However, PCE concentrations in MW-115 are below the calculated alternative SWPC. As such, exposure to surface water and ingestion of fish is not considered to pose a human health risk. No surface water samples have been collected from the Naugatuck River or Steele Brook as part of this investigation.

Sediment

Exposure to sediment can potentially occur near the MacDermid facility in the Naugatuck River. As with surface water exposures, sediment quality can potentially be impacted by groundwater discharge to surface water. In order to assess potential impact to sediment, groundwater samples were compared to the SWPC. Sediment quality may also have been impacted by a release of copper etchant in 1994 to MacDermid stormwater catchbasins that discharge to Steele Brook. As a result of this release, the *RCRA Corrective Action Stabilization Report* prepared by HRP states that approximately 30,000-gallons of water and copper etchant were removed from Steele Brook under the supervision of DEP. Following the removal of contaminated water from the Steele Brook, HRP collected eighteen sediment samples from Steele Brook and the Naugatuck River, including two upstream of the discharge in Steele Brook. The sediment samples were analyzed for copper, nickel, lead, and zinc. The results of the assessment indicate that concentrations of copper were generally highest at the point of discharge into Steele Brook with declining concentrations further downstream. Two exceptions were noted in the concentrations of nickel and zinc, which were reported at higher concentrations in background sediment samples collected upstream in the Naugatuck River versus at the point of the release. Although 1994 data suggests this medium may be contaminated, a complete exposure pathway is not present due to access limitations. Photographs along Steele Brook are included in Attachment 9 to document the overgrowth of vegetation and confirm accessibility limitations. No sediment samples were collected from the Naugatuck River or Steele Brook as part of the most recent investigations completed at the Site.

As discussed above, there is one access point along the stretch of the Naugatuck River where the physical survey was completed, and that recreator fishing from the shoreline does occur along this stretch. An alternative SWPC was calculated for PCE, whose concentration exceeded the SWPC in MW-115. As mentioned previously, a DF was calculated for groundwater discharging from the Site to the Naugatuck River. With the inclusion of the DF, concentrations of constituents in groundwater discharging to the Naugatuck River would be at such low levels as to not adversely impact sediment. No sediment samples have been collected from the Naugatuck River or Steele Brook as part of this investigation.

Subsurface Soil and Trench Air (Outdoor Air)

Subsurface soil and trench air are reasonably expected to be contaminated. Exposure to these media is controlled through an institutional control at the Huntingdon Avenue Facility. This institutional control is described in greater detain in response to Question 3.

Footnotes:

1 "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

2 Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

Contaminated Media	Residents	On-Site Workers	Off-Site Workers	Trespassers	Recreation	Food[3]
Groundwater		YES	NO			NO
Air (indoors)	NO	NO	NO			
Surface Water					NO	NO
Sediment					NO	NO
Soil (surface)		NO	NO	NO		NO
Soil (subsurface e.g., >2 ft)		YES	NO			NO
Air (outdoors)		NO	NO			

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated") as identified in #2 above.
2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

__X__ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

Groundwater

Groundwater beneath the Site may not be suitable for direct human consumption due to waste discharges, spills or leaks of chemicals or other land use impacts and has been assigned a classification of "GB" by the DEP. The "GB" groundwater classification includes the Site and surrounding areas within 1.0 mile to the south, east and west. The southern portion of the MacDermid NORTH parcel is also classified "GB". Based on information provided in the May 23, 2001 *"RCRA Corrective Action Stabilization Report"*, and depth to groundwater data collected during August 2004, groundwater beneath the SOUTH parcel ranges between 29.80 and 36.90 feet below grade.

The results of the local well receptor survey have shown that there are no known active potable water supply wells in the immediate Site area that could be impacted by potential groundwater contamination emanating from the Site. The results of the survey are included as Attachment 8.

Because the Site is located in an industrialized urban area, there are no agricultural uses on the Site or in the immediate vicinity of the Site. As such, there is no potential for exposure of food sources to groundwater that flows beneath the Site.

Environmental Samplers were identified in the *Conceptual Site Model and Screening Levels* as having an exposure pathway for groundwater. As described under Question No. 2 above, there are identified exceedances of the screening criteria for this exposure receptor, media and pathway. The significance of these exceedances will be discussed in Question 4 below.

Air (Indoor)

Volatilization of contaminants in groundwater is unlikely because depth to groundwater measurements indicate groundwater is approximately 30 feet below grade to 37 feet below grade as shown on Table 4 in the Technical Memorandum. The potential human pathway in this instance would involve volatilization of contaminants from impacted groundwater into the vadose zone, migration through the soil column into indoor air space and inhalation by the receptor. However, according to the EPA *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater to Soils*, exposure to volatile organic compounds from depths of 100 feet should be considered a potential pathway for air exposure.

Monitoring well MW-115 is located downgradient of one building structure at the Site (Drawing 1). As stated in the previous section, the VC are appropriately applied to groundwater at the Site at depths up to 30 feet below grade. Based on the locations of these wells and the EPA Guidance document, the potential for indoor air exposure from volatilization of these compounds in groundwater should be considered. However, MacDermid has substantially closed this facility and the building is vacant. Because operations have ceased and there is no intent to resume operations at this facility, the absence of workers at this facility eliminates a complete exposure pathway for indoor air, as long as the building remains vacant. In addition, contaminant concentrations in the most recent groundwater sampling event did not exceed the revised industrial/commercial VC. Also, the direction of groundwater flow to the southeast precludes contaminated groundwater at the Site from potentially impacting abutting residential properties located to the north and west of the Site, as discussed in Question 2.

Trench Air (Outdoor Air) and Subsurface Soil

Excavating Laborers (on-site workers) were identified as having an exposure pathway for outdoor air (trench air) and subsurface soil. However, the implementation of an institutional control will control these receptors' exposures to contaminants in groundwater, subsurface soil, and trench air (outdoor air encountered during performance of excavation of subsurface soil). The implementation of the Project Activity Analysis (PAA) process controls worker exposure to contaminants in subsurface soil, and trench air (outdoor air encountered in a trench during performance of an excavation). A PAA is completed prior to any activity that results in the excavation of soil (the potential source of exposure to constituents in groundwater, subsurface soil and air, due to soil movement). The PAA includes an assessment of available analytical data for soil and groundwater in the area where the proposed activity will occur. If no data are available, or if existing data are incomplete, samples are collected. The data for the areas are compared to the screening levels as discussed in this EID. If there are exceedances of applicable screening levels, all subsurface work in the area is conducted by personnel who have received appropriate health and safety training.

The purpose of the PAA process is to provide the basis for a consistent approach to ensure that potential worker exposures to various environmental media resulting from facility modifications are evaluated prior to the implementation of a modification. The PAA process is primarily focused on the evaluation of potential human exposure to environmental contaminants in soil and groundwater. Any facility modification that could result in a human exposure to soil or outdoor air (trench air) is subject to the PAA process. Typical facility modifications addressed by the PAA process include, but are not limited to:

- Onsite underground utility repair;
- Onsite landscaping (involving excavation to depths greater than 6-inches; routine maintenance would not be included);
- Onsite excavation outside of landscaped areas to any depth;
- Pavement replacement; and
- Removal of building structures including flooring.

For reference purposes, a guide process flow chart has been included at the end of this report as Attachment 10. The PAA process flow chart illustrates the decision steps of the process. However, MacDermid has substantially closed this facility and the building is vacant. Because operations have ceased and there is no intent to resume operations at this facility, the absence of workers at this facility eliminates a complete exposure pathway for indoor air, as long as the building remains vacant.

Because the Site is located in an industrialized area, there are no agricultural activities in the vicinity of the Site and potential exposure of food sources to contaminated soil or trench air is not considered a possible pathway.

Surface Water

As discussed above, the Naugatuck River is located approximately 1,000 feet southeast of the Site and is the discharge point for groundwater flowing beneath the Site. The discharge point was determined by calculation of groundwater flow direction, evaluation of depth to groundwater, distance to the river and approximate 40 foot decrease in topographic relief from the Site to the Naugatuck River. Sections of Steele Brook that are not developed by industrial facilities are overgrown with vegetation preventing access to the brook, as shown in the photographs provided in Attachment 9. This surface water exposure pathway for this surface water body (Steele Brook) is considered incomplete.

The report entitled *Conceptual Site Model and Screening Level* prepared for the Site in May 2002 indicates that exposure to Site contaminants via ingestion of fish should be considered as a potential pathway because chemicals that bioaccumulate in fish could be transported by groundwater discharging from the Site. As discussed in further detail in Question 2 above, recreator fishing from the shoreline does occur along the stretch of the Naugatuck River where groundwater from the Site discharges, and such, is considered a complete pathway.

Sediment

Following the release of copper etchant to the Steel Brook in 1994, 30,000-gallons of water and copper etchant were removed from the brook under the supervision of DEP. Subsequently, eighteen sediment samples were collected and analyzed for copper, nickel, lead, and zinc. Concentrations of these metals were highest at the discharge point into

the Steele Brook and generally decreased downstream toward the confluence with the Naugatuck River. The RSR do not include remediation standards for sediment. However, for the purposes of determining exposure risk for Off-Site Recreators, laboratory results from the 1994 sediment sampling were compared to the DEC. None of the constituents detected in the sediment samples collected from Steele Brook and Naugatuck River exceeded the residential DEC.

As discussed, groundwater flow direction trends in a southeasterly direction towards the Naugatuck River. As with the surface water pathway, potential impacts to Recreators from contact with sediment within the Naugatuck River are dependent on the quality of the groundwater that flows beneath the Site and discharges into this surface water body. A discussion of the accessibility of sediment at Steele Brook and the Naugatuck River is provided in the "Surface Water" section above. Based upon the results of the sediment sampling in 1994 and the inaccessibility of Steele Brook, exposure to sediment and exposure via ingestion of fishing in Steele Brook is not considered a complete pathway.

As with exposure to Recreators discussed above, exposure to sediment and exposure via ingestion of fish is considered an complete pathway at the Naugatuck River because there are accessible areas for recreational fishing downgradient of the Site.

3 Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

4 Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

__X__ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

As discussed in Question 3 above, indoor air is not considered to have a complete pathway because the depth of groundwater at the Site is greater than 30 feet below grade and volatilization of contaminants is not considered significant. Although exposures to trench air (outdoor air) and subsurface soil are regulated by implementing an institutional control that determines the extent and concentration of contamination in an area of proposed activity and prevents unqualified personnel from working in these areas, MacDermid has substantially closed this facility and the building is vacant. Because operations have ceased and there is no intent to resume operations at this facility, the absence of workers at this facility eliminates a complete exposure pathway for indoor air, as long as the building remains vacant.

As discussed below, potential exposures to environmental samplers from groundwater beneath the Site can not reasonably be expected to be significant.

Groundwater

As discussed in Question No. 2, exceedances of the MCLs were identified in three monitoring wells (MW-103, MW-109, and MW-115) during the August 2004 groundwater sampling. Exceedances of the MCLs were identified in four groundwater samples collected during the July and September 2002 groundwater sampling events. Prior to 2002, exceedances of the MCLs were detected in two groundwater samples collected in 2001, in two of the same monitoring wells where exceedances were identified in 2002. Exceedances of the MCL were identified in 2002 for cadmium, chromium, nickel, 1,1-dichloroethylene, 1,2-dichloroethane, tetrachloroethylene, and trichloroethylene. The concentrations of these constituents only slightly exceed the MCL, with the exception of those (volatile organic compounds only) detected in the recently installed monitoring well MW-115 where the concentrations of VOCs are two to seven times greater than the MCL. In 2003, an exceedance of the MCL for cadmium was reported in well MW-109, and exceedances of the MCL for 1,1-dichloroethylene and tetrachloroethylene were reported in MW-115. In 2004, exceedances of the MCLs included chromium, nickel, 1,1-dichloroethylene (1,1,-DCE), 1,2-dichloroethane (1,2-DCA), tetrachloroethylene (PCE), and trichloroethylene (TCE) in monitoring well MW-115. PCE concentrations exceeded the MCLs in monitoring wells MW-105, MW-109, and MW-110. With the exception of

monitoring well MW-115, no other downgradient monitoring wells of MW-105, MW-109, and MW-110 contained constituents at concentrations that exceeded the MCLs.

Although the exposure pathway from groundwater to Environmental Samplers is considered complete, exposure to contaminants in groundwater will be minimized through implementation of health and safety controls. Only personnel who have received appropriate health and safety training and who are familiar with available data and potential hazards associated with contact with groundwater at the Site will conduct groundwater sampling at the Site, therefore exposures can not be reasonably expected to be significant.

Groundwater Discharging to Surface Water and Sediment

Based on the DPH report, the physical survey completed in August 2004, and the interview with Mr. Orciari of the DEP, there is one access point along the stretch of the Naugatuck River where the physical survey was completed, and that recreator fishing from the shoreline does occur along this stretch. However, PCE concentrations in MW-115 are below the calculated alternative SWPC. As such, surface water, sediment, and ingestion of fish are not considered to pose risk to human health although they are complete exposure pathways for human health risk exposure for the Naugatuck River. No surface water samples have been collected from the Naugatuck River or Steele Brook as part of this investigation.

Sediment quality may also have been impacted by a release of copper etchant in 1994 to MacDermid stormwater catchbasins that discharge to Steele Brook. As a result of this release, the *RCRA Corrective Action Stabilization Report* prepared by HRP states that approximately 30,000-gallons of water and copper etchant were removed from Steele Brook under the supervision of DEP. Following the removal of contaminated water from the Steele Brook, HRP collected eighteen sediment samples from Steele Brook and the Naugatuck River, including two upstream of the discharge in Steele Brook. The sediment samples were analyzed for copper, nickel, lead, and zinc. The results of the assessment indicate that concentrations of copper were generally highest at the point of discharge into Steele Brook with declining concentrations further downstream. Two exceptions were noted in the concentrations of nickel and zinc, which were reported at higher concentrations in background sediment samples collected upstream in the Naugatuck River versus at the point of the release. Although 1994 data suggests this media may be contaminated, a complete exposure pathway is not present due to access limitations. Photographs along Steele Brook are included in Attachment 9 to document the overgrowth of vegetation and confirm accessibility limitations. No sediment samples were collected from the Naugatuck River or Steele Brook as part of the most recent investigations completed at the Site.

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

5 Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a Site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- *continue and enter "NO" status code after providing a description of* each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s):

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

__X__ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the MacDermid Incorporated facility, EPA ID #**CTD001164599**, located at 526 Huntingdon Avenue, Waterbury, Connecticut under current and reasonably expected conditions.
This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

____ NO - "Current Human Exposures" are NOT "Under Control."

____ IN - More information is needed to make a determination.

Completed by (signature) Date _____
(print)
(title)

Supervisor (signature) Date _____
(print)
(title)
(EPA Region or State)

Locations where References may be found:

_____
_____
_____
_____
_____

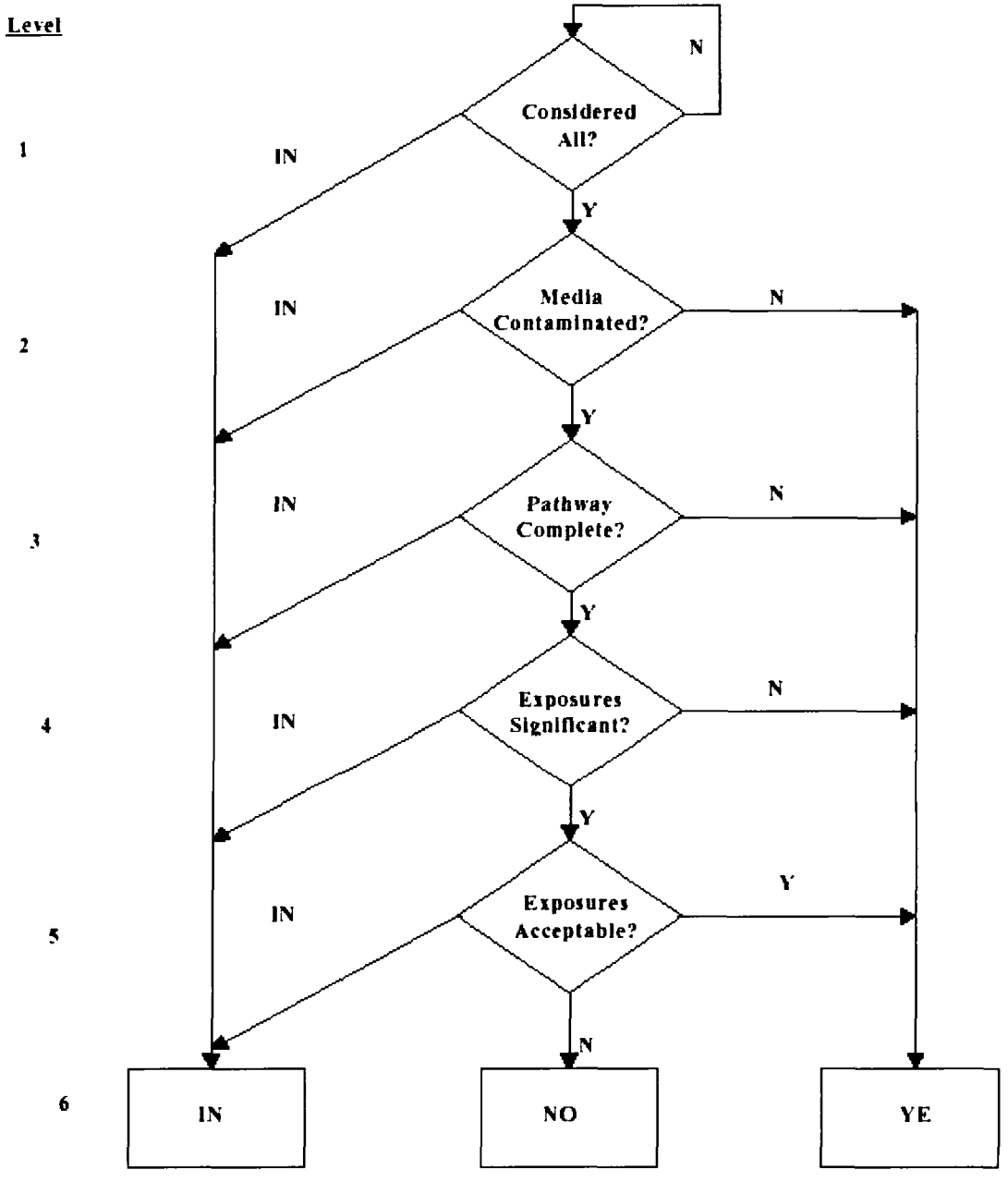
Contact telephone and e-mail numbers

(name) Mr. Richard Nave
(phone #) 203-575-5747
(e-mail) rnave@MacDermid.com

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE COPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

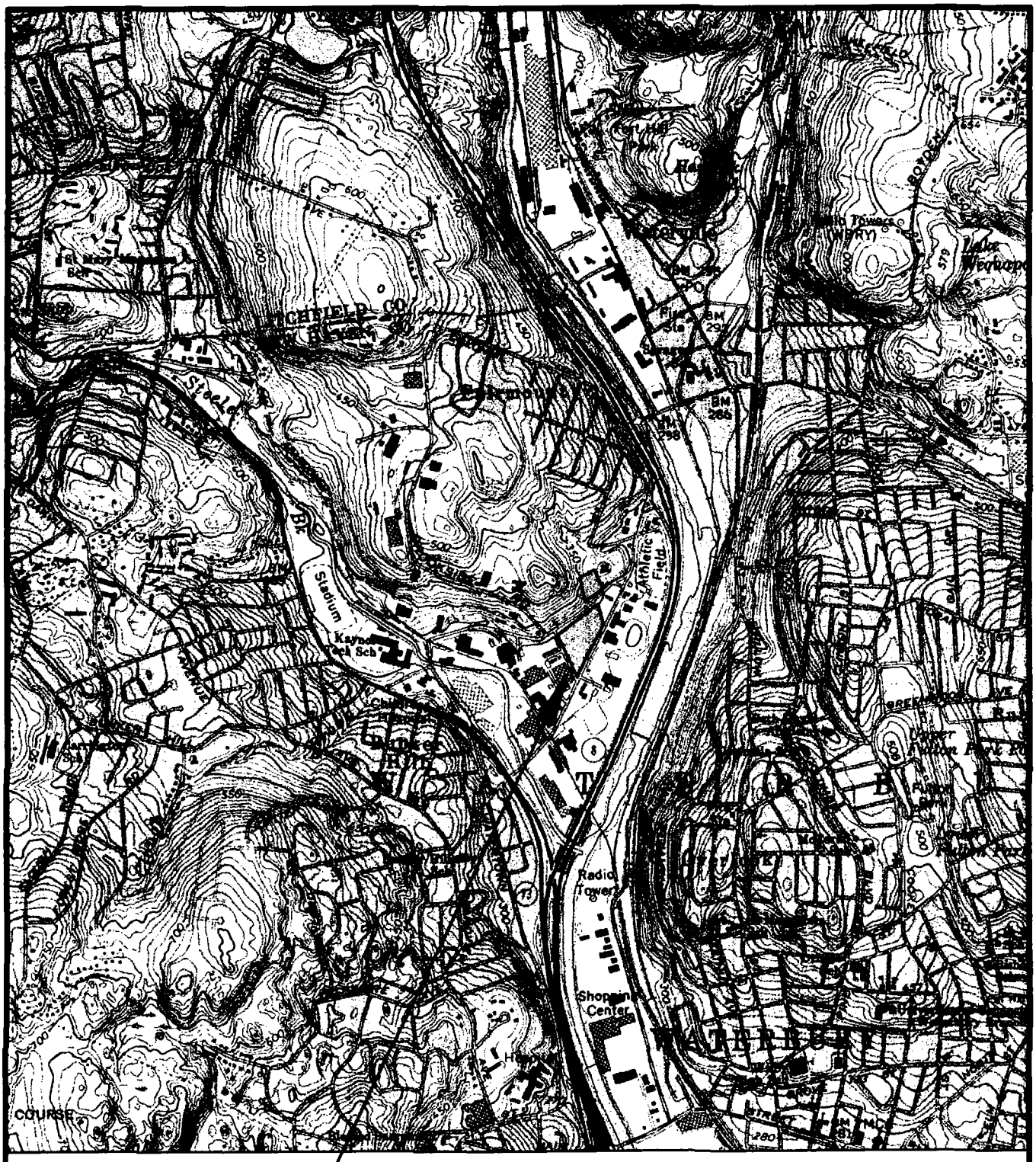
Facility Name: _____
EPA ID#: _____
City/State: _____

CURRENT HUMAN EXPOSURES UNDER CONTROL (CA 725)



Attachment 1

Figures



MAP REFERENCE:
USGS 7.5 MINUTE SERIES QUADRANGLE
WATERBURY, CONN. DATED 1968 AND
REVISED 1994

1000 0 1000 2000 3000

SCALE IN FEET

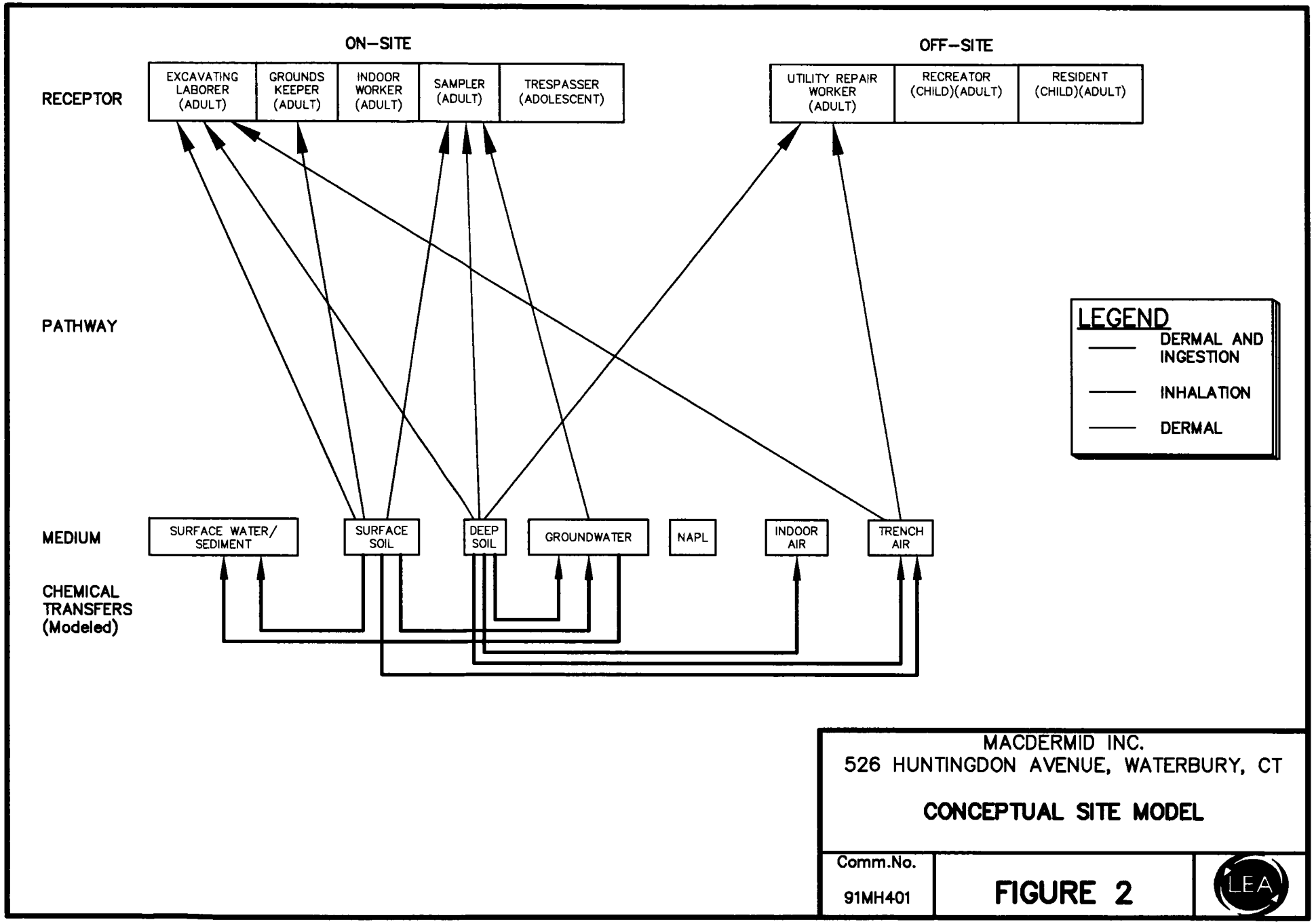
N

MACDERMID, INC.
526 HUNTINGDON AVENUE, WATERBURY, CT

LOCATION MAP
USGS TOPOGRAPHIC MAP

Comm.No.		
91MH401	**FIGURE 1**	LEA

91MH206-F1.dwg



MACDERMID INC.
526 HUNTINGDON AVENUE, WATERBURY, CT

CONCEPTUAL SITE MODEL

Comm.No.	FIGURE 2	LEA
91MH401		

91MH04-F2.dwg

Attachment 2

Drawings

US EPA New England
RCRA Document Management System
Image Target Sheet

RDMS Document ID # 102733

Facility Name: MacDermid Inc

Facility ID#: CTD001164599

Phase Classification: R-13

Purpose of Target Sheet:

[X] Oversized (in Site File) [ ] Oversized (in Map Drawer)

[ ] Page(s) Missing (Please Specify Below)

[ ] Potential FOIA Exempt [ ] Other (Please Provide Purpose Below)

Description of Oversized Material, if applicable:

Drawing 1: Site Plan 8/25/2004

[X] Map [ ] Photograph [ ] Other (Please Specify Below)

* Please Contact the EPA New England RCRA Records Center to View This Document *

US EPA New England
RCRA Document Management System
Image Target Sheet

RDMS Document ID # 102733

Facility Name: MacDermid Inc

Facility ID#: CTD001164599

Phase Classification: R-13

Purpose of Target Sheet:

[X] **Oversized** (in Site File) [ ] **Oversized** (in Map Drawer)

[ ] **Page(s) Missing** (Please Specify Below)

[ ] **Potential FOIA Exempt** [ ] **Other** (Please Provide Purpose Below)

Description of Oversized Material, if applicable:

Drawing 2: Site Detail North Parcel 8/25/2004

[X] **Map** [ ] **Photograph** [ ] **Other** (Please Specify Below)

*** Please Contact the EPA New England RCRA Records Center to View This Document ***

US EPA New England
RCRA Document Management System
Image Target Sheet

RDMS Document ID # 102733

Facility Name: MacDermid Inc

Facility ID#: CTD001164599

Phase Classification: R-13

Purpose of Target Sheet:

[X] Oversized (in Site File) [ ] Oversized (in Map Drawer)

[ ] Page(s) Missing (Please Specify Below)

[ ] Potential FOIA Exempt [ ] Other (Please Provide Purpose Below)

Description of Oversized Material, if applicable:

Drawing 4: Summary of Constituents Detected in Soil 8/25/2004

[X] Map [ ] Photograph [ ] Other (Please Specify Below)

* Please Contact the EPA New England RCRA Records Center to View This Document *

Attachment 3

2002 and 2003 Monitoring Well Completion Reports

WELL COMPLETION LOG

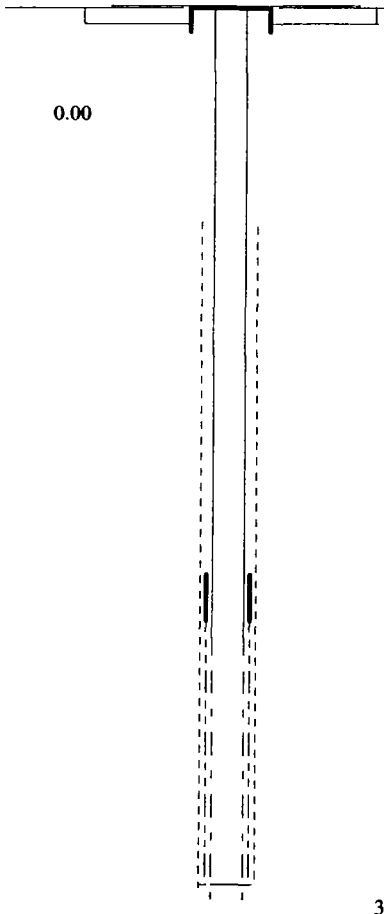
Project: RCRA corrective action assistance
LEA Commission Number 91MW206.004
Client MacDermid Incorporated - TCham
Location MacDermid - Huntingdon Avenue

Start Date 08/28/2002
End Date 08/28/2002

Well ID **MW-114**

Drilling Contractor Connecticut Test
Drilling Method Hollow Stem Auger
Sampling Method Hollow Stem Auger
Groundwater Observation
Depth 32.4 **at** **Hours**
Average depth to water is 32.40

Logged by delehnus
Drilling Foreman Chris DeAngelis
Drill Rig CME 85
Latitude
Longitude



Protector
- Material steel
- Diameter 9"
- Length Ground 0.00
- Stickup
- Key #
- Cover Type road box

Top Seal
- Top
- Bottom
- Material bentonite grout

Backfill
- Top 0.67
- Bottom 24
- Material native

Secondary Sand
- Top
- Bottom
- Size No. 0 Sand

Filter Pack
- Top 26.0
- Bottom 38.0
- Material #10 silica sand

Concrete Diameter 3
Concrete Thickness 0.67

Reference
- Elevation 0.00
- Description

Casing
- Diameter 2"
- Material PVC
- Length 28.0
- Top Elevation 0.00

Seal
- Top 24.0
- Bottom 26.0
- Material bentonite

Screen
- Top 28.00
- Bottom 38.00
- Material PVC
- Diameter 2"
- Length 10.0
- Slot Size 0.010
- Soil Description

Reported depth to bottom of boring 38.00
Last measured depth 38.38

Comments

30' to 32': tan very fine to fine SAND, trace Silt, well sorted, moderately dense, dry
wet at 31'
35' to 37': tan very fine to fine SAND, trace Silt, well sorted, moderately dense, wet

Vertical scale ~ 1:100

WELL COMPLETION LOG

Project: RCRA corrective action assistance **LEA Commission Number** 91MW206.004 **Client** MacDermid Incorporated - TCham **Location** MacDermid - Huntingdon Avenue	**Start Date** 08/28/2002 **End Date** 08/28/2002	**Well ID** **MW-115**

Drilling Contractor Connecticut Test
Drilling Method Hollow Stem Auger
Sampling Method Hollow Stem Auger
Groundwater Observation
Depth 32.6 **at** **Hours**
Average depth to water is 32.65

Logged by delehnus
Drilling Foreman Chris DeAngelis
Drill Rig CME 85
Latitude
Longitude

Protector
- Material steel
- Diameter 9"
- Length Ground 0.00
- Stickup
- Key #
- Cover Type road box

Top Seal
- Top
- Bottom
- Material bentonite grout

Backfill
- Top 0
- Bottom 24
- Material native

Secondary Sand
- Top
- Bottom
- Size No. 0 Sand

Filter Pack
- Top 26.5
- Bottom 38.0
- Material silica sand

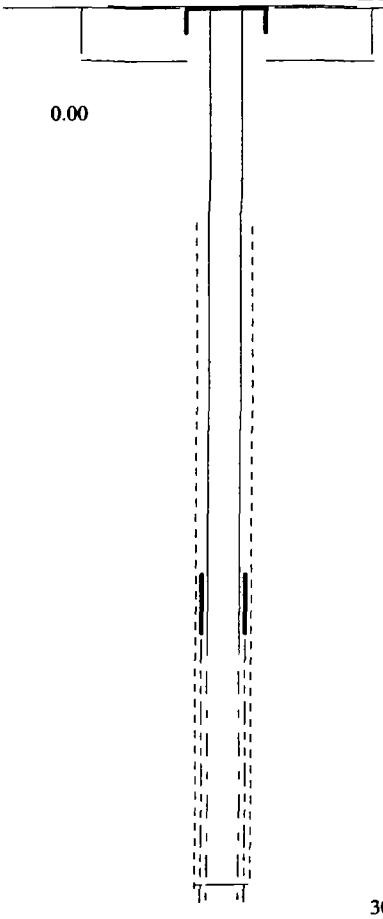
Concrete Diameter
Concrete Thickness

Reference
- Elevation 0.00
- Description

Casing
- Diameter 2"
- Material PVC
- Length 28.0
- Top Elevation 0.00

Seal
- Top 24.0
- Bottom 26.5
- Material bentonite

Screen
- Top 28.00
- Bottom 38.00
- Material PVC
- Diameter 2"
- Length 10.0
- Slot Size 0.010
- Soil Description



Reported depth to bottom of boring 38.00
Last measured depth 38.31

30' to 32': medium brown very fine to fine SAND, trace Silt, wet at 31.5'
35' to 37': medium brown very fine to fine SAND, trace Silt, wet

Comments

Vertical scale ~ 1:100

WELL COMPLETION LOG

Project:
LEA Commission Number 91MH204.001
Client MacDermid Incorporated - TCham
Location MacDermid - Huntingdon Avenue

Start Date 09/22/2003
End Date 09/22/2003

Well ID **MW-116S**

Drilling Contractor Seaboard
Drilling Method Hollow Stem Auger
Sampling Method Hollow Stem Auger
Groundwater Observation
Depth 32.5 **at** **Hours**
Average depth to water is 32.52

Logged by delehnus
Drilling Foreman Jeff Miich
Drill Rig Mobil Drill B-53
Latitude
Longitude

Protector
- Material steel
- Diameter 6"
- Length Ground 0.00
- Stickup
- Key #
- Cover Type roadbox

Top Seal
- Top
- Bottom
- Material bentonite grout

Backfill
- Top 0
- Bottom 22
- Material surface

Secondary Sand
- Top
- Bottom
- Size No. 0 Sand

Filter Pack
- Top 25.0
- Bottom 45.0
- Material #2 Sand

Reported depth to bottom of boring 60.00
Last measured depth 34.50

Comments

Concrete Diameter
Concrete Thickness

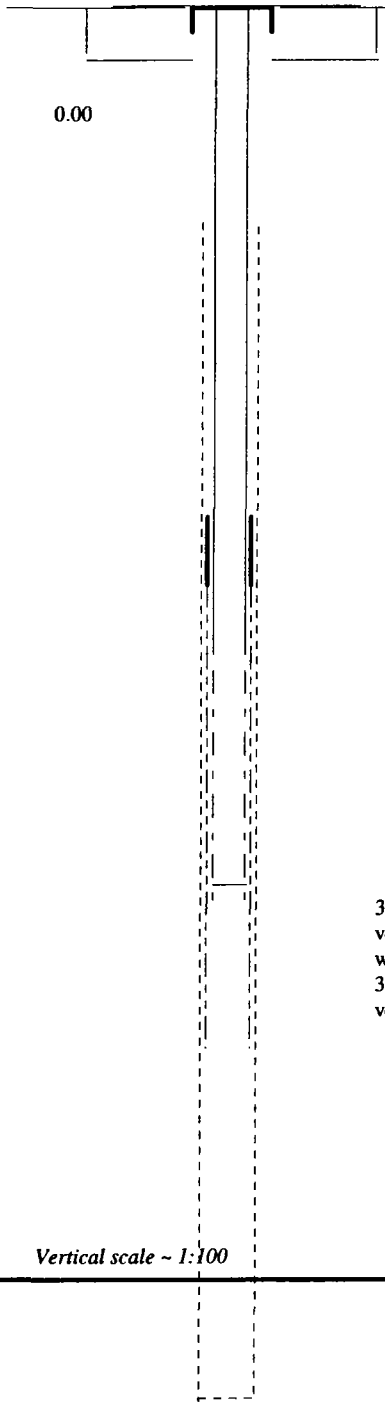
Reference
- Elevation 0.00
- Description

Casing
- Diameter 2"
- Material PVC
- Length 28.0
- Top Elevation 0.00

Seal
- Top 22.0
- Bottom 25.0
- Material bentonite

Screen
- Top 28.00
- Bottom 38.00
- Material Sch 40 PVC
- Diameter 2"
- Length 10.0
- Slot Size 0.01
- Soil Description

30' to 32': medium brown fine SAND, some medium and very fine Sand, some Silt, very dense, dry
wet at 32'
35' to 37': medium brown fine SAND, some medium and very fine Sand, some Silt, very dense, wet



Vertical scale ~ 1:100

WELL COMPLETION LOG

Project:
LEA Commission Number .
Client
Location MacDermid - Huntingdon Avenue

Start Date 09/22/2003
End Date 09/22/2003

Well ID
MW-116D

Drilling Contractor Seaboard
Drilling Method Hollow Stem Auger
Sampling Method Hollow Stem Auger
Groundwater Observation
Depth 31.8 **at** **Hours**
Average depth to water is 31.79

Logged by
Drilling Foreman Jeff Miich
Drill Rig Mobil Drill B-53
Latitude
Longitude

Protector
- Material steel
- Diameter 6"
- Length Ground 0.00
- Stickup
- Key #
- Cover Type roadbox

Top Seal
- Top
- Bottom
- Material bentonite grout

Backfill
- Top 0
- Bottom 45
- Material surface

Secondary Sand
- Top
- Bottom
- Size No. 0 Sand

Filter Pack
- Top 48.0
- Bottom 60.0
- Material #2 Sand

Reported depth to bottom of boring 60.00
Last measured depth 57.92

Comments

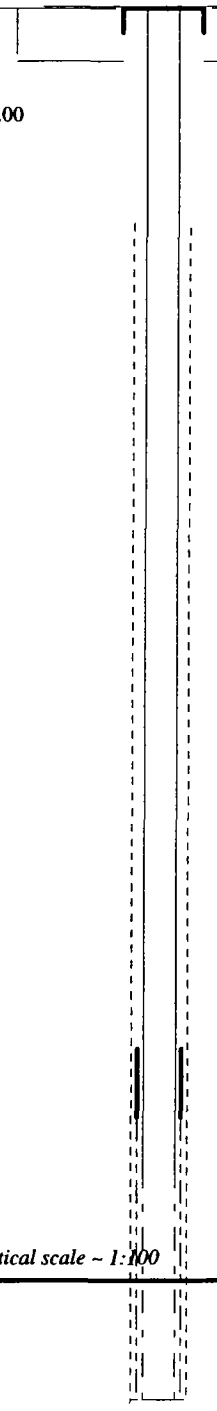
Concrete Diameter
Concrete Thickness

Reference
- Elevation 0.00
- Description

Casing
- Diameter 2"
- Material PVC
- Length 50.0
- Top Elevation 0.00

Seal
- Top 45.0
- Bottom 48.0
- Material bentonite

Screen
- Top 50.00
- Bottom 60.00
- Material Sch 40 PVC
- Diameter 2"
- Length 10.0
- Slot Size 0.01
- Soil Description



Vertical scale ~ 1:100

Attachment 4

2002 and 2003 Geologic Boring Logs

Project: RCRA corrective action assistance **LEA Commission Number** 91MW206.004 **Client** MacDermid Incorporated - TCham **Location** MacDermid - Huntingdon Avenue	**Start Date** 08/28/2002 **End Date** 08/28/2002	**Boring ID** **MW-114**

Drilling Contractor	Connecticut Test Boring	**Logged by**	delehnus
Drilling Method	Hollow Stem Auger	**Drilling Foreman**	Chris DeAngelis
Sampling Method	Split Spoon	**Drill Rig**	CME 85
Groundwater Observation		**Surface Elevation**	0.00
Depth 32.4 **at** **Hours**		**Latitude**	
Depth **at** **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
. . .					
2- 4	2110538	100		2' - 3' grey stained fine SAND, trac Silt, trace medium Sand, strong odour 3' - 4' brown fine to medium SAND, dry, loose, no odour, no stain	437
10- 12	2110539	46	16/18/50/85	rounded large GRAVEL and COBBLES, some light brown medium to coarse Sand, little fine to medium Gravel, loose, dry	0.0
15- 17	2110540	100	3/5/5/8	tan very fine to fine SAND, trace Silt, well sorted, moderately dense, dry	0.0
20- 22	2110541	42	5/9/9/10	tan very fine to fine SAND, trace Silt, well sorted, moderately dense, dry	0.0

Project: RCRA corrective action assistance		**Start Date** 08/28/2002	**Boring ID** MW-114
LEA Commission Number 91MW206.004			
Client MacDermid Incorporated - TCham		**End Date** 08/28/2002	
Location MacDermid - Huntingdon Avenue			
Drilling Contractor Connecticut Test Boring		**Logged by** david lehnus	
Drilling Method Hollow Stem Auger		**Drilling Foreman** Chris DeAngelis	
Sampling Method Split Spoon		**Drill Rig** CME 85	
Groundwater Observation		**Surface Elevation** 0.00	
Depth 32.4 **at** **Hours**		**Latitude**	
Depth **at** **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
25- 27	2110542	100	9/6/7/11	tan very fine to fine SAND, trace Silt, well sorted, moderately dense, dry	0.0
30- 32 V	2110543	100	5/5/5/4	tan very fine to fine SAND, trace Silt, well sorted, moderately dense, dry wet at 31'	0.0
35- 37	2110544	88	5/6/8/8	tan very fine to fine SAND, trace Silt, well sorted, moderately dense, wet	0.0

GEOLOGIC BORING LOG

Project: RCRA corrective action assistance **LEA Commission Number** 91MW206.004 **Client** MacDermid Incorporated - TCham **Location** MacDermid - Huntingdon Avenue	**Start Date** 08/28/2002 **End Date** 08/28/2002	**Boring ID** **MW-115**

Drilling Contractor	Connecticut Test Boring	**Logged by**	delehnus
Drilling Method	Hollow Stem Auger	**Drilling Foreman**	Chris DeAngelis
Sampling Method	Split Spoon	**Drill Rig**	CME 85
Groundwater Observation		**Surface Elevation**	0.00
Depth 32.6 **at**	**Hours**	**Latitude**	
Depth **at**	**Hours**	**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0.00- 4		100		dark brown fine to medium SAND, some medium to coarse Gravel, some Cobbles, little very fine to fine Sand, dry, loose	840
2.00- 4		100		dark brown fine to medium SAND, some medium to coarse Gravel, some Cobbles, little very fine to fine Sand, dry, loose brick, concrete and asphalt fill at 4'; hand auger refusal	845
5- 7	2110532	54	6/18/10/23	light brown fine to medium SAND, little coarse Sand, little large Gravel, little Cobbles, loose, dry	0.0
10- 12	2110533	100	23/38/45/42	silica rich round COBBLES and large GRAVEL, some light brown fine to medium Sand, little coarse Sand, poorly sorted, dry	0.0
15- 17	2110534	83	15/10/10/13	0" - 8" silica rich round COBBLES and large GRAVEL, some light brown fine to medium Sand, little coarse Sand, poorly sorted, dry 8" - 20" light brown very fine to fine SAND, well sorted, moderately dense, dry	0.0
20- 22		0	20/26/16/16	no recovery	

Project: RCRA corrective action assistance		**Start Date** 08/28/2002	**Boring ID** MW-115
LEA Commission Number 91MW206.004		**End Date**	
Client MacDermid Incorporated - TCham		08/28/2002	
Location MacDermid - Huntingdon Avenue			
Drilling Contractor Connecticut Test Boring		**Logged by** delehnus	
Drilling Method Hollow Stem Auger		**Drilling Foreman** Chris DeAngelis	
Sampling Method Split Spoon		**Drill Rig** CME 85	
Groundwater Observation		**Surface Elevation** 0.00	
Depth 32.6 **at** **Hours**		**Latitude**	
Depth **at** **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
25- 27	2110535	88	6/7/8/12	8" - 20" light brown very fine to fine SAND, well sorted, moderately dense, dry	0.0
30- 32	2110536	83	6/6/8/8	medium brown very fine to fine SAND, trace Silt, wet at 31.5'	0.0
35- 37	2110537	600	2/4/8/5	medium brown very fine to fine SAND, trace Silt, wet	0.0

GEOLOGIC BORING LOG

Project:		**Start Date**	**Boring ID**
LEA Commission Number	91MH204.001	09/17/2003	**MW-116S**
Client	MacDermid Incorporated - TCham	**End Date**	
Location	MacDermid - Huntingdon Avenue	09/17/2003	
Drilling Contractor	Seaboard	**Logged by**	delehnus
Drilling Method	Hollow Stem Auger	**Drilling Foreman**	Jeff Miich
Sampling Method	split spoon	**Drill Rig**	Mobil Drill B-53
Groundwater Observation		**Surface Elevation**	0.00
Depth 32.5	**at** **Hours**	**Latitude**	
Depth	**at** **Hours**	**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0- 2	1034212	25	5/6/2/4	0" - 2" asphalt 2" - 6" medium red brown fine to medium SAND, little medium to coarse Gravel, moderately dense, moist	0.0
5- 7	1034213	38	9/44/50/0	0" - 2" medium red brown fine to medium SAND, little medium to coarse Gravel, moderately dense, moist 2" - 9" grey angular schistose COBBLES, some light brown medium Sand, little fine Sand, dry	0.0
10- 12	1034214	33	40/50/0/0	brown rounded PEBBLES and COBBLES, some fine to coarse Gravel, some brown medium to coarse Sand, loose, dry	0.0
15- 17	1034215	79	5/11/21/31	medium brown medium to coarse SAND, some very coarse Sand, some fine to medium Gravel, trace coarse Gravel, very loose, dry	0.0
20- 22	1034216	83	3/8/12/15	medium brown fine SAND, some medium and very fine Sand, some Silt, very dense, dry	0.0

Project:		**Start Date**	**Boring ID**
LEA Commission Number 91MH204.001		09/17/2003	**MW-116S**
Client MacDermid Incorporated - TCham		**End Date**	
Location MacDermid - Huntingdon Avenue		09/17/2003	
Drilling Contractor Seaboard	**Logged by** delehnus		
Drilling Method Hollow Stem Auger	**Drilling Foreman** Jeff Miich		
Sampling Method split spoon	**Drill Rig** Mobil Drill B-53		
Groundwater Observation	**Surface Elevation** 0.00		
Depth 32.5 **at** **Hours**	**Latitude**		
Depth **at** **Hours**	**Longitude**		

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
25- 27	1034217	100	8/12/15/16	medium brown fine SAND, some medium and very fine Sand, some Silt, very dense, dry	0.0
30- 32 V	1034218	100	6/10/11/12	medium brown fine SAND, some medium and very fine Sand, some Silt, very dense, dry wet at 32'	0.0
35- 37	1034219	100	2/2/2/2	medium brown fine SAND, some medium and very fine Sand, some Silt, very dense, wet	0.0
40- 42	1034220	100	5/7/9/4	medium brown fine SAND, some medium and very fine Sand, some Silt, very dense, wet	0.0

GEOLOGIC BORING LOG

Project:		**Start Date** 09/17/2003	**Boring ID** MW-116D
LEA Commission Number .		**End Date** 09/17/2003	
Client			
Location MacDermid - Huntingdon Avenue			
Drilling Contractor	Seaboard	**Logged by**	delehnus
Drilling Method	Hollow Stem Auger	**Drilling Foreman**	Jeff Miich
Sampling Method	split spoon	**Drill Rig**	Mobil Drill B-53
Groundwater Observation		**Surface Elevation**	0.00
Depth 31.8 **at**	**Hours**	**Latitude**	
Depth **at**	**Hours**	**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0- 2		25	5/6/2/4	0" - 2" asphalt 2" - 6" medium red brown fine to medium SAND, little medium to coarse Gravel, moderately dense, moist	0.0
5- 7		38	9/44/50/0	0" - 2" medium red brown fine to medium SAND, little medium to coarse Gravel, moderately dense, moist 2" - 9" grey angular schistose COBBLES, some light brown medium Sand, little fine Sand, dry	0.0
10- 12		33	40/50/0/0	brown rounded PEBBLES and COBBLES, some fine to coarse Gravel, some brown medium to coarse Sand, loose, dry	0.0
15- 17		79	5/11/21/31	medium brown medium to coarse SAND, some very coarse Sand, some fine to medium Gravel, trace coarse Gravel, very loose, dry	0.0
20- 22		83	3/8/12/15	medium brown fine SAND, some medium and very fine Sand, some Silt, very dense, dry	0.0

Project: **LEA Commission Number** . **Client** **Location** MacDermid - Huntingdon Avenue		**Start Date** 09/17/2003 **End Date** 09/17/2003	**Boring ID** **MW-116D**
Drilling Contractor	Seaboard	**Logged by**	delehnus
Drilling Method	Hollow Stem Auger	**Drilling Foreman**	Jeff Miich
Sampling Method	split spoon	**Drill Rig**	Mobil Drill B-53
Groundwater Observation		**Surface Elevation**	0.00
Depth 31.8 **at** **Hours**		**Latitude**	
Depth **at** **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
25- 27		100	8/12/15/16	medium brown fine SAND, some medium and very fine Sand, some Silt, very dense, dry	0.0
30- V 32		100	6/10/11/12	medium brown fine SAND, some medium and very fine Sand, some Silt, very dense, dry wet at 32'	0.0
35- 37		100	2/2/2/2	medium brown fine SAND, some medium and very fine Sand, some Silt, very dense, wet	0.0
40-		100	5/7/9/4	medium brown fine SAND, some medium and very fine Sand, some Silt, very dense, wet	0.0
42.00-				straight drilling	

Project: **LEA Commission Number** . **Client** **Location** MacDermid - Huntingdon Avenue		**Start Date** 09/17/2003 **End Date** 09/17/2003	**Boring ID** **MW-116D**
Drilling Contractor	Seaboard	**Logged by**	delehnus
Drilling Method	Hollow Stem Auger	**Drilling Foreman**	Jeff Miich
Sampling Method	split spoon	**Drill Rig**	Mobil Drill B-53
Groundwater Observation		**Surface Elevation**	0.00
Depth 31.8 **at**	**Hours**	**Latitude**	
Depth **at**	**Hours**	**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
60					

Attachment 5

Technical Memorandum, Additional Subsurface Investigations
LEA
August 2004

TECHNICAL MEMORANDUM
ADDITIONAL SUBSURFACE INVESTIGATIONS
AUGUST 2004

MACDERMID, INCORPORATED
526 HUNTINGDON AVENUE
WATERBURY, CT

August 26, 2004

Prepared for

MacDermid, Incorporated
245 Freight Street
Waterbury, Connecticut 06702

Prepared by

LOUREIRO ENGINEERING ASSOCIATES
100 Northwest Drive
Plainville, Connecticut 06062

Comm. No. 91MH401

TECHNICAL MEMORANDUM
ADDITIONAL SUBSURFACE INVESTIGATIONS
MacDermid, Inc.
526 Huntingdon Avenue, Waterbury, Connecticut

TABLE OF CONTENTS

1.0	**PURPOSE AND SCOPE**	**1**
2.0	**MONITORING WELL AND PIEZOMETER INSTALLATION**	**2**
3.0	**GROUNDWATER SAMPLE COLLECTION**	**4**
3.1	Quality Assurance/Quality Control	4
4.0	**GROUNDWATER ANALYTICAL RESULTS**	**6**
4.1	VOCs	6
4.2	Cyanide	7
4.3	Metals	7

EXHIBITS

Exhibit A	Work Plan
Exhibit B	Drawings
Exhibit C	Field Documentation
Exhibit D	Monitoring Well and Piezometer Completion Reports
Exhibit E	Tables
Exhibit F	Geologic Boring Logs
Exhibit G	Analytical Laboratory Report

TECHNICAL MEMORANDUM
ADDITIONAL SUBSURFACE INVESTIGATIONS
MacDermid, Inc.
526 Huntingdon Avenue, Waterbury, Connecticut

1.0 PURPOSE AND SCOPE

This Technical Memorandum addresses the additional subsurface investigation activities completed at the MacDermid facility located at 526 Huntingdon Avenue, Waterbury, CT (hereinafter referred to as the "Site"). In response to a request from the Environmental Protection Agency (EPA), documented in the April 9, 2004 EPA Comments to the Documentation of Environmental Indicator (CA725), a report entitled *Additional Investigations Work Plan and Quality Assurance Project Plan for Documentation of Environmental Indicator Determination (CA725) Current Human Exposures Under Control, MacDermid, Incorporated, Waterbury, CT* (Work Plan), was prepared by Loureiro Engineering Associates, Inc. (LEA) on behalf of MacDermid, Incorporated and submitted to the EPA on June 24, 2004. The subsurface investigations proposed in the Work Plan included the installation of four piezometers for the measurement of water levels and four groundwater monitoring wells installed in two cluster (with each cluster composed of a shallow and a deep well) and the collection of one round of groundwater samples from all existing and newly installed monitoring wells at the Site. A copy of the Work Plan is provided in Exhibit A. Between July 1, 2004 and August 17, 2004, the following subsurface investigation activities were completed at the Site in response to the Work Plan:

1) The installation of two clusters of shallow and deep monitoring wells, identified as MW-117S/MW-117D, and MW-118S/MW-118D.
2) The installation of four piezometers identified as PZ-01, PZ-02, PZ-03, and PZ-04.
3) The collection of groundwater samples from all existing monitoring wells (including well MW-103, but excluding well MW-108), and all newly installed monitoring wells for laboratory analysis for volatile organic compounds (VOCs), cyanide, and total Resource Conservation and Recovery Act (RCRA) 8 metals plus copper, zinc, and nickel.

The following sections describe in further detail the monitoring well and piezometer installation methodology, the groundwater sample collection activities, and the groundwater sample analytical laboratory results. Included in the discussion regarding the groundwater collection activities is an overview of the quality assurance/quality control (QA/QC) procedures employed during the investigation.

2.0 MONITORING WELL AND PIEZOMETER INSTALLATION

Two locations along the western Site boundary were selected for the installation of the two sets of cluster wells, identified as MW117S/MW-117D and MW-118S/ MW-118D and depicted on Drawing 1 – Site Plan and Drawing 2 – North Parcel, which are provided in Exhibit B. The premise behind the installation of the two sets of cluster wells was to provide a more refined understanding of groundwater flow direction and contaminant concentrations along the western Site boundary in both the horizontal and vertical directions. Such an understanding was necessary due to the presence of residential properties situated west of the Site at which the potential for volatilization of VOCs from groundwater into indoor air required further evaluation.

The designation of letter "S" in the nomenclature for monitoring wells MW-117S and MW-118S indicates that the well screen intervals for these monitoring wells intersects the water table. The designation of the letter "D" in the nomenclature for monitoring wells MW-117D and MW-118D indicates that the screened interval is situated in the deeper zone of the overburden, approximately equivalent to the screened interval for well MW-116D (i.e., 50 feet to 60 feet below ground surface), to assess contaminant concentrations at depth within the aquifer and to calculate vertical gradients.

Three previously existing groundwater monitoring wells, MW-104, MW-106, and MW-107, had either been destroyed or damaged and one monitoring well, MW-108, was found to contain separate-phase product. As the locations of these monitoring wells are essential in developing a representative groundwater contour map, it was determined that piezometers would be placed in the vicinity of these monitoring wells to be utilized in defining groundwater flow direction. As noted on Drawing 1 – Site Plan, piezometers PZ-01, PZ-02, PZ-03, and PZ-04 were advanced either upgradient or sidegradient of monitoring wells MW-104, MW-106, MW-107, and MW-108, respectively. It should be noted that the location of the proposed piezometer in the vicinity of former monitoring well MW-106 was moved upgradient to better assess groundwater flow direction.

It was initially proposed in the Work Plan that the monitoring wells and piezometers would be constructed using Geoprobe® Pre-Pack monitoring well construction materials. With the exception of one piezometer (PZ-03), which was installed using a Geoprobe® drilling rig, the proposed piezometers and monitoring wells were installed using a hollow-stem auger drilling rig. This was due to the difficulty in drilling through the subsurface with the Geoprobe® due to the presence of glacial outwash consisting of sub-rounded cobbles and sediments.

Piezometers PZ-01 through PZ-04 were constructed of five-foot long sections of 1.5-inch Schedule 40 polyvinyl chloride (PVC), and a 0.010-inch slotted schedule 80 PVC screen with a 1.5-inch inner diameter pre-pack filter held in placed by stainless steel mesh. A 1.5-inch diameter Schedule 40 PVC riser connected that well screen to the surface. Monitoring wells MW-117S, MW-117D, MW-118S, and MW-118D were constructed of 2-inch diameter Schedule 40 PVC riser and 0.040-inch slotted well screen. Ten-foot lengths of PVC screen were placed in the monitoring wells and piezometers as follows:

PZ-01:	Well Screen Interval:	29 feet to 39 feet below ground surface
PZ-02:	Well Screen Interval:	28 feet to 38 feet below ground surface
PZ-03:	Well Screen Interval:	28 feet to 38 feet below ground surface
PZ-04:	Well Screen Interval:	29 feet to 39 feet below ground surface

MW-117S:	Well Screen Interval:	28 feet to 38 feet below ground surface
MW-117D:	Well Screen Interval:	45 feet to 55 feet below ground surface
MW-118S:	Well Screen Interval:	28 feet to 38 feet below ground surface
MW-118D:	Well Screen Interval:	50 feet to 60 feet below ground surface

Subsequent to installing the well screen and casing, the borehole was backfilled with No. 0 sand to a depth of two feet above the well screen, followed by approximately two to three feet of bentonite chips. Grout was placed above the bentonite chip seal to approximately two feet below grade. A flush-mount well protector and 2-foot by 2-foot by 2- foot concrete pad were then emplaced. Field documentation is provided in Exhibit C, with well completion reports for the newly installed monitoring wells and piezometers provided in Exhibit D.

All the newly installed wells were developed following installation in general accordance with procedures described in the LEA Standard Operating Procedure (SOP) entitled, *Installing & Developing Monitoring Wells and Piezometers* that is provided with the Work Plan in Exhibit A. Following development, a synoptic water-level measurement event and well survey were completed on all existing and newly installed monitoring wells and piezometers. During the water-level measurement event, separate-phase product was observed in monitoring well MW-108 and piezometer PZ-04 above the water table, indicating a light non-aqueous phase liquid (LNAPL), characteristic of a petroleum product. The thickness of product in monitoring well MW-108 was measured at 0.67 feet. The product thickness in piezometer PZ-04 was measured at 3.99 feet. Water levels measured in each of the wells during the water-level measurement event are provided on Table 4 of Exhibit E.

Geologic conditions were logged by an LEA geologist during the advancement of boreholes for monitoring wells MW-117D and MW-118D. A geologic boring log was prepared in the field to document the visual classification of the unconsolidated materials encountered in the subsurface. Subsurface materials were classified using a modified Burmister soil classification system in accordance with the LEA SOP entitled, *Geologic Logging of Unconsolidated Sedimentary Materials (*Exhibit A). Geologic boring logs for monitoring wells MW-117D and MW-118D are provided in Exhibit F. As noted on those logs, subsurface materials encountered during drilling consisted of heterogeneous glacial outwash material (sub-rounded cobbles, gravels, and coarse-grained sand) overlying a very uniform deposit of fine to very fine sand and silt that was encountered at a depth of approximately 17 to 60 feet below ground surface.

3.0 GROUNDWATER SAMPLE COLLECTION

Groundwater samples were collected from 17 monitoring wells identified as MW-101, MW-102, MW-103, MW-105, MW-109, MW-110, MW-111, MW-112, MW-113, MW-114, MW-115, MW-116S, MW-116D, MW-117S, MW-117D, MW-118S, and MW-118D on August 12, 13, and 16, 2004. The locations of the wells are noted on Drawing 1-Site Plan, provided in Exhibit B. Groundwater samples were collected using modified low-flow sampling techniques in accordance with LEA's SOPs entitled, *Liquid Sample Collection and Field Analysis* and *Low Flow (Low Stress) Liquid Sample Collection and Field Analysis* (Exhibit A) and Site-Specific Work Instructions.

Groundwater samples were collected for analysis for VOCs, cyanide, and RCRA 8 metals plus copper, nickel and zinc. Dual sets of groundwater samples were collected from each monitoring well for analysis of RCRA 8 metals (plus copper, nickel, and zinc). One set of groundwater samples was collected for total (unfiltered) metals, and one set of groundwater samples was collected through the use of in-line 10-micron filters. The use of the 10-micron filter allows the passage of colloidal particles that might move with the flowing groundwater to be included in the analyzed sample. The filtered groundwater samples were placed on hold at Averill Environmental Laboratory (AEL), pending the results of the analysis for total metals. Analysis of the filtered samples was to be conducted should the total metals analysis indicate that the concentrations of one or more metals exceeded the Surface Water Protection Criteria at locations where compliance with such criteria would be assessed.

Following collection of groundwater samples from each monitoring well, samples were placed into appropriate containers and preserved in accordance with analytical method specifications. The sampling containers were placed into a cooler maintained at a temperature of 4° C. The sample coolers were delivered under appropriate chain-of-custody procedures to AEL in accordance with procedures identified in the LEA SOPs entitled *Liquid Sample Collection and Field Analysis* and *Quality Assurance/Quality Control Procedures for Field Activities* (Exhibit A).

3.1 Quality Assurance/Quality Control

QA/QC procedures specific to the field activities and groundwater sample collection completed at the Site were performed per the LEA SOP *Quality Assurance/Quality Control Procedures for Field Activities* (Exhibit A). The QA/QC procedures included the following:

1) The collection of two blind replicate samples. The replicate samples were collected in a manner that ensured that the replicate samples were as close to the original sample as possible, given the inherent constraints associated with groundwater sampling procedures. The blind replicate samples were coded in a fashion that did not alert the laboratory to the fact that the samples were replicates.

2) A trip blank was prepared prior to initiation of sampling activities for each day on which samples intended for VOC analysis were collected. All samples to be analyzed for VOCs were stored in the same coolers as the trip blank each day until delivery to AEL. Each trip blank was subsequently analyzed for VOCs per EPA Method 8260B.

3) Field equipment blanks were collected daily by pouring distilled, de-ionized water through and over decontaminated sampling equipment into pre-labeled sample containers, with the time of collection noted.

4.0 GROUNDWATER ANALYTICAL RESULTS

As previously mentioned, groundwater samples were collected for analysis for VOCs per EPA Method 8260B, cyanide per EPA Method 9014, and total RCRA 8 metals plus copper, nickel, and zinc per EPA Method Series 6000/7000. Depending on the results from the analysis of total metals, additional analysis for metals from samples collected through a 10-micron filter was included in the Work Plan. Tables summarizing the sampling and analytical information are provided as part of this Technical Memorandum. Tables 1 through 3 summarize sampling and analytical information. Copies of laboratory reports are provided in Exhibit G. The following paragraphs describe in detail the laboratory results for the analysis of VOCs, cyanide, and total RCRA 8 metals (plus copper, nickel, and zinc). Dual concentrations for monitoring wells MW-118S and MW-118D indicate that replicate groundwater samples were collected for those wells.

4.1 VOCs

The VOC constituents detected in one or more of the groundwater samples included 1,1-dichloroethane (1,1-DCA); 1,2-dichloroethane (1,2-DCA); 1,1-dichloroethylene (1,1-DCE); 1,1,1-trichloroethane (1,1,1-TCA); cis 1,2-dichloroethylene (cis 1,2-DCE); 1,4-dichlorobenzene; bromomethane; carbon tetrachloride; chlorobenzene; chloroform; dichlorodifluoromethane; methyl ethyl ketone (MEK); methyl tert butyl ether (MTBE); methylene chloride; tetrachloroethylene (PCE); trichloroethylene (TCE); trichlorofluoromethane; vinyl chloride; and xylenes. With the exception of 1,2-DCA, 1,1-DCE, PCE, and TCE at a limited number of locations, VOCs were generally detected in groundwater from the Site at concentrations less than 8 micrograms per liter (μg/l). VOCs were not detected in groundwater from monitoring wells MW-101, MW-102, MW-113, and MW-116D.

PCE was detected in groundwater from monitoring wells MW-103 (14 μg/l), MW-105 (6.1 μg/l), MW-109 (5.1 μg/l), MW-110 [20 (H) μg/l], MW-111 (2.3 μg/l), MW-112 (4.9 μg/l), MW-114 (4.1 μg/l), MW-115 (280 μg/l), MW-116S (1.6 μg/l), and MW-118S (15 μg/l). The "H" analytical qualifier indicates an estimated value as the constituent concentration was above the calibration range.

Detectable concentrations of TCE were present in groundwater samples from monitoring wells MW-103 (2.8 μg/l), MW-112 [0.9 (L) μg/l], MW-115 (20 μg/l), MW-118S (3.0 μg/l), and MW-118D [0.6 (L) μg/l]. Groundwater samples collected from monitoring wells MW-109 and MW-115 contained 1,1,1-TCA at concentrations of 0.8 (L) μg/l and 25 μg/l, respectively. The analytical qualifier "L" indicates that the constituent was present at a concentration below the calibration limit, but above the laboratory method detection limit.

The constituent 1,1-DCA was detected in groundwater samples from monitoring wells MW-111 and MW-115 at concentrations of 1.2 micrograms per liter (μg/l) and 1.0 μg/l, respectively, and 1,2-DCA was detected in groundwater from wells MW-109 (1.1 μg/l), MW-111 (2.5 μg/l), and MW-115 (12 μg/l). The constituent 1,1-DCE was detected only in groundwater samples from well MW-115, at a concentration of 60 μg/l. Vinyl chloride was detected only in groundwater from well MW-117D, at a concentration of 0.6 (L) μg/l. Concentrations of cis 1,2-DCE were detected in monitoring wells MW-103 [0.5 (L) μg/l], MW-115 (1.6 μg/l), MW-118S [0.5 (L) μg/l], MW-118D (1.9 μg/l/1.8 μg/l).

In addition to PCE and TCE and associated degradation products, several other VOCs were detected in groundwater from the Site. As noted in Table 3, the following constituents were reported to be present in groundwater during the August 2004 sampling event. Groundwater from monitoring wells MW-105, MW-109, MW-111, MW-114, MW-117S, MW-117D, MW-118S, and MW-118D contained chloroform at concentrations ranging between 0.5 (L) µg/l and 2.3 µg/l. Bromomethane concentrations ranged from 1.7 µg/l to 1.9 µg/l in groundwater from wells MW-105, MW-116S, and MW-118S. Detectable levels of dichlorodifluoromethane at concentrations of 2.1 µg/l and 2.6 µg/l, respectively, were reported for groundwater from wells MW-114 and MW-115, and trichlorofluoromethane was detected in groundwater from one monitoring well, MW-105, at a concentration of 8.1 µg/l. Carbon tetrachloride was detected in monitoring well MW-118S at concentrations of 0.5 (L) µg/l/0.07 (L)µg/l. Groundwater from only one monitoring well, MW-115, contained a detectable concentration of chlorobenzene at 1.0 (L) µg/l, and 1,4-dichlorobenzene was detected in the groundwater sample collected from monitoring well MW-115 at a concentration of 0.5 (L) µg/l

Methylene chloride concentrations were detected in groundwater samples from monitoring wells MW-103 [0.9 (L) µg/l], MW-115 (6.2 µg/l), MW-117D [0.8 (L) µg/l], MW-118S [0.8 (L) µg/l], and MW-118D [0.6 (L) µg/l], and groundwater samples collected from monitoring wells MW-103, MW-118S, and MW-118D had detectable concentrations of MTBE at 2.8 µg/l, 2.9 µg/l, and 6.2 µg/l/5.6 µg/l, respectively. MEK was detected in groundwater from one monitoring well, MW-111, at a concentration of 3.5 µg/l, and xylene was detected in only groundwater sample from well MW-115, at a concentration of 1.2 (L) µg/l.

The analytical laboratory results for the field and trip blank samples collected on August 12, 2004 indicated that no VOCs were detected. Methylene chloride concentrations were detected in the field blank [1.0 (L) µg/l] and trip blank [0.6 (L) µg/l] collected on August 13, 2004, and the field blank ([0.8 (L) µg/l] and trip blank [1.1 (L) µg/l] collected on August 16, 2004.

4.2 Cyanide

Cyanide was not detected in any of the groundwater samples analyzed for that constituent.

4.3 Metals

Concentrations of several metals were detected in groundwater from monitoring wells MW-101, MW-102, MW-105, MW-109, MW-110, MW-111, MW-112, MW-113, MW-114, MW-115, MW-116S, MW-116D, and MW-118D. The metals detected at one or more locations included arsenic, barium, total chromium, copper, mercury, nickel, and zinc.

Arsenic was detected in groundwater from monitoring wells MW-101 and MW-109 at concentrations of 0.008 milligrams per liter (mg/l) and 0.0087 mg/l, respectively. Barium was detected in groundwater from monitoring wells MW-105 , MW-109, MW-110, MW-111 , MW-112, MW-113, MW-114, MW-115, MW-116S, and MW-118D at concentrations ranging from 0.018 (L) mg/l to).146 mg/L, as noted on Table 3 of Exhibit E. Groundwater samples collected from wells MW-109, MW-110, MW-112, and MW-115 indicated the presence of total chromium concentrations at 0.032 (L) mg/l, 0.011 (L) mg/l, 0.027 (L) mg/l, and 0.526 mg/l, respectively. Copper was detected in groundwater from three monitoring wells: MW-109 (0.291 mg/l), MW-110 (0.512 mg/l), and MW-115 (0.007 (L) mg/l). Mercury was detected only in groundwater from monitoring well MW-110, a concentration of (0.0003 mg/l).

Concentrations of nickel, which was detected in groundwater from four monitoring wells (MW-102, MW-109 , MW-110, and MW-115) ranged from 0.019 (L) mg/L to (0.382 mg/l. Zinc was detected in groundwater from wells MW-101, MW-102, MW-105, MW-109, MW-110, MW-111, MW-112, MW-113, MW-114, MW-116S, MW-116D, and MW-118D at concentrations ranging from 0.010 (L) mg/l to 0.145 mg/l, as noted in Table 3.

EXHIBIT C

Field Documentation

DAILY FIELD REPORT

Loureiro Engineering Associates, Inc.

LEA Comm. No.	91MH401.001	Page	1 of 2
Project	MacDermid - Huntingdon	Date	8/17/2004
Location	MacDermid - Huntingdon Avenue, Waterbury, CT		
Client	MacDermid Incorporated - RNav		

Arrived at Site 8:30 Departed from Site 2:00 Vehicle PERSONAL

Odometer (Start) _____ Return _____

Site Activities

- [ ] Soil Sampling
- [ ] Groundwater Sampling
- [ ] Surface Water Sampling
- [ ] Surface Water Sampling
- [ ] Vapor/Air Sampling
- [ ] Concrete Sampling
- [ ] Other Sampling
- [ ] Well Installation
- [ ] Well Development
- [ ] Geoprobe Work
- [ ] Concrete Coring
- [ ] Construction
- [ ] Inspection
- [ ] Waste Management
- [ ] Waste Management
- [ ] Site Walk Over
- [ ] Surveying Synoptic
- [X] Other (Describe) Water level measurements

Non-productive Time

- [ ] None
- [ ] Equipment Breakdown
- [ ] Late
- [ ] Weather
- [ ] Missing Equipment
- [ ] Other (Describe)

Current Project Information

Last Sample Number Used _____

Last Location ID Used N/A.

Current Location (if not complete) _____

Sampling for _____

Laboratories used _____

Paperwork & Equipment left at/in _____

Site Contact _____

Contractors on Site _____

Time and place to meet contractors _____

Quality Assurance Checks

Yes	N/A	No	
			Sample labels complete
			Sample/cooler seals OK
			All samples obtained
			Chains of custody
			All forms/logs complete
			Site walkover
			Site H&S Plan on site
			Instruments calibrated

Residuals Disposition

Item	Approx. Amount	Container ID
Soil/Solid		
Groundwater		
Decon Fluid		
PPE		
Other		

Instrument Calibrations

pH/Conductivity

Std.	Standard	Meter
[ ]	pH 4	
[ ]	pH 7	
[ ]	pH 10	
___	Cond.	

PID/FID Meter

Std.	Standard	Meter
___		
[ ]	Zero w/Background	
[ ]	Zero w/Clean Air	

Balance

Std.	Standard	Reading
___	Std. Mass	

Expendable Items Used

Qty	Item	LEA Number
	Bailer, Disposable (spec. size)	090
	Drum, Closed Top 55 gallon	086
	Filter, In Line	024
	Miscellaneous Health & Safety Items	060
	Tubing, 1/2", NOS	007
	Tubing, 3/8", NOS	008
	Water, Distilled	025
1	Interface Probe.	

Equipment Used

Qty	Item	LEA Number
	Generator 3500 Watt	153
	Meter, Conductivity	022
	Meter, pH/Temp	021
	Miscellaneous Small Tools & Equipment	152
	Pump, Grundfos	073
	Pump, Peristaltic (spec. Master or Isco)	040
	Pump, Submersible	201
	Pump, Watera	038
	Turbidimeter	023
	VOC Analyzer, Photovac 2020 (PID)	012
1	Water Level Indicator	028

Field Personnel _____ _____ _____

_____ _____ _____

Signature

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
MISCELLANEOUS SAMPLES

LEA Comm. No. 91MH401.001 Page 2 of 2
Project MacDermid - Huntingdon Date 8/17/04
Location MacDermid - Huntingdon Avenue, Waterbury, CT
Client MacDermid Incorporated - RNav

Sample ID	Location ID	Time	Sample Type	Depth (ft)	PID/FID Reading	Depth To Water / Comments / Depth To Product	Waste Container ID
	PZ-03					36.56'	
	PZ-02					36.90'	
	PZ-01					29.80'	
	PZ-04					35.17' - 31.78" = 3.99' of product	
	MW-103					31.15'	
	MW-105					32.42'	
	MW-115					32.05'	
	MW-114					31.82'	
	MW-111					31.75'	
	MW-113					31.26'	
	MW-118S					31.74'	
	MW-118D					31.89	
	MW-116S					31.58'	
	MW-116D					31.78'	
	MW-112					31.86'	
	MW-109					32.22'	
	MW-110					32.92'	
	MW-117S					30.96'	
	MW-117D					31.56'	

Field Personnel _____ _____ Signature _____

DAILY FIELD REPORT

Loureiro Engineering Associates, Inc.

LEA Comm. No.	91MH401.001	Page 1 of 8
Project	MacDermid - Huntingdon	Date 8/16/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid Incorporated - RNav	

Arrived at Site 0900 Departed from Site _____ Vehicle Ford Van, T Downey Vehicle

Odometer (Start) 0 Return _____

Site Activities

- [ ] Soil Sampling
- [x] Groundwater Sampling
- [ ] Surface Water Sampling
- [ ] Surface Water Sampling
- [ ] Vapor/Air Sampling
- [ ] Concrete Sampling
- [ ] Other Sampling
- [ ] Well Installation
- [ ] Well Development
- [ ] Geoprobe Work
- [ ] Concrete Coring
- [ ] Construction
- [ ] Inspection
- [ ] Waste Management
- [ ] Waste Management
- [ ] Site Walk Over
- [ ] Surveying
- [ ] Other (Describe)

Current Project Information

Last Sample Number Used	1051351
Last Location ID Used	MW-103
Current Location (if not complete)	—
Sampling for	VOCs, TTD Metals CN
Laboratories used	AEL
Paperwork & Equipment left at/in	BH
Site Contact	A. Palmeri, R. Nave
Contractors on Site	—
Time and place to meet contractors	—

Non-productive Time

- [x] None
- [ ] Equipment Breakdown
- [ ] Late
- [ ] Weather
- [ ] Missing Equipment
- [ ] Other (Describe)

Quality Assurance Checks

Yes	N/A	No	
✓			Sample labels complete
✓			Sample/cooler seals OK
✓			All samples obtained
✓			Chains of custody
✓			All forms/logs complete
✓			Site walkover
✓			Site H&S Plan on site
✓			Instruments calibrated

ORP 240.1/240.2

DO 99.5%/99.9%

Residuals Disposition

Item	Approx. Amount	Container ID
Soil/Solid		
Groundwater	16 gal	MH-CT-009, MH-CT-010
Decon Fluid	3 gal	MH-CT-010
PPE		
Other		

Instrument Calibrations

pH/Conductivity

Std.	Standard	Meter
✓	pH 4	4.00/4.00
✓	pH 7	7.00/7.00
	pH 10	
—	Cond.	1412/1413

PID/FID Meter

Std.	Standard	Meter
✓	100	100

- [x] Zero w/Background
- [ ] Zero w/Clean Air

Balance

Std.	Standard	Reading
	Std. Mass	

Expendable Items Used

Qty	Item	LEA Number
	Bailer, Disposable (spec. size)	090
	Drum, Closed Top 55 gallon	086
4	Filter, In Line	024
2	Miscellaneous Health & Safety Items	060
	Tubing, 1/2", NOS	007
1 Roll	Tubing, 3/8", NOS 1500 ft	008
1	Water, Distilled	025

Equipment Used

Qty	Item	LEA Number
	Generator 3500 Watt	153
	Meter, Conductivity	022
	Meter, pH/Temp	021
1	Miscellaneous Small Tools & Equipment	152
1	Pump, Grundfos	073
	Pump, Peristaltic (spec. Master or Isco)	040
	Pump, Submersible	201
	Pump, Watera	038
2	Turbidimeter	023
1	VOC Analyzer, Photovac 2020 (PID)	012
	Water Level Indicator	028
4	~~Low Flows~~ Bladder Pumps	
3	Flow cells	
1	Decon Kit	

Field Personnel Jeff Berdeen, Tim Downey

Signature [signature]

Loureiro Engineering Associates, Inc.

DAILY FIELD REPORT

Supplemental Sheet

LEA Comm. No.	**91MH401.001**	Page 2 of 8
Project	MacDermid - Huntingdon	Date 8/16/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid Incorporated - RNav	

Description of Site Activities

900 Arrive @ site TD sets up on MW 118S, JRB on MW-117S, MW 117D
1200 TD Finishes MW-118S, gets lunch for crew
1225 TD Returns; Lunch
1305 TD Sets up on MW-103
1450 JRB Finishes 117D, begins ~~wl~~ DTB measurements, pack van
1515 TD Finishes MW-103, JRB Finishes paperwork, dispose of waste, begin decon of pumps
1550 TD Finishes DTB measurements, helps us / pump decon
1625 Depart site

Field Personnel J Berdeen, T Downey

Signature

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
MISCELLANEOUS SAMPLES

LEA Comm. No.	**91MH401.001**	Page 3 of 8	
Project	MacDermid - Huntingdon	Date 8/16/04	
Location	MacDermid - Huntingdon Avenue, Waterbury, CT		
Client	MacDermid Incorporated - RNav		

Sample ID	Location ID	Time	Sample Type	Depth (ft)	PID/FID Reading	Comments	Waste Container ID
1051346	TRIP Blank	0800	BKT	—	—	—	
1051339	EQUIPMENT Blank	1430	BKE	—	—	—	
1051350	MW-118S	1130	GW	—	0.0	Duplicate of 1051349	

Field Personnel: J Berdeen, T Downey

Signature:

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD

~~LOW FLOW WELL SAMPLE~~
WELL DEPTHS TO BOTTOM

LEA Comm. No.	91MH401.001	Page	4 of 8
Project	MacDermid - Huntingdon	Date	8/16/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time	
Client	MacDermid Incorporated - RNav		

Time	Well ID	Total Depth ~~DTW~~
1407	mw-117S	37.72
1456	mw-116D	57.37
1457	mw116S	33.97
1502	mw107D	51.99
	103	34.84
	1185	36.35
	102	33.78
	101	32.71
	112	34.95
	109	34.60
	110	39.63
	118D	59.11
	113	40.07
	111	34.90
	114	37.84
	115	37.98
	105	36.98

Field Personnel J Berdeen, T Downey

Signature

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	**91MH401.001**	Page 5 of 8
Project	MacDermid - Huntingdon	Date 8/16/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time 11:30
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW 118 S Sample Number(s) ~~1051339~~ 1051349 1051349 uf ~~1051350~~ 1051350 uf

Initial Field Data and Measurements

Depth of Well 38.00' Reference Used TOC
Depth to Water 31.78' PID/FID Reading 0.0
Height of Column ~~34~~ ~~35~~ 6.22' Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter 2" Material PVC
Protector (Road Box) / Stickup
Ground to Reference
Comments

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked	✓	
Other (describe)		

Development Information

Parameter / Time	Depth to Water	Pump Setting	Purge Rate ml	Cum. Liters Purged	Temp (C)	Spec. Cond. umhos	pH	ORP (Eh)	DO	Turbidity	Comment
10:00	31.78	103	100	0		µS/cm c			mg/L	50	~~1 gal~~ 1 gal purge
10:10	31.78	103	~~1000~~	1000	15.55	271	6.08	244.8	9.48	31	
10:20	↓	↓	~~2000~~	2000	15.04	258	5.93	292.9	8.93	15	
10:30			~~3000~~	3000	14.56	258	5.87	313.7	8.81	7.7	
10:40			~~4000~~	4000	14.58	262	5.87	331.8	8.90	5.3	
10:50			~~5000~~	5000	14.62	269	5.86	358.9	8.82	4.5	
10:55			~~6000~~	6000	14.27	277	5.79	380.2	8.77	4.0	
11:00	↓	↓	7000 ↓	7000	14.28	277	5.79	381.2	8.77	3.9	Sample

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other Bladder Pump
Field Decontamination? (Yes) / No If Yes, with what? Alconox, HNO_3, DI, Me OH
Waste Container ID MHE CT-010

Additional Comments 1051350 is Duplicate 36.35' DTB

Field Personnel Tim Downey, Jeff Berdeen Signature Timothy Downey

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	**91MH401.001**	Page 6 of 8
Project	MacDermid - Huntingdon	Date 8/16/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time ~~13:55~~
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW-117D Sample Number(s) ~~1051340~~ 1051335 1051335 dup

Initial Field Data and Measurements

Depth of Well ~55.00 Reference Used top of PVC
Depth to Water 31.59 PID/FID Reading 0.0
Height of Column 23.41 Interface Yes / No ~~If yes, Depth~~ _____ Lighter / Heavier

Well Casing Diameter 2" Material _____
Protector (Road Box) / Stickup
Ground to Reference _____
Comments _____

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked	✓	
Other (describe)		

Development Information

Parameter / Time	Depth to Water	Pump Setting	Purge Rate	Cum. Liters Purged	Temp (C)	Spec. Cond. umhos	pH	ORP (Eh)	DO	Turbidity	Comment
1250	31.70	103	100		14.86	0.861	5.94	245.1	7.09	11	
1255	31.69	103	100		14.80	0.858	5.94	251.7	6.98	9.8	
1300	31.70	103	100		14.84	0.858	5.94	260.3	6.85	8.3	
1305	31.69	103	100		14.85	0.851	5.94	267.0	6.79	7.5	
1310	31.70	103	100		14.90	0.857	5.93	269.8	6.78	7.2	
1315	31.70	103	100		14.94	0.857	5.93	275.2	6.76	8.6	
1320	13.68	103	100		14.78	0.855	5.93	277.0	6.77	7.7	
1325	13.71	103	100		14.86	0.855	5.92	277.1	6.78	8.0	
1330	13.70	103	100		14.83	0856	5.92	276.6	6.74	6.6	
1335	13.70	103	100		14.89	0.856	5.91	279.0	6.72	7.4	
1340	13.70	103	100		14.80	0.854	5.91	280.4	6.74	6.1	
1345	13.70	103	100		14.82	0.852	5.91	282.2	6.70	5.7	
1350	13.70	103	100		14.83	0.851	5.91	285.2	6.69	3.0	

Developement Method Peristaltic Pump / Bailer / Inertial Pump / (Other) Bladder pump
Field Decontamination? (Yes) / No If Yes, with what? Liquinox, HNO3, DI, MeOH
Waste Container ID MH-CT-009

Additional Comments

Measure after 3.25 wl
Start purge ~~958~~ 1005

Field Personnel J Bodeen, T Downey Signature

32.85
1.42
3427

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	**91MH401.001**	Page 7 of 8
Project	MacDermid - Huntingdon	Date 8/16/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time 12:40
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW-117S Sample Number(s) ~~1051335~~ 1051341 1051341 ref

Initial Field Data and Measurements

Depth of Well 38 ~~38.~~ Reference Used Top of PVC
Depth to Water 34.27 ~~32.85~~ PID/FID Reading 0.0
Height of Column 3.73 ~~5.15~~ ~~Interface Yes / No If yes, Depth~~ Lighter / Heavier

Well Casing Diameter 2" Material PVC
Protector Road Box / Stickup
Ground to Reference
Comments

General Condition	OK	Bad
Casing Secure	—	
Collar Intact	—	
Cover Locked	—	
Other (describe)		

Development Information

Parameter / Time	Depth to Water	Pump Setting	Purge Rate	Cum. Liters Purged	Temp (C)	Spec. Cond. umhos	pH	ORP (Eh)	DO	Turbidity	Comment
1130	34.33	103	100	5.50	13.91	0.197	5.89	338.6	1.91	65	
1135	34.32	103	100	6.00	13.83	0.199	5.87	317.5	1.76	60	
1140	34.30	103	100	6.50	14.40	0.200	5.85	307.0	1.68	55	
1145	34.32	103	100	7.00	14.72	0.205	5.90	288.2	1.75	45	
1150	34.34	103	100	7.50	14.76	0.208	5.90	273.1	2.05	35	
1155	34.33	103	100	~~7.5~~ 8.0	14.92	0.208	5.89	270.6	2.48	37	
1200	34.34	103	100	8.5	14.96	0.209	5.90	269.0	2.75	31	
1205	34.36	103	100	9.0	14.81	0.209	5.90	263.2	2.95	27	
1210	34.35	103	100	9.5	14.79	0.208	5.88	257.0	3.23	19	
1215	34.36	103	100	10.0	14.87	0.210	5.88	250.0	3.19	16	
1220	34.35	103	100	10.5	14.90	0.211	5.91	244.8	3.20	9.2	
1225	34.37	103	100	11	14.98	0.211	5.91	239.1	3.31	7.9	
1230	34.36	103	100	11.5	15.08	0.211	5.90	235.8	3.36	6.3	
1235	34.33	103	100	12.0	15.06	0.210	5.90	236.9	3.36	4.8	

3.73
0.16
2238
3.23
5.15
0.5968
1.16
0.90
15
1240

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other Bladder Pump
Field Decontamination? Yes / No If Yes, with what? Liquinox, HNO_3, DI, MeOH
Waste Container ID

Additional Comments

Measurements taken after ~~1 gallon~~ 0.75 gallons
Start purge @ 1025

Field Personnel J. Berdeen
T. Downey

Signature [signature]

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	**91MH401.001**	Page 8 of 8
Project	MacDermid - Huntingdon	Date 8/16/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time 14:35
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW-103 Sample Number(s) ~~1051348~~ 1051351 1051351 08

Initial Field Data and Measurements

Depth of Well 34.84 Reference Used TOC
Depth to Water 31.25' PID/FID Reading 0
Height of Column 3.59 Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter 2" Material PVC
Protector (Road Box) / Stickup
Ground to Reference _____
Comments _____

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked	✓	
Other (describe)		

Development Information

Parameter / Time	Depth to Water	Pump Setting	Purge Rate	Cum. Liters Purged mL	Temp (C)	Spec. Cond. umhos	pH	ORP (Eh)	DO	Turbidity	Comment
13:40	31.25	103	100			µS/cm		mg/L			1gal purge volume
13:50				1000	14.71	62	5.56	352.0	12.12	5.9	
14:00				2000	14.60	60	5.55	392.0	44.1	2.4	
14:10					14.54	56	5.33	436.9	43.1	1.9	
14:20					14.43	58	5.35	466.9	12.07	1.1	
14:30					14.70	59	5.39	476.0	12.01	0.7	
					14.69	59	5.40	479.1	12.00	0.7	Sample

Developement Method Peristaltic Pump / Bailer / Inertial Pump / (Other) Bladder pump
Field Decontamination? (Yes) / No If Yes, with what? Liquinox, HNO3, DI, MeOH
Waste Container ID MH-CT-010

Additional Comments 34.84 DTB

Field Personnel Tim Downey, J Berdeen

Signature Timothy Downey

AVERILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

No. 38792

PROJECT NAME:	PROJECT LOCATION:	PROJECT NUMBER:
MacDonald – Huntington Ave	Waterbury CT	91MH401.001

REPORT TO: Barbara Hermanik

INVOICE TO:

Source Codes: W = Well O = Outfall RO = Run Off R = River/Stream B = Bottom Sediment
MW = Monitoring Well S = Soil SG = Sludge LF = Landfill L = Lake/Ocean T = Treatment Facility
X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
14	1051349	MW	3	E	40 ml	HI	8260B		✓			
15	1051349	MW	1	P	1/2 gal	NaOH I	Cyanide		✓			
16	1051349	MW	1	A	500 mL	NI	RCRA 8 Metals + Cu, Ni, Zn	Hold	✓			
17	1051349,5	MW	1	A	500 mL	NI	RCRA 8 Metals + Cu, Ni, Zn		✓			
18	1051350	MW	3	E	40 ml	HI	8260B		✓			
19	1051350	MW	1	P	1/2 gal	NaOH I	Cyanide		✓			
20	1051350,5	MW	1	A	500 mL	NI	RCRA 8 Metals + Cu, Ni, Zn		✓			
21	1051350	MW	1	A	500 mL	NI	RCRA 8 Metals + Cu, Ni, Zn	Hold	✓			
22	1051339	X	3	E	40 ml	HI	8260B		✓			
23	1051339	X	1	P	1/2 gal	NaOH I	Cyanide		✓			
24	1051339	X	1	A	500 mL	NI	RCRA 8 Metals + Cu, Ni, Zn	HOLD	✓			
25	1051339,5	X	1	A	500 mL	NI	RCRA 8 Metals + Cu, Ni, Zn		✓			

Container Code: P = Plastic E = EPA VIAL C = Cube G = Glass A = Amber Glass B = Bacteria Bottle
Preservative Code: I = Iced F = Filtered N = Nitric Acid (HNO_3) H - Hydrochloric Acid (HCl) R = Sodium Hydroxide (NaOH) T = Sodium Thiosulfate S = Sulfuric Acid (H_2SO_4)
O = Other, *Specify*

Sampler's Signature	Affiliation	Date	Time
[signature]	UEA	8/16/01	1530

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	14-25	[signature]	[signature]	8/16/01	1530
2					
3					
4					

AVERILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

No. 38796

PROJECT NAME:	PROJECT LOCATION:	PROJECT NUMBER:
MacDermid - Huntingdon Avenue	Waterbury, CT	91MH401.001

REPORT TO: Barbara Heemink

INVOICE TO:

Source Codes: W = Well; O = Outfall; RO = Run Off; R = River/Stream; B = Bottom Sediment; MW = Monitoring Well; S = Soil; SG = Sludge; LF = Landfill; L = Lake/Ocean; T = Treatment Facility; X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	1051335	mw	3	E	40 mL	HI	8260B		✓			
2	1051335	mw	1	P	½ gal	NaOH I	Cyanide		✓			
3	1051335	mw	1	A	500 mL	NI	Metals (RCRA 8 + Cu, Ni, Zn)	HOLD	✓			
4	1051335 dt	mw	1	A	500 mL	NI	Metals (RCRA 8 + Cu, Ni, Zn)		✓			
5	1051341	mw	3	E	40 mL	HI	8260B		✓			
6	1051341	mw	1	P	½ gal	NaOH I	Cyanide		✓			
7	1051341	mw	1	A	500 mL	NI	Metals (RCRA 8 + Cu, Ni, Zn)	HOLD	✓			
8	1051341 dt	mw	1	A	500 mL	NI	Metals (RCRA 8 + Cu, Ni, Zn)		✓			
9	1031351	mw	3	E	40 mL	HI	8260B		✓			
10	1031351	mw	1	P	½ gal	NaOH I	Cyanide		✓			
11	1031351	mw	1	A	500 mL	NI	Metals (RCRA 8 + Cu, Ni, Zn)	HOLD	✓			
12	1031351 dt	mw	1	A	500 mL	NI	Metals (RCRA 8 + Cu, Ni, Zn)		✓			
13	1051346	X	~~3~~ 1	E	40 mL	HI	8260B		✓			

Container Code: P = Plastic; E = EPA VIAL; C = Cube; G = Glass; A = Amber Glass; B = Bacteria Bottle

Preservative Code: I = Iced; F = Filtered; N = Nitric Acid (HNO_3); H - Hydrochloric Acid (HCl); R = Sodium Hydroxide (NaOH); T = Sodium Thiosulfate; S = Sulfuric Acid (H_2SO_4); O = Other, *Specify*

Sampler's Signature	Affiliation	Date	Time
[signature]	CEA	8/16/04	1530

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-13	[signature]	[signature]	8/16/04	17:15
2					
3					
4					

DAILY FIELD REPORT

Loureiro Engineering Associates, Inc.

LEA Comm. No.	91MH401.001		Page ___ of ___
Project	MacDermid - Huntingdon		Date 8/13/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT		
Client	MacDermid Incorporated - RNav		

Arrived at Site 8:00 Departed from Site 1500 Vehicle FORD VAN 40 MILES

Odometer (Start) _____ Return _____

Site Activities

- [ ] Soil Sampling
- [x] Groundwater Sampling
- [ ] Surface Water Sampling
- [ ] Surface Water Sampling
- [ ] Vapor/Air Sampling
- [ ] Concrete Sampling
- [ ] Other Sampling
- [ ] Well Installation
- [ ] Well Development
- [ ] Geoprobe Work
- [ ] Concrete Coring
- [ ] Construction
- [ ] Inspection
- [ ] Waste Management
- [ ] Waste Management
- [ ] Site Walk Over
- [ ] Surveying
- [ ] Other (Describe)

Current Project Information

Last Sample Number Used	1051355
Last Location ID Used	
Current Location (if not complete)	
Sampling for	
Laboratories used	AEL
Paperwork & Equipment left at/in	BH
Site Contact	
Contractors on Site	
Time and place to meet contractors	

Non-productive Time

- [ ] None
- [ ] Equipment Breakdown
- [ ] Late
- [ ] Weather
- [ ] Missing Equipment
- [ ] Other (Describe)

Quality Assurance Checks

Yes	N/A	No	
✓			Sample labels complete
	✓		Sample/cooler seals OK
✓			All samples obtained
✓			Chains of custody
✓			All forms/logs complete
✓			Site walkover
✓			Site H&S Plan on site
✓			Instruments calibrated

Residuals Disposition

Item	Approx. Amount	Container ID
Soil/Solid		
Groundwater	15 GAL	MH-CT-009
Decon Fluid		
PPE		
Other		

Instrument Calibrations

pH/Conductivity

Std.	Standard	Meter
[ ]	pH 4	
[ ]	pH 7	
[ ]	pH 10	
___	Cond.	

PID/FID Meter

Std.	Standard	Meter
___		
[ ]	Zero w/Background	
[ ]	Zero w/Clean Air	

Balance

Std.	Standard	Reading
___	Std. Mass	

Expendable Items Used

Qty	Item	LEA Number
	Bailer, Disposable (spec. size)	090
	Drum, Closed Top 55 gallon	086
7	Filter, In Line	024
1	Miscellaneous Health & Safety Items	060
	Tubing, 1/2", NOS	007
	Tubing, 3/8", NOS	008
5	Water, Distilled	025

Equipment Used

Qty	Item	LEA Number
	Generator 3500 Watt	153
	Meter, Conductivity	022
	Meter, pH/Temp	021
1	Miscellaneous Small Tools & Equipment	152
	Pump, Grundfos	073
	Pump, Peristaltic (spec. Master or Isco)	040
	Pump, Submersible	201
	Pump, Watera	038
3	Turbidimeter	023
1	VOC Analyzer, Photovac 2020 (PID)	012
3	Water Level Indicator	028
1	INTERFACE PROBE	154

Field Personnel JON SWEETON, TIM DOWNEY, NEIL HICKEY Signature

DAILY FIELD REPORT

Loureiro Engineering Associates, Inc.

Supplemental Sheet

LEA Comm. No.	91MH401.001	Page ____ of ____
Project	MacDermid - Huntingdon	Date 8/13/01
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid Incorporated - RNav	

Description of Site Activities

0800 ARRIVE AT SITE, TIM DOWNEY, NEIL HICKEY, JON SWEETON

TD. SAMPLES MW-102
NH SAMPLES MW-112
JS SAMPLES MW-116S

TD SAMPCES MW-101
NH SAMPLES MW-109
JS SAMPLES MW-118D

TD + NH GET PRODUCT LEVEL IN MW-108

DEPTH TO PRODUCT = 32.95
DEPTH TO WATER = 33.62

SET PUMPS IN WELLS MW-118S, MW-117S, MW-117D

DO DRUM INVENTORY

DO EQUIPMENT BLANK.

1500 CLOSE GATE, LEAVE SITE

Field Personnel TIM DOWNEY, NEIL HICKEY, JON SWEETON

Signature

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
MISCELLANEOUS SAMPLES

LEA Comm. No.	**91MH401.001**		Page ____ of ____
Project	MacDermid - Huntingdon		Date 8/13/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT		
Client	MacDermid Incorporated - RNav		

Sample ID	Location ID	Time	Sample Type	Depth (ft)	PID/FID Reading	Comments	Waste Container ID
105135A	EQ BLANK	1000	—	—	—	EQ. BLANK	
105135A4	EQ BLANK	1400	—	—	—		
105135S	TRIP BLANK	1405	—	—	—	TRIP BLANK	

Field Personnel: JON SWEETON, NEIL HICKEY, TIM DOWNEY

Signature:

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	**91MH401.001**	Page ____ of ____	
Project	MacDermid - Huntingdon	Date 8/12/04	
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time 9:30	
Client	MacDermid Incorporated - RNav		

Monitoring Well Number MW-112 Sample Number(s) ~~1051345~~ 1051383 1051383 MS

Initial Field Data and Measurements

Depth of Well 33.20 Reference Used TOR

Depth to Water 32.86 PID/FID Reading 4.3

Height of Column ____ Interface Yes (No) If yes, Depth ____ Lighter / Heavier

Well Casing Diameter 2" Material PVC

Protector Road Box / Stickup

Ground to Reference ____

Comments PURGE = 0.37 G = 1.5 L

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked	✓	
Other (describe)		

Development Information

Time \ Parameter	Depth to Water	Pump Setting	Purge Rate	Cum. Liters Purged	Temp (C)	Spec. Cond. umhos	pH	ORP (Eh)	DO	Turbidity	Comment
9:18	32.30	100/70	150ml/m	0.5	17.87	295	5.91	459.1	77.7	6.3	
9:28	32.30	100/70	150ml/m	1.5	17.97	288	5.89	497.2	69.8	5.2	
9:38	32.30	100/70	100ml/m	2.5	18.02	286	5.91	520.9	66.8	3.9	
9:48	32.30	100/70	100ml	3.5	18.01	285	5.91	534.8	65.7	4.3	

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other SAMPLE-BLADDER PUMP

Field Decontamination? (Yes) / No If Yes, with what? DED. TUBING

Waste Container ID MH-CT-09

Additional Comments

Field Personnel TIM OWNEY, NEIL HILLIGEY, JON SWEETON Signature

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	**91MH401.001**	Page	of
Project	MacDermid - Huntingdon	Date	8/13/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time	13:~~55~~ 14:10
Client	MacDermid Incorporated - RNav		

Monitoring Well Number MW-118D Sample Number(s) ~~1051334~~ 1051340 1051353
1051340 up 1051353 up

Initial Field Data and Measurements

Depth of Well 60.00 Reference Used
Depth to Water 33.70 PID/FID Reading 0.0
Height of Column 26.30 Interface Yes / No If yes, Depth Lighter / Heavier

Well Casing Diameter Material General Condition

Protector Road Box / Stickup
Ground to Reference
Comments 4.1 GAL/V = 16 L/V

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked	✓	
Other (describe)		

Development Information

Parameter / Time	Depth to Water	Pump Setting	Purge Rate	Cum. Liters Purged	Temp (C)	Spec. Cond. umhos	pH	ORP (Eh)	DO	Turbidity	Comment
11:45	33.70	103/35	120	0.5	17.38	410	5.54	381	95	26	
12:00	33.75	103/35	120	2.3L	17.76	422	5.15	557	88	31	
12:15	33.75	103/35	120	4.1L	20.20	420	5.32	591	89	20	
12:30	33.75	103/35	120	~~5.9~~	20.99	423	5.42	599	89	18	
12:45	33.75	103/35	120	~~7.7~~	21.19	424	5.48	603	89	13	
1:00	33.75	103/35	120	9.5	22.28	424	5.50	606	90	8.7	
1:15	33.75	103/35	120	11.3	16.54	420	4.87	638	84	8	
1:25	33.75	103/35	150	12.8	16.27	419	4.90	640	83	7	NEW BAT
1:35	33.75	103/35	150	15.0	16.18	419	5.08	639	82	5.69	
1:~~40~~	33.75	103/35	150	16.55	16.29	419	5.13	637	82	4.80	
1:~~45~~	33.75	103/35	150	17.3	16.30	419	5.13	630	82	4.75	

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other SAMPE - BLADDER PUMP
Field Decontamination? Yes / No If Yes, with what?
Waste Container ID MH-CT-009

Additional Comments

Field Personnel JON SWEETON, TIM DOWNEY NEIL HICKEY Signature

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	**91MH401.001**	Page ____ of ____
Project	MacDermid - Huntingdon	Date 8/13/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time 9:40
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW-116S Sample Number(s) ~~1051346~~ 105,3~~[illegible]~~ 52 JEI, 105 13~~[illegible]~~ 52 JEI uf

Initial Field Data and Measurements

Depth of Well 34.50 Reference Used ____
Depth to Water 33.64 PID/FID Reading 1.5
Height of Column 0.86 Interface Yes / No If yes, Depth ____ Lighter / Heavier

Well Casing Diameter 2" Material PVC
Protector (Road Box) / Stickup
Ground to Reference ____
Comments 0.14 GAL/V = 0.5 L/V

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked		✓
Other (describe)		

Development Information

Parameter / Time	Depth to Water	Pump Setting	Purge Rate	Cum. Liters Purged	Temp (C)	Spec. Cond. umhos	pH	ORP (Eh)	DO	Turbidity	Comment
~~33~~ 9:05	33.80	100/22	150	0.5	17.0	192	5.51	331	51	70	
9:10	33.80	100/22	150	1.25	17.30	212	5.28	468	41	31	
9:25	33.80	100/22	150	3.50	17.80	220	5.19	566	40	12	
9:30	33.80	100/22	150	3.75	17.72	222	5.12	590	40	7.7	
9:35	33.80	100/22	150	4.00	17.74	223	5.11	601	40	6.5	
9:40	33.80	100/22	150	4.25	17.90	223	5.15	606	41	5.0	SAMPLE

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other SAMPLE-BLADDER PUMP
Field Decontamination? Yes / No If Yes, with what? ____
Waste Container ID MH-CT-009

Additional Comments

THIS ROADBOX HAS BOTH MW-116S + MW-116D IN IT. MW-116S IS TO THE SOUTH.

Field Personnel JON SWEETON *Signature* [signature]

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	91MH401.001	Page ____ of ____	
Project	MacDermid - Huntingdon	Date 8/13/04	
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time 11:37	
Client	MacDermid Incorporated - RNav		

Monitoring Well Number MW-109 Sample Number(s) 105134 105134 vf

Initial Field Data and Measurements

32.00

Depth of Well	35.10	Reference Used	TOR		
Depth to Water	32.55	PID/FID Reading	10.8		
Height of Column	2.55	Interface	Yes / (No)	If yes, Depth	Lighter / Heavier
Well Casing Diameter	2"	Material	PVC		
Protector	(Road Box) / Stickup				
Ground to Reference					
Comments	0.40 gal = 1.6 gal				

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked	✓	
Other (describe)		

Development Information

Parameter / Time	Depth to Water	Pump Setting	Purge Rate	Cum. Liters Purged	Temp (C)	Spec. Cond. umhos	pH	ORP (Eh)	DO	Turbidity	Comment
11:00	32.55	100/22	120	0.5	18.75	1108	5.46	488	17.0	10.0	
11:15	32.55	100/22	100	2.0	19.29	1115	5.37	475.1	20.9	4.8	
11:25	32.55	100/22	100	3.0	19.79	1156	5.50	469.1	22.1	3.7	
11:35	32.55	100/22	100	4.0	19.54	1156	5.51	468.5	20.1	3.7	

Developement Method Peristaltic Pump / Bailer / ~~Inertial Pump~~ / Other SAMPLE- BLADDER PUMP

Field Decontamination? (Yes) No If Yes, with what? DED. TUBING

Waste Container ID MH-ST-09

Additional Comments

Field Personnel TIM DOWNEY NEIL HICKEY JON SWEETON Signature

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	**91MH401.001**	Page ____ of ____
Project	MacDermid - Huntingdon	Date 8/13/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time ___:___
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW-101 Sample Number(s) ~~1051338~~ 1051345

Initial Field Data and Measurements

Depth of Well 33.04 Reference Used TOC

Depth to Water 6.05 PID/FID Reading 0

Height of Column ____ Interface Yes / No If yes, Depth ____ Lighter / Heavier

Well Casing Diameter 2" Material PVC

Protector Road Box / (Stickup)

Ground to Reference ____

Comments ____

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked	Screw on no lock	
Other (describe)	no Plug	

Development Information

Parameter / Time	Depth to Water	Pump Setting	Purge Rate	Cum. Liters Purged mL	Temp (C)	Spec. Cond. umhos	pH	ORP (Eh)	DO	Turbidity	Comment
10:50	6.05	103	100 mL/min	0		mS/cm			mg/L		4.3 gal volume
11:00				1,000	14.47	117	7.61	474.3	1.03	3.19	
11:10				2000	14.65	118	7.63	477.4	1.10	2.79	
11:20				3,000	14.60	118	7.62	487.0	1.03	2.75	
11:50			150	6,000	14.09	116	7.61	512.1	0.82	3.50	Turned pressure up
12:20			200	10,500	14.11	117	7.59	518.3	0.77	2.53	
12:40			200	14,500	14.14	117	7.56	550.1	0.77	2.51	Sample

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other SAMPLE-BLADDER

Field Decontamination? Yes / No If Yes, with what? ____

Waste Container ID MH-CT-009

Additional Comments

Field Personnel Timothy Downey ____ *Signature* Timothy Downey

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	**91MH401.001**	Page ___ of ___
Project	MacDermid - Huntingdon	Date 8/13/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time ___:___
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW02 Sample Number(s) ~~1051337~~ 1051344

Initial Field Data and Measurements

Depth of Well 34.59 Reference Used TOC

Depth to Water 26.06 PID/FID Reading 0

Height of Column 8.53 Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter 2" Material PVC

Protector Road Box / (Stickup)

Ground to Reference _____

Comments _____

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked	✓ no way to lock	
Other (describe)	no compression plug	

Development Information

Parameter / Time	Depth to Water	Pump Setting	Purge Rate mL/min	Cum. Liters Purged mL	Temp (C)	Spec. Cond. umhos	pH	ORP (Eh)	DO	Turbidity	Comment
9:15	26.06	103	150	0		uS/cm			mg/L		1.36 gal to be volume
9:20	26.71	103	100	750	13.98	62	5.49	154.6	2.13	4.39	Turned pressure
9:30	26.12	103	100	1,750	16.65	60	5.56	175.9	3.04	5.40	To 18 PSI
9:40	26.10	103	100	2,750	15.15	54	5.49	202.5	3.88	3.90	
9:50	26.10	103	100	3,750	14.20	50	5.43	219.2	4.13	4.43	
10:00	26.10	103	100	4,750	14.51	50	5.45	222.2	4.11	4.00	
10:10	26.10	103	100	5,750	14.53	56	5.46	223.6	4.14	4.10	Sample

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other Bladder Pump

Field Decontamination? Yes / No If Yes, with what? _____

Waste Container ID MW-CT-009

Additional Comments

Field Personnel Tim Downey _____ _____ Signature Timothy Downey

AVERILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

NO. 38793

PROJECT NAME:	PROJECT LOCATION:	PROJECT NUMBER:
MAC-DERMID - HUNTINGDON	WATERBURY CT	9/MH401

REPORT TO:

INVOICE TO: LEA

Source Codes: W = Well, O = Outfall, RO = Run Off, R = River/Stream, B = Bottom Sediment, MW = Monitoring Well, S = Soil, SG = Sludge, LF = Landfill, L = Lake/Ocean, T = Treatment Facility, X = Other, Specify WATER

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	1051353	MW	3	E	40ml	I,H	8260B		✓			
2	1051353	MW	1	P	1/2L	I,R	CYANIDE		✓			
3	1051353 DUP	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn TOTAL		✓			
4	1051353	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn (FILTERED) HOLD		✓			
5	1051354	X	3	E	40ml	I,H	8260B		✓			
6	1051354	X	1	P	1/2L	I,R	CYANIDE		✓			
7	1051354	X	1	A	1/2L	I,N	RCRA 8 MET Cu, Ni, Zn TOTAL		✓			
8	1051354	X	1	A	1/2L	I,N	RCRA 8 MET Cu, Ni, Zn (FILTERED) HOLD		✓			
9	1051355	X	2	E	40ml	I,N	8260B		✓			

Container Code: P = Plastic, E = EPA VIAL, C = Cube, G = Glass, A = Amber Glass, B = Bacteria Bottle

Preservative Code: I = Iced, F = Filtered, N = Nitric Acid (HNO_3), H - Hydrochloric Acid (HCl), R = Sodium Hydroxide (NaOH), T = Sodium Thiosulfate, S = Sulfuric Acid (H_2SO_4), O = Other, *Specify*

Sampler's Signature	Affiliation	Date	Time
	8/13/04	8/13/04	

ADDITIONAL COMMENTS:
RUSH VOCs By 8/17/04
CYANIDE + TOTAL METALS By 8/20/04

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-9			8/13/04	1635
2					
3					
4					

AVERILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

No. 38794

PROJECT NAME:	PROJECT LOCATION:	PROJECT NUMBER:
MAC-DERMID - HUNTINGDON	WATERBURY CT	9/MH401

REPORT TO:

INVOICE TO: LEA

Source Codes: W = Well; O = Outfall; RO = Run Off; R = River/Stream; B = Bottom Sediment; MW = Monitoring Well; S = Soil; SG = Sludge; LF = Landfill; L = Lake/Ocean; T = Treatment Facility; X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	1051345	MW	3	E	40ml	I,H	8260 B		✓			
2	1051345	MW	1	P	1/2G	I,R	CYANIDE		✓			
3	1051345UF	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn TOTAL		✓			
4	1051345	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn (FILTERED)	HOLD	✓			
5	1051344	MW	3	E	40ml	I,H	8260 B		✓			
6	1051344	MW	1	P	1/2G	I,R	CYANIDE		✓			
7	1051344UF	MW	1	A	1/2L	I,N	RCRA 8 MET Cu, Ni, Zn TOTAL		✓			
8	1051344	MW	1	A	1/2L	I,N	RCRA 8 MET Cu, Ni, Zn (FILTERED)	HOLD	✓			
9	1051352	MW	3	E	40ml	I,H	8260B		✓			
10	1051352	MW	1	P	1/2G	I,R	CYANIDE		✓			
11	1051352UF	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn TOTAL		✓			
12	1051352	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn (FILTERED)	HOLD	✓			

Container Code: P = Plastic; E = EPA VIAL; C = Cube; G = Glass; A = Amber Glass; B = Bacteria Bottle

Preservative Code: I = Iced; F = Filtered; N = Nitric Acid (HNO_3); H - Hydrochloric Acid (HCl); R = Sodium Hydroxide (NaOH); T = Sodium Thiosulfate; S = Sulfuric Acid (H_2SO_4); O = Other, Specify

Sampler's Signature	Affiliation	Date	Time
	LEA	8/13/04	

ADDITIONAL COMMENTS:

RUSH VOC's BY 8/17/04
CYANIDE + TOTAL METALS 8/20/04

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-12			8/13/04	1635
2					
3					
4					

AVERILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

NL 38795

PROJECT NAME:	PROJECT LOCATION:	PROJECT NUMBER:
MAC-DERMID - HUNTINGDON RD	WATERBURY CT	91MH401

REPORT TO: BARBARA
INVOICE TO: LEA

Source Codes: W = Well; O = Outfall; RO = Run Off; R = River/Stream; B = Bottom Sediment; MW = Monitoring Well; S = Soil; SG = Sludge; LF = Landfill; L = Lake/Ocean; T = Treatment Facility; X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	1051333	MW	3	E	40ML	I,H	8260 B		✓			
2	1051333	MW	1	P	1/2L	I,R	CYANIDE		✓			
3	1051333MS	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn TOTAL		✓			
4	1051333	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn (FILTERED)	HOLD	✓			
5	1051334	MW	3	E	40ML	I,H	8260 B		✓			
6	1051334	MW	1	P	1/2L	I,R	CYANIDE		✓			
7	1051334MSD	MW	1	A	1/2L	I,N	RCRA 8 MET Cu, Ni, Zn TOTAL		✓			
8	1051334	MW	1	A	1/2L	I,N	RCRA 8 MET Cu, Ni, Zn (FILTERED)	HOLD	✓			
9	1051340	MW	3	E	40ML	I,H	8260 B		✓			
10	1051340	MW	1	P	1/2L	I,R	CYANIDE		✓			
11	1051340	MW	1	A	1/2L	I,N	RCRA 8 MET Cu, Ni, Zn TOTAL		✓			
12	1051340	MW	1	A	1/2L	I,N	RCRA 8 MET Cu, Ni, Zn (FILTERED)	HOLD	✓			

Container Code: P = Plastic; E = EPA VIAL; C = Cube; G = Glass; A = Amber Glass; B = Bacteria Bottle
Preservative Code: I = Iced; F = Filtered; N = Nitric Acid (HNO_3); H - Hydrochloric Acid (HCl); R = Sodium Hydroxide (NaOH); T = Sodium Thiosulfate; S = Sulfuric Acid (H_2SO_4)
O = Other, Specify

Sampler's Signature	Affiliation	Date	Time
[signature]	LEA	8/13/04	

ADDITIONAL COMMENTS:
RUSH: VOC'S BY 8/17/04
CYANIDE + TOTAL METALS BY 8/20/04

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-12	[signature] FOR	[signature]	8/13/04	1635
2					
3					
4					

DAILY FIELD REPORT

Loureiro Engineering Associates, Inc.

LEA Comm. No.	91MH401.001		Page ___ of ___
Project	MacDermid - Huntingdon		Date 8/12/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT		
Client	MacDermid Incorporated - RNav		

Arrived at Site 9:00 Departed from Site 4:30 Vehicle VAN, GEOPROBE 40 MILES EACH

Odometer (Start) _____ Return _____

Site Activities

- [ ] Soil Sampling
- [x] Groundwater Sampling
- [ ] Surface Water Sampling
- [ ] Surface Water Sampling
- [ ] Vapor/Air Sampling
- [ ] Concrete Sampling
- [ ] Other Sampling
- [ ] Well Installation
- [ ] Well Development

- [ ] Geoprobe Work
- [ ] Concrete Coring
- [ ] Construction
- [ ] Inspection
- [ ] Waste Management
- [ ] Waste Management
- [ ] Site Walk Over
- [ ] Surveying
- [ ] Other (Describe)

Current Project Information

Last Sample Number Used _____
Last Location ID Used _____
Current Location (if not complete) _____
Sampling for _____
Laboratories used _____
Paperwork & Equipment left at/in _____
Site Contact _____
Contractors on Site _____
Time and place to meet contractors _____

Non-productive Time

- [ ] None
- [ ] Equipment Breakdown
- [ ] Late

- [ ] Weather
- [ ] Missing Equipment
- [ ] Other (Describe)

Quality Assurance Checks

Yes	N/A	No	
X			Sample labels complete
	X		Sample/cooler seals OK
X			All samples obtained
X			Chains of custody
X			All forms/logs complete
X			Site walkover
X			Site H&S Plan on site
X			Instruments calibrated

Residuals Disposition

Item	Approx. Amount	Container ID
Soil/Solid		
Groundwater	10 GAL	MH-LT-009
Decon Fluid		
PPE		
Other		

Instrument Calibrations

pH/Conductivity

Std.	Standard	Meter
	pH 4	
	pH 7	
	pH 10	
___	Cond.	

PID/FID Meter

Std.	Standard	Meter
___		
	Zero w/Background	
	Zero w/Clean Air	

Balance

Std. Standard Reading
___ Std. Mass _____

Expendable Items Used

Qty	Item	LEA Number
	Bailer, Disposable (spec. size)	090
	Drum, Closed Top 55 gallon	086
8	Filter, In Line	024
1	Miscellaneous Health & Safety Items	060
	Tubing, 1/2", NOS	007
	Tubing, 3/8", NOS	008
5	Water, Distilled	025

Equipment Used

Qty	Item	LEA Number
	Generator 3500 Watt	153
	Meter, Conductivity	022
	Meter, pH/Temp	021
1	Miscellaneous Small Tools & Equipment	152
	Pump, Grundfos	073
	Pump, Peristaltic (spec. Master or Isco)	040
	Pump, Submersible	201
	Pump, Watera	038
3	Turbidimeter	023
1	VOC Analyzer, Photovac 2020 (PID)	012
3	Water Level Indicator	028

Field Personnel JON SWEETEN, TIM DOWNEY, NEIL HICKEY Signature

Loureiro Engineering Associates, Inc.

DAILY FIELD REPORT

Supplemental Sheet

LEA Comm. No.	**91MH401.001**	Page ____ of ____
Project	MacDermid - Huntingdon	Date 8/12/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid Incorporated - RNav	

Description of Site Activities

9:00 ARRIVE AT SITE TIM DOWNEY, NEIL HICKEY
JON SWEETON, BARBARA HEEMINK

BARBARA GIVES US A SITE TOUR

IS SAMPLES MW-111
TD SAMPLES MW-105
NH SAMPLES MW-113

RAINING VERY HARD FOR ABOUT 1 HR

IS SAMPLES MW-114
TD SAMPLES MW-110
NH SAMPLES MW-116D

PUMPS ARE DECONED AND PLACED IN MW-118D, MW-109, MW-101, MW-102 AND MW-116S

MW-117S, MW-117D AND MW-118S WERE DEVELOPED TODAY, THEY WILL HAVE PUMPS SET IN THEM TOMORROW AND WILL BE SAMPLED ON MONDAY

IS SAMPLES MW-115

DO EQUIPMENT BLANK

CLOSE GATES AND LEAVE SITE

MH-CP-009

Field Personnel JON SWEETON, TIM DOWNEY, NEIL HICKEY Signature

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
MISCELLANEOUS SAMPLES

LEA Comm. No.	91MH401.001	Page ____ of ____
Project	MacDermid - Huntingdon	Date 8/12/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid Incorporated - RNav	

Sample ID	Location ID	Time	Sample Type	Depth (ft)	PID/FID Reading	Comments	Waste Container ID
105134 7	TRIP BLANK	1655				TRIP	
105134 8	EQ BLANK	1700				EQ.	

Field Personnel: JON SWEETON, TIM DOWNEY, NEIL HICKEY

Signature

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	91MH401.001	Page ____ of ____
Project	MacDermid - Huntingdon	Date 5/12/09
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time 14:59
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW-1160 Sample Number(s) ~~1051344~~ 1051332, 1051332 of

Initial Field Data and Measurements

Depth of Well 57.92 Reference Used TOR
Depth to Water 31.88 PID/FID Reading 0.0
Height of Column 26.04 Interface Yes / (No) If yes, Depth _____ Lighter / Heavier

Well Casing Diameter 2" Material PVC
Protector Road Box / Stickup
Ground to Reference _____
Comments 1 VOLUME = 4.2 GAL = 16 L

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked	✓	N/A OK
Other (describe)		

Development Information

Parameter / Time	Depth to Water	Pump Setting	Purge Rate	Cum. Liters Purged	Temp (C)	Spec. Cond. umhos	pH	ORP (Eh)	DO	Turbidity	Comment
13:28	31.96	103/90	175 ml/m	0.5	19.37	55	4.95	344.0	94.9	16.9	
13:38	31.96	103/90	175 ml/m	2.25	18.63	23	4.56	456.6	86.5	11.9	
13:48	32.10	103/90	175 ml/m	4.00	18.98	20	4.55	506.2	85.2	6.99	
13:58	32.10	103/90	175 ml/m	5.75	19.07	21	4.63	530.3	84.4	4.38	
14:08	32.10	103/90	175 ml/m	7.50	18.58	21	4.64	555.5	83.7	0.93	
14:18	32.10	103/90	175 ml/m	9.25	18.64	21	4.68	559.0	84.9	0.96	
14:28	32.10	103/90	175 ml/m	11.00	18.79	22	4.44	577.8	86.7	0.91	
14:38	32.10	103/90	175 ml/m	12.75	18.94	23	4.28	597.8	88.2	0.97	
14:48	32.10	103/90	175	14.50	19.04	25	4.22	606.1	89.1	1.03	
14:58	32.10	103/90	175	16.25	18.96	24	4.19	608.3	89.1	0.86	

Developement Method Peristaltic Pump / Bailer / (Inertial Pump) / Other SAMPLE - BLADDER PUMP
Field Decontamination? (Yes) / No If Yes, with what? DEDICATED TUBING,
Waste Container ID ~~WT-ES~~ MH-CT-009

Additional Comments

Field Personnel JON SWEETON NEIL HICKEY Signature
TIM DONVEY

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	**91MH401.001**	Page ____ of ____
Project	MacDermid - Huntingdon	Date 8/12/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time 10:20
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW-113 Sample Number(s) ~~1051343~~ 1051331, 1051331 DUP

Initial Field Data and Measurements

Depth of Well 40.50 Reference Used TOP OF CASING
Depth to Water 34.45 PID/FID Reading 0.0
Height of Column 6.05 Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter 2" Material PVC
Protector (Road Box) / Stickup
Ground to Reference _____
Comments 1 GAL TO BE PURGED

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked		✓
Other (describe)		

Development Information

Parameter / Time	Depth to Water	Pump Setting	Purge Rate	Cum. Liters Purged	Temp (C)	Spec. Cond. umhos	pH	ORP (Eh)	DO	Turbidity	Comment
9:09	34.55	103/20	75 ml/m	0.5	18.65	464	5.10	202.8	42.5	10.93	
9:19	34.55	103/20	75 ml/m	1.0	18.47	387	5.15	196.5	39.6	3.89	
9:29	34.55	103/20	75 ml/m	1.5	18.41	375	5.21	221.4	41.5	3.17	
9:39	34.55	103/20	75 ml/m	2.0	18.18	374	5.24	224.3	42.3	3.10	
9:49	34.56	103/20	75 ml/m	2.5	19.51	366	5.30	220.5	30.5	2.67	
9:59	34.57	103/20	75 ml/m	3.0	18.01	363	5.29	214.8	37.6	1.69	
10:09	34.59	103/20	75	3.5	18.01	359	5.32	222.1	33.2	1.18	
10:19	34.60	103/20	75	4.0	18.03	357	5.34	224.1	33.1	1.05	

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other SAMPLE-BLADDER PUMP
Field Decontamination? Yes / No If Yes, with what? _____
Waste Container ID MH-CT-009

Additional Comments

Field Personnel JON SWEETON, TIM DOWNEY, NEIL HICKEY Signature

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	91MH401.001	Page ___ of ___
Project	MacDermid - Huntingdon	Date 8/12/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time 16:25
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW-115 Sample Number(s) ~~1051333~~ 1051338, 1051338 ~~of~~

Initial Field Data and Measurements

Depth of Well 38.31 Reference Used TOC
Depth to Water 33.76 PID/FID Reading ___
Height of Column 4.55 Interface Yes / No If yes, Depth ___ Lighter / Heavier
Well Casing Diameter 2" Material PVC
Protector Road Box / Stickup
Ground to Reference ___
Comments 0.73 o/v = 2.84v

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked	✓	
Other (describe)		

Development Information

Parameter / Time	Depth to Water	Pump Setting	Purge Rate	Cum. Liters Purged	Temp (C)	Spec. Cond. umhos	pH	ORP (Eh)	DO	Turbidity	Comment
1525	33.76	101/25	150	0.5	17.40	738	4.12	645	60		
1530	33.90	101/25	150	1.25	16.86	700	4.05	629	55	50	
1540	34.20	101/25	150	2.75	16.45	597	4.26	610	42	18	
1550	34.20	101/25	150	4.25	16.40	722	4.62	580	28	14	
1600	34.20	101/25	150	5.75	16.80	833	5.28	550	28	14	
1610	34.20	101/25	150	7.25	16.48	816	4.92	560	39	11	
1615	34.20	101/25	150	8.00	16.29	810	4.89	562	40	6	
1620	34.20	101/25	150	8.75	16.25	811	4.90	563	47	5	

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other SAMPLE-BLADDER PUMP
Field Decontamination? Yes / No If Yes, with what? ___
Waste Container ID MHCT-009

Additional Comments

Field Personnel JON SWEETON Signature

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	91MH401.001	Page ___ of ___
Project	MacDermid - Huntingdon	Date 8/12/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time 1405
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW-110 Sample Number(s) ~~1051341~~ 1051343, 1051343 DUP

Initial Field Data and Measurements

Depth of Well 40.09 Reference Used Toc

Depth to Water 33.28 PID/FID Reading ____

Height of Column 6.81' Interface Yes / No If yes, Depth ____ Lighter / Heavier

Well Casing Diameter 2" Material PVC

Protector (Road Box) / Stickup

Ground to Reference ____

Comments ____

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked	✓	
Other (describe)		

Development Information

Time \ Parameter	Depth to Water	Pump Setting	Purge Rate mL/min	Cum. Liters Purged mL	Temp (C)	Spec. Cond. umhos	pH	ORP (Eh)	DO	Turbidity	Comment
13:00	33.28	103	100	0		455/cm			mg/L		1 gal Volume
13:10	33.28	↓	↓	1000	20.15	256	5.90	275.8	7.13	9.7	
13:20	33.28			2000	18.78	222	5.72	480.5	6.29	10	
13:30	33.40			3000	19.34	275	5.76	500.2	5.98	9.5	
13:40	33.37			4000	18.93	378	5.76	513.6	5.78	7.7	
13:50	↓			5000	19.25	430	5.77	526.8	5.64	6.0	
14:00				6000	19.13	496	5.74	539.7	5.39	4.8	
14:05	↓	↓	↓	6500	19.18	504	5.75	541.9	5.36	4.1	Sample

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other ____

Field Decontamination? Yes / No If Yes, with what? SAMPLE-BLADDER PUMP

Waste Container ID MH-CT-009

Additional Comments

Field Personnel Tim Downay ____ ____ *Signature* Timothy Downay

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	91MH401.001	Page ____ of ____
Project	MacDermid - Huntingdon	Date 8/12/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time 11:00
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW-106 Sample Number(s) 1051342, 1051342 DUP

Initial Field Data and Measurements

Depth of Well 38.10' Reference Used TOC
Depth to Water 32.60 PID/FID Reading ____
Height of Column 5.5 Interface Yes / No If yes, Depth ____ Lighter / Heavier

Well Casing Diameter 2" Material PVC
Protector (Road Box) / Stickup
Ground to Reference ____
Comments ____

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked	✓	
Other (describe)		

Development Information

Parameter / Time	Depth to Water	Pump Setting	Purge Rate ml/min	Cum. Liters Purged	Temp (C)	Spec. Cond. umhos	pH	ORP (Eh)	DO	Turbidity	Comment
10:00	32.60'	103	100	0		µS/cm					.88 gal volume
10:10				1,000	18.35	92	5.97	236	7.76	32.0	
10:20				2,000	17.48	85	5.80	335.2	7.36	16.0	
10:25				2,500	17.75	79	5.78	369.4	7.08	9.0	
10:35				3,000	18.12	77	5.78	398.8	7.03	9.0	
10:40				3,500	18.10	76	5.77	400.8	6.98	7.2	
10:45				4,000	18.20	76	5.77	412.6	6.88	6.2	
10:50				4,500	18.21	75	5.76	418.7	6.88	5.3	
10:55				5,000	18.18	75	5.75	424.3	6.86	5.2	
11:00				5,500	18.19	75	5.75	431.2	6.91	5.0	Sample

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other SAMPE-BLADDER PUMP
Field Decontamination? Yes / No If Yes, with what? DI
Waste Container ID MH-CT-009

Additional Comments

Field Personnel Tim Downey Signature Timothy Downey

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	**91MH401.001**	Page	of
Project	MacDermid - Huntingdon	Date	8/12/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time	14:30
Client	MacDermid Incorporated - RNav		

Monitoring Well Number MW-114 Sample Number(s) 1051332 1051337, 1051337 df

Initial Field Data and Measurements

Depth of Well 38.38 Reference Used TOC
Depth to Water 33.74 PID/FID Reading
Height of Column 4.64 Interface Yes / No If yes, Depth Lighter / Heavier

Well Casing Diameter 2" Material PVC
Protector (Road Box) / Stickup
Ground to Reference
Comments 0.74 GAL/V = 2.8 L/V

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked	✓	
Other (describe)		

Development Information

Parameter / Time	Depth to Water	Pump Setting	Purge Rate	Cum. Liters Purged	Temp (C)	Spec. Cond. umhos	pH	ORP (Eh)	DO	Turbidity	Comment
1250	33.74	103/50	180	0.5	20.0	1047	3.77	597	63	380	
1305	33.74	101/25	140	2.6	19.02	870	3.18	604	60	209	
1315	33.74	101/25	140	4.0	18.64	726	2.92	609	66	65	
1325	33.74	101/22	100	5.0	19.49	737	3.33	604	67	80	
1340	33.75	101/22	100	6.5	19.21	791	3.32	605	64	36	
1400	33.75	101/22	100	8.5	19.25	882	3.32	603	61	18	
1405	33.75	101/22	100	9.0	19.70	920	3.48	602	59	15	
1410	33.75	101/22	100	9.5	19.65	930	3.40	604	58	15	
1415	33.75	101/22	100	10.0	19.70	940	3.35	609	57	11	

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other BLADDER PUMP
Field Decontamination? Yes / No If Yes, with what?
Waste Container ID MH-CT-009

Additional Comments

Field Personnel JON SWEETON *Signature*

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	**91MH401.001**	Page ___ of ___	
Project	MacDermid - Huntingdon	Date 8/12/04	
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time 11:10	
Client	MacDermid Incorporated - RNav		

Monitoring Well Number MW-111 Sample Number(s) ~~103135~~ 1051336, 1051336 DUP

Initial Field Data and Measurements

Depth of Well 35.51 Reference Used TOC
Depth to Water 33.00 PID/FID Reading ___
Height of Column 2.51 Interface Yes / No If yes, Depth ___ Lighter / Heavier

Well Casing Diameter 2" Material PVC
Protector (Road Box) / Stickup
Ground to Reference ___
Comments 0.40 GAL/V = 1.5 L/V

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact		✓
Cover Locked		✓
Other (describe)		

Development Information

Time \ Parameter	Depth to Water	Pump Setting	Purge Rate	Cum. Liters Purged	Temp (C)	Spec. Cond. umhos	pH	ORP (Eh)	DO %	Turbidity	Comment
10:20	33.85	103/50	200	0.2							
10:32	33.85	99/22	100	0.5	19.44	80	4.67	287	52		
10:37	33.85	99/22	100	1.0	19.39	82	4.67	328	50	33	
10:47	33.85	99/22	100	2.0	19.40	104	4.59	418	44	13	
10:57	33.85	99/22	100	3.0	19.22	136	4.53	470	39	7.3	
11:02	33.85	99/22	100	3.5	19.23	140	4.54	480	38	4.8	

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other BLADDER

Field Decontamination? Yes / No If Yes, with what? ___

Waste Container ID MH-CT-0009

Additional Comments ROAD BOX IS ABOUT 8" BELOW PAVEMENT
RAIN WATER MAY INFILTRATE WELL
NEEDS NEW PAD

Field Personnel JON SWEETON Signature

AVERILL
ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

NO. 38797

PROJECT NAME:	PROJECT LOCATION:	PROJECT NUMBER:
MAC-DERMID-HUNTINGDON AVE	WATERBURY CT	91MH401

REPORT TO:

INVOICE TO: LEA

Source Codes: W = Well; O = Outfall; RO = Run Off; R = River/Stream; B = Bottom Sediment; MW = Monitoring Well; S = Soil; SG = Sludge; LF = Landfill; L = Lake/Ocean; T = Treatment Facility; X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	1051336	MW	3	E	40ml	I,H	8260 B ✓	RUSH - DUE TUES AUG 17th	✓			
2	1051336	MW	1	P	1/2L	I,R	CYANIDE ✓	RUSH DUE AUG 20th	✓			
3	1051336 (4f)	MW	1	A	1/2L	I,N	RCRA 8 MET Cu,Ni,Zn TOTAL ✓	RUSH - DUE AUG 20th	✓			
4	1051336 (5) JES	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu,Ni,Zn (FILTERED) ✓	HOLD	✓			
5	1051337	MW	3	E	40ml	I,H	8260 B ✓	RUSH DUE TUES AUG 17th	✓			
6	1051337	MW	1	P	1/2L	I,R	CYANIDE ✓	RUSH - DUE AUG 20th	✓			
7	1051337 (4f)	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu,Ni,Zn TOTAL ✓	RUSH DUE AUG 20th	✓			
8	1051337 (5) JES	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu,Ni,Zn (FILTERED) ✓	HOLD	✓			
9	1051338	MW	3	E	40ml	I,H	8260B ✓	RUSH - DUE TUES AUG 17th	✓			
10	1051338	MW	1	P	1/2L	I,R	CYANIDE ✓	RUSH DUE AUG 20th	✓			
11	1051338 (4f)	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu,Ni,Zn TOTAL ✓	RUSH DUE AUG 20th	✓			
12	1051338 (5)	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu,Ni,Zn (FILTERED) ✓	HOLD	✓			

Container Code: P = Plastic; E = EPA VIAL; C = Cube; G = Glass; A = Amber Glass; B = Bacteria Bottle

Preservative Code: I = Iced; F = Filtered; N = Nitric Acid (HNO_3); H - Hydrochloric Acid (HCl); R = Sodium Hydroxide (NaOH); T = Sodium Thiosulfate; S = Sulfuric Acid (H_2SO_4); O = Other, Specify

Sampler's Signature	Affiliation	Date	Time
	LEA	8/12/04	1745

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-12			8/12/04	5:45 PM
2	1-12			8/13/04	1355
3					
4					

AVERILL
ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 38798

PROJECT NAME: MAC-DERMID - HUNTINGDON AVE

PROJECT LOCATION: WATERBURY CT

PROJECT NUMBER: 91MH401

REPORT TO:

INVOICE TO: LEA

Source Codes: W = Well, O = Outfall, RO = Run Off, R = River/Stream, B = Bottom Sediment, MW = Monitoring Well, S = Soil, SG = Sludge, LF = Landfill, L = Lake/Ocean, T = Treatment Facility, X = Other, Specify AQUEOUS

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	TYPE	SIZE	PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	1051342	MW	~~3~~ 2 JES	E	40ml	I,H	8260B ✓ ~~(HEAD + VOA)~~	RUSH - DUE TUES AUG 17th	✓			
2	1051342	MW	1	P	1/2 G	I,R	CYANIDE ✓	RUSH - DUE AUG 20th	✓			
3	1051342uf	MW	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn TOTAL ✓	RUSH - DUE AUG 10th	✓			
4	1051342	MW	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn (FILTERED) ✓	HOLD	✓			
5	1051343	MW	~~3~~ 2 JES	E	40ml	I,H	8260B ✓	RUSH - DUE TUES AUG 17th	✓			
6	1051343	MW	1	P	1/2 G	I,R	CYANIDE ✓	RUSH DUE AUG 10th	✓			
7	1051343uf	MW	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn TOTAL ✓	RUSH - DUE AUG 20	✓			
8	1051343	MW	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn (FILTERED) ✓	HOLD	✓			
9	1051348	MW	3	E	40ml	I,H	8260B ✓	RUSH - DUE TUES AUG 17th	✓			
10	1051348	X	1	P	1/2 G	I,R	CYANIDE ✓	RUSH DUE AUG 20	✓			
11	1051348uf	X	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn TOTAL ✓	RUSH DUE AUG 20	✓			
12	1051348	X	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn FILTERED ✓	HOLD	✓			
13	1051347	X	1	E	40ml	I,H	8260B ✓	RUSH - DUE TUES AUG 17th	✓			

Container Code: P = Plastic, E = EPA VIAL, C = Cube, G = Glass, A = Amber Glass, B = Bacteria Bottle
Preservative Code: I = Iced, F = Filtered, N = Nitric Acid (HNO_3), H - Hydrochloric Acid (HCl), R = Sodium Hydroxide (NaOH), T = Sodium Thiosulfate, S = Sulfuric Acid (H_2SO_4), O = Other, Specify

Sampler's Signature	Affiliation	Date	Time
[signature]	LEA	8/12/04	1745

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-13	[signature]	[signature]	8/12/04	5:45 PM
2	1-13	[signature]	[signature]	8/13/04	9:35
3					
4					

AVERILL
ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 38799

PROJECT NAME:	PROJECT LOCATION:	PROJECT NUMBER:
MAC-DERMID - HUNTINGDON AVE	WATERBURY, CT	91MH401

REPORT TO:

INVOICE TO: LEA

Source Codes: W = Well, O = Outfall, RO = Run Off, R = River/Stream, B = Bottom Sediment, MW = Monitoring Well, S = Soil, SG = Sludge, LF = Landfill, L = Lake/Ocean, T = Treatment Facility, X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	105133	MW	3	E	40ml	I,H	8260 B ✓	RUSH - DUE TUE - AUG 17th	✓			
2	105133	MW	1	P	1/2L	I,R	CYANIDE ✓	RUSH - DUE AUG 20th	✓			
3	105133 uf	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn TOTAL ✓	RUSH - DUE AUG 20th	✓			
4	105133	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn (FILTERED) ✓	HOLD	✓			
5	105132	MW	3	E	40ml	I,H	8260 B ✓	RUSH - DUE TUES AUG 17th	✓			
6	105132	MW	1	P	1/2L	I,R	CYANIDE ✓	RUSH - DUE AUG 20th	✓			
7	105132 uf	MW	1	A	1/2L	I,N	RCRA 8 MET, ~~Cu, Ni, Zn~~ TOTAL ✓	RUSH - DUE AUG 20th	✓			
8	105132	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn (FILTERED) ✓	HOLD	✓			

Container Code: P = Plastic, E = EPA VIAL, C = Cube, G = Glass, A = Amber Glass, B = Bacteria Bottle
Preservative Code: I = Iced, F = Filtered, N = Nitric Acid (HNO_3), H - Hydrochloric Acid (HCl), R = Sodium Hydroxide (NaOH), T = Sodium Thiosulfate, S = Sulfuric Acid (H_2SO_4)
O = Other, Specify

Sampler's Signature	Affiliation	Date	Time
N/A	LEA	8/12/04	1145

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-8			8/12/04	5:45 PM
2	1-8			8/13/04	9:35
3					
4					

DAILY FIELD REPORT

Loureiro Engineering Associates, Inc.

Page 1 of 5

	91MH401.001
Project	MacDermid - Huntingdon
Location	MacDermid - Huntingdon Avenue, Waterbury, CT
Client	MacDermid Incorporated - RNav
Date	8/12/04

Arrived at Site 0750 Departed from Site 1330 Vehicle Ford Ranger

Odometer (Start) _____ Return _____

Site Activities

- [ ] Soil Sampling
- [ ] Groundwater Sampling
- [ ] Surface Water Sampling
- [ ] Surface Water Sampling
- [ ] Vapor/Air Sampling
- [ ] Concrete Sampling
- [ ] Other Sampling
- [ ] Well Installation
- [x] Well Development
- [ ] Geoprobe Work
- [ ] Concrete Coring
- [ ] Construction
- [ ] Inspection
- [ ] Waste Management
- [ ] Waste Management
- [ ] Site Walk Over
- [ ] Surveying
- [ ] Other (Describe)

Non-productive Time

- [x] None
- [ ] Equipment Breakdown
- [ ] Late
- [ ] Weather
- [ ] Missing Equipment
- [ ] Other (Describe)

Current Project Information

Last Sample Number Used _____

Last Location ID Used _____

Current Location (if not complete) _____

Sampling for _____

Laboratories used _____

Paperwork & Equipment left at/in Delaware Avenue

Site Contact _____

Contractors on Site _____

Time and place to meet contractors _____

Quality Assurance Checks

Yes	N/A	No	
			Sample labels complete
			Sample/cooler seals OK
			All samples obtained
			Chains of custody
			All forms/logs complete
			Site walkover
			Site H&S Plan on site
			Instruments calibrated

Residuals Disposition

Item	Approx. Amount	Container ID
Soil/Solid		
Groundwater	59 gals	MHCT 008, 009
Decon Fluid		
PPE		
Other		

Instrument Calibrations

pH/Conductivity

Std.	Standard	Meter
[ ]	pH 4	4.10
[ ]	pH 7	7.03
[ ]	pH 10	10.3
___	Cond.	

PID/FID Meter

Std.	Standard	Meter
___		
[ ]	Zero w/Background	
[ ]	Zero w/Clean Air	

Balance

Std.	Standard	Reading
___	Std. Mass	

Expendable Items Used

Qty	Item	LEA Number
	Bailer, Disposable (spec. size)	090
✓	Decontamination Supplies	081
	Drum, Closed Top 55 gallon	086
	Filter, Zap Cap	024
✓	Miscellaneous Health & Safety Items	060
✓	Water, Distilled	025

Equipment Used

Qty	Item	LEA Number
✓	Meter, pH/Temp	021
	Miscellaneous Small Tools & Equipment	152
	Pump, Grundfos	073
	Pump, Peristaltic (spec. Master or Isco)	040
	Pump, Submersible	201
✓	Pump, Watera	038
	Thermo-Anemometer	248
✓	Turbidimeter	023
	VOC Analyzer, Photovac 2020 (PID)	012
✓	Water Level Indicator	028

Field Personnel Eric Boswell

Signature

Loureiro Engineering Associates, Inc.

DAILY FIELD REPORT

Supplemental Sheet

	91MH401.001	Page 2 of 5
Project	MacDermid - Huntingdon	Date 8/12/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid Incorporated - RNav	

Description of Site Activities

0750 - arrived onsite & set up for the development of MW-117D & MW-117S
0815 - CT Test borings showed up to finish pad on MW-117D & abandoned old MW-117S
- I moved to MW-118S in order to let them finish.
0900 - start purging MW-118S
1000 - start purging MW-117S
1120 - start purging MW-117D
1245 - CT Test borings wants me to inspect & sign off on the PVC riser from the old MW-117D.
- I called Barbara Hemink to confirm & she agreed to it
- screen from MW-117D (old) became detached inside the hole. I was unable to see it.
1330 - left site for day.

Field Personnel ~~Eric Boswell~~ [signature]

Signature [signature]

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
WELL DEVELOPMENT

	91MH401.001	Page 3 of 5
Project	MacDermid - Huntingdon	Date 8/12/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time 0850
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW-1185 Sample Number(s) _____

Initial Field Data and Measurements

Depth of Well 36.25 Reference Used top of PVC casing
Depth to Water 31.75 PID/FID Reading _____
Height of Column 4.5 Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter 1.5" Material PVC

Protector Road Box / Stickup
Ground to Reference _____
Comments well volume = .41 gallons

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked	✓	
Other (describe)		

Development Information

Purge Volume Factors
0.5" - 0.01
1" - 0.041
1.5" - 0.091
2" - 0.16
4" - 0.65
6" - 1.5

Volumes \ Parameter	Gallons	Temp (C)	pH (SU)	Spec.Con.	Turbidity	Other
Initial 0903	.5	18.3	5.64	100.1	error	
0908	1	16.0	5.57	79.5	error	
0913	1.5	16.1	5.56	80.2	error	
0918	2	15.3	5.61	78.1	error	
0923	2.5	15.2	5.64	78.8	error	
0928	3	15.4	5.61	78.6	error	

Initial Sample Observations

Clear	
Colored	
Cloudy	
Turbid	✓
Odor	
Sheen	✓

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other _____
Field Decontamination? (Yes / No) If Yes, with what? methanol
Waste Container ID MW-CT-008

Additional Comments

Field Personnel Alex Clarke _____ *Signature* _____

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
WELL DEVELOPMENT

	91MH401.001	Page 4 of 5
Project	MacDermid - Huntingdon	Date 8/12/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time ___:___
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW-117S-RW Sample Number(s) _____

Initial Field Data and Measurements

Depth of Well 37.45 Reference Used top of PVC casing
Depth to Water 30.84 PID/FID Reading _____
Height of Column 6.61 Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter 2" Material PVC

Protector Road Box / Stickup
Ground to Reference _____
Comments well volume = 1.00

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked	✓	
Other (describe)		

Development Information

Purge Volume Factors
0.5" - 0.01
1" - 0.041
1.5" - 0.091
2" - 0.16
4" - 0.65
6" - 1.5

Initial Sample Observations
Clear ☐
Colored ☐
Cloudy ☐
Turbid ✓
Odor ☐
Sheen ✓

Volume / Parameter	Gallons	Temp (C)	pH (SU)	Spec.Con.	Turbidity	Other
Initial 1005	1.5	16.1	5.62	64.6	error	
1012	3	14.6	5.76	69.0	↑	
1021	4	15.0	5.90	68.2		
1026	5	14.8	5.94	68.8		
1033	7	15.1	6.03	70.2	↓	
1037	8	15.5	6.09	71.3	error	
1053	9	15.6	6.18	71.2	635	
1100	10	15.6	6.22	73.9	623	
1104	11	15.5	6.31	73.9	500	
1109	12	15.2	6.27	73.7	307	

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other _____
Field Decontamination? Yes / No If Yes, with what? Methanol
Waste Container ID MH-CT-0058

Additional Comments

1040 - well dry
1048 - began pumping again
* never ran dry again (possible clog in check valve)

Field Personnel Alex Clarke *Signature* [signature]

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
WELL DEVELOPMENT

	91MH401.001	Page 5 of 5
Project	MacDermid - Huntingdon	Date 8/12/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time 11:25
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW-117D-RW Sample Number(s) _____

Initial Field Data and Measurements

Depth of Well 55.16 Reference Used top of PVC casing
Depth to Water 32.35 PID/FID Reading _____
Height of Column 22.81 Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter 2" Material PVC

Protector Road Box / Stickup
Ground to Reference _____
Comments well volume = 3.65 gallons

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact	✓	
Cover Locked	NA	
Other (describe)		

Development Information

Purge Volume Factors
0.5" - 0.01
1" - 0.041
1.5" - 0.091
2" - 0.16
4" - 0.65
6" - 1.5

Volumes / Parameter	Gallons	Temp (C)	pH (SU)	Spec.Con.	Turbidity	Other
Initial 1125	40	15.8	6.26	70.9	ever	
1131	4	14.7	6.22	67.8		
1136	8	14.4	6.13	66.1		
1144	12	14.5	6.04	68.5		
1151	16	14.5	5.98	68.9		
1204	20	15.6	5.85	73.2		
1207	22	14.9	5.85	73.8		
1210	24	14.7	5.85	75.1		
1215	26	14.8	5.82	78.1		
1218	28	14.8	5.83	77.9		
1222	30	14.9	5.82	76.3		
1225	32	14.7	5.80	76.3	ever	

Initial Sample Observations

Clear	
Colored	
Cloudy	
Turbid	✓
Odor	
Sheen	✓

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other Submersible Pump
Field Decontamination? Yes / No If Yes, with what? Methanol
Waste Container ID MW-EA-008, 009

Additional Comments

A total of 42 gallons were purged. 10 gallons after stabilization

Field Personnel Alex Clarke _____ *Signature* _____

MW-11D -RW.

DAILY FIELD REPORT

Loureiro Engineering Associates, Inc.

	91MH401.001	Page ____ of ____
Project	MacDermid - Huntingdon	Date 8/11/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid Incorporated - RNav	

Arrived at Site 8:20 Departed from Site 15:25 Vehicle FORD RANGER

Odometer (Start) _____ Return _____

Site Activities

- [ ] Soil Sampling
- [ ] Groundwater Sampling
- [ ] Surface Water Sampling
- [ ] Surface Water Sampling
- [ ] Vapor/Air Sampling
- [ ] Concrete Sampling
- [ ] Other Sampling
- [X] Well Installation
- [X] Well Development

- [ ] Geoprobe Work
- [ ] Concrete Coring
- [ ] Construction
- [ ] Inspection
- [ ] Waste Management
- [ ] Waste Management
- [ ] Site Walk Over
- [ ] Surveying
- [X] Other (Describe) INSTALL 8 bladder pumps.

Non-productive Time

- [ ] None
- [ ] Equipment Breakdown
- [ ] Late

- [ ] Weather
- [ ] Missing Equipment
- [ ] Other (Describe)

Current Project Information

Last Sample Number Used: NA.
Last Location ID Used: _____
Current Location (if not complete): _____
Sampling for: _____
Laboratories used: _____
Paperwork & Equipment left at/in: _____
Site Contact: _____
Contractors on Site: _____
Time and place to meet contractors: _____

Quality Assurance Checks

Yes	N/A	No	
			Sample labels complete
			Sample/cooler seals OK
			All samples obtained
			Chains of custody
			All forms/logs complete
			Site walkover
			Site H&S Plan on site
			Instruments calibrated

Residuals Disposition

Item	Approx. Amount	Container ID
Soil/Solid		
Groundwater		
Decon Fluid		
PPE		
Other		

Instrument Calibrations

pH/Conductivity

Std.	Standard	Meter
	pH 4	
	pH 7	
	pH 10	
___	Cond.	

PID/FID Meter

Std.	Standard	Meter
___		
	Zero w/Background	
	Zero w/Clean Air	

Balance

Std. Standard Reading
___ Std. Mass _____

Expendable Items Used

Qty	Item	LEA Number
	Cap, PVC, 1", (Threaded or FJT)	147
	Cap, PVC,1', Slip (S447010)	146
	Concrete, 60 lb. Bag	085
	Decontamination Supplies	081
3	Drum, Open Top 55 Gallon	086
	Grout mix, bag	237
	Locks, Monitoring Well	155
	Miscellaneous Health & Safety Items	060
	Plug, Locking, 2"	233
	Sand, Filter Pack, Bags	220
	Water, Distilled	025
	Well Point, 1" Sch 80 (FJT or ?)	216
	Well Protector, Roadbox, 4"	135
	Well Protector, Roadbox, 6"	175
	Well Protector, Roadbox, 7"	014
	Well Protector, Stickup, 4" (10127 or ?)	007a

Equipment Used

Qty	Item	LEA Number
1	Miscellaneous Small Tools & Equipment	152
	Pump, Peristaltic (spec. Master or Isco)	040
	Pump, Submersible	201
1	Pump, Watera	038
1	VOC Analyzer, Photovac 2020 (PID)	012
1	Water Level Indicator	028
	WELL MATERIAL SUPPLIED	
	BY CONNECTICUT TEST BORING.	

Field Personnel RYAN HINES _____ *Signature*
ERIC BOSWELL. _____

Loureiro Engineering Associates, Inc.

DAILY FIELD REPORT

Supplemental Sheet

	91MH401.001	Page ____ of ____
Project	MacDermid - Huntingdon	Date 8/11/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid Incorporated - RNav	

Description of Site Activities W.C. overcast - 70°F

0800 - Arrive onsite

Time	well ID	DTB	DTW	PID	~~Set~~	Set Time
9:39	MW-116S	34.25	31.45	0.00	—	—
9:42	MW-112	35.02	31.86	0.00	~~1210~~ 32.5	12:10
10:30	MW-113	39.98	34.40	1.2	37.0	1:50
10:00	MW-109	34.49	32.14	2.5	—	—
10:11	MW-110	39.65	30.59	0.7	35.5	12:57
10:40	MW-111	34.78	31.88	1.4	34.00	1:40
10:45	MW-114	37.84	31.91	0.3	35.25	1:30
11:03	MW-115	37.94	31.76	0.0	35.5	1:20
	↳ Flooded - did not bail					
11107	MW-105	36.96	32.56	0.0	34.5	1:10
11:40	MW-116D	58.25			56.00	11:40

11:10 - Chris D'Angelis, CTB arrived on-site to discuss MW-117D and inspect well

1150 - Chris D'Angelis, CTB Departs

1230 - CT Test Boring (CTB) arrives to work on MW-117D

Chris D'Angelis
Quentin - Driller
Mike - Driller's Helper

Boring went down to bedrock - 55'
2' = #0 Sand
3' - Bentonite
- Grout

1300 - Lightning - CTB begins finishing up for day
↳ did not complete concrete cap on MW-117D-RW and abandonment of MW-117D

1510 - Labeled drums WT-CT-029, 030, 031, soil cuttings, date
WT-CT-005, 006, 007, MW-118, date

1520 - CTB departs site

1525 - Depart Site

Field Personnel Ryan Hines

Signature Ryan J. Hines

Loureiro Engineering Associates, Inc.

DAILY FIELD REPORT

Supplemental Sheet

	91MH401.001	Page ____ of ____
Project	MacDermid - Huntingdon	Date 8/11/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid Incorporated - RNav	

Description of Site Activities W.C. overcast - 70°F

0820 - arrive on site

Chris D'Angelis 11:10 arrive
11:50 Depart
Came to MSpect
MW-117D

Arrived
CTB 12:30
for MW-117D
rebore

	Well ID	DTB	DTW	SET	PID
9:39	MW-116S	34.25	31.45		0.00
9:42	MW-112	35.02	31.86		0.00
10:31	MW-113	39.98	34.40		1.2
10:40	MW-111	34.78	31.88		1.4
10:45	MW-114	37.84	31.91		0.3
Flooded 11:03	MW-115	37.94	31.76		0.0
11:07	MW-105	36.96	32.56		0.0
	MW-110 - Could not find				
10:00	MW-109	34.49	32.14		2.50
10:11	MW-110	39.65	30.59		0.7

Time	Set Depth	
11:40	56	MW-116D 58.25
12:10	32.5	MW-112
12:57	35.5	MW-110
1:10	34.5	MW-105
1:20	35.5	MW-115
1:30	35.25	MW-114
1:40	34.00	MW-111
1:50	37.00	MW-113

MW-117D - RN

CTB - CT Test Borings
Chris D'Angelis - Heads
Mike - Driller
Quentin - Driller's Helper
Bottom of Boring - 55'

Soil Cuttings
WT-OT-028 9-031 date -
WT-CT-005-7

MW-117S
MW-117D
confirm offset - don't know

what they have done
down to bedrock (55-58)
2" diameter PVC well
Well screen - 10' well screen 55-45
Riser
2'-#0 sand above well screen

Field Personnel
Eric Boswell

Signature
KJH for EB

3' - Bentonite
Grout

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
WELL DEVELOPMENT

	91MH401.001	Page ____ of ____
Project	MacDermid - Huntingdon	Date __/__/__
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time 10:25
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW-118D Sample Number(s) _____ _____

Initial Field Data and Measurements

Depth of Well 59.2 Reference Used PVC
Depth to Water 32.03 PID/FID Reading 0.00
Height of Column 27.17 Interface Yes / No If yes, Depth _____ Lighter / Heavier
Well Casing Diameter 2" Material PVC
Protector Road Box / Stickup
Ground to Reference _____
Comments _____

General Condition	OK	Bad
Casing Secure		
Collar Intact		
Cover Locked		
Other (describe)		

Development Information

Purge Volume Factors
0.5" - 0.01
1" - 0.041
1.5" - 0.091
2" - 0.16
4" - 0.65
6" - 1.5

Initial Sample Observations
Clear [ ]
Colored [X] Brown
Cloudy [X]
Turbid [X]
Odor [ ]
Sheen [ ]

Volumes \ Parameter	Gallons	Temp (C)	pH (SU)	Spec.Con.	Turbidity	Other
Initial						
	20	16.3	6.23	—	Brn	
	55	18.1	6.18	—	Brn	
	60	16.2	6.18	92.7	Brn	
	70	15.6	6.15	84.7	Brn	
	75	14.9	6.03	81.0	406	
	85	15.6	5.72	75.9	68.6	
	100	14.9	5.71	72.0	162	
	130	15.4	5.71	74.8	143	

Developement Method Peristaltic Pump / Bailer / ~~Inertial Pump~~ / Other _____
Field Decontamination? Yes / No If Yes, with what? _____
Waste Container ID _____

Additional Comments

Field Personnel _____ _____ *Signature*
Eric Boswell

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
WELL DEVELOPMENT

	91MH401.001	Page ____ of ____
Project	MacDermid - Huntingdon	Date ___/___/____
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time ___:___
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW-117D Sample Number(s) _____ _____

Initial Field Data and Measurements

Depth of Well 39.9 Reference Used _____
Depth to Water 29.57 PID/FID Reading 0.3
Height of Column _____ Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter _____ Material _____
Protector Road Box / Stickup
Ground to Reference _____
Comments _____

General Condition	OK	Bad
Casing Secure		
Collar Intact		
Cover Locked		
Other (describe)		

Development Information

Purge Volume Factors
0.5" - 0.01
1" - 0.041
1.5" - 0.091
2" - 0.16
4" - 0.65
6" - 1.5

Volumes \ Parameter	Gallons	Temp (C)	pH (SU)	Spec.Con.	Turbidity	Other
Initial						

Initial Sample Observations
Clear ☐
Colored ☐
Cloudy ☐
Turbid ☐
Odor ☐
Sheen ☐

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other _____

Field Decontamination? Yes / No If Yes, with what? _____
Waste Container ID _____

Additional Comments

Field Personnel _____ _____ *Signature*
Eric Boswell _____ _____

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
WELL DEVELOPMENT

	91MH401.001	Page ____ of ____
Project	MacDermid - Huntingdon	Date ___/___/____
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time ___:___
Client	MacDermid Incorporated - RNav	

Monitoring Well Number MW-117S Sample Number(s) _____ _____

Initial Field Data and Measurements

Depth of Well 37.1 Reference Used _____

Depth to Water 30.84' PID/FID Reading 0.0

Height of Column _____ Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter _____ Material _____

Protector Road Box / Stickup

Ground to Reference _____

Comments _____

General Condition	OK	Bad
Casing Secure		
Collar Intact		
Cover Locked		
Other (describe)		

Development Information

Purge Volume Factors

0.5" - 0.01
1" - 0.041
1.5" - 0.091
2" - 0.16
4" - 0.65
6" - 1.5

Initial Sample Observations

Clear ☐
Colored ☐
Cloudy ☐
Turbid ☐
Odor ☐
Sheen ☐

Volumes \ Parameter	Gallons	Temp (C)	pH (SU)	Spec.Con.	Turbidity	Other
Initial						

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other _____

Field Decontamination? Yes / No If Yes, with what? _____

Waste Container ID _____

Additional Comments

Field Personnel _____ _____ *Signature*

Eric Boswell _____ _____ _____

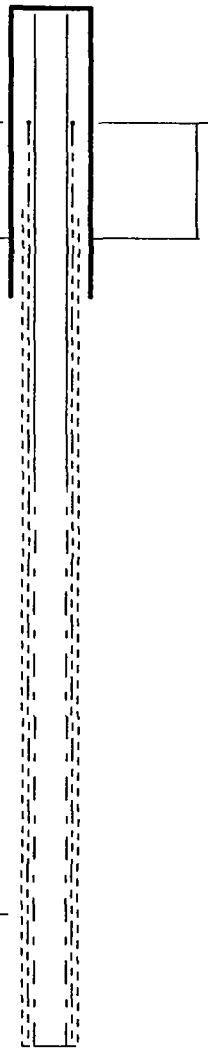
WELL COMPLETION REPORT

Project: MacDermid - Huntingdon
91MH401.001
Client MacDermid Incorporated - RNav
Location MacDermid - Huntingdon Avenue

Start Date 8/11/04
End Date 8/11/04
Well ID MW-117D - RW

Drilling Contractor CONNECTICUT TEST BORING
Drilling Method Hollow Stem Auger
Sampling Method ~~Hollow~~
Groundwater Observation
Depth ~32' **at** ____ **Hours**

Logged by RYAN HINES
Drilling Foreman CLINTON
Drill Rig
GPS Latitude
GPS Longitude



Protector
- Material: Steel
- Diameter: 6"
- Length: 12" Ground
- Stickup: NA
- Key #: NA
- Cover Type: Roadblock

Top Seal
- Top: 2'
- Bottom: 2.5'
- Material: Bentonite chips. grout.

Backfill
- Top: 2.5'
- Bottom: 40'
- Material: Grout

Secondary Sand
- Top: 43'
- Bottom: 45'
- Size: NO. 0 SAND.

Filter Pack
- Top: 45'
- Bottom: 55'
- Material: NO. 0 SAND

Reported depth to bottom of boring 55'

Comments

Concrete
- Diameter: 2'
- Thickness: 2'

Reference
- Stickup: NA
- Description:

Casing
- Diameter: 2"
- Material: PVC
- Length: 45'
- Stickup: NA.

Seal
- Top: 40'
- Bottom: 43'
- Material: BENTONITE CHIPS.

Screen
- Top: 45'
- Bottom: 55'
- Material: PVC
- Diameter: 2"
- Length: 10'
- Slot Size: 40

Miscellaneous Materials (Quantity Used/Item)
- Cement:
- Bentonite Chips:
- Bentonite Pellets: SUPPLIED
- Bentonite Powder:
- Grout Weight: BY
- Filter Pack Sand:
- Capping Sand: CTB
- Well Point:
- Well Plug:

Signature _____

DAILY FIELD REPORT

Loureiro Engineering Associates, Inc.

Page 1 of 5

Project	91MH401.001 MacDermid - Huntingdon
Location	MacDermid - Huntingdon Avenue, Waterbury, CT
Client	MacDermid Incorporated - RNav
Date	8/7/04

Arrived at Site 8:20 Departed from Site 3:45 Vehicle PERSONAL

Odometer (Start) _____ Return _____

Site Activities

- [ ] Soil Sampling
- [ ] Groundwater Sampling
- [ ] Surface Water Sampling
- [ ] Surface Water Sampling
- [ ] Vapor/Air Sampling
- [ ] Concrete Sampling
- [ ] Other Sampling
- [X] Well Installation
- [X] Well Development
- [ ] Geoprobe Work
- [ ] Concrete Coring
- [ ] Construction
- [ ] Inspection
- [ ] Waste Management
- [ ] Waste Management
- [ ] Site Walk Over
- [ ] Surveying
- [ ] Other (Describe)

Current Project Information

Last Sample Number Used: NA
Last Location ID Used:
Current Location (if not complete):
Sampling for:
Laboratories used:
Paperwork & Equipment left at/in:
Site Contact: Al P.
Contractors on Site: CONNECTICUT TEST BORING

Non-productive Time

- [ ] None
- [ ] Equipment Breakdown
- [ ] Late
- [ ] Weather
- [X] Missing Equipment
- [ ] Other (Describe)

Time and place to meet contractors: SITE

Quality Assurance Checks

Yes	N/A	No	
	✓		Sample labels complete
	✓		Sample/cooler seals OK
	✓		All samples obtained
	✓		Chains of custody
✓			All forms/logs complete
	✓		Site walkover
✓			Site H&S Plan on site
✓			Instruments calibrated

Residuals Disposition NA

Item	Approx. Amount	Container ID
Soil/Solid		
Groundwater		
Decon Fluid		
PPE		
Other		

Instrument Calibrations

pH/Conductivity

Std.	Standard	Meter
	pH 4	
	pH 7	
	pH 10	
___	Cond.	

PID/FID Meter

Std.	Standard	Meter
___		

- [ ] Zero w/Background
- [ ] Zero w/Clean Air

Balance

Std. Standard Reading
___ Std. Mass _____

Expendable Items Used

Qty	Item	LEA Number
	Bailer, Disposable (spec. size)	090
1	Decontamination Supplies	081
1	Drum, Closed Top 55 gallon	086
	Filter, Zap Cap	024
	Miscellaneous Health & Safety Items	060
	Water, Distilled	025
1	Waterra Tubing	
1	generator	

Equipment Used

Qty	Item	LEA Number
	Meter, pH/Temp	021
1	Miscellaneous Small Tools & Equipment	152
	Pump, Grundfos	073
	Pump, Peristaltic (spec. Master or Isco)	040
	Pump, Submersible	201
1	Pump, Watera	038
	Thermo-Anemometer	248
1	Turbidimeter	023
	VOC Analyzer, Photovac 2020 (PID)	012
1	Water Level Indicator	028

Field Personnel Barbara Heemink _____ _____ Signature

Loureiro Engineering Associates, Inc.

DAILY FIELD REPORT

Supplemental Sheet

	91MH401.001	Page 2 of 5
Project	MacDermid - Huntingdon	Date 8/7/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid Incorporated - RNav	

Description of Site Activities

8:15 = arrived at Site. Connecticut Test Boring crew at site
8:25 = started drilling MW-118S.
8:55 = Boring advancement of MW-118S completed
9:00 = initiated monitory well installation at MW-118S.
9:30 = Eric Boswell arrive
10:15 = finished setting monitoring well MW-118S.
11:00 = started developing MW-118S
12:30 finished developing MW-118S.
11:45 = initiated ~~[illegible]~~ removal of original MW MW-117S.
2:30 = finalized well installation of MW-117S RW
5:00 = finished setting roadbrocks, concrete at monitoring wells MW-117SRW & MW-118S.

Waste Disposal Drum Reference:

PZ-04: Drum ID: WT-DT-024 - soil cuttings.
MW-118S: Drum ID: WT-DT-021 = soil cuttings
WT-CT-002 - ~~decon two~~ purged water
MW-117D: Drum ID: WT-DT-027 = soil cuttings
WT-CT-004 = purged water: decon H_2O.
MW-117S Drum ID: WT-CT-003 = purged water: decon H_2O.
WT-DT-025
WT-DT-026 } soil cuttings.
WT-DT-028

Field Personnel ~~Alex Clarke~~ ~~Dave S. Vasiliou~~ BARBARA HEEMINK

Signature

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
WELL DEVELOPMENT

	91MH401.001	Page 2 of 2
Project	MacDermid - Huntingdon	Date 8/7/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	Time ___:___
Client	MacDermid Incorporated - RNav	

Monitoring Well Number HW-118S Sample Number(s) _____ _____

Initial Field Data and Measurements

Depth of Well 38' Reference Used NA
Depth to Water 31' 7" PID/FID Reading NA
Height of Column 5' 3" Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter 2" Material PVC
Protector Road Box / Stickup
Ground to Reference NA
Comments _____

General Condition	OK	Bad
Casing Secure	✓	
Collar Intact		
Cover Locked		
Other (describe)		

Development Information

Purge Volume Factors
0.5" - 0.01
1" - 0.041
1.5" - 0.091
2" - 0.16
4" - 0.65
6" - 1.5

Volumes \ Parameter	Gallons	Temp (C)	pH (SU)	Spec.Con.	Turbidity	Other
Initial						
11:30	2.66	—	—	—	+1100	
12:00	2.66	—	—	—	+1100	
12:30	2.66	—	—	—	+1100.	

Initial Sample Observations
- Clear [ ]
- Colored [ ]
- Cloudy [X]
- Turbid [X]
- Odor [ ]
- Sheen [ ]

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other WATERRA PUMP.

Field Decontamination? Yes / No If Yes, with what? _____

Waste Container ID WT-CT-002

Additional Comments STARTED @ 11:00 AM. FINISHED AT 12:30 PM.
~~[illegible]~~ Removed approximately 8 gallons.
1 gallon ≃ 1 well volume.

Field Personnel Barbara Heemink _____ Signature [signature]

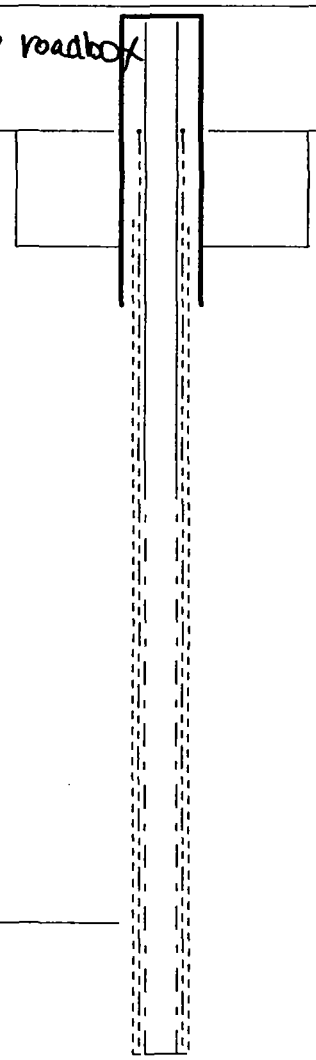
4 of 5

WELL COMPLETION REPORT

Project:	MacDermid - Huntingdon 91MH401.001	**Start Date** 8/7/04	**Well ID** MW-117S-RW
Client	MacDermid Incorporated - RNav	**End Date** 8/7/04	
Location	MacDermid - Huntingdon Avenue		

Drilling Contractor CONNECTICUT TEST BORING
Drilling Method HOLLOWSTEM AUGER
Sampling Method NA
Groundwater Observation
Depth ____ **at** ____ **Hours**
~32'

Logged by - overnight = Barba Heeminke
Drilling Foreman Clinton
Drill Rig —
GPS Latitude NA
GPS Longitude NA



Protector
- Material: Metal cap roadbox
- Diameter: 6"
- Length: 12" Ground
- Stickup: NO
- Key #: NO
- Cover Type: metal cap bottdown
- 2-2.5 = bentonite.

Top Seal
- Top: 2.5'
- Bottom: 23'
- Material: Grout

Backfill
- Top: 23'
- Bottom: 26'
- Material: bentonite

Secondary Sand
- Top: 26'
- Bottom: 38'
- Size: No. 0

Filter Pack
- Top: NA.
- Bottom:
- Material:

Reported depth to bottom of boring

Concrete Diameter 2'
Concrete Thickness 2'

Reference
- Stickup: NA
- Description:

Casing
- Diameter:
- Material:
- Length:
- Stickup:

Seal
- Top:
- Bottom:
- Material:

Screen
- Top: 28'
- Bottom: 38'
- Material: 40 PVC
- Diameter: 2"
- Length: 10'
- Slot Size: ~~.010~~ 40

Miscellaneous Materials (Quantity Used/Item)
- Cement
- Bentonite Chips
- Bentonite Pellets
- Bentonite Powder
- Grout Weight
- Filter Pack Sand
- Capping Sand
- Well Point
- Well Plug

Comments
1) RW = replaced well
2) Removed well material & used same borehole to reinstall New monitoring well I.D'd as MW-117S-RW.
3) BURNED WELL IN.
4.) NO LOGGING.
5) waste drum ID.

well materials supplied by driller

Signature [signature]

LEA
Loureiro Engineering Associates, Inc.

purged H2O/decon H2O = WT-LT-003
Soil cuttings = WT-OT-025
WT-OT-026
WT-OT-028

505

WELL COMPLETION REPORT

Project: MacDermid - Huntingdon
91MH401.001
Client MacDermid Incorporated - RNav
Location MacDermid - Huntingdon Avenue

Start Date 8/7/04
End Date 8/7/04
Well ID MW-118S

Drilling Contractor CONNECTICUT TEST BORING
Drilling Method Hollow Stem Auger
Sampling Method NA
Groundwater Observation
Depth 31'7" **at** ____ **Hours**

Logged by - Oversight - Barbara Heeman
Drilling Foreman CLINTON
Drill Rig ____
GPS Latitude NA
GPS Longitude NA

Protector
- Material: ~~PVC~~ metal loadbox
- Diameter: ~~8"~~ ~~7"~~ 6"
- Length: ~~2'~~ 12" Ground
- Stickup: NA
- Key #: NA
- Cover Type: metal CAP

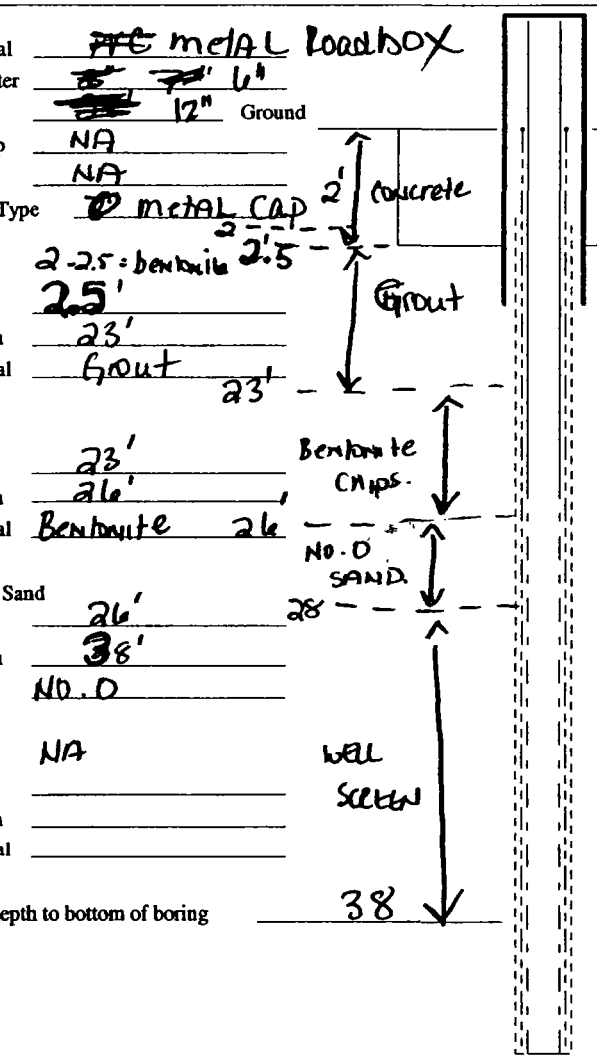
Top Seal
- Top: 2.5'
- Bottom: 23'
- Material: Grout

Backfill
- Top: 23'
- Bottom: 26'
- Material: Bentonite 26

Secondary Sand
- Top: 26'
- Bottom: 38'
- Size: NO. 0

Filter Pack: NA
- Top: ____
- Bottom: ____
- Material: ____

Reported depth to bottom of boring: 38



Concrete Diameter: 2'
Concrete Thickness: 2'

Reference
- Stickup: NA
- Description: ____

Casing
- Diameter: 2'
- Material: 40. PVC
- Length: 28'
- Stickup: NA

Seal
- Top: ____
- Bottom: ____
- Material: ____

Screen
- Top: 28'
- Bottom: 38'
- Material: 40 PVC
- Diameter: 2"
- Length: 10'
- Slot Size: 40 ~~.010~~

Miscellaneous Materials (Quantity Used/Item)
- Cement: ____
- Bentonite Chips: ____
- Bentonite Pellets: ____
- Bentonite Powder: ____
- Grout Weight: ____
- Filter Pack Sand: ____
- Capping Sand: ____
- Well Point: ____
- Well Plug: ____

Comments
- BURNED WELL IN.
- NO LOGGING
- Waste Drum ID: WT-DT-021 (soil cuttys) WT-0022

Signature ____

LEA

Loureiro Engineering Associates, Inc.

DAILY FIELD REPORT

Loureiro Engineering Associates, Inc.

Page 1 of ~~8~~ 8

Project	91MH401.001 MacDermid - Huntingdon
Location	MacDermid - Huntingdon Avenue, Waterbury, CT
Client	MacDermid Incorporated - RNav
Date	8/6/04

Arrived at Site 0715 Departed from Site _____ Vehicle VAN

Odometer (Start) _____ Return C30

Site Activities

- [x] Soil Sampling
- [ ] Groundwater Sampling
- [ ] Surface Water Sampling
- [ ] Surface Water Sampling
- [ ] Vapor/Air Sampling
- [ ] Concrete Sampling
- [ ] Other Sampling
- [x] Well Installation
- [ ] Well Development
- [ ] Geoprobe Work
- [ ] Concrete Coring
- [ ] Construction
- [ ] Inspection
- [ ] Waste Management
- [ ] Waste Management
- [ ] Site Walk Over
- [ ] Surveying
- [ ] Other (Describe)

Non-productive Time

- [x] None
- [ ] Equipment Breakdown
- [ ] Late
- [ ] Weather
- [ ] Missing Equipment
- [ ] Other (Describe)

Current Project Information

Last Sample Number Used	1049079
Last Location ID Used	MW-167D
Current Location (if not complete)	—
Sampling for	—
Laboratories used	—
Paperwork & Equipment left at/in	G. Heenink
Site Contact	AM
Contractors on Site	CTB.
Time and place to meet contractors	715 - Site.

Quality Assurance Checks

Yes	N/A	No	
✓			Sample labels complete
✓			Sample/cooler seals OK
✓			All samples obtained
	✓		Chains of custody
✓			All forms/logs complete
✓			Site walkover
	✓		Site H&S Plan on site
✓			Instruments calibrated

Residuals Disposition

Item	Approx. Amount	Container ID
Soil/Solid	6-drums	MH-DT-015-020
Groundwater		
Decon Fluid		
PPE		
Other		

Instrument Calibrations

pH/Conductivity

Std.	Standard	Meter
	pH 4	
	pH 7	
	pH 10	
	Cond.	

PID/FID Meter

Std.	Standard	Meter
100	Isobt	100

- [x] Zero w/Background
- [ ] Zero w/Clean Air

Balance

Std. Standard Reading

Std. Mass

Expendable Items Used

Qty	Item	LEA Number

Equipment Used

Qty	Item	LEA Number
1	Photovac - PID	
1	MISC - H&S	
1	Soil Sampling kit	
1	MISC Tools	
6	55-gal- drums	

Field Personnel ~~Alex Clarke~~, E. Bogell, ~~Dave S. Vasilion~~

Signature

Loureiro Engineering Associates, Inc.

DAILY FIELD REPORT

Supplemental Sheet

	91MH401.001	Page 2 of 8
Project	MacDermid - Huntingdon	Date 8/6/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid Incorporated - RNav	

Description of Site Activities

0715 - arrive on-site - Meet w/ B. Heeminke - review well installed 8-5 & gadds for day.
0720 - CTB on-site - set-up @ MW-118 area.
0750 - begin drilling monitor well / boring MW-118D - drill to 28' and begin 2' interval continuous split-spoon sampling
0830 - begin split spoon sampling -
0950 - de-label and empty and brack old sample jars of soil from this site, into drum MH-OT-017
0920 - B. Heeminke depart site
1025 - complete boring for MW-118D to 60' - refusal @ 60' - 1" - begin to set well - 2" dia - PVC - supplied by CTB
1040 Gail B - on-site -
1320 - Set-up drill rig on MW-117D
1330 - Begin drilling on MW-117D
1420 - Rich - MacDermid on-site - off site @ 1450 - Reported former excavation area - possible source from previous occupant Ball bearing MFG
1535 - Set well @ MW-117D
1500 - Gail B - off-site.

1615 - depart site.

EJB

Field Personnel ~~Alex Clarke~~ E. Boswell
~~Dave S. Vasiliou~~

Signature [signature]

Loureiro Engineering Associates, Inc.

FIELD BORING LOG

BORING ID: MW-118D

LEA Comm. No.	91MH401.001		Page 3 of 8
Project	MacDermid - Huntingdon		Date 8/6/04
Location	MacDermid - Huntingdon Avenue	GPS Latitude	
Client	MacDermid - RNav	GPS Longitude	
Drilling Method	8" HSA	Drilling Contractor	CTB
Sampling Method	Split Spoon- GRAB	Drill Foreman	Chris D'Angelis
Groundwater Depth	30' at	Drill Rig	CME-75

Elevation/ Depth	Sample Number(s)	Recovery (% or n/n)	Blows/6" / Downforce	Time	PID/FID (ppm)	Mass	Description of Recovered Material (Color, primary grain size and amount, other grain size(s) and amounts, density, moisture, coherence, structure, sorting, other characteristics)
0	1049051	—	—		0.0		~0-12'- Sand/gravel & cobbles 12- med/fine sand-yellow / Drilled down to 28'- begin split spoon sampling
28	1049052	20/24		835	0.0		med to fine yellow brown sand- 0-10" dry 10-20" moist
30	1049053	18/24		0840	0.0		fine to very fine yellow brown sand- wet
32	1049054	24/24		0845	0.0		AA
34	1049055	24/24		0850	0.0		yellow brown very fine sand & silt - wet
36	1049056	24/24		0855	0.0		AA
38	1049057	14/24		0900	0.0		AA
40	1049058	22/24		0905	0.0		AA - laminae observed
42	1049059	24/24		0910	0.0		AA
44	1049060	~~24~~ 14/24		0915	0.0		AA
46							

SEE BOREHOLE PROBE 7/21/04 BH

Comments

Waste Container MW-01-015 016

Trip Blank ID(s)

Field Personnel ~~Alex Clarke~~ E. Boswell ~~Dave S. Vasiliou~~

Signature

Loureiro Engineering Associates, Inc.

FIELD BORING LOG

BORING ID: MW-116D (continued)

LEA Comm. No.	**91MH401.001**		Page 4 of 8
Project	MacDermid - Huntingdon		Date 8/6/04
Location	MacDermid - Huntingdon Avenue	GPS Latitude	
Client	MacDermid - RNav	GPS Longitude	
Drilling Method	8" HSA	Drilling Contractor	CTB
Sampling Method	Split Spoon - Grab	Drill Foreman	Chris D'Angelo
Groundwater Depth	30' at	Drill Rig	CME-75

Elevation/ Depth	Sample Information: Sample Number(s)	Recovery (% or n/n)	Blows/6" / Downforce	Time	PID/FID (ppm)	Mass	Description of Recovered Material (Color, primary grain size and amount, other grain size(s) and amounts, density, moisture, coherence, structure, sorting, other characteristics)
46	1049061	20/24		0930	0.0		dk. yellow brown very fine SAND and SILT - wet. laminae observed.
48	1049062	13/24		0945	0.0		AA
50	1049063	20/24		0955	0.0		AA
52	1049064	24/24		1000	0.0		AA
54	1049065	22/24		1005	0.0		AA
56	1049066	24/24		1010	0.0		AA Yellow brown silt- some fine sand and wet
58	1049067	24/24		1015	0.0		AA
60							Refusal @ 60'

Comments

Waste Container MH-05-018 017 Trip Blank ID(s)

Field Personnel ~~Alex Clarke~~ E. Basnell, ~~Dave S. Vasiliou~~ Signature

FIELD BORING LOG

Loureiro Engineering Associates, Inc.

BORING ID: MW-117D

LEA Comm. No.	91MH401.001		Page 15 of 18
Project	MacDermid - Huntingdon		Date 8/16/04
Location	MacDermid - Huntingdon Avenue	GPS Latitude	
Client	MacDermid - RNav	GPS Longitude	
Drilling Method	8" HSA	Drilling Contractor	CTB
Sampling Method	Split Spoon Grab	Drill Foreman	Chris D'Angelo
Groundwater Depth	at	Drill Rig	CME-75

Elevation/ Depth	Sample Information: Sample Number(s)	Recovery (% or n/n)	Blows/6" / Downforce	Time	PID/FID (ppm)	Mass	Description of Recovered Material (Color, primary grain size and amount, other grain size(s) and amounts, density, moisture, coherence, structure, sorting, other characteristics)
0							
5	—	—	—	1330	—	—	brown med sand & gravel & cobbles 0-1"-2" >3"-rounded - Observed from cuttings at of borehole
10	—	—	—	1340	—	—	AA
15	—	—	—	1350	—	—	AA- brown med & crs sand gravel & cobbles 1-2" diam loose- dry - obsvd from drill cuttings & borehole
20	—	—	—	1355	—	—	AA
25	—	—	—	1400	—	—	AA
28	—	—	—	1405	—	—	AA
30	—	0%	—	1410	—	—	—
32	1049068	100% 24/24	—	1420	0.0	—	Yellow brown fine sand-some silt- 0-16"- moist 16"-24"- wet
34	1049069	24/24	—	1425	0.0	—	yellow brown fine sand-some silt & occ sand- altering layers of laminae - well sorted wet
36	104070	20/24	—	1430	0.6	—	AA
38	104071	24/24	—	1435	0.0	—	AA

Begin split spoons.

Comments

Waste Container MH-05-0816 Trip Blank ID(s)

Field Personnel: Alex Clarke; Dave S. Vasiliou

Signature

Loureiro Engineering Associates, Inc.

FIELD BORING LOG

BORING ID: MW-117D (continued)

LEA Comm. No.	**91MH401.001**		Page 8 of 8
Project	MacDermid - Huntingdon		Date 8/16/04
Location	MacDermid - Huntingdon Avenue	GPS Latitude	
Client	MacDermid - RNav	GPS Longitude	

Drilling Method	8" HSA	Drilling Contractor	C&B
Sampling Method	Split Spoon grab	Drill Foreman	Chris D'Angelo
Groundwater Depth	at	Drill Rig	CME-75

Elevation/ Depth	Sample Information: Sample Number(s)	Recovery (% or n/n)	Blows/6" / Downforce	Time	PID/FID (ppm)	Mass	Description of Recovered Material (Color, primary grain size and amount, other grain size(s) and amounts, density, moisture, coherence, structure, sorting, other characteristics)
38	NS						No Sample.
40	1049072	12/24	–	1450	0.0	–	Yellow brown fine sand some silt - wet
42	1049073	24/24	–	1455	0.0	–	AA
44	1049074	24/24	–	1500	0.0	–	AA
46	1049075	24/24	–	1505	0.0	–	AA
48	1049076	18/24	–	1510	0.0	–	AA
50	1049077	22/24	–	1515	0.0	–	AA
52	1049078	22/24	–	1520	0.0	–	0-8" - AA 8"-24" - red coarse gravel & yellow brown sand - angular gvl
54	1049079	~~24~~ 10/24	–	1525	0.0	–	AA - Refusal - black rock in shoe
55							

Comments

Waste Container MH-OT-019 020 Trip Blank ID(s)

Field Personnel ~~Alex Clarke~~ E. Boswell
~~Dave S. Vasiliou~~

Signature [signature]

G-7 7-8

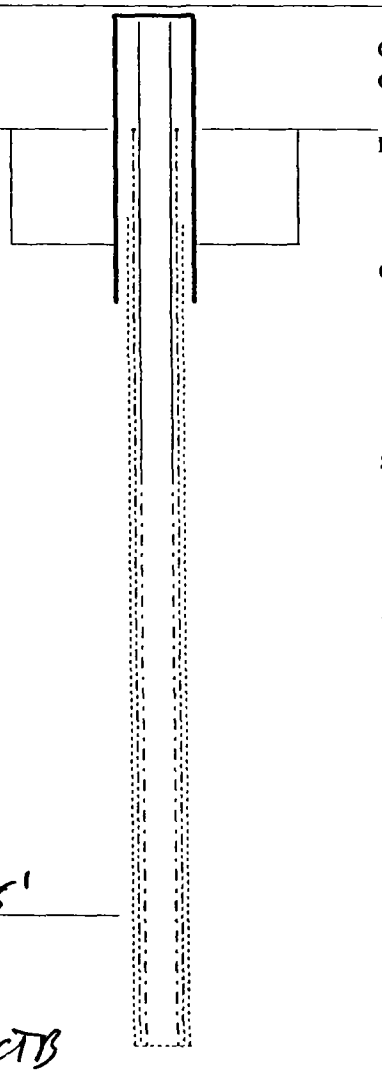
WELL COMPLETION REPORT

Project: MacDermid - Huntingdon
LEA Comm. No. 91MH401.001
Client MacDermid - RNav
Location MacDermid - Huntingdon Avenue

Start Date 8-6-04
End Date
Well ID 117 D

Drilling Contractor CTB
Drilling Method 8" HSA
Sampling Method Split Spoon grab
Groundwater Observation
Depth 30' **at** ____ **Hours**

Logged by E. Bosnell
Drilling Foreman Chris D'Angelo
Drill Rig CME-75
GPS Latitude
GPS Longitude



Protector
- Material: metal
- Diameter: 6"
- Length: 12" Ground
- Stickup: —
- Key #: —
- Cover Type: bolt down

Top Seal
- Top
- Bottom
- Material

Backfill
- Top: 2'
- Bottom: 42.7
- Material: grout

Secondary Sand
- Top
- Bottom
- Size

Filter Pack
- Top: 42.7'
- Bottom: 55'
- Material: 0-Sand

Reported depth to bottom of boring 55'

Comments
well materials supplied by CTB

Concrete
- Diameter: 2'
- Thickness: 2'

Reference
- Stickup: —
- Description

Casing
- Diameter: 2"
- Material: 40-PVC
- Length: 55
- Stickup: 5

Seal
- Top
- Bottom
- Material

Screen
- Top: 45'
- Bottom: 55'
- Material: PVC
- Diameter: 2"
- Length: 10'
- Slot Size: 40

Miscellaneous Materials (Quantity Used/Item)
- Cement
- Bentonite Chips
- Bentonite Pellets: X
- Bentonite Powder
- Grout Weight
- Filter Pack Sand
- Capping Sand
- Well Point: X
- Well Plug

Signature Eric J. Bosnell

A7 8-8

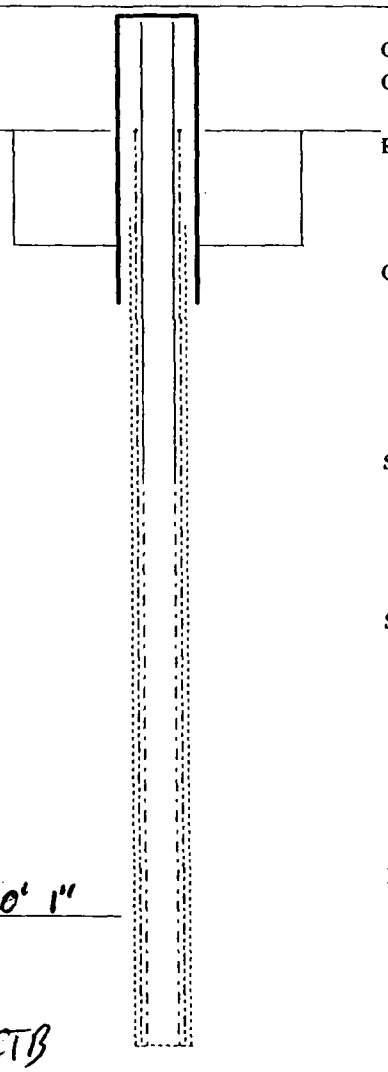
WELL COMPLETION REPORT

Project: MacDermid - Huntingdon
LEA Comm. No. 91MH401.001
Client MacDermid - RNav
Location MacDermid - Huntingdon Avenue

Start Date 8-6-04 | **Well ID** MW-118D
End Date —

Drilling Contractor CTB
Drilling Method 8" HSA
Sampling Method Split Spoon - Grab
Groundwater Observation
Depth 30' **at** ____ **Hours**

Logged by R. Bosnell
Drilling Foreman Chris D'Angelis
Drill Rig CME-75
GPS Latitude ____
GPS Longitude ____



Protector
- Material: metal
- Diameter: 6"
- Length: 12" Ground
- Stickup: —
- Key #: —
- Cover Type: bolt down

Top Seal
- Top: ____
- Bottom: ____
- Material: ____

Backfill
- Top: 2'
- Bottom: 45'
- Material: grout

Secondary Sand
- Top: ____
- Bottom: ____
- Size: ____

Filter Pack
- Top: 47'
- Bottom: 60'
- Material: 0-SAND

Reported depth to bottom of boring 60' 1"

Comments
well material supplied by CTB

Concrete Diameter 2'
Concrete Thickness 2'

Reference
- Stickup: —
- Description: ____

Casing
- Diameter: 2"
- Material: 40-PVC
- Length: 60
- Stickup: —

Seal
- Top: 45'
- Bottom: 47'
- Material: bentonite

Screen
- Top: 50
- Bottom: 60
- Material: 40-PVC
- Diameter: 2"
- Length: 10'
- Slot Size: 10

Miscellaneous Materials (Quantity Used/Item)
- Cement: ____
- Bentonite Chips: ____
- Bentonite Pellets: ____
- Bentonite Powder: ____
- Grout Weight: ____
- Filter Pack Sand: ____
- Capping Sand: ____
- Well Point: X
- Well Plug: ____

Signature ____

DAILY FIELD REPORT

Loureiro Engineering Associates, Inc.

	91MH401.001	Page 1 of 5
Project	MacDermid - Huntingdon	Date 8/5/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid Incorporated - RNav	

Arrived at Site 0750 Departed from Site 1620 Vehicle VAN

Odometer (Start) _____ Return _____

Site Activities

- [ ] Soil Sampling
- [ ] Groundwater Sampling
- [ ] Surface Water Sampling
- [ ] Surface Water Sampling
- [ ] Vapor/Air Sampling
- [ ] Concrete Sampling
- [ ] Other Sampling
- [x] Well Installation
- [ ] Well Development
- [ ] Geoprobe Work
- [ ] Concrete Coring
- [ ] Construction
- [ ] Inspection
- [ ] Waste Management
- [ ] Waste Management
- [ ] Site Walk Over
- [ ] Surveying
- [ ] Other (Describe)

Current Project Information

Last Sample Number Used	—
Last Location ID Used	PZ-04
Current Location (if not complete)	—
Sampling for	—
Laboratories used	—
Paperwork & Equipment left at/in	B. Heaminck
Site Contact	AL-203-808-1506
Contractors on Site	Quitan & Mike of CTB
Time and place to meet contractors	8:00 - site.

Non-productive Time

- [x] None
- [ ] Equipment Breakdown
- [ ] Late
- [ ] Weather
- [ ] Missing Equipment
- [ ] Other (Describe)

Quality Assurance Checks

Yes	N/A	No	
	✓		Sample labels complete
	✓		Sample/cooler seals OK
	✓		All samples obtained
	✓		Chains of custody
✓			All forms/logs complete
✓			Site walkover
✓			Site H&S Plan on site
✓			Instruments calibrated

Residuals Disposition

Item	Approx. Amount	Container ID
Soil/Solid	10- drums	MH OT-05 to 014
Groundwater		
Decon Fluid		
PPE		
Other		

Instrument Calibrations

pH/Conductivity

Std.	Standard	Meter
	pH 4	
	pH 7	
	pH 10	
	Cond.	

PID/FID Meter

Std.	Standard	Meter
100	Isobutylene	100

- [x] Zero w/Background
- [ ] Zero w/Clean Air

Balance

Std.	Standard	Reading
	Std. Mass	

Expendable Items Used

Qty	Item	LEA Number

Equipment Used

Qty	Item	LEA Number
1	Photovac	
1	Misc H&S	
1	Misc Tools	
10	55 gal - open top drums	
90	ft - 1.5" Riser - PVC	
30	ft - 1.5" Pre-pack Screens	

Field Personnel ~~Alex Clarke~~ E. Boswell ~~Dave S. Vasiliou~~

Signature [signature]

Loureiro Engineering Associates, Inc.

DAILY FIELD REPORT

Supplemental Sheet

	91MH401.001	Page 2 of 5
Project	MacDermid - Huntingdon	Date 8/15/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid Incorporated - RNav	

Description of Site Activities W.C. overcast

0720 - load van and depart Southington Yard
0750 - arrive on-site - Check CBYD markout - locate PZ-2 - 1st piezometer to install
0805 - CTB (CT Test Borings) rig arrives - begin setup on PZ-2
0815 - Chris D'Angelo of CTB - supervisor arrives - review scope and waste handling
0830 - meet w/ Al of MacDermid - agrees to move drums to storage location former Chemical Storage Warehouse "TAN Building" -
0855 - begin drilling PZ-02 - asphalt surface - gravel and sand subsurface materials
0850 - refusal @ ~11' - possible cobble/boulder or sewer pipe - drilled through
0900 - Bobcat delivered to move drums & soil -
0910 - Chris & Ron - LEA-LCI - deliver open-top drums -
0945 - Set Piezometer. - power wash all auger upon removal
1100 - begin setup on PZ-01
1115 - Start drilling PZ-01
1400 - Start drilling PZ-04 - PZ-02 completed - PZ-01 pad being constructed
1450 - PZ-04 - depth @ 30' to 35' - Strong chemical odor - cutting oil like smell
PID: reading from soil @ 30-35' peaked @ 4.7 ppm.
* - PID screening conducted ~ 10' intervals throughout day - no readings 0.0 ppm
- Soils generally - rounded gravel & cobbles 0-15' - brown med to fine sand 15' to depth of well.
1625 - CTB - cleaning & packing up will complete PAD for PZ-04 - Friday 8/6 morning
1630 - depart site

Field Personnel ~~Alex Clarke~~ E. Boswell
~~Dave S. Vasiliou~~

Signature

3-5

WELL COMPLETION REPORT

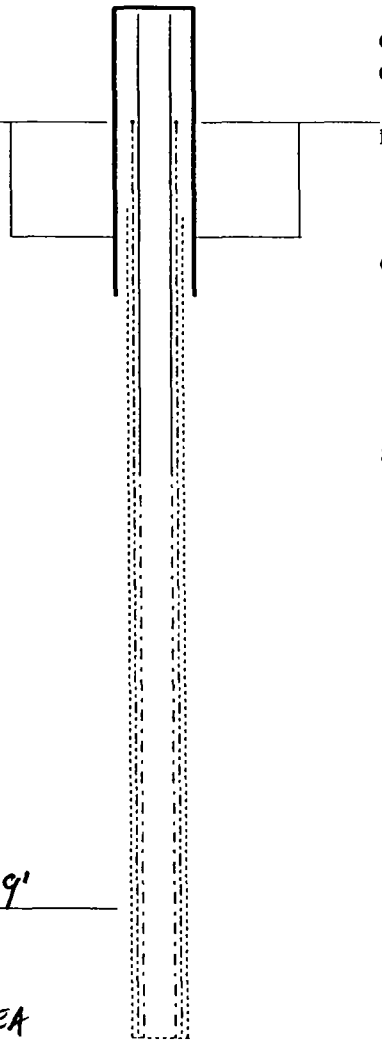
Project: MacDermid - Huntingdon
LEA Comm. No. 91MH401.001
Client MacDermid - RNav
Location MacDermid - Huntingdon Avenue

Start Date 8-5-04
End Date
Well ID PZ-02C

BA 8/10/04

Drilling Contractor CTB
Drilling Method 8" HSA
Sampling Method NA
Groundwater Observation
Depth ____ **at** ____ **Hours**

Logged by E. Boswell
Drilling Foreman Chris D'Angelo
Drill Rig CME 75
GPS Latitude
GPS Longitude



Protector
- Material: steel
- Diameter: 6"
- Length: 12" Ground
- Stickup: flush
- Key #: NA
- Cover Type: bolt

Top Seal
- Top
- Bottom
- Material

Backfill
- Top: 2'
- Bottom: 23'
- Material: ~~bentonite/cement slurry~~ grout

Secondary Sand
- Top
- Bottom
- Size

Filter Pack
- Top: 26'
- Bottom: 39'
- Material: 0-Sand.

Reported depth to bottom of boring 39'

Comments well material supplied by LEA

MH-01-005
006
007
008

Concrete
- Diameter: 2'
- Thickness: 2'

Reference
- Stickup
- Description

Casing
- Diameter: 1½"
- Material: 40-PVC
- Length: 28'
- Stickup: —

Seal
- Top: 23'
- Bottom: 26'
- Material: bentonite pellets

Screen
- Top: 28'
- Bottom: 38'
- Material: Pre-Pack
- Diameter: 1.5"
- Length: 10'
- Slot Size: pre-pack

Miscellaneous Materials (Quantity Used/Item)
- Cement
- Bentonite Chips
- Bentonite Pellets: x
- Bentonite Powder
- Grout Weight
- Filter Pack Sand
- Capping Sand
- Well Point
- Well Plug: x

Signature Eric J. Boswell

LEA

Loureiro Engineering Associates, Inc.

4 - 5

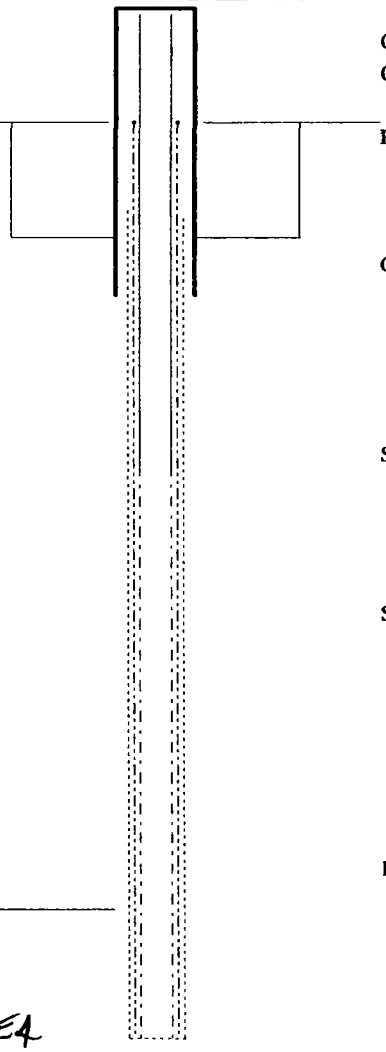
WELL COMPLETION REPORT

Project: MacDermid - Huntingdon
LEA Comm. No. 91MH401.001
Client MacDermid - RNav
Location MacDermid - Huntingdon Avenue

Start Date 8-5-04 | **Well ID** PZ-04
End Date 8-6-04

Drilling Contractor CTB
Drilling Method 8" HSA
Sampling Method NA
Groundwater Observation
Depth 35' **at** ____ **Hours**

Logged by E. Bonnell
Drilling Foreman Chris O'Angelis
Drill Rig CME-75
GPS Latitude ____
GPS Longitude ____



Protector
- Material: metal
- Diameter: 6"
- Length: 12" Ground
- Stickup: flush
- Key #: standard NA
- Cover Type: bolt down

Top Seal
- Top: ____
- Bottom: ____
- Material: ____

Backfill
- Top: 2'
- Bottom: 24'
- Material: grout

Secondary Sand
- Top: ____
- Bottom: ____
- Size: ____

Filter Pack
- Top: 37'
- Bottom: 40'
- Material: #0-sand

Reported depth to bottom of boring: 40'

Comments
well materials supplied by LEA

MHDT-004
002
013

Concrete
- Diameter: 2'
- Thickness: 2'

Reference
- Stickup: ____
- Description: ____

Casing
- Diameter: 1.5"
- Material: 40-PVC
- Length: 39' - riser - 29'
- Stickup: ____

Seal
- Top: 24'
- Bottom: 27'
- Material: bentonite pellets

Screen
- Top: 29'
- Bottom: 39'
- Material: pre-pack
- Diameter: 1.5"
- Length: 10'
- Slot Size: pre pack

Miscellaneous Materials (Quantity Used/Item)
- Cement: ____
- Bentonite Chips: ____
- Bentonite Pellets: X
- Bentonite Powder: ____
- Grout Weight: ____
- Filter Pack Sand: ____
- Capping Sand: ____
- Well Point: ____
- Well Plug: X

Signature Eric J. Bonnell

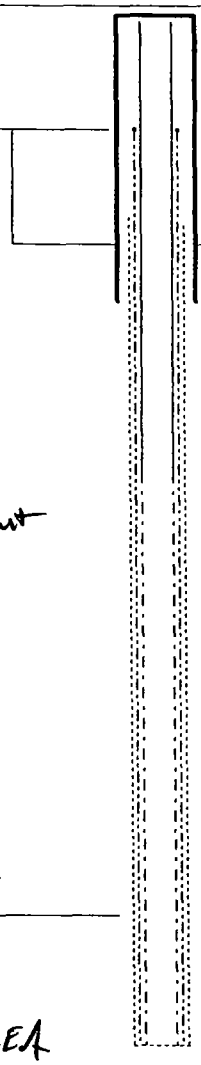
WELL COMPLETION REPORT

Project: MacDermid - Huntingdon
LEA Comm. No. 91MH401.001
Client MacDermid - RNav
Location MacDermid - Huntingdon Avenue

Start Date 8-5-04
End Date 8-5-04
Well ID PZ-01

Drilling Contractor CTE
Drilling Method 8" HSA
Sampling Method NA
Groundwater Observation
Depth 34' **at** ____ **Hours**

Logged by E. Boswell
Drilling Foreman Chris O'Angelis
Drill Rig CME-75
GPS Latitude ____
GPS Longitude ____



Protector
- Material: metal
- Diameter: 6"
- Length: 12" Ground
- Stickup: flush
- Key #: NA
- Cover Type: bolt down

Top Seal
- Top: ____
- Bottom: ____
- Material: ____

Backfill
- Top: 2'
- Bottom: 24'
- Material: ~~bentonite/cement slurry~~ grout

Secondary Sand
- Top: ____
- Bottom: ____
- Size: ____

Filter Pack
- Top: 27'
- Bottom: 40'
- Material: 0-sand

Reported depth to bottom of boring: 40'

Comments
well materials supplied by LEA

MH-OT-008
009
010
011

Concrete
- Diameter: 2'
- Thickness: 2'

Reference
- Stickup: ____
- Description: ____

Casing
- Diameter: 1.5"
- Material: 40-PVC
- Length: 39'
- Stickup: —

Seal
- Top: 24'
- Bottom: 27'
- Material: bentonite pellets

Screen
- Top: 29'
- Bottom: 39'
- Material: Pre-pack
- Diameter: 1.5"
- Length: 10'
- Slot Size: Pre-pack

Miscellaneous Materials (Quantity Used/Item)
- Cement: ____
- Bentonite Chips: ____
- Bentonite Pellets: x
- Bentonite Powder: ____
- Grout Weight: ____
- Filter Pack Sand: ____
- Capping Sand: ____
- Well Point: ____
- Well Plug: x

Signature Eric J Boswell

DAILY FIELD REPORT

Loureiro Engineering Associates, Inc.

	91MH401.001	Page 1 of 4
Project	MacDermid - Huntingdon	Date 7/21/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid Incorporated - RNav	

Arrived at Site 0730 Departed from Site 1620 Vehicle LCI-SF-8

Odometer (Start) _____ Return LCI-SF-8

Site Activities

- [ ] Soil Sampling
- [ ] Groundwater Sampling
- [ ] Surface Water Sampling
- [ ] Surface Water Sampling
- [ ] Vapor/Air Sampling
- [ ] Concrete Sampling
- [ ] Other Sampling
- [x] Well Installation
- [ ] Well Development
- [x] Geoprobe Work
- [ ] Concrete Coring
- [ ] Construction
- [ ] Inspection
- [ ] Waste Management
- [ ] Waste Management
- [ ] Site Walk Over
- [ ] Surveying
- [ ] Other (Describe)

Non-productive Time

- [ ] None
- [x] Equipment Breakdown
- [ ] Late
- [ ] Weather
- [ ] Missing Equipment
- [x] Other (Describe) Repeated Retrieval

Current Project Information

Last Sample Number Used	049060
Last Location ID Used	MW-1185
Current Location (if not complete)	MW-1185
Sampling for	—
Laboratories used	—
Paperwork & Equipment left at/in	B. Horowitz
Site Contact	Al - MacDermid
Contractors on Site	Ch-Target Gen.
Time and place to meet contractors	740-Site.

Quality Assurance Checks

Yes	N/A	No	
	✓		Sample labels complete
	✓		Sample/cooler seals OK
	✓		All samples obtained
	✓		Chains of custody
✓			All forms/logs complete
✓			Site walkover
✓	✓		Site H&S Plan on site
✓			Instruments calibrated

Residuals Disposition

Item	Approx. Amount	Container ID
Soil/Solid	1/3 Drum	MH-OT-004
Groundwater		
Decon Fluid		
PPE		
Other		

Instrument Calibrations

pH/Conductivity

Std.	Standard	Meter
	pH 4	
	pH 7	
	pH 10	
	Cond.	

PID/FID Meter

Std.	Standard	Meter
100	Isobutyl	99.8

- [x] Zero w/Background
- [ ] Zero w/Clean Air

Balance

Std.	Standard	Reading
	Std. Mass	

Expendable Items Used

Qty	Item	LEA Number

Equipment Used

Qty	Item	LEA Number
✓	PID - photo vac.	
✓	Misc. H&S	
✓	Small Tools	
✓	Track Mat - Geoprobe	

Field Personnel Alex Clarke _____

~~Dave S. Vasiliou~~ E. Bovell _____

Signature

DAILY GEOPROBE REPORT

Loureiro Engineering Associates, Inc.

	91MH401.001	Page ____ of ____
Project	MacDermid - Huntingdon	Date 7/21/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid Incorporated - RNav	

Arrived at Site 0730 Departed from Site 1620 Geoprobe 6610DT

Odometer (Start) Return

Probe Hours (Start) 8 Finish

Vehicle Checklist/Condition

OK	Geoprobe	OK	Trailer (if used)
	Engine Fluids	✓	Brakes (Incl. battery)
	Transmission	✓	Hitch
	Brakes (Incl. parking)	✓	Safety Chains
	Lights	✓	Lights
	Signals	✓	Signals
	Tires	✓	Tires
	General	✓	General
	Other (describe)		Other (Describe)

Equipment Broken/Needing Repair

LB Heavy-duty (9/16)-inch Piston Stop-Pin

All checks above must be OK and signed off before leaving in the morning

Signature

Expendable Items Used			Equipment Used		
Qty	Item	LEA Number	Qty	Item	LEA Number
1	Bentonite Chips, Bag	089		Exhaust Hose	033
	Bentonite Pellets, Buckets		1	Miscellaneous Small Tools & Equipment	152
	Cap, End, Vinyl (AT-641K or AT-726K)	150		Probe Rod Jack	119
	Cap, Slip, 0.5" Vinyl (AT-441)	044		Pump, Grout	200
	Cap, Slip, 1" PVC (S447010)	146		Thermo-Anemometer	248
	Cap, Threaded, 1" PVC	147			
	Concrete, 60 lb. Bag	085			
	Connectors, Snap Lock (GW-2030)	210			
4	Core Catchers, MC (AT-8531K)	999			
1	Decontamination Supplies	081			
2	Ear Plugs				
	Filter, In Line	024			
	Liners, LB PETG (AT-825k)	128			
4	Liners, MC Acetate	173			
	Liners, MC PETG	173			
	Locks, Monitoring Well	155			
	Miscellaneous Health & Safety Items	060			
	Point, Drive, Exp., SP15 (GW-15)	003			
	Point, Exp. (spec. GW-2040 or GW-445)	002			
	Sand, Filter Pack, Bags	220			
	Tubing, 1/2", NOS	007			
	Water, Distilled	025			
	Well Point, 1" Sch.80 PVC	216			
	Well Protector, Road Box (10581)	014			
	Well Protector, Roadbox, 7"	014			
	Well Protector, Stickup, 4" (10127)	014			
	Well Riser, 0.5" PVC, 5' (GW2050)	228			
	Well Riser, 1" Sch. 80 PVC, 5' (1058CATB	131			
	Well Screen, 1" Sch. 80 PVC, 5' (105810	130			
	Well Screen, Pre-Packed, 3' (GW-2010)	224			

Field Personnel Alex Clarke

Dave S. Vasiliou

Signature

Loureiro Engineering Associates, Inc.

FIELD BORING LOG

BORING ID: MW-118D

BH 8/10/04.

LEA Comm. No.	**91MH401.001**		Page 9 of 4
Project	MacDermid - Huntingdon		Date 7/21/04
Location	MacDermid - Huntingdon Avenue	GPS Latitude	
Client	MacDermid - RNav	GPS Longitude	
Drilling Method	Direct Push / HSA	Drilling Contractor	LEA
Sampling Method		Drill Foreman	A. Clarke
Groundwater Depth	→ at ←	Drill Rig	Track Mount

Elevation/ Depth	Sample Information: Sample Number(s)	Recovery (% or n/n)	Blows/6" / Downforce	Time	PID/FID (ppm)	Mass	Description of Recovered Material (Color, primary grain size and amount, other grain size(s) and amounts, density, moisture, coherence, structure, sorting, other characteristics)
0	1049051	75%		0905	15.1*		1"-4" - lt. brown. fine sand. 4"-6" - gray silt / fn. sand 6"-8" - yellow fine sand 8"-24" - brown med & fn sand
2	1049052			0910	15.6*		24"-48" - brown med & fn sand trace crs sand
4	1049053	95%		0915	15.7*		yellow brown crs SAND some gravel, dry, loose
6	1049054			0920	16.0*		yellow/white/gray crse & very crs sand & gravel some large gravel; dry loose
8	1049055	95%		0925	16.0*		AA
10	1049056			0930	16.1*		AA 3'6" to 3'10" - yellow brown fine sand
12	1049057	100%		0945	121		0-12" med to crs & very crs sand gravel - dark gray & brown dry loose 12"-24" - lt yellow brown fine sand moist
14	1049058			0950	375		yellow brown fine sand dense & moist
16	1049059	80%		1000	52.9		gray to gray brown - cobbles gravel some sand
18	1049060			1005	21.7		yellow brown fine sand
20							Refusal

Comments * baggie (Sterile (disinfectant)) used for screening measured 3.1 ppm empty - blank - - Replaced PID & changed to regular poly baggies - 0.0 - empty/blank
20' - switch to hollow stem auger → refusal - 3x - @ 10' - very bony/cobbles - 1-4" diameter - well rounded.

Waste Container MH-OT-004 Trip Blank ID(s)

Field Personnel Alex Clarke ~~Dave S. Vasiliou~~ E. Boswell

Signature [signature]

Loureiro Engineering Associates, Inc.

DAILY FIELD REPORT

Supplemental Sheet

	91MH401.001
Project	MacDermid - Huntingdon
Location	MacDermid - Huntingdon Avenue, Waterbury, CT
Client	MacDermid Incorporated - RNav

Page 2 of 4
Date 7/21/04

Description of Site Activities

0700 - meet @ Southington Yard & depart for site
0730 - arrive on-site - move trailer to MW-118-S/D - mobilize rig to MW-118-S
0740 - fine - from On-Target - arrives to Mark-out underground water lines
0745 - site contact Al from MacDermid
0750 - Set-up rig - sampling area - obtain - water etc. - calibrate PID
0840 - begin install MW-118-S/D
1010 - set-up for piston assembly on geoprobe
1015 - Chris - LEA/LCI shop drop-off new PID & baggies.
0910 - PID screening showing influence of disinfectant used in sterile baggies
PID - Low Battery warning
1030 - Resume drilling w/ Hollow Stem Auger → broken piston point assembly
1145 - Refusal @ ~12' → offset
1300 - Refusal @ ~10' → offset
~~1430 - Refusal @ ~10' → offset GJB~~ 1330 - Lunch.
1430 - Resume drilling - HSA
1530 ~~1530~~ - demobilize - pack-up - decon → Refusal @ ~10'
1610 - depart site per Barbara - Heemink

EJB

Field Personnel: Alex Clarke
~~Dave S. Vasiliou~~ E. Boswell

Signature: [signature]

DAILY FIELD REPORT

Loureiro Engineering Associates, Inc.

LEA Comm. No.	91MH401.001	Page	1 of *
Project	MacDermid - Huntingdon	Date	7/2/01
Location	MacDermid - Huntingdon Avenue, Waterbury, CT		
Client	MacDermid - RNav		

Arrived at Site 7:35 Departed from Site 4:00 Vehicle F150

Odometer (Start) _____ Return _____

Site Activities

- [X] Soil Sampling
- [ ] Groundwater Sampling
- [ ] Surface Water Sampling
- [ ] Surface Water Sampling
- [ ] Vapor/Air Sampling
- [ ] Concrete Sampling
- [ ] Other Sampling
- [ ] Well Installation
- [ ] Well Development
- [X] Geoprobe Work
- [ ] Concrete Coring
- [ ] Construction
- [ ] Inspection
- [ ] Waste Management
- [ ] Waste Management
- [ ] Site Walk Over
- [ ] Surveying
- [ ] Other (Describe)

Non-productive Time

- [X] None
- [ ] Equipment Breakdown
- [ ] Late
- [ ] Weather
- [ ] Missing Equipment
- [ ] Other (Describe)

Current Project Information

Last Sample Number Used	1049023
Last Location ID Used	MW-117
Current Location (if not complete)	MW-117
Sampling for	
Laboratories used	
Paperwork & Equipment left at/in	
Site Contact	Al P.
Contractors on Site	
Time and place to meet contractors	

Quality Assurance Checks

Yes	N/A	No	
X			Sample labels complete
X			Sample/cooler seals OK
		X	All samples obtained
X			Chains of custody
X			All forms/logs complete
	X		Site walkover
X			Site H&S Plan on site
X			Instruments calibrated

Residuals Disposition

Item	Approx. Amount	Container ID
Soil/Solid	55 gal	NA
Groundwater		
Decon Fluid	55 gal	NA
PPE		
Other		

Instrument Calibrations

pH/Conductivity

Std. Standard Meter

- [ ] pH 4
- [ ] pH 7
- [ ] pH 10
- [ ] Cond.

PID/FID Meter

Std. Standard Meter

- [ ] 100 Isobutylene = 101
- [X] Zero w/Background
- [ ] Zero w/Clean Air

Balance

Std. Standard Reading

Std. Mass

Expendable Items Used

Qty	Item	LEA Number
	Bailer, Disposable (spec. size)	090
	Cap, PVC, 1", (Threaded or FJT)	147
	Cap, PVC,1', Slip (S447010)	146
	Concrete, 60 lb. Bag	085
	Decontamination Supplies	081
	Drum, Closed Top 55 gallon	086
	Drum, Open Top 55 Gallon	086
	Ear Plugs	
	Filter, Zap Cap	024
	Grout mix, bag	237
	Locks, Monitoring Well	155
1	Miscellaneous Health & Safety Items	060
	Plug, Locking, 2"	233
	Sand, Filter Pack, Bags	220
	Water, Distilled	025
	Well Point, 1" Sch 80 (FJT or ?)	216

Equipment Used

Qty	Item	LEA Number
	Balance, Ohaus	031
	Drill, Core Saw, w/ Attachment	009
	Drill, Hammer, Dewalt	
	Drill, Hilti, incl. Concrete Anchors	010
	Hand Auger, w/ attachments	013
	Locator, Metrotech Pipe	053
	Meter, pH/Temp	021
	Miscellaneous Small Tools & Equipment	152
	Pump, Grundfos	073
	Pump, Peristaltic (spec. Master or Isco)	040
	Pump, Submersible	201
	Pump, Watera	038
	Saw, Steel Cutoff	063
	Thermo-Anemometer	248
	Turbidimeter	023
	VOC Analyzer, Photovac 2020 (PID)	012

Field Personnel: Alex Clarke; Dave S. Vasiliou

Signature: David Vasiliou

NOTE: CORRECTIONS ON THIS AND FOLLOWING SHEETS MADE IN RED INK BY BARBARA HOMINIK ON 8/10/04. btt

Loureiro Engineering Associates, Inc.

DAILY FIELD REPORT

Supplemental Sheet

LEA Comm. No.	**91MH401.001**	Page 2 of 6
Project	MacDermid - Huntingdon	Date 7/2/07
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid - RNav	

Description of Site Activities

7:35 arrive @ site. Had to transfer all equipment to MW-118 and Alex had to drive all equipment

9: Began to probe MW-117D. Drilling is difficult, but progressing

11:08 left site to buy baggies + lunch

11:40 Back to site. We stopped and ate a quick lunch

12:15 Alex hit refusal @ 33'. We could not move any further. We cleaned out inside of building + let Al go home

1:40 Barbara called + to wait while she discussed with Brian.

2:15 Thunder. We quickly pulled all rods out of ground. We packed up all equipment + prepared to leave the site.

4:00 Alex + I left site

DV

Field Personnel	Alex Clarke	*Signature*
	Dave S. Vasiliou	David Vasiliou

DAILY GEOPROBE REPORT

Loureiro Engineering Associates, Inc.

LEA Comm. No.	**91MH401.001**	Page 3 of 6
Project	MacDermid - Huntingdon	Date 8/2/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid - RNav	

Arrived at Site 0735 Departed from Site 1600 Geoprobe 66ODT

Vehicle Checklist/Condition

Odometer (Start) Return

Probe Hours (Start) Finish

OK	Geoprobe	OK	Trailer (if used)
✓	Engine Fluids	✓	Brakes (Incl. battery)
	Transmission	✓	Hitch
	Brakes (Incl. parking)	✓	Safety Chains
	Lights	✓	Lights
	Signals	✓	Signals
	Tires	✓	Tires
	General	✓	General
	Other (describe)		Other (Describe)

Equipment Broken/Needing Repair

All checks above must be OK and signed off before leaving in the morning

Signature

Expendable Items Used			Equipment Used		
Qty	Item	LEA Number	Qty	Item	LEA Number
2	Bentonite Chips, Bag	089		Exhaust Hose	033
	Bentonite Pellets, Buckets		1	Miscellaneous Small Tools & Equipment	152
	Cap, End, Vinyl (AT-641K or AT-726K)	150		Probe Rod Jack	119
	Cap, Slip, 0.5" Vinyl (AT-441)	044		Pump, Grout	200
	Cap, Slip, 1" PVC (S447010)	146		Thermo-Anemometer	248
	Cap, Threaded, 1" PVC	147			
1	Concrete, 60 lb. Bag	085			
	Connectors, Snap Lock (GW-2030)	210			
9	Core Catchers, MC (AT-8531K)	999			
1	Decontamination Supplies	081			
	Ear Plugs				
	Filter, In Line	024			
	Liners, LB PETG (AT-825k)	128			
9	Liners, MC Acetate	173			
	Liners, MC PETG	173			
	Locks, Monitoring Well	155			
	Miscellaneous Health & Safety Items	060			
	Point, Drive, Exp., SP15 (GW-15)	003			
	Point, Exp. (spec. GW-2040 or GW-445)	002			
	Sand, Filter Pack, Bags	220			
	Tubing, 1/2", NOS	007			
	Water, Distilled	025			
	Well Point, 1" Sch.80 PVC	216			
	Well Protector, Road Box (10581)	014			
	Well Protector, Roadbox, 7"	014			
	Well Protector, Stickup, 4" (10127)	014			
	Well Riser, 0.5" PVC, 5' (GW2050)	228			
	Well Riser, 1" Sch. 80 PVC, 5' (1058CATB	131			
	Well Screen, 1" Sch. 80 PVC, 5' (105810	130			
	Well Screen, Pre-Packed, 3' (GW-2010)	224			

Field Personnel Alex Clarke

Dave S. Vasiliou

Signature

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
MISCELLANEOUS SAMPLES

LEA Comm. No.	**91MH401.001**	Page 4 of 6
Project	MacDermid - Huntingdon	Date 7/2/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid - RNav	

Sample ID	Location ID	Time	Sample Type	Depth (ft)	PID/FID Reading	Comments	Waste Container ID
109967	Trip Blank	8:35	Blank	—	—		

DV

Field Personnel	Alex Clarke	Signature
	Dave S. Vasiliou	David Vasiliou

MW-117D

FIELD BORING LOG

Loureiro Engineering Associates, Inc.

BORING ID: MW-117 ~~S~~ D

LEA Comm. No.	**91MH401.001**		Page 5 of 6
Project	MacDermid - Huntingdon		Date 7/2/04
Location	MacDermid - Huntingdon Avenue	GPS Latitude	
Client	MacDermid - RNav	GPS Longitude	
Drilling Method	Geoprobe	Drilling Contractor	~~Alex~~ - LEA
Sampling Method	Continuous Coring	Drill Foreman	Alex Clarke
Groundwater Depth	at	Drill Rig	6610 DT

Elevation/ Depth	Sample Information: Sample Number(s)	Recovery (% or n/n)	Blows/6" / Downforce	Time	PID/FID (ppm)	Mass	Description of Recovered Material (Color, primary grain size and amount, other grain size(s) and amounts, density, moisture, coherence, structure, sorting, other characteristics)
0	1049007	24/		9:01	0.0		8" asphalt 6" Brown, f-m Sand, some gravel + cobble
2	1049008	/48		9:03	0.0		7" SAA 11" orangish Brown, vf-f Sand, little silt, trace cobble
4	1049009	45/		10:10	0.0		2" SAA 2" Black, vf-f sand + gravel, tight, dry 17" light Brown, f-m Sand + gravel + Cobbl
6	1049010	/49		10:12	0.0		29" SAA
8	1049011	33/		10:20	0.0		17" SAA
10	1049012	/49		10:22	0.0		16" SAA
12	1049013	48/		10:34	0.0		8" SAA 5" Dark Brown, f-Sand + Silt, Some grave 11" tan, fm Sand, Some gravel
14	1049014	/49		10:32	0.0		4" Brown, m-Sand, little gravel - very tigh 20" tan, f-m Sand + gravel + cobble
16	1049015	30/		10:42	0.0		15" SAA
18	1049016	/49		10:44	0.0		15" Brown, f-m Sand + gravel, Some cobble moist @ 20'
20							

Comments

Waste Container

Trip Blank ID(s)

Field Personnel: Alex Clarke; Dave S. Vasiliou

Signature

MW-117D.

FIELD BORING LOG

Loureiro Engineering Associates, Inc.

BORING ID: MW-117~~S~~D

LEA Comm. No.	**91MH401.001**		Page 6 of 6
Project	MacDermid - Huntingdon		Date 7/2/04
Location	MacDermid - Huntingdon Avenue	GPS Latitude	
Client	MacDermid - RNav	GPS Longitude	
Drilling Method	Geoprobe	Drilling Contractor	LEA
Sampling Method	Continuous Coring	Drill Foreman	Alex Clarke
Groundwater Depth	____ at ____	Drill Rig	6610 DT

Elevation/ Depth	Sample Number(s)	Recovery (% or n/n)	Blows/6" / Downforce	Time	PID/FID (ppm)	Mass	Description of Recovered Material (Color, primary grain size and amount, other grain size(s) and amounts, density, moisture, coherence, structure, sorting, other characteristics)
20	1049017	48/		10:55	0.0		15" SAA 9" light Brown vf-Sand, bedded
22	1049018	/48		10:58	0.0		24" SAA
24	1049019	26/		12:17	0.0		13" SAA
26	1049020	/48		12:18	0.0		13" SAA
28	1049021	37/		12:35	0.0		2" SAA 16" Brown f-m Sand, some gravel, very tig
30	1049022	/48		12:38	0.1		2" SAA 17" tan, vf Sand, bedded
32	1049023	17/		2:19	0.0		17" SAA - wet Refusal @ 33.5'
34		/18					
36							
38							
40							

Comments

Waste Container

Trip Blank ID(s)

Field Personnel	Alex Clarke		*Signature*
	Dave S. Vasiliou		David Vasiliou

DAILY FIELD REPORT

Loureiro Engineering Associates, Inc.

LEA Comm. No.	91MH401.001	Page 1 of 7	BH
Project	MacDermid - Huntingdon	Date 7/1/04	
Location	MacDermid - Huntingdon Avenue, Waterbury, CT		
Client	MacDermid - RNav		

Arrived at Site 7:20 Departed from Site 5:30 Vehicle F/150

Odometer (Start) _____ Return _____

Site Activities

- [X] Soil Sampling
- [ ] Groundwater Sampling
- [ ] Surface Water Sampling
- [ ] Surface Water Sampling
- [ ] Vapor/Air Sampling
- [ ] Concrete Sampling
- [ ] Other Sampling
- [ ] Well Installation
- [ ] Well Development
- [X] Geoprobe Work
- [X] Concrete Coring
- [ ] Construction
- [ ] Inspection
- [ ] Waste Management
- [ ] Waste Management
- [ ] Site Walk Over
- [ ] Surveying
- [ ] Other (Describe)

Non-productive Time

- [X] None
- [ ] Equipment Breakdown
- [ ] Late
- [ ] Weather
- [ ] Missing Equipment
- [ ] Other (Describe)

Current Project Information

Last Sample Number Used	1048900 6
Last Location ID Used	P2-07 38-40
Current Location (if not complete)	
Sampling for	
Laboratories used	
Paperwork & Equipment left at/in	
Site Contact	Al P.
Contractors on Site	
Time and place to meet contractors	

Quality Assurance Checks

	Yes	N/A	No
Sample labels complete	X		
Sample/cooler seals OK	X		
All samples obtained	X		
Chains of custody	X		
All forms/logs complete	X		
Site walkover		X	
Site H&S Plan on site	X		
Instruments calibrated	X		

Residuals Disposition

Item	Approx. Amount	Container ID
Soil/Solid		
Groundwater		
Decon Fluid		
PPE		
Other		

Instrument Calibrations

pH/Conductivity

Std.	Standard	Meter
[ ]	pH 4	
[ ]	pH 7	
[ ]	pH 10	
[ ]	Cond.	

PID/FID Meter

Std.	Standard	Meter
100	Isobutylene ~102	
[X]	Zero w/Background	
[ ]	Zero w/Clean Air	

Balance

Std.	Standard	Reading
___	Std. Mass	

Expendable Items Used

Qty	Item	LEA Number
	Bailer, Disposable (spec. size)	090
	Cap, PVC, 1", (Threaded or FJT)	147
	Cap, PVC,1', Slip (S447010)	146
	Concrete, 60 lb. Bag	085
	Decontamination Supplies	081
	Drum, Closed Top 55 gallon	086
	Drum, Open Top 55 Gallon	086
	Ear Plugs	
	Filter, Zap Cap	024
	Grout mix, bag	237
	Locks, Monitoring Well	155
1	Miscellaneous Health & Safety Items	060
	Plug, Locking, 2"	233
	Sand, Filter Pack, Bags	220
	Water, Distilled	025
	Well Point, 1" Sch 80 (FJT or ?)	216

Equipment Used

Qty	Item	LEA Number
	Balance, Ohaus	031
1	Drill, Core Saw, w/ Attachment	009
1	Drill, Hammer, Dewalt	
1	Drill, Hilti, incl. Concrete Anchors	010
	Hand Auger, w/ attachments	013
	Locator, Metrotech Pipe	053
	Meter, pH/Temp	021
	Miscellaneous Small Tools & Equipment	152
	Pump, Grundfos	073
	Pump, Peristaltic (spec. Master or Isco)	040
	Pump, Submersible	201
	Pump, Watera	038
	Saw, Steel Cutoff	063
	Thermo-Anemometer	248
	Turbidimeter	023
	VOC Analyzer, Photovac 2020 (PID)	012

Field Personnel Alex Clarke

Dave S. Vasiliou

Signature David Vasiliou

NOTE: CORRECTIONS ON THIS & FOLLOWING SHEETS MADE IN RED INK BY BARBARA HEATWOLE ON 8/10/04 BH

Loureiro Engineering Associates, Inc.

DAILY FIELD REPORT

Supplemental Sheet

LEA Comm. No.	**91MH401.001**	Page 2 of 7
Project	MacDermid - Huntingdon	Date 7/1/04
Location	MacDermid - Huntingdon Avenue, Waterbury, CT	
Client	MacDermid - RNav	

Description of Site Activities

7:20 arrive at Site. met Alex. Al arrived shortly after. Al told us that 2 tanks were going to be removed today so we would all have to work together

7:30 Alex + I moved all equipment to PZ-03

8:24 Began to Core at PZ-03

8:35 Barbara arrived at site. She dropped off coolers and ice. She told me about scope for day + showed me that 1043984 got broken in the cooler overnight. I cleaned the cooler and repacked it with ice.

9:16 Alex moved geoprobe to PZ-03 and set up.

9:30 Began Coring

11:00 Coring very slow. Had to switch to 2' intervals

11:15 Had to switch over to piston point and make equipment adjustments System working poorly. The soil is tight and the cores are getting stuck in the hole! The sleeves are getting stuck in the cores. We had 2 cases where parts got stuck in the hole + retrieval took awhile. Dave Brisson was onsite to help out.

2:19 Still having trouble. We are down 32' and still no ground water. Al P. asked if we could be done @ 4:00 or 5:00 at the latest So he could look up. It's not looking good.

3:20 Completed boring on PZ03. They set up to install the well.

DV

Field Personnel	Alex Clarke		*Signature*
	Dave S. Vasiliou		David Vasiliou

DAILY GEOPROBE REPORT

Loureiro Engineering Associates, Inc.

LEA Comm. No.	**91MH401.001**	Page 3 of 7	
Project	MacDermid - Huntingdon	Date 7/1/04	
Location	MacDermid - Huntingdon Avenue, Waterbury, CT		
Client	MacDermid - RNav		

Arrived at Site 0720 Departed from Site 1730 Geoprobe 6610DT

Odometer (Start) _____ Return _____

Probe Hours (Start) _____ Finish _____

Vehicle Checklist/Condition

OK	Geoprobe	OK	Trailer (if used)
✓	Engine Fluids	✓	Brakes (Incl. battery)
✓	Transmission	✓	Hitch
✓	Brakes (Incl. parking)	✓	Safety Chains
✓	Lights	✓	Lights
✓	Signals	✓	Signals
✓	Tires	✓	Tires
✓	General	✓	General
	Other (describe)		Other (Describe)

Equipment Broken/Needing Repair

All checks above must be OK and signed off before leaving in the morning

Signature

Expendable Items Used

Qty	Item	LEA Number
2	Bentonite Chips, Bag	089
	Bentonite Pellets, Buckets	
	Cap, End, Vinyl (AT-641K or AT-726K)	150
	Cap, Slip, 0.5" Vinyl (AT-441)	044
	Cap, Slip, 1" PVC (S447010)	146
	Cap, Threaded, 1" PVC	147
½	Concrete, 60 lb. Bag	085
	Connectors, Snap Lock (GW-2030)	210
10	Core Catchers, MC (AT-8531K)	999
1	Decontamination Supplies	081
	Ear Plugs	
	Filter, In Line	024
	Liners, LB PETG (AT-825k)	128
10	Liners, MC Acetate	173
	Liners, MC PETG	173
	Locks, Monitoring Well	155
2	Miscellaneous Health & Safety Items	060
	Point, Drive, Exp., SP15 (GW-15)	003
	Point, Exp. (spec. GW-2040 or GW-445)	002
	Sand, Filter Pack, Bags	220
	Tubing, 1/2", NOS	007
1	Water, Distilled	025
	Well Point, 1" Sch.80 PVC	216
	Well Protector, Road Box (10581)	014
1	Well Protector, Roadbox, 7"	014
	Well Protector, Stickup, 4" (10127)	014
	Well Riser, 0.5" PVC, 5' (GW2050)	228
	Well Riser, 1" Sch. 80 PVC, 5' (1058CATB	131
	Well Screen, 1" Sch. 80 PVC, 5' (105810	130
	Well Screen, Pre-Packed, 3' (GW-2010)	224
2	1.5 well screen pre-pack	
6	1.5 PVC well casing	

Equipment Used

Qty	Item	LEA Number
1	Exhaust Hose	033
1	Miscellaneous Small Tools & Equipment	152
	Probe Rod Jack	119
1	Pump, Grout	200
	Thermo-Anemometer	248

Field Personnel Alex Clarke

Dave S. Vasiliou

Signature

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
MISCELLANEOUS SAMPLES

LEA Comm. No.	**91MH401.001**	Page 4 of 7	
Project	MacDermid - Huntingdon	Date 7/1/04	
Location	MacDermid - Huntingdon Avenue, Waterbury, CT		
Client	MacDermid - RNav		

Sample ID	Location ID	Time	Sample Type	Depth (ft)	PID/FID Reading	Comments	Waste Container ID
1048987	PZ-03	9:41	GP	0-2			
1048988	PZ03	9:44	GP	2-4			
1048989	PZ03	9:52	GP	4-6			
1048990	PZ03	9:54	GP	6-8			
1048991	PZ03	10:02	GP	8-10			
1048992	PZ03	10:04	GP	10-12			
1048993	PZ03	10:16	GP	12-14			
1048994	PZ03	10:20	GP	14-16			
1048995	PZ-03	10:25	GP	16-18			
1048996	PZ03	10:46	GP	18-20			
1048997	PZ-03	12:08	GP	20-22			
1048998	PZ-03	12:10	GP	22-24			
1048999	PZ03	12:38	GP	24-26			
1049000	PZ03	12:40	GP	26-28			
1049001	PZ-03	13:45	GP	28-30			
1049002	PZ-03	13:52	GP	30-32			
1049003	PZ-03	14:39	GP	32-34			
1049004	PZ-03	14:42	GP	34-36			
1049005	PZ-03	15:08	GP	36-38			
1049006	PZ03	15:10	GP	38-40			
1049168	Trip Blank	15:15	Blank	—			

DV

Field Personnel	Alex Clarke		
	Dave S. Vasiliou		Signature David Vasiliou

Loureiro Engineering Associates, Inc.

FIELD BORING LOG

BORING ID: PZ-03

LEA Comm. No.	91MH401.001	Page	5 of 7
Project	MacDermid - Huntingdon	Date	7/1/04
Location	MacDermid - Huntingdon Avenue	GPS Latitude	
Client	MacDermid - RNav	GPS Longitude	
Drilling Method	Geoprobe	Drilling Contractor	
Sampling Method	Continuous Coring	Drill Foreman	Alex Clarke
Groundwater Depth	at	Drill Rig	6610 DT

Elevation/ Depth	Sample Number(s)	Recovery (% or n/n)	Blows/6" / Downforce	Time	PID/FID (ppm)	Mass	Description of Recovered Material (Color, primary grain size and amount, other grain size(s) and amounts, density, moisture, coherence, structure, sorting, other characteristics)
2	1043987	38		9:41	0.0		14" Brown, f-m Sand, little c-Sand + gravel dry + tight
4	1048988	48		9:44	0.9		24" Dark brown, vf Sand and Silt, little gravel, w/ glass frags. - fill + Strong od.
6	1048989	25		9:52	0.2		1" SAA
8	1048990	48		9:54	0.0		9" SAA 4" Brown, vf-f sand, little m-Sand, little grave 4" Cobble / 7" Brown, f-m SAND, little silt, trace ga
10	1048991	27		10:02	7.2		3" Brown, m-f Sand, some gravel, odor, dry, loose - native
12	1048992	48		10:04	2.9		16" SAA 2" cobble 6" Dark Brown, silt + vf-sand, little S gravel very tight, moist, Strong odor
14	1048993	48		10:16	0.0		6" SAA 18" tan, f-m Sand + Gravel, Some cobble Strong odor, tight
16	1048994	48		10:20	0.1		24" SAA - tight + dry
18	1048995	18 / 24		10:25	0.5		18" SAA - tight + dry
20	1048996	24 / 24		10:46	0.0		24" tan, vf-Sand, bedded

Comments

Waste Container

Trip Blank ID(s)

Field Personnel	Alex Clarke		Signature
	Dave S. Vasiliou		

Loureiro Engineering Associates, Inc.

FIELD BORING LOG

BORING ID: PZ-03

LEA Comm. No.	**91MH401.001**		Page 6 of 7
Project	MacDermid - Huntingdon		Date 7/1/04
Location	MacDermid - Huntingdon Avenue	GPS Latitude	
Client	MacDermid - RNav	GPS Longitude	
Drilling Method	Geoprobe	Drilling Contractor	
Sampling Method	Continuous Coring	Drill Foreman	Alex Clarke
Groundwater Depth	at 32'	Drill Rig	6610 DT

Elevation/ Depth	Sample Information: Sample Number(s)	Recovery (% or n/n)	Blows/6" / Downforce	Time	PID/FID (ppm)	Mass	Description of Recovered Material (Color, primary grain size and amount, other grain size(s) and amounts, density, moisture, coherence, structure, sorting, other characteristics)
20	1048987	37		12:08	7.9		13" SAA
22	1048988	48		12:10	11.2		24" SAA
24	1048989	48		12:38	7.2		Macro core sleeve got stuck so we had to hammer sample out onto plastic, but material was all SAA
26	1049000	48		12:40	10.0		
28	1049001	48		13:45	0.0		24" SAA
30	1049002	48		13:52	4.5		24" SAA
32	1049003	48		14:39	0.6		24" SAA - wet
34	1049004	48		14:42	0.0		24" SAA
36	1049005	48		15:08	0.0		24" SAA
38	1049006	48		15:10	0.0		24" SAA
40							

Comments

Waste Container

Trip Blank ID(s)

Field Personnel	Alex Clarke		*Signature*
	Dave S. Vasiliou		

WELL COMPLETION REPORT

7 of 7

Project: MacDermid - Huntingdon
LEA Comm. No. 91MH401.001
Client MacDermid - RNav
Location MacDermid - Huntingdon Avenue

Start Date 7/8/04
End Date 7/1/04
Well ID PZ-03

Drilling Contractor Alex Clarke - LEA
Drilling Method Geoprobe
Sampling Method Continuous coring
Groundwater Observation
Depth 32' **at** ____ **Hours**

Logged by
Drilling Foreman Alex Clarke
Drill Rig 6610 DT
GPS Latitude
GPS Longitude

Protector
- Material: Steel roadbox
- Diameter: 7"
- Length: ____ Ground
- Stickup:
- Key #:
- Cover Type: roadbox

Top Seal
- Top: ~~Surface~~ 3'
- Bottom: 26'
- Material: Bentonite grout

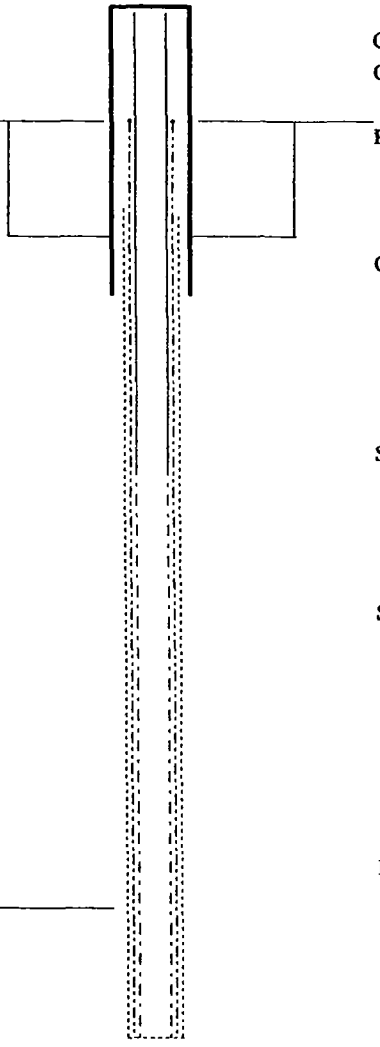
Backfill
- Top: 3'
- Bottom: 26'
- Material: Bentonite grout

Secondary Sand
- Top: 26'
- Bottom: 38'
- Size: 0

Filter Pack
- Top: 28'
- Bottom: 38'
- Material:

Reported depth to bottom of boring 39'

Comments



Concrete
- Diameter: 9"
- Thickness: 10"

Reference
- Stickup:
- Description:

Casing
- Diameter: 1.5'
- Material: PVC
- Length: 28'
- Stickup:

Seal
- Top:
- Bottom:
- Material:

Screen
- Top: 28'
- Bottom: 38'
- Material: Prepack
- Diameter: 1.5
- Length: 10'
- Slot Size: .010

Miscellaneous Materials (Quantity Used/Item)
- Cement: 1/2 Bag
- Bentonite Chips:
- Bentonite Pellets: 1/2 Bag
- Bentonite Powder: 1 Bag
- Grout Weight:
- Filter Pack Sand:
- Capping Sand: 1 Bag
- Well Point: 1
- Well Plug: 1

Signature _____

EXHIBIT A

***Additional Investigations Work Plan and Quality Assurance Project Plan for Documentation of Environmental Indicator Determination (CA725) Current Human Exposures Under Control, MacDermid, Incorporated, Waterbury, CT* (Work Plan), prepared by LEA on June 24, 2004.**

ADDITIONAL INVESTIGATIONS WORK PLAN AND QUALITY ASSURANCE PROJECT PLAN FOR DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION (CA725) CURRENT HUMAN EXPOSURES UNDER CONTROL/

MacDermid, Incorporated
Waterbury, Connecticut

June 24, 2004

Prepared for

MACDERMID, INCORPORATED
245 Freight Street
Waterbury, CT 06702

Prepared by

LOUREIRO ENGINEERING ASSOCIATES, INC.
100 Northwest Drive
Plainville, Connecticut, Zip

An Employee Owned Company

Comm. No. 91mh401.001

Table of Contents

		Page
1.	INTRODUCTION	1-1
2.	MONITORING WELL AND PIEZOMETER INSTALLATION	2-1
2.1	Monitoring Well Installation	2-1
2.2	Piezometer Installation	2-2
2.3	Well Development	2-2
2.4	Well Survey and Water-level Measurements	2-2
3.	GROUNDWATER SAMPLE COLLECTION	3-1
3.1	Sample Collection and Analysis	3-1
3.2	QA/QC Procedures Associated With Groundwater Sample Collection	3-1
4.	ASSOCIATED FIELD AND DATA MANAGEMENT ACTIVITIES	4-1
4.1	Equipment Decontamination	4-1
4.2	Residuals Management	4-1
4.3	Health and Safety Plan	4-1
4.4	Documentation	4-2
5.	QUALITY ASSURANCE PROJECT PLAN	5-1
5.1	Objectives of the Quality Assurance Project Plan	5-2
6.	EVALUATION OF DOWNGRADIENT PRODUCTION WELL USE	6-1
7.	EVALUATION OF ACCESSIBILITY TO THE NAUGATUCK RIVER	7-1
8.	OFFSITE COMMERCIAL/INDUSTRIAL INDOOR AIR ASSESSMENT	8-1

1. INTRODUCTION

This Work Plan has been prepared by Loureiro Engineering Associates, Inc. (LEA) at the request of MacDermid, Inc. in response to a request received from the EPA in its document "Technical Review of the Documentation of Environmental Indicator Determination (CA725) Current Human Exposures Under Control, Dated April 9, 2004." The Work Plan addresses the following:

1. The installation of groundwater monitoring wells and piezometers, as well as groundwater sampling procedures, and includes a Quality Assurance Project Plan (QAPP) for the collection of samples and management of data associated with those activities. The procedure used by LEA to enter and verify electronic analytical data is included as part of the QAPP.

2. Additional research and evaluations to address the presence of downgradient industrial water supply wells.

3. Recreator use and accessibility to the Naugatuck River.

4. Indoor air exposure assessment for off-site workers in the surrounding commercial and industrial facilities.

Of the above-mentioned objectives for this Work Plan, the primary activities to be performed include monitoring well and piezometer installation and groundwater sampling. Ancillary activities, such as the advancement of boreholes, collection and possible analysis of soil samples, collection of water-level measurements, and data management from collection to presentation and archiving are also included. Descriptions of the procedures that will be followed during performance of the activities conducted under this Work Plan are described in Sections 2.0 through 4.0 of the Work Plan. All field activities and data management procedures will be performed in accordance with the QAPP for the project, which is provided in this Work Plan as Section 5.0. Sections 6.0 and 7.0 of the Work Plan address the additional evaluations regarding downgradient production wells and recreator use and accessibility to the Naugatuck River, respectively.

2. MONITORING WELL AND PIEZOMETER INSTALLATION

2.1 Monitoring Well Installation

Two locations along the western property boundary will be selected for the installation of nested groundwater monitoring wells. One location will be approximately 100 feet north of well location MW-116 and one location will be approximately 200 feet south of well location MW-116, both situated along the western property boundary. The proposed permanent nested groundwater monitoring wells are illustrated on Drawing 1. The purpose of the wells will be to provide a refined understanding of groundwater flow direction and contaminant along the western property boundary and a better understanding of contaminant concentration along the western property boundary.

One of the two wells at each location will be installed such that the screen intersects the water table. The remaining well at each location will be installed with the screened section at a depth approximately equivalent to that at well MW-116D to assess contaminant concentrations at depth within the aquifer. All groundwater monitoring wells will be installed in accordance with the LEA Standard Operating Procedure (SOP) entitled *Installing & Developing Monitoring Wells and Piezometers.*

All monitoring wells will be constructed using the Geoprobe® Pre-Pack monitoring well construction materials. The pre-pack construction consists of five- foot long sections of 1.5-inch Schedule 40 polyvinyl chloride (PVC), 0.010-inch slotted Schedule 80 PVC screen with a 1.5-inch inner diameter pre-pack filter held in place by stainless steel mesh. The pre-pack screen sections may be joined to provide screen length multiples of five feet. A 1.5-inch diameter Schedule 40 PVC riser connects the screen to the surface.

Screen lengths for the proposed monitoring wells will be 10 feet. After the screen and riser is installed, one to two feet of sand will be placed above the screen to prevent the bentonite seal from leaking downward into the screened interval. A bentonite seal will be placed from the top of the sand cap to the surface. Emplacement of the sand cap and the bentonite seal will be performed while slowly retrieving the casing, allowing the native formation material to collapse around the backfill material.

All proposed wells will be completed with a 2-foot by 2-foot by 2-foot concrete pad and flush-mount well protector. All SOPs identified in this Work Plan are provided in Appendix A.

At each of the proposed locations, monitoring wells will be installed into borings advanced in accordance with the LEA SOP entitled *Geoprobe® Probing and Sampling* (Appendix A) under the supervision of an LEA geologist. Soil samples will be collected every two feet, and an aliquot of soil from each two-foot interval will be screened in the field for volatile organic compounds with a photoionization detector (PID). At each location, the LEA geologist will prepare a field boring log documenting the visual classification of the soils encountered. Soils will be classified using a modified Burmister soil classification system in accordance with the LEA SOP entitled *Geologic Logging of Unconsolidated Sedimentary Materials* (Appendix A).

2.2 Piezometer Installation

LEA will also install piezometers at four locations on the site. These piezometers will be located in the vicinity of historic groundwater monitoring wells that have either been damaged or destroyed. Specifically, piezometers will be installed in the vicinity of the historic wells MW-104, MW-106, and MW-107. In addition, a piezometer will be installed in the general vicinity of well MW-108. The proposed piezometer locations are depicted on Drawing 1. These temporary installations will be utilized to provide water-level data supplemental to that obtained from the existing well network.

The piezometers will be installed into boreholes advanced using Geoprobe® probing and sampling techniques, as described in the LEA SOP entitled *Geoprobe® Probing and Sampling* (Appendix A). The piezometers will be constructed in a manner similar to that described above for monitoring wells using pre-packed 1½-inch diameter PVC screen and riser, with the screened interval for each piezometer set across approximately the same zone of the aquifer as that of the original monitoring wells that each piezometer is designed to replace. Each piezometer installation will be then be completed in a manner similar to that described above for the monitoring wells.

2.3 Well Development

All newly installed monitoring wells and piezometers will be developed following installation in accordance with procedures described in the LEA SOP entitled *Installing & Developing Monitoring Wells and Piezometers* (Appendix A). The monitoring wells will be developed at least one week prior to collection of groundwater samples from those wells.

2.4 Well Survey and Water-level Measurements

Following installation, each of the newly installed wells and piezometers will be surveyed for location and elevation relative to an arbitrary datum that has been established for the site. Water

levels in each of the newly installed and existing monitoring wells and the newly installed piezometers will be measured in accordance with procedures described in the LEA SOP entitled *Liquid Sample Collection and Field Analysis* (Appendix A). During this activity, LEA field personnel will also compile an inventory identifying the condition of the wells.

3. GROUNDWATER SAMPLE COLLECTION

3.1 Sample Collection and Analysis

LEA will collect a single round of groundwater samples from the viable existing monitoring wells and the newly installed monitoring wells on the site. Groundwater sampling will be conducted in general accordance with the LEA SOPs entitled *Liquid Sample Collection and Field Analysis* and *Low Flow (Low Stress) Liquid Sample Collection and Field Analysis* (Appendix A).

Depending on the condition of the monitoring wells, up to 19 wells will be sampled for volatile organic compounds (VOCs), metals (arsenic, barium, cadmium, chromium, mercury, lead, selenium, silver, copper, nickel, and zinc), and cyanide. Following collection from the monitoring well, groundwater samples will be placed into appropriate containers and preserved in accordance with specifications specific to the analyses being performed. The sampling containers will be placed into a cooler maintained at a temperature of 4° C until delivery to the state-certified laboratory that will be performing the analysis. The sample coolers will be delivered under appropriate chain-of-custody procedures to the analytical laboratory in accordance with procedures identified in the LEA SOPs entitled *Liquid Sample Collection and Field Analysis* and *Quality Assurance/Quality Control Procedures for Field Activities.*

3.2 QA/QC Procedures Associated With Groundwater Sample Collection

Quality Assurance/Quality Control (QA/QC) procedures specific to field activities and sample collection that will be performed during the course of the investigation are detailed in the SOP noted above, which is provided in Appendix A, and will include:

- A single blind replicate sample will be collected and coded in a fashion that will not alert the laboratory to the fact that it is a replicate sample.

- A trip blank will be prepared prior to initiation of sampling activities for each day on which samples intended for VOC analysis will be collected. All samples to be analyzed for VOCs will be stored in the same cooler as the trip blank each day until delivery to the analytical laboratory. Each trip blank will be subsequently analyzed for VOCs using EPA Method 8260.

- Sampling personnel will make every effort to collect the replicate samples in a manner that will ensure that the samples are as close to replicate samples as possible, given the inherent constraints associated with groundwater sampling procedures.

- Field equipment blanks will be collected by pouring distilled, deionized water through and over decontaminated sampling equipment into prelabelled sample containers, with the time of collection noted.

- Field equipment blanks will be collected at the rate of one per day.

- Chain-of-custody and field sampling reports will be logged after collection of each sample.

QA/QC procedures related to laboratory activities will be the responsibility of the laboratory and must be in accordance with established guidelines for QA/QC for laboratories certified by the State of Connecticut.

4. ASSOCIATED FIELD AND DATA MANAGEMENT ACTIVITIES

4.1 Equipment Decontamination

All sampling equipment used during the investigation will be subjected to decontamination procedures before and in-between sample collection. Decontamination of the sampling equipment will be performed according to the following procedures:

- All excess loose dirt and debris will be removed from the sampling equipment and placed in a five-gallon container appropriate for the purpose.
- Sampling equipment will then be placed in an Alconox and tap water solution and scrubbed to remove all debris.
- The sampling equipment will be rinsed twice by immersion into two tap water rinse baths.
- A spray of <10% methanol in water will be applied to the equipment and, where metals are of concern, a spray of <10% nitric acid in water will also be applied.
- A spray rinse of distilled water will then be applied to the equipment.
- Rinse and wash waters will be changed as necessary to ensure complete decontamination of sampling equipment.

4.2 Residuals Management

All soil and groundwater not directly collected into sample containers will be containerized as appropriate for the particular type of material and appropriately labeled as remediation waste in accordance with applicable state and federal regulations. All spent decontamination fluids will be placed into a closed-top five-gallon container. The container will be labeled as appropriate in the field and stored in a secure area for future disposal.

4.3 Health and Safety Plan

A site-specific Health and Safety Plan has been developed for the site. All personnel performing onsite activities related to the tasks identified in this Work Plan will be familiar with the contents of the site Health and Safety Plan before they begin work at the site, and will sign the Health and Safety Plan in accordance with company policy.

4.4 Documentation

Documentation of all field activities and procedures will be in accordance with the SOP entitled *Documentation and Integrity of Field Sampling Activities* and all other SOPs included as Appendix A. Data management documentation will be consistent with the descriptions of those activities that are presented in the *Data Management Plan* and *LEA Procedure for Entering and Verifying Electronic Analytical Data* that are provided in Appendix B. Copies of the field forms that will be used during this supplemental investigation are included in Appendix C. Following completion of all field activities and a review of the conditions observed and analytical results, a final report will be prepared. This report will document activities performed during the course of the investigation, present results of laboratory analyses, evaluate the data obtained during the investigation with regard to characterizing onsite soils, and provide recommendations for any future course(s) of action should such be necessary.

5. QUALITY ASSURANCE PROJECT PLAN

The QAPP discusses objectives and QA/QC protocols that will be used to achieve the Data Quality Objectives (DQOs) for the installation of groundwater monitoring wells and piezometers and groundwater sampling, including ancillary field and data management activities, that will be performed at the site. The field sampling plan was designed to meet the objectives of providing supplemental information on groundwater levels and groundwater quality that will support approval of a revised Documentation of Environmental Indicator Determination (CA725) Current Human Exposures Under Control .

This QAPP has been prepared with reference to the guidance presented in the Region I, EPA-New England Compendium of Quality Assurance Project Plan Requirements and Guidance document and Attachment A to this document Region I, EPA New England Quality Assurance Project Plan Manual (QAPP Manual). The Quality Assurance/Quality Control procedures that will followed during this project have been described in detail for each of the field activities in the LEA SOPs identified in the previous sections of this Work Plan. They include the Standard Operating Procedures for:

- *Installing & Developing Monitoring Wells and Piezometers*
- *Geoprobe® Probing and Sampling*
- *Geologic Logging of Unconsolidated Sedimentary Materials*
- *Liquid Sample Collection and Field Analysis*
- *Low Flow (Low Stress) Liquid Sample Collection and Field Analysis*
- *Quality Assurance/Quality Control Procedures for Field Activities*
- *Documentation and Integrity of Field Sampling Activities*

In addition to those SOPs, all of which are provided in Appendix A, activities associated with data management during and following collection are described in detail in the two documents entitled *Data Management Plan* and *LEA Procedure for Entering and Verifying Electronic Analytical Data*. These documents are included with this Work Plan in Appendix B.

5.1 Objectives of the Quality Assurance Project Plan

Quality assurance objectives are generally defined in terms of Data Quality Indicators (DQIs). DQIs are comprised of five parameters: precision, accuracy, representativeness, completeness, and comparability (PARCCs parameters).

The objective of this QAPP is to present the QA/QC procedures to be implemented during the supplemental investigation activities described in previous sections of the Work Plan. The QAPP ensures that the data generated is of sufficient quality and quantity to allow confirmation that the investigation objectives for the site are achieved. The sampling objectives of the proposed investigation are to:

- Collect sufficient data to address the continued EPA concern that contaminated groundwater present at the site migrates in the direction of residential properties located west of the site.

- Provide a refined understanding of groundwater flow direction and contaminant distribution along the western property boundary.

Preliminary DQOs were identified to ensure that the data generated during field sampling will be of adequate quality and sufficient quantity to form a sound basis for decision making purposes relative to the above objectives. DQOs have been specified for the proposed investigation relative to the following items:

- Data Uses;

- Data Types;

- Data Quality;

- Data Quantity;

- Sampling and Analytical Methods; and

- Data Precision, Accuracy, Representativeness, Completeness, and Comparability Parameters (DQIs).

6. EVALUATION OF DOWNGRADIENT PRODUCTION WELL USE

LEA will perform additional research and evaluations to address recreator use and accessibility to the Naugatuck River. A well survey performed by LEA resulted in the identification of down gradient industrial water supply wells. To supplement this survey, additional tasks will be completed to clarify whether the production wells are still in use. If the production wells are in use, an appropriate inquiry will be performed, without contacting the well owner, to identify if any chemical parameter testing has been performed. In addition, if wells are found to be in use, groundwater contamination at the site will be evaluated with respect to whether or not a potential for risk to downgradient users exists as a result of groundwater quality on or potentially emanating from the site.

7. EVALUATION OF ACCESSIBILITY TO THE NAUGATUCK RIVER

Further evaluation will be performed to address inaccessibility of the Naugatuck River to recreators. A literature search and contact with the local public health department will be completed. The results of these activities will be documented and a complete characterization of the use of the Naugatuck River in the vicinity of the site will be provided. If the Naugatuck River is determined to be used by recreators and represents a complete pathway, LEA will perform an appropriate evaluation to assess the significance of the pathway. Additional data are necessary to support the evaluation. An additional proposal will be provided for appropriate level of investigation to support that groundwater contamination present at the site does not pose a perceptible impact to surface water or sediment quality in the Naugatuck River.

8. OFFSITE COMMERCIAL/INDUSTRIAL INDOOR AIR ASSESSMENT

Utilizing the existing and newly acquired information, the potential for off-site workers in the surrounding commercial and industrial facilities to be exposed to indoor air contamination will be assessed. Based on information obtained during the proposed investigation and previously existing data, modeling of potential risk to receptors due to contamination of indoor air from groundwater at the site will be modeled using the most appropriate version of the Johnson and Ettinger model and associated spreadsheets. The evaluation will be conducted in accordance with the November 2002 OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance) using the tiered evaluation process included in that guidance document.

FIGURES

US EPA New England
RCRA Document Management System
Image Target Sheet

RDMS Document ID # 102733

Facility Name: MacDermid Inc

Facility ID#: CTD001164599

Phase Classification: R-13

Purpose of Target Sheet:

[X] Oversized (in Site File) [ ] Oversized (in Map Drawer)

[ ] Page(s) Missing (Please Specify Below)

[ ] Potential FOIA Exempt [ ] Other (Please Provide Purpose Below)

Description of Oversized Material, if applicable:

Drawing 1: Proposed Monitoring Well Piezometer 8/16/2004

[X] Map [ ] Photograph [ ] Other (Please Specify Below)

* Please Contact the EPA New England RCRA Records Center to View This Document *

US EPA New England
RCRA Document Management System
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[ ] Potential FOIA Exempt [ ] Other (Please Provide Purpose Below)

Description of Oversized Material, if applicable:

Drawing 3: Groundwater Contour Map 8/25/2004

[X] Map [ ] Photograph [ ] Other (Please Specify Below)

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APPENDIX A

LEA STANDARD OPERATING PROCEDURES

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Installing and Developing Monitoring Wells and Piezometers

SOP ID: 10007
Date Initiated: 02/20/90
Revision No. 006: 08/12/02

Approved By: */s/ Joseph T. Trzaski* *08/12/02*
Joseph T. Trzaski **Date**
Senior Scientist

/s/ Nick D. Skoularikis *08/12/02*
Nick D. Skoularikis **Date**
Director of Quality

REVISION RECORD

Rev #	Date	Additions/Deletions/Modifications
Initial Issue	02/20/90	
001-004	-.	No record.
005	12/31/01	Formatting and minor revisions throughout.
006	08/12/02	Added section on utility clearance.

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Installing and Developing
Monitoring Wells and Piezometers

1. Purpose and Scope

This standard operating procedure (SOP) is designed to describe the methods and procedures used to install and develop monitoring wells and piezometers in a water-table aquifer. Monitoring well and piezometer installation and development shall generally follow the guidelines presented in the "*Handbook of Suggested Practices for the Design and Installation of Groundwater Monitoring Wells*" (United States Environmental Protection Agency (EPA), 1989), the "*RCRA Ground Water Monitoring Technical Enforcement Guidance Document*" (EPA, 1986), and any state or local guidance, or regulatory documents which are available.

This SOP describes general procedures and guidelines to be followed or consulted for the proper methods to be used when installing monitoring wells or piezometers in unconsolidated deposits and bedrock. Because each site is unique and the purpose of the monitoring wells may vary from installation to installation, no definitive rules can be established. Throughout this SOP reference to monitoring wells is also intended to mean piezometers unless specifically indicated otherwise. This SOP also applies to monitoring wells and piezometers installed by Geoprobe® direct push technologies.

2. Definitions

None

3. Equipment and Decontamination

3.1. Equipment Supplied by the Drilling Contractor:

- Drilling rig.
- Monitoring well casing.
- Monitoring well screen.
- Bottom caps, plugs or points.
- Centering guides (if they are to be used).
- Filter pack sand.
- Bentonite.

- Cement-bentonite grout.
- Mud-scale to measure densities.
- Protective casing or road box.
- Steam-cleaning apparatus and supplies.
- Suitable containers (e.g., Department of Transportation (DOT)-approved 55-gallon drums with liners) for soil cuttings, well development water, and water generated from steam cleaning.
- Metal stamps for permanently marking wells.
- All necessary permits and licenses.
- If the Geoprobe® is used for well installation, Geoprobe®-specific equipment for well installation.

3.2. Equipment Supplied by Loureiro Engineering Associates, Inc. (LEA)

- Field forms.
- Indelible markers.
- Lock(s) and keys.
- Well development equipment (pumps, surge block, bailers, etc.).
- Analytical instrumentation (Analytical instrumentation includes, but is not necessarily limited to turbidity meters, pH meters, specific conductivity meters, and thermometers.).
- Calibration supplies for all analytical instrumentation, as appropriate.
- Alconox®, or other non-phosphate laboratory grade detergent.
- 5-gallon buckets.
- Decontamination brushes.
- Distilled, de-ionized water.
- Decontamination fluids (<10% methanol in water, 100% n-hexane, and 10% nitric acid).

3.3. Equipment Selection and Specifications

The following specifications will be followed:

Cement-Bentonite Grout: If cement-bentonite is utilized, the cement-bentonite grout will be a mixture of 95 pounds of Type II Portland cement, 4 to 6 pounds of powdered sodium bentonite, and 5 gallons of potable water. The bentonite must be thoroughly mixed with the water before the cement is added. The cement bentonite grout shall have a density of 14 pounds/gallon.

Filter Pack Sand: All filter pack sand will be clean, well-rounded silica sand, in factory-sealed bags. The sand will conform to the most

recent version of the American Water Works Association (AWWA) Standard AWWA/ANSI A100 for water wells. In brief, the standard states that filter pack sand will have an average specific gravity of 2.5 with not more than 1% of the material having a specific gravity less than 2.25. Thin, flat or elongated particles shall not exceed 2% of the material, no more than 5% of the material shall be soluble in hydrochloric acid, and the material shall be washed and free of shale, mica, clay, dirt, loam, and organic impurities.

Bentonite: All bentonite will be pure, additive-free bentonite whether it is pellets, chips, or powder.

3.4. Equipment Decontamination

3.4.1. Equipment Decontamination for Monitoring Well Installation

All well materials and drilling equipment which are used to construct a monitoring well or piezometer must be clean and free of any potential contaminants. All well construction materials not certified by LEA personnel as decontaminated when delivered will be decontaminated by steam cleaning before being installed. Drilling equipment must also be decontaminated, prior to beginning work, by steam cleaning. Geoprobe® equipment shall be cleaned using a detergent such as Liquinox®.

All decontamination activities shall be completed at a specially constructed decontamination pad (or a portable decontamination unit). The decontamination pad shall be constructed before any drilling activity begins. The pad shall be constructed of high-density polyethylene (HDPE) liner material, of sufficient size and strength to allow the drill rig access to the pad, and bermed to contain the generated wastewaters.

3.4.2. Equipment Decontamination for Sampling Equipment and Well Development.

All materials and equipment used to sample soil or which enter a well must be clean and free of any potential contaminants. In general, the choice of decontamination procedures shall be based upon the site-specific contaminants and outlined in the site-specific work plan.

For sites at which the contaminants are unknown, but contamination is suspected, the decontamination procedures outlined below shall be followed.

3.4.2.1. Prior to commencing any field activities, the following solutions (as appropriate for the anticipated contaminants) shall be prepared and placed into 500-ml laboratory squirt bottles: <10% methanol in water; 10% nitric acid in water; 100% n-hexane; distilled, de-ionized water. Other chemicals may be used for decontamination of site-specific contaminants if needed for decontamination of those contaminants.

3.4.2.2. In the field, prepare approximately 2.5 gallons of a solution of Alconox® (or other suitable non-phosphate laboratory grade detergent) in tap water in a 5-gallon bucket.

3.4.2.3. Prepare a piece of 5-mil polyethylene sheeting to underlie the decontamination area. The sheeting shall be of sufficient size to contain any accidental discharge of decontamination solutions. The plastic shall be bermed to contain spills. The decontamination for Geoprobe® equipment shall be performed in buckets or in tubs.

3.4.2.4. The order for decontaminating equipment is as follows:

1) Detergent scrub.
2) De-ionized (DI) water rinse.
3) Hexane rinse (to be used only if separate-phase petroleum product, other than gasoline, is present).
4) DI water rinse.
5) 10% nitric acid rinse (to be used only when metals are suspected as potential contaminants).
6) DI water rinse.
7) Methanol rinse (<10% solution).
8) Air dry.

The order of decontamination may change if different chemicals are used.

3.4.2.5. Disposable materials such as cord shall not be decontaminated and shall be disposed of after use.

3.4.3. At the end of the project day, all spent decontamination fluids and materials, such as the polyethylene sheeting and personal protective equipment, shall be managed and/or disposed of in accordance with all applicable municipal, state, and federal regulations.

4. Procedures

4.1. Utilities

4.1.1. Notify the appropriate "one call" utility notification service (e.g. Call Before You Dig at 1-800-922-4455, Contractor ID: 10502) at least three working days prior to commencing operations on a site. The locations of all proposed borings must be clearly marked in the field prior to notification. The Project Engineer/Manager **must** call and confirm that each utility has been to the site and has marked their respective lines.

4.1.2. On private sites, consult with the Owner or other person knowledgeable about the site as to the locations of potential private or abandoned utilities and locate these prior to beginning work. Upon the discretion of the Project Engineer/Manager, a pipe locator can also be used to assist in locating utilities.

4.1.3. Note that OSHA may have additional requirements for location of utilities.

4.1.4. All efforts to locate underground utilities (including names of owner or designee and time) should be properly documented in the field logbook prior to onset of the work scheduled.

4.2. OSHA

4.2.1. The Senior LEA representative shall be the Competent Person required by OSHA for all work. However, this does not relieve other LEA representatives from bringing to his or her attention conditions, which may be unsafe or present a hazard to the drilling crew, the general public, or other workers on the site.

4.3. Monitoring Well and Piezometer Installation

The specific monitoring well installation methodologies are dependent upon the specific drilling method used. In general, monitoring wells will be constructed through the inside of the drill stem, once the borehole has been advanced to the desired depth. For

Geoprobe® monitoring wells, the wells will be constructed through the inside of stainless steel casing.

4.3.1. Borehole Advancement

If the borehole has been drilled to a depth greater than that at which the well is to be set, the borehole must be backfilled with bentonite pellets, bentonite chips, or a bentonite-cement slurry to a depth of approximately one foot below the intended well depth. Approximately one foot of clean sand must be placed on top of the backfill to return the borehole to the proper depth for the well installation.

For bedrock monitoring wells, the borehole shall be advanced to approximately one foot into competent bedrock and the isolation casing grouted into place. The grout is to be allowed to cure for at least 24 hours before drilling continues. After the grout has cured, the borehole is to be advanced using the appropriate technique (e.g., coring, air rotary, mud rotary) to the desired depth. If the borehole is advanced to a depth greater than that at which the well is to be set, the borehole shall be backfilled as described above.

For Geoprobe® installed wells and piezometers, the steel casing will be drilled to the specified depth of the bottom of the well using the Geoprobe® and in certain cases manually.

4.3.2. Installation of Well Screen and Casing

The appropriate lengths of well screen (with bottom cap, or plug, or well point) and casing must be joined watertight and carefully lowered inside the drill stem to the bottom of the borehole. If centering guides are used, they must be placed at intervals around the well casing, beginning no lower than 5 feet above the top of the screen.

4.3.3. Design and Installation of the Filter Pack

After the well screen and casing are installed in the borehole, the filter pack shall be installed. For monitoring wells in unconsolidated materials, the selection of the appropriate filter pack material shall be based upon a grain-size analysis of a sample collected from the intended screen interval. The selection of the appropriate filter pack material shall be based upon the methodologies presented in the "*Handbook of Suggested Practices for the Design and Installation of Groundwater Monitoring Wells*" (EPA, 1989), the "*RCRA Ground Water Monitoring Technical Enforcement Guidance Document*" (EPA, 1986), or any state or local guidance, or regulatory documents which are available. In the

absence of grain size analyses, the filter pack material shall be selected based upon an experienced geologist's best judgment as to the appropriate material.

For bedrock monitoring wells, the well screen and filter pack are emplaced primarily to stabilize the borehole and are therefore not sized in the same manner as for a monitoring well in unconsolidated sediments. For typical bedrock monitoring wells, 10-slot well screen is appropriate. The selection of the appropriate filter pack material shall be based upon the slot size selected for the well screen.

A filter pack of clean silica sand will be placed around the well screen. Place the filter pack into the borehole at a uniform rate in a manner that will allow even placement of the sand. The drill stem shall be raised slowly while the sand is being placed to avoid caving of the borehole walls; the drill stem shall never be raised above the top of the filter pack during installation. Using a stainless steel weight on the end of a fiberglass tape, continuously sound the top of the filter pack as it is being installed. The filter pack shall extend from a depth of approximately one foot below the screened interval to a minimum height of one to two feet above the top of the well screen. However, this length may be adjusted if it would create the potential for cross-contamination or in the case of shallow water tables.

A finer-grained sand cap shall be installed for a minimum of one foot above the filter pack. This height may also be adjusted in the case of shallow water tables.

4.3.4. Installation of Impermeable Seal

An impermeable seal at least two feet thick must be placed on top of the fine sand cap. The seal may be composed of either bentonite pellets or a bentonite slurry. The pellets must be placed into the borehole in a slow and continuous manner that prevents bridging. This is especially important in deeper monitoring wells where the pellets may have to be emplaced through a considerable depth of standing water in the borehole.

The bentonite slurry shall be prepared by mixing approximately 15 pounds of bentonite powder with 7 gallons of water for each one cubic foot of slurry needed. The slurry shall be emplaced in the borehole via a tremie pipe. The tremie pipe must be plugged on the bottom and have openings along the sides of the bottom one foot of pipe. This will allow the slurry to be emplaced into the borehole without disturbing the fine sand cap. This procedure is especially important for the relatively deeper wells.

Verify the position of the top of the bentonite seal using a weighted tape measure. If all or a portion of the bentonite seal must be emplaced above the water table, hydrate the bentonite with clean water. Allow 30 minutes after adding the water for the bentonite to hydrate.

The thickness of the bentonite seal may be adjusted for wells completed in aquifers with shallow water tables.

4.3.5. Installation of Grout Backfill

Place an annular seal of cement-bentonite grout above the bentonite seal. Install the cement-bentonite grout continuously from the bottom of the annular space to the ground surface through a tremie pipe. The tremie pipe must be plugged on the bottom and have openings along the sides of the bottom one-foot length of pipe. This will allow the grout to be emplaced into the borehole without disturbing the bentonite seal. Alternatively, a bentonite slurry can be used.

4.3.6. Surface Completion

All monitoring wells will be finished at the surface with a concrete pad. The concrete pad shall typically be two-feet square and at least four inches thick. The concrete shall fill the borehole to a depth below the frost line. The pad shall be constructed in one continuous pour of concrete. Note that some of the cement-bentonite grout used for the annular seal may have to be removed to install the concrete pad. A survey pin may be installed in the concrete pad before it dries, if necessary.

For monitoring wells that will be completed above-grade, a locking steel protective casing shall be installed in the concrete. The protective casing shall extend at least three feet into the ground and two feet above ground. For monitoring wells that will be completed flush, a steel roadbox, suitable for traffic loads, with a gasketed cover and drain shall be installed.

Each well will be properly labeled on the exterior of the locking cap or protective steel casing with a metal stamp indicating the permanent well identifier.

4.3.7. Well Protection Bollards

Guard posts may be installed in high-traffic areas for additional protection. One to four guard posts would be installed around the protective casing, within the edges of the concrete pad. If used, guard posts will consist of concrete-filled steel tubes, at least 3 inches in diameter, painted with multiple coats of epoxy-based paint to prevent rust. The guard posts would extend at least two feet below ground and approximately three feet above ground.

5. Well Development

Monitoring well development may be accomplished by surging and bailing (or pumping), or over pumping. Other methods, such as air jetting, backwashing, or air-lift pumping, shall be avoided because these methods introduce fluids into the formation and may have unexpected influences on groundwater quality, if only for a short period of time.

Immediately upon opening the well, the air in the wellhead will be sampled for VOCs using a portable VOC analyzer, such as a Photovac MicroTIP®. The well cap shall be opened slightly and the sampling port of the VOC analyzer shall be inserted into the well. The maximum reading shall be recorded on the appropriate field paperwork. The instrument shall be zeroed with ambient air prior to the measurement, and the initial and final readings shall be recorded for each well.

Measures shall be taken during well sampling to prevent surface soils from coming in contact with the purging equipment and lines. Typically, a polyethylene sheet is placed on the ground providing adequate coverage for the equipment being used.

In addition, the procedures described in LEA SOP ID 10004 in the sections for Field Analysis, Well Evacuation, and Sample Withdrawal shall be followed.

5.1. Surging and Bailing

In surging and bailing, a well is developed by alternately surging a short section of the screen with a tight-fitting surge block. Begin by lowering the surge block to the top of the screened interval and swab the well with a pumping action with a typical stroke of 2 to 3 feet. (Begin surging at the top of the well intake to avoid having loosened material from "sand-locking" the surge block.) Do not surge the well too violently to avoid damaging the well screen or the filter pack. Remove the surge block at regular intervals and bail (or pump) the fine material from the well. Proceed with surging throughout the length of the well screen, being careful to avoid hitting the bottom of the well. Check the quality of the bailed water at regular intervals, as described in Section 5.3.

In cases where a considerable volume of sediment may initially be drawn into the well, begin surging the well gently in the casing above the well screen. Proceed with surging and bailing to the bottom of the screened interval.

5.2. Overpumping

In overpumping, a well is developed by operating a pump in the well at a capacity which greatly exceeds the formation's ability to supply water. The flow velocity into the well during overpumping usually greatly exceeds the flow velocity

induced during normal sampling. This increased velocity causes movement of particles from the formation into the well.

Begin developing the well by installing a suitable pump at the bottom of the well. Alternatively, a surface-mounted pump with a suction hose may be used if the drawdown inside the well will not exceed the pump's available lift. The discharge from the pump shall be directed to approved containers. The pump (or intake hose) must be equipped with a backflow-prevention valve to prevent introducing aerated water into the aquifer.

Start the pump and discharge water at the highest practical rate. If the well runs dry, stop the pump and allow the well to recharge. Check the quality of the discharged water at regular intervals as described in Section 4.3.

5.3. Completing Well Development

During bailing or pumping, measure and record water quality parameters to gauge the degree and effectiveness of development. Typically, pH, temperature, specific conductivity, and turbidity shall be checked at periodic intervals (but at least every three well-volumes) until the purge water begins to appear clear. Then measurements shall be made after each well volume until the parameters stabilize. The water quality parameters may be considered stable when:

- pH, temperature, and specific conductivity of consecutive measurements have relative percent differences (RPD), as defined below, of less than 10%; and,
- The turbidity is 5 NTU or less (applicable only in aquifers with low percentages of fines. This may not be achievable in all situations, but the turbidity shall be less than 50 NTU and shall stabilize with an RPD of less than 10%).

However, in no case shall the development stop before the above criteria are met, and:

- At least 3 well volumes have been removed; or,
- The well has been surged and pumped for at least 30 minutes.

The RPD between two measurements (e.g., M1 and M2) is calculated as follows:

$$RPD = \frac{|\ M1 - M2\ |}{(M1 + M2)/2} \times 100\%$$

All well development equipment and supplies shall be thoroughly decontaminated prior to and between each monitoring well. Place all development water into properly labeled, suitable containers; leave all filled containers in an appropriate location.

6. Documentation

6.1. Well Development

Well development activities will be documented on the appropriate field forms, and specifically on the "Field Data Record Groundwater" and "Well Development Report" forms. Information provided on those forms includes: purge method, amount of water per well volume, instrument readings after purging of each well volume.

6.2. Monitoring Well Completion Log Forms

During the installation of a monitoring well, complete records must be kept of quantities and types of all well construction materials used.

A complete geologic log shall be kept during advancement of the borehole for the well. The procedures for completing geologic logs are presented in *Standard Operating Procedure for Geologic Logging of Unconsolidated Sedimentary Materials* (SOP ID 10015). However, the additional information pertinent to monitoring well installations shall be recorded on a separate form. A monitoring well completion form is provided in Attachment 1. In addition typical wellhead details – one for flush-mount well completions and one for above-grade completions - are provided as Figure 1. Whenever a monitoring well is installed, record all appropriate information concerning the quantity of materials used, the type and manufacturer of the materials, the mixtures of grouts or slurries, and any pertinent notes regarding the installation of each well.

After the project is completed, submit a copy of the attached Geologic Soil Boring/Well Completion Log Request Form along with copies of all Monitoring Well Completion forms for final typing and entry into the LEA database. The request form provides information on the types of final logs to be produced, the scale at which to plot the final forms, and notes common to all reports.

7. Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) procedures will be followed in compliance with the site-specific work plan.

8. References

8.1. EPA, *RCRA Groundwater Monitoring Technical Enforcement Guidance Document*, OSWER 9950.1, September 1986.

8.2 EPA, *Handbook of Suggested Practices for the Design and Installation of Groundwater Monitoring Wells*, EPA/600/4-89/034, 1989.

END OF DOCUMENT

ATTACHMENT 1

Monitoring Well Completion Report and Well Development Forms

WELL COMPLETION REPORT

Project: Emhart Des of Res Sy
LEA Comm. No. 3481400.
Client Emhart Industries, Inc.
Location Emhart Industries former Headquarters

Start Date | **Well ID**
End Date

Drilling Contractor _____
Drilling Method _____
Sampling Method _____
Groundwater Observation
Depth _____ **at** _____ **Hours**

Logged by
Drilling Foreman _____
Drill Rig _____
GPS Latitude _____
GPS Longitude _____

Protector
- Material _____
- Diameter _____
- Length _____ Ground
- Stickup _____
- Key # _____
- Cover Type _____

Top Seal
- Top _____
- Bottom _____
- Material _____

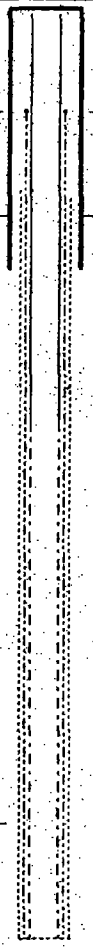
Backfill
- Top _____
- Bottom _____
- Material _____

Secondary Sand
- Top _____
- Bottom _____
- Size _____

Filter Pack
- Top _____
- Bottom _____
- Material _____

Reported depth to bottom of boring _____

Comments



Concrete Diameter _____
Concrete Thickness _____

Reference
- Stickup _____
- Description _____

Casing
- Diameter _____
- Material _____
- Length _____
- Stickup _____

Seal
- Top _____
- Bottom _____
- Material _____

Screen
- Top _____
- Bottom _____
- Material _____
- Diameter _____
- Length _____
- Slot Size _____

Miscellaneous Materials (Quantity Used/Item)
- Cement _____
- Bentonite Chips _____
- Bentonite Pellets _____
- Bentonite Powder _____
- Grout Weight _____
- Filter Pack Sand _____
- Capping Sand _____
- Well Point _____
- Well Plug _____

Signature _____

Loureiro Engineering Associates, Inc.

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
WELL DEVELOPMENT

LEA Comm. No.	3481400.	Page ____ of ____
Project	Emhart Des of Res Sy	Date __/__/____
Location	Emhart Industries former Headquarters, Farmington, CT	Time __:__
Client	Emhart Industries, Inc.	

Monitoring Well Number _____ Sample Number(s) _____ _____

Initial Field Data and Measurements

Depth of Well _____ Reference Used _____
Depth to Water _____ PID/FID Reading _____
Height of Column _____ Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter _____ Material _____
Protector Road Box / Stickup
Ground to Reference _____
Comments _____

General Condition	OK	Bad
Casing Secure		
Collar Intact		
Cover Locked		
Other (describe)		

Development Information

Purge Volume Factors
0.5" - 0.01
1" - 0.041
1.5" - 0.091
2" - 0.16
4" - 0.65
6" - 1.5

Initial Sample Observations
Clear ☐
Colored ☐
Cloudy ☐
Turbid ☐
Odor ☐
Sheen ☐

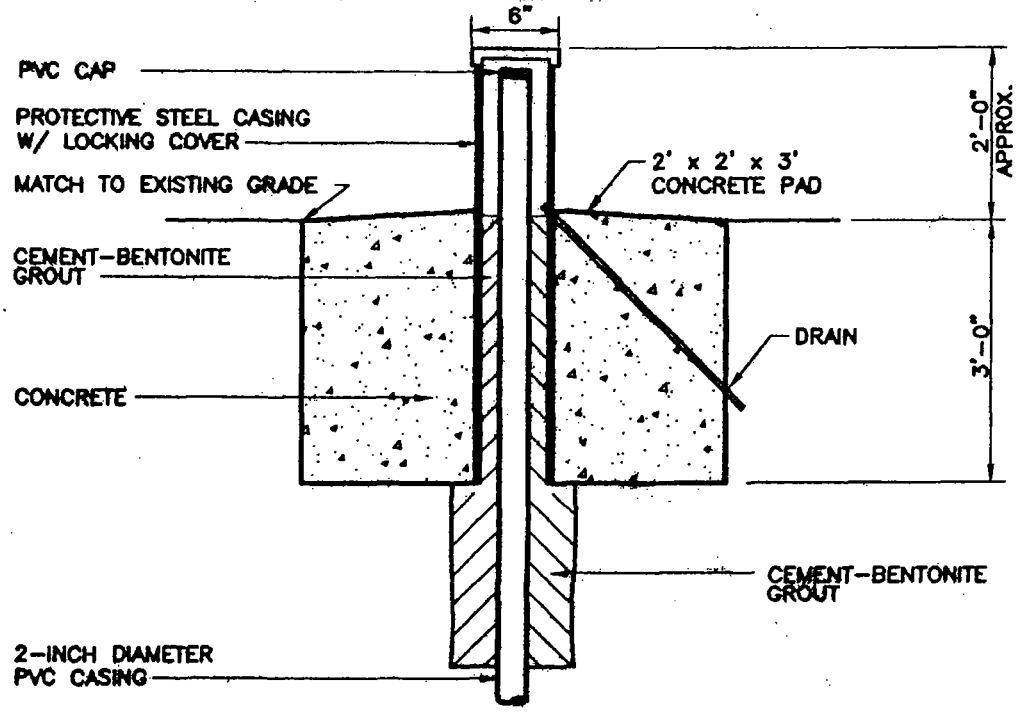
Volumes / Parameter	Gallons	Temp (C)	pH (SU)	Spec.Con.	Turbidity	Other
Initial						

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other _____
Field Decontamination? Yes / No If Yes, with what? _____
Waste Container ID _____

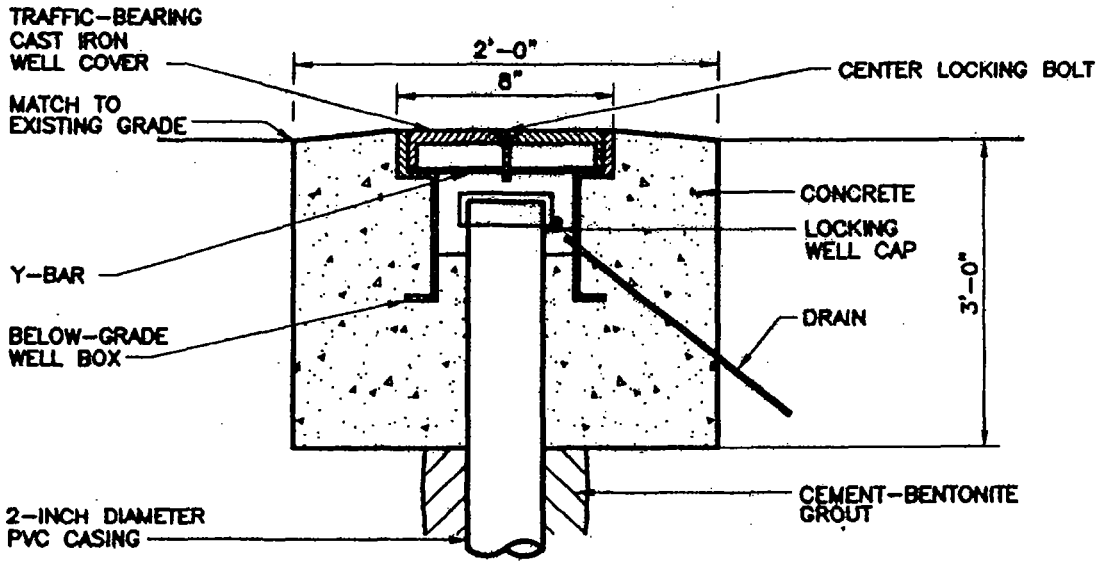
Additional Comments

Field Personnel _____ _____ *Signature*

FIGURES



ABOVE GRADE WELLHEAD
CONSTRUCTION DETAIL - NOT TO SCALE



FLUSH TO GRADE WELLHEAD
CONSTRUCTION DETAIL - NOT TO SCALE

TYPICAL
WELLHEAD DETAILS

Comm.No. | FIG. 1 | LEA

WELL-DET (1)

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Geologic Logging of Unconsolidated Sedimentary Materials

SOP ID: 10015
Date Initiated: 12/27/94
Revision No. 002: 01/15/02

Approved By: *__/s/ Kimberly C. Clarke__* *__01/15/02__*
Kimberly C. Clarke **Date**
Senior Project Scientist

__/s/ Nick D. Skoularikis__ *__01/15/02__*
Nick D. Skoularikis **Date**
Director Of Quality

REVISION RECORD

Rev #	Date	Additions/Deletions/Modifications
Initial Issue	12/27/94	
001	11/20/96	No record
002	01/15/02	Formatting and minor revisions throughout

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Geologic Logging of Unconsolidated Sedimentary Materials

1. Purpose and Scope

This document presents the methods and procedures used to describe unconsolidated sedimentary materials for geological purposes in a uniform and consistent manner. It includes procedures for properly recording the observations by providing guidelines for completing boring logs and submitting those logs for computer entry. This Standard Operating Procedure (SOP) refers only to geologic logging of soils and sediments (including artificial fill and other man-made deposits) and specifically is not intended to describe logging of soils or sediments for geotechnical or other engineering purposes. Although the SOP presents a system for describing sediments, it is not intended to be a definitive reference for classifying sedimentary materials, nor is it intended to replace experience or training. Individuals using this SOP should be trained and competent in field methodologies and geologic logging prior to commencing field activities.

2. Definitions

2.1. None

3. Equipment

3.1. Equipment required for the geologic logging of soil/sediment samples shall include the following items:

- Tape measure or scale.
- Hand lens.
- Color chart.
- Grain-size comparator.
- Field forms.
- Indelible marker(s).
- Small table.
- Field Paperwork.
- Clipboard.

4. Procedures

4.1. Sample Collection

Samples of soil and unconsolidated sedimentary materials will be collected in general accordance with the SOPs for Soil Sampling (SOP ID 10006), Hand Auger Borings (SOP ID 10003), Hollow Stem Auger Soil Borings (SOP ID 10008), and Geoprobe® Probing and Sampling (SOP ID 10011). Those SOPs include procedures for decontamination of equipment required for sample collection, as well as providing the methodologies for sample collection and documentation.

4.2. Descriptions of Unconsolidated Sedimentary Materials

4.2.1. General Sediment Description Guidelines

For the purposes of geologically logging unconsolidated soils and sedimentary materials, a Modified Burmister method of description and classification should be used. The Modified Burmister Sediment Classification System (or simply, Burmister System) is intended as a rapid field method for identifying and classifying sediments. The system is based upon visual identification of the generalized grain-size distribution and description of the physical characteristics of the sample.

A Burmister System description is comprised of three parts: a color descriptor; a grain-size descriptor; and modifier(s). The color descriptor indicates the overall color or colors of the wet sample. The descriptor consists of a color name or names and (if possible) the color code from a standard color reference (for example, a Munsell[7] Color Chart). The grain-size description indicates the predominant grain size in the sample, as well as the relative percentages of other grain sizes present.

Modifiers are used to further describe the geologic character of the sample. Modifiers may include descriptions of moisture content, sorting, sphericity, angularity, sedimentary structures or other pertinent information.

4.2.2. Color Description

The color of the wet sediment should be determined with reference to a standard color comparator (for example, a Munsell[7] Color Chart) for rocks or sediment. The included color descriptor should contain both the color name and, when a color comparator is used, the appropriate hue-chroma value code, for example "Reddish brown (5YR 4/4)". The color of a sample should always be gauged when the sample is wet, or it should be noted otherwise.

4.2.3. Predominant Grain-Size Description

The first step in describing a sediment sample is visually estimating the size range and percentage of the various grain sizes in the sample. Reference should be made to standard geologic comparators for assessment of the grain size(s).

The primary grain-size descriptor indicates the predominant grain size, as judged visually, of the sample. The descriptor is always capitalized and underlined. Possible descriptors include: CLAY, SILT, SAND, and GRAVEL (GRANULES, PEBBLES, COBBLES, and BOULDERS). These correspond to the standard Wentworth size-classification scheme used for describing sediments for geologic purposes. Size classifications for CLAY through GRAVEL are presented in Table 1. The descriptor should also include an indication of the relative size range of the sample within the predominant grain size (for example, "fine-to-medium sand", "coarse sand", etc.). Although Table 1 includes divisions of the silt category, this is applicable only to sediment samples analyzed by pipette or hydrometer and cannot be distinguished in the field.

The presence of other grain sizes, in addition to the predominant material is also included in the grain-size descriptor. Appropriate grain sizes are the same as for the predominant grain size of the material (clay, silt, etc.), however only the initial letter of the word is capitalized. The description should also include an indication of the relative amount of the minor components. Appropriate indicators for the relative percentages present are provided in Table 2.

It is generally not considered possible to visually distinguish between clay and silt. Estimation of the silt/clay content of a sample should be based upon the plastic properties of the sample. The plastic properties of the sample may be estimated by taking an approximately 1 cubic centimeter ball of the sediment and attempting to roll a thread of the material between the palms of the hand. The minimum size of the thread which may be rolled may be compared to the values presented in Table 3 and the plasticity estimated. A comparison of the minimum thread diameter which may be formed with the information presented in Table 3 provides an approximate silt/clay content estimate for sand-silt-clay sediments and composite clay sediments.

4.2.4. Modifiers

Various modifiers may be added to the basic sediment description to further describe the geologic character of the sample.

For sand or coarser-sized material, the relative degree of sorting, the sphericity, and angularity should also be recorded. Sorting may be visually estimated. Sphericity and angularity, however, should be made with reference to an accepted comparator. A chart illustrating various degrees of sphericity and angularity is attached as Figure 1.

The mineralogy of the sample should also be recorded. Reference should be made to the relative percentages, grain size(s), and sphericity of the mineral particles (especially where it differs significantly from that of the predominant grain-size material).

Other information which should be recorded for each sample includes an estimate of the density and cohesiveness of the sample (made from blow counts where applicable, or other specific instrumentation where appropriate), the relative moisture content of the sample, visible sedimentary structures, and any odors or staining noticeable during logging. Tables 3 and 4 present appropriate terms for describing the plasticity, density, and cohesiveness of sediment samples.

Especially important is an indication that a specific portion of the material may represent "sluff" or material collapsed from the borehole walls.

4.3. Written Sediment Descriptions

The written sediment description may be made as either an unabbreviated or an abbreviated description. Both methods should relate the same information, however the abbreviated description is better suited for field use.

In an unabbreviated description, all of the words of the description should be written out in their entirety. The descriptor should include pertinent information regarding the sample's size gradation, consistency, color, and relative grain size, as described previously. The color descriptor should precede the primary sediment component name, while additional details such as the plasticity, mineralogy, visible sedimentary structures, etc., should follow the sediment component name.

An example of an unabbreviated description is:

Red-brown (5YR 4/4), fine to coarse SAND, little fine Gravel, little Silt, moist, moderately well sorted, low sphericity, Gravel waterworn, Sand subangular, micaceous.

Since the Burmister system is intended to provide a means for describing uniform sediments, three "special" cases should be addressed.

First, the Burmister system is intended only to describe the sediment. Where a genetic classification of the material is significant, it should be added as a separate statement at the end of the description. For example:

> **Olive gray (5Y 4/2), coarse to fine SAND, some fine Gravel, little Silt, moist, poorly sorted, sub-rounded to angular, dense. TILL.**

A genetic classification should only be used when the origin of the material is very clear and not simply a field interpretation of possible depositional environment.

Second, in the case where the sediment sample is heterogeneous (for example, a varved silt and clay), each component should be described individually, and reference should be made to the relative percentages of each component and to the interlayering. For example:

> **Soft, reddish-brown (5YR 3/4), CLAY and SILT, alternately layered, medium to high overall plasticity. Layers: CLAY layers, 3/8" to 5/8" thick, comprise 60%" of sample. SILT layers, 1/8" to 3/8" thick, comprise 40%" of sample. VARVED CLAY and SILT.**

Third, when one material grades uniformly into a distinct sediment type, the individual components should be described separately and the gradation noted. For example:

> **Soft, reddish-brown (5YR 3/4), CLAY, medium overall plasticity, grading into soft, reddish-brown (5YR 4/4), SILT, trace Clay, low overall plasticity.**

In the abbreviated sediment descriptions, the sample information is presented in a manner analogous to that for the unabbreviated description substituting standard abbreviations for specific portions of the text. Abbreviations for the identifying terms in the Burmister system are presented in Tables 2, 3, and 4. Mineralogic and geologic abbreviations may be found in standard geologic and mineralogic texts and field manuals. Except for the use of abbreviations, the abbreviated description is completely analogous to the unabbreviated description.

For the sake of consistency in describing unconsolidated sedimentary materials, the description should follow the order and general definitions presented in Table 5.

4.4. Recording Descriptions

4.4.1. Geologic Boring Logs

Attached to this SOP is a copy of LEA's standard geologic boring log form. This log should be completed for each boring that is completed. The heading information is self-explanatory. The body of the log contains space for information for each sampled interval in the boring. The following information should be recorded:

Depth Interval	The upper and lower depths from which the sample was collected.
Sample No.	The sample number, as obtained from LEA Data Management, assigned to this sample.
Recovery	The length of the recovered sample and the length of the sampler (in consistent units). The percent recovery will be calculated by the LEA Data Management program.
Blows/6"	The number of blow counts per 6" interval for the sample. Alternately, the downhole pressure or other pertinent information regarding the required drilling or sampling force.
Sample Description	The sample description using the guidelines and order presented in Section 3.0 and Table 5.
PID/FID	The headspace reading from a PID or FID in ppm.

The comments section of the form should be used to record general observations regarding drilling conditions, backfilling of the borehole, or other pertinent information regarding drilling the borehole.

4.5. Computer Data Entry

After a project is completed, copies of the Geologic Boring Log forms should be submitted for computer data entry. A completed copy of the Geologic Soil Boring/well Completion Log Request Form should be attached to the log forms.

5. Quality Assurance/Quality Control

5.1. Soil and sediment logging will be conducted in accordance with this SOP to ensure quality and consistency in field activities.

5.2. Field paperwork will be reviewed by office staff personnel and/or project manager to ensure completeness and accuracy in logging records.

6. References

6.1. None

END OF DOCUMENT

TABLE 1
Wentworth Size Classification System

US Standard Sieve Sizes	Millimeters	Microns	Phi (N)	Wentworth Size Classification	
Use Wire Squares	4096	4,096,000	-20	Boulder	GRAVEL
	1024	1,024,000	-10		
	256	256,000	-8		
				Cobble	
	64	64,000	-6		
				Pebble	
	16	16,000	-4		
5	4	4,000	-2		
				Granule	
6	3.36	3,360	-1.75		
7	2.83	2,830	-1.50		
8	2.38	2,380	-1.25		
10	2.0	2,000	-1.00		
				Very Coarse Sand	SAND
12	1.68	1,680	-0.75		
14	1.41	1,410	-0.50		
16	1.19	1,190	-0.25		
18	1.00	1,000	0.00		
				Coarse Sand	
20	0.84	840	0.25		

TABLE 1
Wentworth Size Classification System

US Standard Sieve Sizes	Millimeters	Microns	Phi (N)	Wentworth Size Classification
25	0.71	710	0.50	
30	0.59	590	0.75	
35	0.50	500	1.00	
				Medium Sand
40	0.42	420	1.25	
45	0.35	350	1.50	
50	0.30	300	1.75	
60	0.25	250	2.00	
				Fine Sand
70	0.210	210	2.25	
80	0.177	177	2.50	
100	0.149	149	2.75	
120	0.125	125	3.00	
				Very Fine Sand
140	0.105	105	3.25	
170	0.088	88	3.50	
200	0.074	74	3.75	

TABLE 1
Wentworth Size Classification System

US Standard Sieve Sizes	Millimeters	Microns	Phi (N)	Wentworth Size Classification	
230	0.0625	62.5	4.00		
				Coarse Silt	MUD
270	0.053	53	4.25		
325	0.044	44	4.50		
Analyzed by Pipette or Hydrometer	0.037	37	4.75		
	0.031	31	5.0		
				Medium Silt	
	0.0156	15.6	6.0		
				Fine Silt	
	0.0078	7.8	7.0		
				Very Fine Silt	
	0.0039	3.9	8.0		
				Clay (Note: Some use 2: (or 9N) as the clay boundary.)	
	0.0020	2.0	9.0		
	0.00098	0.98	10.0		
	0.00049	0.49	11.0		
	0.00024	0.24	12.0		
	0.00012	0.12	13.0		

TABLE 1
Wentworth Size Classification System

US Standard Sieve Sizes	Millimeters	Microns	Phi (N)	Wentworth Size Classification
	0.00006	0.06	14.0	

Table 2
Modified Burmister System Descriptors

Fractions		Proportion Descriptors		
(+)	Major Fraction	Quantity	Descriptor	Abbreviation
(-)	Minor Fraction	35% - 50%	and	a
e.g., a medium to coarse SAND which is predominantly medium grained would be written as: m(+) - c SAND		20% - 35%	some	s
		10% - 20%	little	l
		1% - 10%	trace	t
Modifiers: (+) Upper a of the range (-) Lower a of the range				

Table 3
Plasticity of Sediment Samples

Material	Symbol	Feel	Ease of Rolling Thread	Minimum Thread Diameter	Plasticity Index	Plasticity
Clayey SILT	CyM	Rough	Difficult	1/4"	1 to 5	Slight (Sl)
SILT & CLAY	M & C	Rough	Less Difficult	1/8"	5 to 10	Low (L)
CLAY & SILT	C & M	Smooth, dull	Readily	1/16"	10 to 20	Medium (M)
Silty CLAY	MyC	"Shiny"	Easy	1/32"	20 to 40	High (H)
CLAY	C	Waxy, very shiny	Easy	1/64"	40 +	Very High (VH)

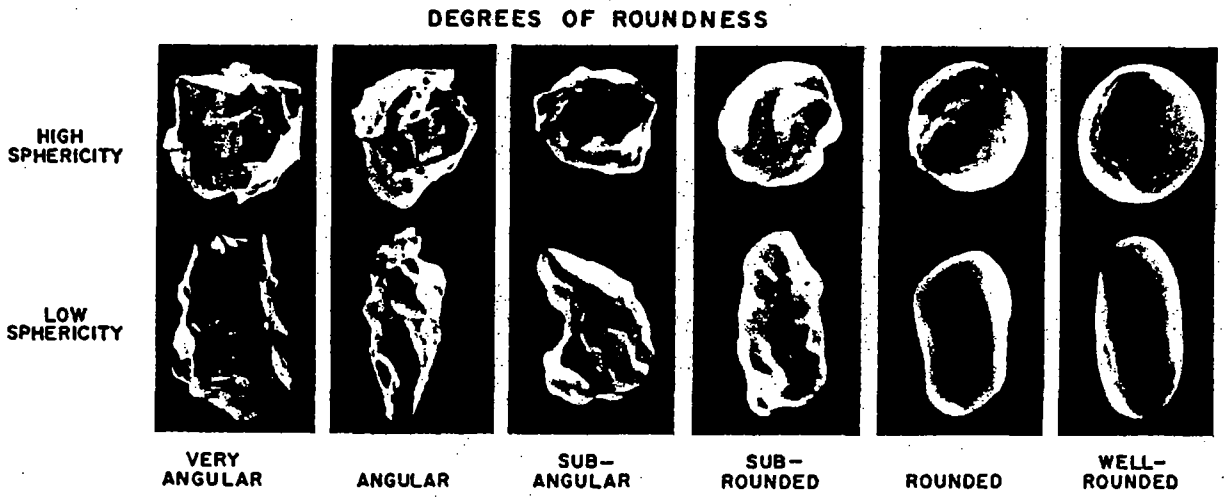
Table 4
Density and Cohesiveness of Sediment Samples

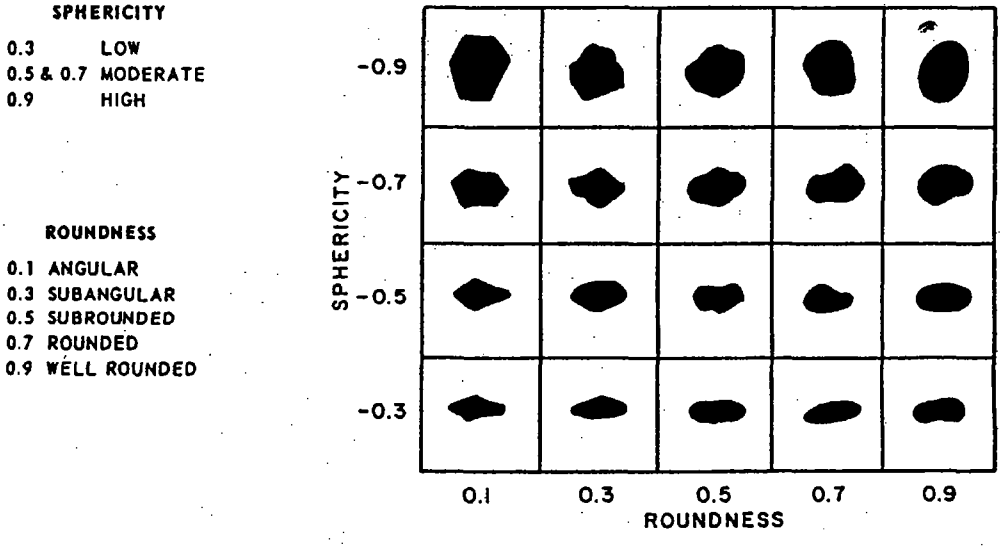
Density of Cohesionless Soils		Consistency of Cohesive Soils	
Blow Counts	Relative Density	Blow Counts	Consistency
0 to 4	Very Loose	0 to 2	Very Soft
5 to 9	Loose	2 to 4	Soft
10 to 29	Medium Dense	4 to 8	Medium
30 to 49	Dense	8 to 15	Stiff
50 to 79	Very Dense	15 to 30	Very Stiff
80 or more	Extremely Dense	30 or more	Hard

Table 5
Description of Sediment Properties

Sediment Parameter	Properties
Color	The color of the sample should be described for the wet sediments. If possible the color should be referenced to a standard color chart such as a Munsell7 Color Chart.
Primary Grain Size	Primary grain size refers to the size of the predominant sedimentary size class within the material (as judged visually). The grain size divisions should conform to the standard Wentworth Scale divisions, as shown in Table 1.
Secondary Grain Size(s)	Secondary grain size(s) refer to material which, as a grain-size group, comprises less than the majority of the sediment. Aside from stating the size classification, the relative percentage of the material must be stated. The grain size divisions should conform to the standard Wentworth Scale divisions as shown in Table 1. To describe the approximate percentage of the secondary grain size(s) present, qualifiers shown in Table 2 should be used.
Moisture Content	The moisture content of the sample should be described as dry, slightly moist, moist, or wet. Gradation from one state to another should be recorded as, for example, moist to wet, or moisty wet.
Sorting	The relative degree of sorting of the sediment should be indicated as poor, moderate, good, or very good. The degree of sorting is a function of the number of grain size classes present in the sample; the greater the number of classes present the poorer the sorting. In addition, for samples composed only of sand, the relative degree of sorting is a function of the number of sand-size subclasses present.
Sphericity	Sphericity is a measure of how well the individual grains, on average, approximate a sphere. The average sphericity of the sand and larger size fractions should be described as low, moderate or high. A chart illustrating various degrees of sphericity is presented in Figure 1.
Angularity	Angularity, or roundness, refers to the sharpness of the edges and corners of a grain (or the majority of the grains). Five degrees of angularity are shown in Figure 1: Angular (sharp edges and corners, little evidence of wear); Subangular (edges and corners rounded, faces untouched by wear); Subrounded (edges and corners rounded to smooth curves, original faces show some areas of wear); Rounded (edges and corners rounded to broad curves, original faces worn away); and, Well Rounded (no original edges, faces, or curves, no flat surfaces remain on grains).
Sedimentary Structures	Sedimentary structures are such things as varved layers, distinct bedding, or stratification.
Density -or- Cohesiveness	The density of cohesion of a sample (for the purposes of this application) refer to the sample's resistance to penetration by a sampling device. Density is used in reference to sediments primarily silt-size and coarser while cohesiveness is used in reference to primarily clay-sized sediments. Density or cohesiveness can be assessed from the number of blows from "standard" split-spoon sampling (i.e., 140# hammer, 30" fall, 2" X 2" (O.D., 1 3/8" I.D.)) split-spoon samplers according to the scale in Table 3.

FIGURE 1


DEGREES OF ROUNDNESS
HIGH SPHERICITY
LOW SPHERICITY
VERY ANGULAR
ANGULAR
SUB-ANGULAR
SUB-ROUNDED
ROUNDED
WELL-ROUNDED


SPHERICITY
0.3 LOW
0.5 & 0.7 MODERATE
0.9 HIGH
ROUNDNESS
0.1 ANGULAR
0.3 SUBANGULAR
0.5 SUBROUNDED
0.7 ROUNDED
0.9 WELL ROUNDED
SPHERICITY
-0.9
-0.7
-0.5
-0.3
0.1
0.3
0.5
0.7
0.9
ROUNDNESS

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Geoprobe® Probing and Sampling

SOP ID: 10011
Date Initiated: 11/10/94
Revision No. 005: 12/31/01

Approved By: *_/s/ David C. Brisson_* *_01/03/02_*
David C. Brisson **Date**
Project Geologist

*_/s/ Nick D. Skoularikis_* *_01/03/02_*
Nick D. Skoularikis **Date**
Director of Quality

REVISION RECORD

Rev #	Date	Additions/Deletions/Modifications
Initial Issue	11/10/94	
001-002	-	No record.
003	06/17/97	No record.
004	07/19/00	Revisions to template, including new logo. Revisions to Sections 3, 4, 5 and 6 in order to generalize sampling procedures and reference Geoprobe® Systems' catalog and specific soil sampling standard operating procedures.
005	12/31/01	Revisions made to reflect new SOP format. Addition of QA/QC section, minor changes throughout.

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Geoprobe® Probing and Sampling

1. Purpose and Scope

The objective of this standard operating procedure (SOP) is to collect discrete soil samples at depth using Geoprobe® probing and sampling methodologies and to recover the samples for visual inspection and/or analysis. Procedures for soil sampling for analysis are included in *Loureiro Engineering Associates (LEA) SOP for Soil Sampling*, SOP ID 10006.

2. Definitions

2.1. **Geoprobe®***: A vehicle-mounted, hydraulically-powered, soil probing machine that utilizes static force and percussion to advance small diameter sampling tools into the subsurface for collecting soil core, soil gas, or groundwater samples.

*Geoprobe is a registered trademark of Kejr Engineering, Inc., Salina, Kansas.

2.2. **Sampler**: A piston type soil sampler capable of recovering a discrete sample in the form of a core contained inside a removable liner.

2.3. **Liner**: A removable/replaceable, thin-walled tube inserted inside the sampler body for the purpose of containing and storing soil samples. Liner materials include brass, stainless steel, Teflon®, and clear plastic (either PETG or cellulose acetate butyrate).

3. Equipment

The equipment required to recover soil core samples using the Geoprobe® samplers and driving system can be found in the Geoprobe® Systems catalog for tools and equipment, as referenced in Section 6. Sample liners for the Geoprobe® samplers are available in four different materials. Liner materials should be selected based on sampling purpose, analytical parameters, and data quality objectives. A listing of the general parts and equipment from the Geoprobe® Systems catalog for tools and equipment is provided below:

Geoprobe® Tools	Part Number
Probe Rod (4 Foot)	AT104B
Probe Rod (3 Foot)	AT10B
Probe Rod (2 Foot)	AT105B
Probe Rod (1 Foot)	AT106B
Drive Cap	AT11B
Pull Cap	AT12B
Extension Rod	AT67
Extension Rod Coupler	AT68
Extension Rod Handle	AT69
MC Drive Head	AT8510
MC Cutting Shoes	AT8530,8535,8537
MC Piston Tip Assembly	AT8570
MC Spacer Ring or Core Catcher	AT8531K,8532K
MC Sample Tube	AT8522
MC PETG Liner	AT825K
MC Combination Wrench	AT8590
MC Release Rod	AT8580
MC Extension Rod	AT671
Extension Rod Coupler	AT68
Ext. Rod Quick Links	AT694K
Ext. Rod Handle	AT69
MC Vinyl End Caps	AT726K
Liner Cutter Kit	AT8000K
Nylon Brush for Macro Tubes	BU700

4. Procedure

4.1. Utilities Clearance

4.1.1. Notify the appropriate "one call" utility notification service (e.g., in Connecticut, Call Before You Dig at 1-800-922-4455) at least three working days prior to commencing operations on a site. The locations of all proposed borings must be clearly marked in the field prior to notification. The Project Engineer/Manager **must** call and confirm that each utility has been to the site and has marked their respective lines.

4.1.2. On private sites, consult with the owner or other person knowledgeable about the site as to the locations of potential private or abandoned utilities and locate these prior to beginning work. Upon the

discretion of the Project Engineer/Manager, a pipe locator can also be used to assist in locating utilities.

4.1.3. Note that the Occupational Safety and Health Administration (OSHA) may have additional requirements for location of utilities.

4.1.4. All efforts to locate underground utilities (including names of owner or designee and time) should be properly documented in the field logbook or field paperwork prior to onset of the work scheduled.

4.2. Health and Safety

The foreman or supervisor of the drilling crew shall be the competent person as required by OSHA for all of their work. However, this does not relieve any other LEA representative from bringing to his or her attention conditions which may be unsafe or present a hazard to the drilling crew, the general public, or other workers on the site. The LEA representative is responsible for ensuring that LEA activities are conducted in accordance with the site-specific Health and Safety Plan.

4.3. Site Preparation

4.3.1. A sufficient area shall be cordoned off to restrict access to the work area. This area shall be termed an "Exclusion Zone".

4.3.2. An equipment decontamination area shall be assembled as described in Section 4.14 within the exclusion zone.

4.3.3. All personal protective equipment as required in the site-specific health and safety plan shall be donned.

4.4. General Sampler Assembly

4.4.1. The sampler is connected to the leading end of a Geoprobe® probe rod and driven into the subsurface using a Geoprobe® drilling apparatus. Additional probe rods are connected in succession to advance the sampler to depth. The sampler remains sealed (closed) by a piston tip as it is being driven. The piston is held in place by a reverse threaded stop pin at the trailing end of the sampler. The first four-foot interval does not require the piston tip assembly. In addition, if the borehole remains open, the piston tip assembly may not be required for deeper intervals. If there is evidence that the borehole is collapsing, the piston tip will be utilized.

4.4.2. When the sampler tip has reached the top of the desired sampling interval, a series of extension rods, sufficient to reach depth, are coupled together and lowered down the inside diameter of the probe rods. The extension rods are then rotated clockwise (using a handle). The male threads on the leading end of the extension rods engage the female threads on the top end of the stop pin, and the pin is removed.

4.4.3. After the extension rods and stop pin have been removed, the tool string is advanced an additional 24 to 48 inches (depending on the soil sampling system in use). The piston is displaced inside the sampler body by the soil as the sample is cut. To recover the sample, the sampler is recovered from the hole and the liner containing the soil sample is removed.

4.4.4. Refer to the Geoprobe® System standard operating procedures for operation of various soil sampling systems (e.g., Macro Core Piston Rod Soil Sampling System, DT21 Dual Tube Soil Sampling System, Large Bore Soil Sampling System).

4.5. Pilot Hole

A pilot hole is appropriate when the surface to be penetrated contains gravel, asphalt, hard sand, or rubble. Preprobing can prevent unnecessary wear on the sampling tools. A specific Geoprobe® preprobe may be used for this purpose. The pilot hole should be made only to a depth above the sampling interval. Where surface pavements are present, a hole may be drilled with the Geoprobe® using a specific drill steel bit (AT-32, -33, -34, or -35, depending upon the thickness of the pavement), tipped with a 1.5 inch diameter carbide drill bit (AT-36) prior to probing. For pavements in excess of 6 inches, the use of compressed air to remove cuttings is recommended.

4.6. Concrete Coring

Should the borehole be located on concrete, the Geoprobe® can be used to core through the concrete to gain access to the underlying soil. A carbide-tipped drill bit (AT36-39) and Geoprobe® drill steel (AT3524, 3536, 3548) will be attached to the drill assembly and utilized to core the concrete. For concrete in excess of 16 inches, other methods (i.e., a core saw) should be utilized to penetrate the concrete.

4.7. Driving

4.7.1. Attach a probe rod to the assembled sampler and a drive cap to the probe rod. Position the assembly for driving into the subsurface.

Make sure the assembled sampler is relatively perpendicular to the ground surface. A level can be utilized if drilling on uneven ground.

4.7.2. Drive the assembly into the subsurface until the drive head of the sample tube is just above the ground surface.

4.7.3. Remove the drive cap and the probe rod. Secure the drive head with a 1-inch or adjustable wrench and retighten the stop pin with a 3/8-inch wrench.

4.7.4. Attach a 2-foot probe rod and a drive cap, and continue to drive the sampler into the ground. Attach 3-foot probe rods in succession until the leading end of the sampler reaches the top of the desired sampling interval.

4.8. Preparing to Sample

4.8.1. When the sampling depth has been reached, position the Geoprobe® machine away from the top of the probe rod to allow room to work.

4.8.2. Insert an extension rod down the inside diameter of the probe rods. Hold onto it and place an extension rod coupler on the top threads of the extension rod (the down hole end of the leading extension rod should remain uncovered). Attach another extension rod to the coupler and lower the jointed rods down-hole.

4.8.3. Couple additional extension rods together in the same fashion as in Step 2. Use the same number of extension rods as there are probe rods in the ground. The leading extension rod must reach the stop-pin at the top of the sampler assembly. When coupling extension rods together, you may opt to use the extension rod jig to hold the down-hole extension rods while adding additional rods.

4.8.4. When the leading extension rod has reached the stop pin down-hole, attach the extension rod handle to the top extension rod.

4.8.5. Turn the handle clockwise (right handed) until the stop pin detaches from the threads on the drive head. Pull up lightly on the extension rods during this procedure to check thread engagement.

4.8.6. Remove the extension rods and uncouple the sections as each joint is pulled from the hole. The extension rod jig may be used to hold the rod couplers in place as the top extension rods are removed.

4.8.7. The stop pin should be attached to the bottom of the last extension rod upon removal. Inspect it for damage. Once the stop pin has been removed, the sampler is ready to be redriven to collect a sample.

4.9. Sample Collection

4.9.1. Reposition the Geoprobe® machine over the probe rods, adding an additional probe rod to the tool string if necessary. Make a mark on the probe rod 24 inches above the ground surface (this is the distance the tool string will be advanced).

4.9.2. Attach a drive cap to the probe rod and drive the tool string and sampler another 24 inches. Use of the Geoprobe®'s hammer function during sample collection may increase the sample recovery in certain formations. Do not overdrive the sampler.

4.10. Retrieval

4.10.1. Remove the drive cap on the top probe rod and attach a pull cap. Lower the probe shell and close the hammer latch over the pull cap.

4.10.2. With the Geoprobe® foot firmly on the ground, pull the tool string out of the hole. Stop when the top (drive head) of the sampler is about 12 inches above the ground surface.

4.10.3. Because the piston tip and rod have been displaced inside the sample tube, the piston rod now extends into the 2-foot probe rod section. In loose soils, the 2-foot probe rod and sampler may be recovered as one piece by using the foot control to lift the sampler the remaining distance out of the hole.

4.10.4. If excessive resistance is encountered while attempting to lift the sampler and probe rod out of the hole using the foot control, unscrew the drive head from the sampler and remove it with the probe rod, the piston rod and the piston tip. Replace the drive head onto the sampler and attach a pull cap to it. Lower the probe shell and close the hammer latch over the pull cap and pull the sampler the remaining distance out of the hole with the probe machine foot firmly on the ground.

4.11. Sample Recovery

4.11.1. Detach the 2-foot probe rod if it has not been done previously.

4.11.2. Unscrew the cutting shoe using the cutting shoe wrench, if necessary. Pull the cutting shoe out with the liner attached. If the liner doesn't slide out readily with the cutting shoe, take off the drive head and push down on the sidewall of the liner. The liner and sample should slide out easily.

4.12. Core Liner Capping

4.12.1. The ends of the liners can be capped off using the vinyl end cap for further storage or transportation. A black end cap should be used at the bottom (down end) of the sample core and a red end cap at the top (up end) of the core.

4.12.2. On brass, stainless steel, and Teflon® liners, cover the end of the sample tube with Teflon® tape before placing the end caps on the liner. The tape should be smoothed out and pressed over the end of the soil core so as to minimize headspace. However, care should be taken not to stretch and, therefore, thin the Teflon® tape.

4.12.3. The soil boring identifier and depth of sample should be marked at the top of the core (on the red end cap).

4.13. Sample Removal

4.13.1. Clear plastic and Teflon® liners can be slit open easily with a utility knife for the samples to be analyzed or placed in appropriate containers.

4.13.2. Brass and stainless steel liners separate into four 6 inch sections. The manual extruder may be used to push the soil cores out of the liner sections for analysis or for transfer to other containers.

4.13.3. The procedures for collection of soil samples for chemical analysis are described in the *Standard Operating Procedure for Soil Sampling.*

4.13.4. Soil samples collected for archive purposes shall be placed into soil jars and labeled with sample numbers, date, time, and LEA commission number.

4.14. Equipment Decontamination and Cleaning

4.14.1. Prior to conducting a boring, the LEA representative will ensure that all necessary equipment is clean and decontaminated, including the rig, all augers and probing equipment, samplers, brushes, and any

other tools or equipment. Decontamination procedures may vary slightly from those presented below, dependent upon the particular types of contaminants encountered.

4.14.2. A section of 5 mil (minimum) plastic sheeting shall be cut of sufficient size to underlie the decontamination area to contain any discharge of decontamination solutions.

4.14.3. The following solutions (as appropriate for the anticipated contaminants) shall be prepared and placed in 500 ml laboratory squirt bottles:

- Methanol solution in water (less than 10 percent).
- 10 percent nitric acid solution in water (less than 10 percent).
- 100 percent hexane solution (to be used only if separate-phase petroleum product, other than gasoline, is present).
- Distilled deionized (DI) water.

4.14.4. A fifth solution of phosphate-free detergent and tap water (approximately 2.5 gallons) shall be prepared in a five-gallon bucket. Only those solutions required for site-specific conditions will be used at a given site, as specified in the site-specific work plan.

4.14.5. All loose debris shall be removed from the augers and spatulas into an empty 5-gallon bucket or plastic sheeting using a stiff bristled brush.

4.14.6. The order of decontamination solutions is as follows:

- Detergent scrub.
- Distilled water rinse.
- Hexane rinse (to be used only if separate-phase petroleum product, other than gasoline, is present).
- Distilled water rinse.
- 10 percent nitric acid rinse (to be used only when metals are suspected as potential contaminants).
- Distilled water rinse.
- Methanol rinse (less than 10 percent solution).
- Air dry.

4.14.7. All sampling equipment shall be decontaminated at the beginning of each project, in between sample collection, and at the completion of the project.

4.14.8. An alternative to the procedure described above requires that the larger equipment be cleaned using a high-pressure wash and steam cleaning in an area constructed to contain spent decontamination fluid and debris (plastic sheeting bermed with timber is usually sufficient). Alternative methods of cleaning may be more appropriate for an individual piece of equipment for site conditions based upon knowledge of site contaminants, and may be used at the discretion of the LEA representative. Section 4.19 provides additional information on management of potentially contaminated fluids and materials.

4.14.9. At the end of the project day, all used equipment shall be decontaminated. All spent decontamination solutions will be handled and disposed of in accordance with all applicable municipal, state and federal regulations.

4.15. VOC Monitoring

4.15.1. A portable volatile organic compound (VOC) analyzer equipped with a photoionization detector (PID) or flame ionization detector (FID) shall be available on site and shall be used to screen all cuttings and fluids (if any) removed from the hole.

4.15.2. Since, in general, it cannot be presumed that there is no contamination at a given site, all cuttings and/or fluids which show a reading on the VOC analyzer that is above background shall be containerized or drummed, as appropriate, on site. The soil cuttings should be containerized if the presence of other contaminants (such as metals, semivolatile organic compounds) is known or suspected. Additional information on management of potentially contaminated fluids and materials is presented in Section 4.19.

4.16. Sample Collection and Documentation

The following procedures will be followed for sample collection following removal from the borehole.

4.16.1. The sample tube shall be opened by the LEA representative and immediately scanned using the VOC analyzer using the approach described in Section 4.17.

4.16.2. The LEA representative will record on the boring log information described in Section 4.18.2.

4.16.3. Prior to reuse, the sampler shall be decontaminated using the procedures described in Section 4.14.

4.16.4. Soil samples collected for archival purposes shall be placed into soil jars and labeled with the sample number, date, time, and LEA commission number.

4.16.5. The procedures for collection of soil samples for chemical analysis are described in the *Standard Operating Procedure for Soil Sampling.*

4.17. Field Analysis

4.17.1. The following procedure shall be used to obtain readings with a portable VOC analyzer of the VOCs present in a soil sample:

- Obtain an aliquot of soil (approximately 50 grams) from the split spoon and placed into a plastic bag or equivalent and sealed.
- Agitate the sample, assuring that all soil aggregates are broken, for at least two minutes.
- Carefully break the seal of the bag enough to insert the VOC probe.
- Record the maximum reading obtained on the appropriate forms, as described in Section 4.18.

4.18. Field Documentation

4.18.1. The following general information shall be recorded in the field log book and /or appropriate field forms:

- Project and site identification.
- LEA commission number.
- Field personnel.
- Name of recorder.
- Identification of borings.
- Collection method.
- Date and time of collection.
- Types of sample containers used, sample identification numbers and QA/QC sample identification.
- Field analysis method(s).
- Field observations on sampling event.
- Name of collector.

- Climatic conditions, including air temperature.
- Chronological events of the day.
- Status of total production.
- Record of non-productive time.
- QA/QC data.
- Name of drilling firm.
- Location of boring(s) on site in sufficient detail to relocate boring at a future time (include sketch).

4.18.2. The following information shall be recorded in the boring log:

- Project name, location, and LEA commission number.
- Borehole number, borehole diameter, boring location, drilling method, contractor, groundwater observations, logger's name and date.
- Depth below grade, sample number, duplicate numbers, VOC analyzer reading, rig behavior (i.e., drilling effort, etc.).
- A complete sample description following SOP ID 10015, *Geologic Logging of Unconsolidated Sedimentary Deposits*. This will include, as a minimum: depth, material size gradation using the Burmister system, color, moisture, and density. Should a well be constructed in a borehole, a complete well schematic shall be drawn and accurately labeled.
- Use of water, including source(s) and quantity.

4.18.3. The following information shall be recorded on the QA Checklist provided in the Daily Field Report:

- Review of all necessary site activities and field forms.
- Statement of corrective actions for deficiencies.

4.18.4. Any instrument calibration information shall be recorded in the "Instrument Calibration" section provided in the Daily Field Report, and shall include the following information:

- Instrument make, model, and type.
- Calibration readings.
- Standards and backgrounds used for calibration.

4.19. Disposal of Potentially Contaminated Materials

Potentially contaminated cuttings or fluids, as indicated by knowledge of the site, discoloration, VOC analyzer readings, or other evidence, shall be containerized on-site pending sampling and determination of hazardous waste status.

4.20. Refusal

Refusal is defined as failure to penetrate the subsurface materials to any greater depth using the maximum reasonable pressure limits of the Geoprobe® machine.

4.21. Bedrock

The term "bedrock" will not be used in a boring log or other description of subsurface materials that have been collected using the Geoprobe® machine, since a confirmatory core cannot be collected.

4.22. Boring Abandonment

4.22.1. If the boring is not to be used for other purposes (i.e., monitoring well, soil vapor probe, soil vapor extraction well, etc.) it shall be abandoned.

4.22.2. The boring shall be filled and sealed with neat cement grout or high-density bentonite clay grout as soon as the tools are withdrawn from the borehole.

4.22.3. Excess cuttings shall be containerized, labeled and the analytical data of the contents reviewed/profiled before disposal.

4.22.4. In paved areas, the upper three feet of the borehole shall be filled, up to two inches below the existing grade, to allow for repairing of the pavement.

4.22.5. Pavement shall be repaired using cold patch asphalt filler or concrete.

5. Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) procedures shall comply with the procedures described in LEA SOP ID 10004. QA/QC samples, if required, (including performance evaluation samples, equipment blank samples, trip blank samples, and field duplicate samples) shall be collected according to the site-specific work plan.

6. References

6.1. Geoprobe® Systems, 1997, *1998-1999 Tools and Equipment Catalog.*

6.2. Geoprobe® Systems, *Geoprobe® Macro-Core Soil Sampler Standard Operating Procedure*, Technical Bulletin No. 95-8500, prepared 11/95, revised 09/98

6.3. Geoprobe® Systems, *Geoprobe® DT21 Dual Tube Soil Sampling System, Continuous Core Soil Sampler Standard Operating Procedure*, Technical Bulletin No. 982100, 09/98

6.4. Geoprobe® Systems, *Geoprobe® Large Bore Soil Sampler, Discrete Interval Soil Sampler Standard Operating Procedure*, Technical Bulletin No. 93-660, prepared 09/96, revised 04/98.

END OF DOCUMENT

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Liquid Sample Collection and Field Analysis

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Approved By: *<u>/s/ Joseph T. Trzaski</u>* *<u>12/31/01</u>*
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REVISION RECORD

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Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Liquid Sample Collection and Field Analysis

1. Purpose and Scope

This document describes procedures to be followed for measurement of static water level elevations, detection of immiscible layers, well evacuation, sample withdrawal, and field analyses.

2. Definitions

2.1. Immiscible layers: The term is used to denote free-phase liquids that may be present in the aquifer as a result of a release. These liquids may have a density lighter than water (light non-aqueous phase liquids (LNAPL) or floaters) or heavier than water (dense non-aqueous phase liquids (DNAPL) or sinkers).

3. Equipment

3.1. Equipment required for the collection and field analysis of liquid samples includes:

- Water-level indicator (accurate to 0.01 foot). The size of the instrument depends on the size of the wells being monitored.
- Distilled water.
- Hand towels.
- Portable volatile organic compound (VOC) analyzer (Photovac MicroTIP®, Foxboro OVA® or equivalent).
- Interface probe, clear polyvinyl chloride (PVC) or fluorocarbon resin bailer (if required).
- pH and temperature meter (capable of accuracy to 0.1 pH unit).
- Specific conductivity meter.
- Bailers (clean or disposable) with disposable nylon or polyethylene rope.

- Polyethylene plastic sheeting.
- Polyethylene tubing, and appropriate pumping apparatus such as centrifugal pump, Wattera® pump with fluorocarbon resin foot valve, peristaltic pump with appropriate tubing, submersible pump or other appropriate pumping apparatus.
- Clean disposable gloves.
- Field paperwork.
- Sample collection jars.
- Indelible marker.
- Cooler(s) with ice or ice packs.
- Site-specific Health and Safety Plan (as applicable).
- Site-specific work plan, work instructions, drawings (as applicable).
- Personal protective equipment (as may be required by Site Specific Health and Safety Plan).
- Aluminum foil (if field decontamination is expected).
- Appropriate containers for collection of purge water (bucket, carboy, 55-gallon drum etc.).

4. Procedures

Immediately upon opening the well, the air in the wellhead should be sampled for VOCs using a portable VOC analyzer, such as a Photovac MicroTIP®. The well cap shall be opened slightly and the sampling port of the VOC analyzer shall be inserted into the well. The maximum reading shall be recorded on the appropriate field paperwork. The instrument shall be zeroed with ambient air prior to the measurement, and the initial and final readings shall be recorded for each well.

Measures shall be taken during well sampling to prevent surface soils from coming in contact with the purging equipment and lines. Typically, a polyethylene sheet is placed on the ground providing adequate coverage for the equipment being used.

4.1. Detection of Immiscible Layers

4.1.1. If the presence of immiscible layers is suspected or unknown, the sampling event shall include provisions for detection of immiscible phases prior to well evacuation or sample collection. Lighter and/or

denser immiscible phases may be encountered in a groundwater monitoring well.

4.1.2. An interface probe will be used to determine the existence of any immiscible layers, light or dense. Alternatively, a clear fluorocarbon resin or PVC bailer may be used to determine the existence of the phases or oil sheen in the well when no accurate determination of the immiscible layer thickness is required. For Geoprobe® wells smaller than 1" in diameter, an interface probe cannot be introduced into the well. A small diameter disposable bailer can be used to determine the existence of any immiscible layers. Alternatively the initial water purged from a well will be collected and evaluated visually for the presence of immiscible layers.

4.1.3. If immiscible layers were encountered, the levels of the immiscible liquids shall be measured to an accuracy of 0.02 feet using an electronic interface probe capable of detecting the interfaces between air, product, and water. The interface levels shall be recorded in the field notebook. Adjustments of the observed head to the theoretical hydraulic head shall be calculated based on the density conversion factor associated with the particular non-aqueous phase liquid.

4.1.4. If required, the immiscible layers and groundwater shall then be purged into 55-gallon 17H DOT drum, which shall be labeled and characterized for disposal. The immiscible layer shall be collected prior to any purging activities.

4.2. Measurement of Static Water Level

4.2.1. The static water elevations in each well shall be measured prior to each sampling event. This is performed initially to characterize the site, and in subsequent sampling rounds to determine whether horizontal or vertical flow gradients have changed. A change in hydrologic conditions may necessitate modification of the groundwater monitoring program.

4.2.2. Remove the protective cover and locking cap.

4.2.3. Each well shall have a surveyed reference point located at the top of the well casing with the locking cap removed. The reference point shall be easily recognizable, since the personnel conducting the sampling may differ from one sampling event to the next. If no distinguishable reference point is present, the measurements shall be

taken from the highest point on the well casing. The absence of a reference point and subsequent reference point used for the measurements shall be recorded on the field paperwork.

4.2.4. The following parameters shall be measured with an accuracy of 0.01 ft:

- Depth to standing water.
- Depth to bottom of well.

4.2.5. A water-level indicator will be used for measurement. Due to possible pressure differences between the well atmosphere and the ambient atmosphere, the water level will be allowed to equilibrate for 15 minutes following removal of the well cap. The results shall be recorded in the appropriate location(s) on the appropriate field forms.

4.2.6. Total depth measurements will be compared to original depths to determine the degree of siltation that may have occurred. This information shall be noted on the field form. Should significant siltation occur in any well, the well may need to be redeveloped by an approved method. This information will also be used to confirm that the proper well is being sampled (in case of cluster wells).

4.2.7. The portion of the tape immersed in the well shall be decontaminated during retrieval using a distilled water rinse followed by drying with a clean wipe, prior to use in another well. This decontamination procedure shall be amended, as needed, to accommodate the specific type of contamination anticipated.

4.3. Field Analysis

4.3.1. Parameters that are physically or chemically unstable shall be measured immediately after collection using a field test meter or other equipment. Parameters such as pH, temperature, specific conductivity, and turbidity will be measured in the field, at the temperature of the well sample. The measurement of additional parameters may be required dependent upon sampling methods or other site-specific conditions.

4.3.2. A combination of pH/temperature/specific conductivity meters shall be used. The meter shall be calibrated prior to use and at the end of the day using calibration solutions, in accordance with the instructions provided in the instrument's operating manual. Whenever a

questionable reading ("spike") is observed the calibration shall be checked. The calibration shall be checked prior to sampling each well or well cluster. Calibration information to be recorded in the field paperwork shall include the temperature, pH, and conductivity readings in each calibration solution before and after each calibration.

The pH/temperature/conductivity meters shall be placed into a sample and allowed to stabilize for a minimum of twenty seconds. The accuracy of measurement shall be 0.1 standard units for pH, and 0.1° Celsius for temperature. For conductivity, the accuracy shall be as stipulated by the range of the instrument. The sample shall be discarded in an appropriate manner upon completion of the analysis.

4.3.3. The pH/temperature/specific conductivity meters shall be decontaminated using a distilled/deionized water rinse between each sample. To the extent possible, the same probe and meter shall be used for all measurements at a given site for the duration of monitoring at the site.

4.3.4. Turbidity of the sample will be measured using a DRT turbidimeter, Model 15C or equivalent, that has been calibrated in accordance with the instructions provided in the instrument's manual. The accuracy of the measurement shall be to 1 NTU (nephelometric turbidity unit).

4.4. Well Evacuation

4.4.1. Calculate standing water in the well based on the following schedule and record on the appropriate field form:

Well Diameter (inches)	Conversion Factor (gal/feet)
½	0.01
1	0.041
1 ¼	0.064
1 ½	0.091
2	0.163
4	0.654
6	1.47

4.4.2. Generally, a centrifugal, submersible, air-lift, bladder, inertial, or peristaltic pump equipped with a fluorocarbon resin or PVC foot valve on the end of dedicated tubing, as appropriate, may be used to evacuate the monitoring wells. Alternatively, evacuation of the wells may be accomplished using a bailer.

4.4.3. A new sheet of polyethylene plastic shall be placed on the ground adjacent to the well. Sampling and purging equipment, such as pump, tubing, bailers and bailer twine, containers, etc., shall be placed on the polyethylene sheet, never on the ground.

4.4.4. Don disposable gloves, prepare pump and tubing for insertion into the well, ensuring that any tubing or pump apparatus is of sufficient length to reach the appropriate depth for pumping. Pumping shall occur within the well screened interval as indicated on the well construction diagram. If the well construction information is not available, the bottom of the tubing or pump shall be placed 1' - 2' above the bottom of the well.

4.4.5. Lower the pump and/or tubing gently into the water column to the appropriate depth and begin pumping.

4.4.6. Measure pH, temperature, specific conductivity, turbidity and other specific parameters in the well from the first water extracted during the purging process.

4.4.7. Remove a volume of water equal to 3 to 5 times the standing water from the well measured into an appropriate container. Purging of the well shall occur at a slow rate to minimize agitation of the water recharging the well.

4.4.8. If it is not possible to remove three volumes as described above, due to slow recovery of the well, the well shall be emptied and allowed to recover. In slow-yielding wells, whenever full recovery exceeds two hours, the sample shall be extracted as soon as a sufficient volume is available for a sample for each parameter.

4.4.9. Measure pH, temperature, specific conductivity, turbidity and other specific parameters **prior** to sampling.

4.4.10. Well evacuation is deemed to be complete when the following criteria have been met:

- pH measurements vary no more than ± 0.5 standard units.
- Specific conductivity measurements vary no more than ± 10%.
- Temperature measurements vary no more than ± 1°C.
- Turbidity measurements (if used) are below 5 NTU, if practicable.

Alternatively well purging shall be deemed complete if a maximum of five well volumes have been removed from the well and/or other site-specific or method-specific parameters have stabilized.

4.4.11. Measure pH, temperature, specific conductivity and turbidity (and other specific parameters) again **after** sampling to determine the effectiveness of purging and sample stability.

4.4.12. Do **not** re-use purging equipment (bailers, rope, tubing, sampling vials, etc.). Any non-disposable bailers shall be returned to the office for decontamination. Pumps shall be decontaminated between monitoring wells, in accordance with procedures noted in Section 4.7.

4.4.13. Bailer twine and other consumables, such as filter apparatus, shall be disposed of appropriately.

4.4.14. Record sampler's name, sampling time, volume of water purged, parameters measured, weather conditions, sample number, analyses required and all other pertinent information on appropriate field forms, and complete the chain of custody form. The field paperwork shall also provide an indication of other field conditions that could potentially impact water levels (such as a pond being drained, or presence of a beaver dam in nearby surface water).

4.4.15. As dictated by project-specific requirements and/or groundwater quality considerations, any water purged from the monitoring wells shall be stored in properly labeled containers for disposal.

4.4.16. Storage shall be in properly labeled containers approved for storage of hazardous materials, and in an appropriate designated location at the site.

4.5. Sample Withdrawal

4.5.1. In order to ensure that the groundwater sample is representative of the formation, it is important to minimize physical alteration (i.e. agitation during purging and/or sample collection) or chemical contamination of the sample during the withdrawal process. The sample set shall include enough dedicated bailers and sample jars to obtain samples from each well, and additional quality assurance/quality control (QA/QC) samples such as duplicates, trip blanks and equipment blanks. In addition, it is recommended to increase the supply of

sampling equipment and sample jars by about 10% to account for missing or broken glassware.

4.5.2. Use either an appropriate pump or bailer to purge each well (the same pump used for purging may be used for sample withdrawal, with the exception that samples intended for VOC analysis must be collected using either a bailer or a bladder pump.). Do not reuse a bailer in the field; used non-disposable bailers shall be returned to the office for decontamination.

4.5.3. To minimize agitation of the water column, samples shall be collected from the pump tubing in the following order into pre-labeled sample containers:

- Extractable organics (semi-volatile).
- Total petroleum hydrocarbons (TPH).
- Poly chlorinated biphenyls (PCBs).
- Metals.
- Phenols.
- Cyanide.
- Chloride and sulfate.
- Nitrate and ammonia.
- Turbidity.
- Radionuclides.

Samples to be analyzed for the following constituents shall be collected using a bailer, after any pump and tubing have been removed from the well. Removal of any down hole equipment shall be done carefully and in a manner that minimizes disturbance of the water column.

- Volatile organic compounds (VOCs).
- Purgeable organic carbon (POCs).
- Purgeable organic halogens (POX).
- Total organic halogens (TOX).
- Total organic carbon (TOC).

4.5.4. Samples shall be obtained from the monitoring wells as soon as possible after purging. This may require waiting an extended period for low-yielding wells.

4.5.5. Samples collected for VOC analysis shall be free of any air bubbles and inverted upon filling. Bacterial samples shall be collected using dedicated gloves; taking care not to allow anything to touch the inside of the sampling container.

4.5.6. Samples collected for dissolved metals analysis, which are to be filtered in the field, shall be passed through a 0.45 micron (maximum) filter (either in-line or under negative pressure) prior to placement in the sample bottle.

4.5.7. In situations where replicate samples shall be required, care shall be taken to ensure that each sample collected is independent.

4.5.8. In some situations, inorganic parameters may be sampled directly from a pump after completion of well evacuation procedures.

4.6. Post Sampling Procedures

4.6.1. As required, upon completion of all sampling procedures for a particular site, secure the lid of the cooler using packaging tape with the chain of custody inside.

4.6.2. If the laboratory is local, transport the samples directly to the laboratory and present them to the sample manager. The representative of LEA should witness the verification of the chain of custody and obtain a carbon copy for filing in the project notebook.

4.6.3. If the laboratory is distant, arrange for transport with a reputable carrier service. Typically, the laboratory specifies the carrier to be used and provides the shipping papers. The cooler and samples shall be secured for transport, and all mailing documentation secured onto the top of the cooler. Unless otherwise specified, delivery shall be overnight. Friday shipments should be mailed for Saturday delivery, once confirmed that the laboratory can accept them on Saturday. The laboratory shall provide confirmation of acceptance noting the temperature of the temperature blank and any deviations from the chain of custody.

4.7. Field Documentation

4.7.1. Field documentation shall include at a minimum: a chain-of-custody form, Field Data Record Groundwater Form, Sample Collection Form, Daily Field Report, Field Quality Review Checklist. Sample labels shall be used for proper sample identification.

4.7.1.1. The labels shall be sufficiently durable to withstand immersion for 48 hours without detaching and to withstand normal handling. The information provided shall be legible at all times.

4.7.1.2. The following information shall be provided on the sample label using an indelible-ink pen:

- Sample identification number.
- LEA Commission Number.
- Date and time of collection.
- Place of collection.
- Parameter(s) requested (if space permits).

4.7.1.3. A field logbook and/or appropriate field forms will be used to log all pertinent information with an indelible-ink pen. The following information shall be provided:

- Project and site identification.
- LEA commission number.
- Identification of well.
- Static water level measurement technique.
- Presence of immiscible layers and detection method.
- Time well purged.
- Collection method for immiscible layers and sample identification numbers.
- Well evacuation procedure/equipment.
- Sample withdrawal procedure/equipment.
- Date and time of collection.

- Types of sample containers used and sample identification numbers.
- Preservative(s) used.
- Parameters requested for analysis.
- Field analysis method(s).
- Whether or not field filtration was performed and the filter size, if appropriate.
- Field observations on day of sampling event.
- Record of site activities.
- Field personnel.
- Climatic conditions, including air temperature.
- Status of total production.
- Record of non-productive time.
- Name of all visitors to the site related to the project.

4.7.1.4. The chain-of-custody record shall include the following information:

- Company's name and location.
- Date and time of collection.
- Sample number.
- Container type, number, size.
- Preservative used.
- Signature of collector.
- Signatures of persons involved in the chain of possession.
- Analyses to be performed.
- Type and number of samples.

A separate entry shall be made for each sample, and within each sample each case that a different preservative is used.

4.7.1.5. The Field Data Record Groundwater Form shall be updated during the sampling of each well and include the following information:

- Identification of well.
- Well depth, diameter, depth to water.
- Static water level depth and measurement technique.
- Purge volume and pumping rate.
- Time well purged.
- LEA commission number.
- Date.

4.8. Equipment Decontamination

All materials and equipment, which enter a well, must be clean and free of any potential contaminants. In general, the equipment and materials entering the well shall be unused and preferably disposable. Any items not considered disposable should be decontaminated prior to commencing field activities. If field decontamination is required, the choice of decontamination procedures shall be based upon knowledge of the site-specific contaminants and as outlined in the site-specific work plan.

For sites at which the contaminants are unknown, but contamination is suspected, the decontamination procedures outlined below shall be followed.

4.8.1. Prior to commencing any field activities, the following solutions (as appropriate for the appropriate contaminants) shall be prepared and placed into 500-ml laboratory squirt bottles: 10% methanol in water; 10% nitric acid in water; 100% n-hexane; distilled, de-ionized water.

4.8.2. In the field, prepare approximately 2.5 gallons of a solution of Alconox® (or other suitable non-phosphate laboratory grade detergent) in tap water in a 5-gallon bucket.

4.8.3. Prepare a piece of 5-mil polyethylene sheeting to underlie the decontamination area. The sheeting shall be of sufficient size to contain any accidental discharge of decontamination solutions. The plastic shall be bermed to contain spills.

4.8.4. The order for decontaminating equipment is as follows:

1) Detergent scrub.
2) DI water rinse.
3) Hexane rinse (to be used only if separate-phase petroleum product, other than gasoline, is present).
4) DI water rinse.
5) 10% nitric acid rinse (to be used only when metals are suspected as potential contaminants).
6) DI water rinse.
7) Methanol rinse (<10% solution).
8) Air dry.

4.8.5. Materials considered disposable such as the bailer cord, pump tubing, filters, etc. shall not be decontaminated and shall be disposed of in accordance with all applicable municipal, state, and federal regulations.

4.8.6. Wrap each piece of decontaminated equipment in aluminum foil, as appropriate, to maintain cleanliness.

4.8.7. At the end of the project day, dispose of all spent decontamination fluids and materials such as the polyethylene sheeting and personal protective equipment in accordance with all applicable municipal, state, and federal regulations.

5. Quality Assurance/Quality Control

Typically samples taken for Quality Assurance/Quality Control for liquid sample collection include duplicate samples, equipment blanks and trip blanks. The necessity for these samples will be outlined in the site-specific work plan. In general, all QA/QC measures taken during liquid sample collection shall be in conformance with LEA's standard operating procedure (SOP) ID 10005. Standard QA/QC measure shall include the recording of pertinent information as follows:

5.1. The Field Instrument & Quality Assurance Record, which is a portion of the Daily Field Report, shall include the following information:

- Instrument make, model, and type.
- Calibration readings.
- Calibration/filtration lot numbers.
- Field personnel and signature.

5.2. The Field Quality Review Checklist, which is a portion of the Daily Field Report, shall assure the completeness of the sampling round and include the following information:

- Reviewer's name and date.
- Review of all necessary site activities and field forms.
- Statement of corrective actions for deficiencies.

6. References

6.1. EPA, *RCRA Groundwater Monitoring Technical Enforcement Guidance Document*, OSWER 9950.1, September 1986.

6.2. EPA, *Practical Guide for Groundwater Sampling*, EPA/600/2-85/104, September 1985.

6.3. DEP, Site Characterization Guidance Document, Draft, June 12, 2000.

END OF DOCUMENT

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Low Flow (Low Stress)
Liquid Sample Collection and Field Analysis

SOP ID: 10039
Date Initiated: 06/11/01
Revision No. 002: 12/02/02

Approved By: */s/ David C. Brisson* — *12/03/02*
David C. Brisson — **Date**
Project Geologist

/s/ Nick D. Skoularikis — *12/02/02*
Nick D. Skoularikis — **Date**
Director of Quality

REVISION RECORD

Rev #	Date	Additions/Deletions/Modifications
Initial Issue	06/11/01	
001	04/01/02	Updated to reflect new SOP format.
002	12/02/02	Updated to reflect stabilization procedures.

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
For
Low Flow (Low Stress)
Liquid Sample Collection and Field Analysis

1. Purpose and Scope

This standard operating procedure (SOP) describes the procedures to be followed for measurement of static water level elevations, detection of immiscible layers, well evacuation, sample withdrawal, and field analyses utilizing low flow sampling techniques.

2. Definitions

2.1. Immiscible layers: The term is used to denote free-phase liquids that may be present in the aquifer as a result of a release. These liquids may have a density lighter than water (light non-aqueous phase liquids (LNAPL) or floaters) or heavier than water (dense non-aqueous phase liquids (DNAPL) or sinkers).

3. Equipment

3.1. Equipment required for the collection and field analysis of liquid samples shall include:

- Water-level indicator (accurate to 0.01 foot).
- Distilled water.
- Hand towels.
- Portable volatile organic compound (VOC) analyzer (Photovac MicroTIP®, Foxboro OVA® or equivalent).
- Interface probe/ clear view bailer.
- Flow-through-cell capable of monitoring pH, temperature, specific-conductance, Eh, dissolved oxygen, and turbidity.
- Polyethylene plastic sheeting.
- Adjustable rate submersible pump (preferred), adjustable rate centrifugal pump or bladder pump (constructed of stainless steel or Teflon®),

adjustable rate peristaltic pump and polyethylene tubing (1/4 to 3/8 inch inner diameter (I.D.)), or other appropriate pumping apparatus.

- Clean disposable gloves.
- Alconox®, or other non-phosphate laboratory grade detergent.
- Three 5-gallon buckets.
- Decontamination brushes.
- Distilled, de-ionized (DI) water.
- Decontamination fluids (less than 10 percent methanol in water, 100 percent n-hexane, and 10 percent nitric acid).

4. Procedure

4.1. Equipment Decontamination

All materials and equipment, which enter a well, must be clean and free of any potential contaminants. In general, the choice of decontamination procedures should be based upon knowledge of the site-specific contaminants and outlined in the site-specific work plan.

For sites at which the contaminants are unknown, but contamination is suspected, the decontamination procedures outlined below should be followed.

4.1.1. Prior to commencing any field activities, the following solutions (as appropriate for the appropriate contaminants) should be prepared and placed into 500-ml laboratory squirt bottles: less than 10 percent methanol in water; 10 percent nitric acid in water; 100 percent n-hexane; distilled, de-ionized water.

4.1.2. In the field, prepare approximately 2.5 gallons of a solution of Alconox® (or other suitable non-phosphate laboratory grade detergent) in tap water in a 5-gallon bucket.

4.1.3. Prepare a piece of 5-mil polyethylene sheeting to underlie the decontamination area. The sheeting should be of sufficient size to contain any accidental discharge of decontamination solutions. The plastic should be bermed to contain spills.

4.1.4. The order for decontaminating equipment is as follows:

1) Detergent scrub.

2) DI water rinse.
3) Hexane rinse (to be used only if separate-phase petroleum product, other than gasoline, is present).
4) DI water rinse.
5) 10 percent nitric acid rinse (to be used only when metals are suspected as potential contaminants).
6) DI water rinse.
7) Methanol rinse (less than 10 percent solution).
8) Air dry.

4.1.5. Materials such as the bailer cord should not be decontaminated and should just be disposed of after each test.

4.1.6. Wrap each piece of decontaminated equipment in aluminum foil, as appropriate, to maintain cleanliness.

4.1.7. At the end of the project day, dispose of all spent decontamination fluids and materials such as the polyethylene sheeting and personal protective equipment in accordance with all applicable municipal, state, and federal regulations.

4.2. Sample Collection

4.2.1. Immediately upon opening the well, the air in the well head will be sampled for VOCs using a portable VOC analyzer, such as a Photovac MicroTIP® or equivalent. The instrument shall be zeroed with ambient air prior to the measurement, and the initial and final readings shall be recorded for each well.

4.3. Detection of Immiscible Layers

4.3.1. Should evidence warrant, a sampling event shall include provisions for detection of immiscible phases prior to well evacuation or sample collection. LNAPLs are relatively insoluble liquid organic compounds with densities less than that of water (1 g/ml), while DNAPLs are organic compounds with densities greater than that of water. Lighter and/or denser immiscible phases may be encountered in a groundwater monitoring well.

4.3.2. An interface probe will be used to determine the existence of any immiscible layers, light or dense. Alternatively, a clear fluorocarbon resin or PVC bailer may be used to determine the existence of the

phases or oil sheen in the well when no accurate determination of the immiscible layer thickness is required.

4.3.3. Should elevations of the immiscible layers be required, levels of the fluids shall be measured to an accuracy of 0.02 feet using an electronic interface probe capable of detecting the interfaces between air, product, and water. The interface levels shall be recorded in the field form. Adjustments of the observed head to the theoretical hydraulic head shall be calculated based on the density conversion factor associated with the particular non-aqueous phase liquid.

4.3.4. If immiscible layers are detected low-flow sampling is not recommended.

4.4. Measurement of Static Water Level

4.4.1. The static water elevations in each well shall be measured prior to each sampling event. This is performed initially to characterize the site, and in subsequent sampling rounds to determine whether horizontal or vertical flow gradients have changed. A change in hydrologic conditions may necessitate modification of the groundwater monitoring program.

4.4.2. Remove the protective cover and locking cap from the well.

4.4.3. Each well shall have a surveyed reference point located at the top of the well casing with the locking cap removed. The reference point shall be easily recognizable, since the personnel conducting the sampling may differ from one sampling event to the next.

4.4.4. The following parameters shall be measured with an accuracy of 0.01 ft:

- Depth to standing water.
- Depth to bottom of well.

4.4.5. A water-level indicator with a fiberglass tape will be used for measurement. Due to possible pressure differences between the well atmosphere and the ambient atmosphere, the water level will be allowed fifteen minutes to equilibrate upon removal of the well cap. If excess pressure is encountered the water level will be allowed greater

than fifteen minutes to equilibrate upon removal of the well cap. The results shall be recorded on the appropriate field form(s).

4.4.6. Total depth measurements will be compared to original depths to determine the degree of siltation that may have occurred. This information shall be noted on the field forms. Should significant siltation occur in any well, the well shall be redeveloped by an approved method.

4.4.7. The portion of the tape immersed in the well shall be decontaminated during retrieval using a distilled water rinse followed by drying with a clean wipe, prior to use in another well. This decontamination procedure shall be amended, as needed, to accommodate the specific type of contamination anticipated.

4.4.8. The static water level should be monitored and recorded throughout the purging and sampling of each well.

4.5. Field Analysis

4.5.1. Parameters that are physically or chemically unstable shall be tested utilizing a flow-through-cell. Such parameters as pH, temperature, specific conductance, dissolved oxygen (DO), oxidation reduction potential (Eh), and turbidity will be measured in the field, at the temperature of the well sample.

4.5.2. Parameters such as pH, temperature, specific conductance, DO, Eh, and turbidity shall be measured using a flow-through-cell (YSI model 6820 or equivalent). The meter shall be calibrated prior to use and at the end of the day using supplied solutions, in accordance with the instructions provided by the manufacturer. Calibration information will be recorded in the field before and after each calibration.

4.6. Well Evacuation

4.6.1. Calculate standing water in the well based on the following schedule and record on the appropriate field form:

Well Diameter (inches)	Conversion Factor (gal/feet)
2	0.163
4	0.654
6	1.47

4.6.2. Generally, a submersible, air-lift, bladder, inertial, or peristaltic pump equipped with a fluorocarbon resin or PVC foot valve on the end of dedicated tubing, as appropriate, may be used to evacuate the monitoring wells.

4.6.3. A new piece of polyethylene plastic shall be placed on the ground adjacent to the well. Sampling and purging equipment, such as pump, tubing, containers, etc., shall be placed on the polyethylene sheet, never on the ground.

4.6.4. Don disposable gloves, prepare pump and tubing for insertion into the well, ensuring that any tubing or pump apparatus is of sufficient length to reach the appropriate depth for pumping.

4.6.5. Lower the pump and/or tubing gently into the water column to the midpoint of the zone to be sampled. A site-specific sampling plan should specify the sampling depth, or provide specific criteria for the selection of intake depth for each well. If possible keep the pump intake two feet above the bottom of the well. Start the pump at the lowest speed setting and slowly increase the speed until discharge occurs. Check the water level. Adjust the pump rate until little or no draw down occurs. Draw down should not exceed 0.3 feet, if the draw down exceeds 0.3 feet shut the pump down and allow to recharge. Alternate pumping and recharging until parameters stabilize. It should be noted that stable drawdowns of 0.3 feet while desirable are not mandatory.

4.6.6. Monitor and record water level and pumping rate every three to five minutes during purging. Calculate the volume of the discharge tubing, bladder pump, and the flow-through-cell. Once this volume has been purged from the well monitor and record indicator field parameters (turbidity, pH, Eh, DO, temperature and specific conductance) in the well from the first water extracted during the purging process and three consecutive samples taken every three to five minutes. Stabilization is considered to be achieved when three consecutive readings are within the following limits:

- Turbidity (10% for values less than 5 and greater than 1 NTU). It should be noted that achievements of turbidity levels less than 5 NTUs are not mandatory but efforts should be made to collect a groundwater samples with the lowest turbidity achievable.
- DO (10%).
- Specific Conductance and Temperature (3%).
- pH (+/- 0.1 unit).
- ORP/Eh (+/- millivolts).

4.6.7. If it is not possible to obtain stabilization as described above, due to slow recovery of the well, the well shall be emptied and allowed to recover, or if after 4 hours of purging the field parameters have not stabilized, discontinue purging and collect samples. Make special note on the appropriate sampling forms that sample collection occurred without stabilization. Samples obtained from slow-yielding wells shall be extracted as soon as a sufficient volume is available for a sample for each parameter.

4.6.8. Measure indicator parameters again **after** sampling to determine effectiveness of purging and sample stability.

4.6.9. Do **not** re-use purging equipment (bailers, rope, tubing, sampling vials, etc.). Pumps shall be decontaminated between monitoring wells, in accordance with procedures noted in Section 4.1.

4.6.10. Record sampler's name, sampling time, volume of water purged, parameters measured, weather conditions, sample number, analyses required and all other pertinent information in the field notebook and/or appropriate field forms, and complete the chain of custody form.

4.6.11. Any water purged from the monitoring wells shall be stored in appropriate containers until the laboratory analyses are available. Then it should be disposed of in accordance with all applicable local, state and federal requirements.

4.6.12. Storage shall be in containers approved for storage of hazardous materials, and in an appropriate designated location at the facility.

4.7. Sample Withdrawal

4.7.1. In order to ensure that the groundwater sample is representative of the formation, it is important to minimize physical alteration (i.e. agitation during purging and/or sample collection) or chemical contamination of the sample during the withdrawal process.

4.7.2. Use an appropriate pump to purge each well (the same pump used for purging may be used for sample withdrawal, with the exception that samples intended for VOC analysis must be collected using a bladder pump).

4.7.3. The samples shall be collected at a location before entering the flow-through-cell. To minimize agitation of the water column, samples shall be collected from the pump tubing in the following order into pre-labeled sample containers:

- Extractable organics (semi-volatile).
- VOCs.
- Total petroleum hydrocarbons.
- PCBs.
- Metals.
- Phenols.
- Cyanide.
- Chloride and sulfate.
- Nitrate and ammonia.
- Turbidity.
- Radionuclides.
- Purgeable organic carbon (POCs).
- Purgeable organic halogens (POX).
- Total organic halogens (TOX).
- Total organic carbon (TOC).

4.7.4. Samples shall be obtained from the monitoring wells as soon as possible after purging. This may require waiting an extended period for low-yielding wells.

4.7.5. Samples collected for VOC analysis shall be free of any air bubbles and inverted upon filling. Bacterial samples shall be collected using dedicated gloves; taking care not to allow anything to touch the inside of the sampling container.

4.7.6. Samples collected for dissolved metals analysis, which are to be filtered in the field, shall be passed through a 0.45 micron (maximum) filter (either in-line or under negative pressure) prior to placement in the sample bottle.

4.7.7. In situations where replicate samples are required, care shall be taken to ensure that each sample collected is independent.

4.7.8. In some situations, inorganic parameters may be sampled directly from a pump after completion of well evacuation procedures.

4.8. Field Documentation

4.8.1. Field documentation shall include at a minimum: a chain-of-custody form, Field Data Record Groundwater Form, Sample Collection Form, Daily Field Report. Sample labels and sample seals shall be used for proper sample identification.

4.8.1.1. The labels shall be sufficiently durable to withstand immersion for 48 hours without detaching and to withstand normal handling. The information provided shall be legible at all times.

4.8.1.2. The following information shall be provided on the sample label using an indelible pen:

- Sample identification number.
- Date and time of collection.
- Place of collection.
- Parameter(s) requested (if space permits).

4.8.1.3. Appropriate field forms will be used to log all pertinent information with an indelible pen. The following information shall be provided:

- Project and site identification.
- LEA commission number.

- Identification of well.
- Static water level measurement technique.
- Presence of immiscible layers and detection method.
- Time well purged.
- Collection method for immiscible layers and sample identification numbers.
- Well evacuation procedure/equipment.
- Sample withdrawal procedure/equipment.
- Date and time of collection.
- Types of sample containers used and sample identification numbers.
- Preservative(s) used.
- Parameters requested for analysis.
- Field analysis method(s).
- Whether or not field filtration was performed and the filter size, if appropriate.
- Field observations on day of sampling event.
- Record of site activities.
- Field personnel.
- Climatic conditions, including air temperature.
- Status of total production.
- Record of non-productive time.

4.8.1.4. The Field Sampling Record shall include at a minimum the following information:

- Identification of well.
- Date and time of collection.
- Name of collector.
- Sample number.

4.8.1.5. The chain-of-custody record shall include the following information:

- Company's name and location.
- Date and time of collection.
- Sample number.
- Container type, number, size.
- Preservative used.
- Signature of collector.
- Signatures of persons involved in the chain of possession.
- Analyses to be performed.
- Type and number of samples.

4.8.1.6. The Field Data Record Groundwater Form shall be updated during the sampling of each well and include the following information:

- Identification of well.
- Well depth, diameter, depth to water.
- Static water level depth and measurement technique.
- Purge volume and pumping rate.
- Time well is purged.
- LEA commission number.
- Date.

4.8.1.7. The Daily Field Record shall include the following information:

- Client's name, location, LEA commission number, date.
- Instrument make, model, and type.
- Calibration readings.
- Calibration/filtration lot numbers.

- Field personnel and signature.

4.8.1.8. The Daily Field Record shall assure the completeness of the sampling round and include the following information:

- Reviewer's name, date, and LEA commission number.
- Review of all necessary site activities and field forms.
- Statement of corrective actions for deficiencies.

5. References

5.1. United States Environmental Protection Agency (EPA), Region I. *Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells,* July 30, 1996, Revision 2.

5.2. Robert W. Puls and Michael Barcelona, EPA. *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures,* in Groundwater Issue, (EPA/540/S-95/504), April 1996.

5.3. Connecticut Department of Environmental Protection, Bureau of Water Management, Permitting Enforcement and Remediation Division. *Site Characterization Guidance Document,* Draft, June 12, 2000.

END OF DOCUMENT

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Quality Assurance/Quality Control Measures
for
Field Activities

SOP ID: 10005
Date Initiated: 02/20/90
Revision No. 004: 12/31/01

Approved By: */s/ Jeffrey J. Loureiro* *12/19/01*
Jeffrey J. Loureiro **Date**
President

/s/ Nick D. Skoularikis *12/19/01*
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Director of Quality

REVISION RECORD

Rev #	Date	Additions/Deletions/Modifications
Initial Issue	02/20/90	
001-003	-	No record.
004	12/31/01	Updated to reflect new SOP format. Added section 4.3, Results Evaluation. Minor revisions throughout.

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Quality Assurance/Quality Control Measures
for
Field Activities

1. Statement of Purpose

This document describes procedures to be followed for proper Quality Assurance Quality Control (QA/QC) practices which shall incorporate all activities associated with sampling tool and instrument preparation, field measurements and sampling, proper documentation of field and post-field activities, QC sample preparation, chain-of-custody protocol and laboratory analytical procedures. The use of specific QA/QC measures is project-specific as defined in the project work plan. This standard operating procedure (SOP) was adopted in accordance with the Environmental Protection Agency (EPA) document *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846).

2. Definitions

2.1. Trip Blank: An aliquot of organic-free water or equivalent neutral reference material carried into the field but not exposed.

2.2. Equipment Blank: An aliquot of analyte-free deionized water processed through all sample collection equipment.

2.3. Replicate Samples: Samples that have been divided into two or more portions in the field.

2.4. Collocated Samples: Independent samples collected under identical circumstances in a way that they are equally representative of the parameter of interest.

2.5. Performance Evaluation (PE) Sample: A sample that mimics actual samples in all possible aspects, except that its composition is known to the auditor and unknown to the analyst.

3. Equipment

None

4. Procedure

4.1. General

4.1.1. All QA/QC sample preparation procedures shall be properly documented including:

- Name of person(s) or laboratory involved in sample preparation.
- Reagents used.
- Sample number.
- Analyses required.
- Concentration calculations.
- Accuracy of measurements.
- Number, type, size of containers used.
- Preservation method.
- Date and time of sample preparation.

4.1.2. All information shall be included in the field logbook and/or appropriate field forms, but not necessarily in the chain-of-custody record except as needed for proper sample identification and analysis. Blind sample numbers are being used in order not to disclose the nature of the sample to the laboratory. No information that would identify the sample as a QA/QC sample shall be included in the chain-of-custody record.

4.1.3. At the conclusion of each sampling day, a quality control review shall be conducted using the Field Quality Review Checklist and the Daily Field Report.

4.2. QC Sample Preparation

4.2.1. Trip Blank

4.2.1.1. Contaminated trip blanks may indicate contamination of the samples during the field trip or shipment to the lab, cross-contamination between the samples, contaminated sample vials, or improper handling.

4.2.1.2. Trip blanks shall be used only with samples that are to be analyzed for volatile organic compounds.

4.2.1.3. One trip blank shall be included per shipping container (cooler) carrying sample soil and/or groundwater samples that are to be analyzed for volatile organic compounds

4.2.1.4. Trip blanks are prepared using analyte-free deionized organic-free water prior to field activities associated with the sampling event, usually by the laboratory providing the sampling containers. Each trip blank is placed in a 40-ml glass VOA vial and is carried in the same shipping container as the sample(s). Trip blanks should not be opened at any time during transport.

4.2.2. Equipment Blank

4.2.2.1. The purpose of an equipment/rinsate blank is to determine if decontamination procedures were adequate or if any of the equipment might contribute contaminants to the sample.

4.2.2.2. An equipment blank is prepared by running analyte-free deionized water through all sample collection equipment (bailers, pumps, filters, split-spoon) and placing it in the appropriate sample containers for analysis. If equipment has been decontaminated in the field, the equipment blank shall be collected after decontamination procedures have been performed.

4.2.2.3. Equipment blanks shall be used when sampling surface water, groundwater, soil, and sediment.

4.2.2.4. One equipment blank shall be collected for each sample bottle/preservation technique/analysis procedure per matrix per sampling event, or as otherwise specified in project-specific documents.

4.2.3. Replicate Samples

4.2.3.1. Replicate samples provide precision information on handling, shipping, storage, preparation and laboratory analysis.

4.2.3.2. Replicate samples are samples that have been divided into two or more portions in the field. An example of a replicate sample is two identical sample bottles filled with water from the same bailer retrieval. To ensure homogeneity, the bailer should be emptied into a clean, decontaminated beaker used exclusively

for the purpose and containing sufficient volume for both sample containers, and from that into the sample containers.

4.2.3.3. Replicate samples cannot be used when sampling for volatile organic compounds.

4.2.3.4. One replicate sample shall be obtained for each sample bottle/preservation technique/analysis procedure per sampling event or one out of every 20 samples, unless collocated samples are used (see below), or as otherwise specified in project-specific documents.

4.2.4. Collocated Samples

4.2.4.1. Collocated samples provide precision information on sample acquisition, homogeneity, handling, shipping, storage, preparation and laboratory analysis.

4.2.4.2. Collocated samples are independent samples collected in such a way so that presumably they are equally representative of the parameter of interest. Examples of collocated samples are groundwater samples collected sequentially, soil core samples collected side-by-side, or air samples collected essentially at the same time from the same manifold.

4.2.4.3. Collocated samples are especially useful when sampling for volatile organic compounds, for which replicate samples cannot be used.

4.2.4.4. Collocated samples shall be obtained for each sample bottle/preservation technique/analysis procedure per sampling event or one out of every 20 samples, unless replicate samples are used (see above), or as otherwise specified in project-specific documents.

4.2.5. Split Samples

4.2.5.1. The purpose of split samples is to provide an assessment of the laboratory analytical procedure.

4.2.5.2. Split samples are collocated or replicate samples sent to two (or more) different laboratories.

4.2.5.3. Split samples can be used with any sample media. Split samples can be used in conjunction with spiked samples (see

below). In case contradictory results are obtained from the samples split between different laboratories, the spiked samples can be used to verify the analytical data (provided that the spiked samples were properly prepared and the appropriate documentation is available).

4.2.5.4. When used, one split/spiked sample per sample bottle/preservation technique/analysis procedure per sampling event or every 20 samples shall be included, or as specified in project-specific documents.

4.2.6. Spiked Samples

4.2.6.1. The purpose of spiked samples is to provide information on the precision of the laboratory analytical procedure. However, besides a wrong preparation, several other sources of error exist such as analyte stability, holding time and interactions with the sample matrix.

4.2.6.2. Spiked samples are samples spiked with the contaminants of interest. The compounds used for spiking should be of the same chemical group as the contaminants being investigated, but they do not have to be the exact chemical compounds. Spiking should be carefully designed and performed prior to the field investigations. Field matrix spikes are not generally recommended because of the high level of technical expertise required for proper preparation and documentation.

4.2.6.3. Can be used with any sample media, however, liquid matrices are preferred due to uniformity of mixing.

4.2.6.4. When used, one split/spiked sample per sample bottle/preservation technique/analysis procedure per sampling event or every 20 samples shall be included, or as otherwise specified in project-specific documents. In order to ensure defensible data, performance evaluation (PE) samples, prepared by an independent vendor, are typically being used. The ordering and handling procedures and record keeping requirements are discussed in Loureiro Engineering Associates, Inc. (LEA's) *SOP for Preparation of PE Samples* (SOP 10030).

4.3. Result Evaluation

4.3.1. The analytical results on QA/QC samples should be evaluated along with the remaining analytical data as follows:

4.3.1.1. No constituents should be detected in the trip blank or equipment blank.

4.3.1.2. The relative percent differences (RPDs) shall be computed for all constituents detected in both duplicate samples used.

The RPD between two measurements (e.g., M1 and M2) is calculated as follows:

$$RPD = \frac{|M1 - M2|}{(M1 + M2)/2} \times 100\%$$

4.3.1.3. Any deviations in the performance evaluation samples shall be brought to the attention of the laboratory. An investigation shall then be performed by the laboratory of the method used, laboratory QA/QC procedures followed, and computations performed. The laboratory shall report the results of their investigation and any corrective actions taken.

5. References

5.1. EPA, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846).

END OF DOCUMENT

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Documentation and Integrity
of
Field Sampling Activities

SOP ID: 10038
Date Initiated: 04/30/99
Revision No. 002: 08/09/02

Approved By: /s/ David C. Brisson 08/09/02
David C. Brisson Date
Project Geologist

/s/ Nick Skoularikis 08/09/02
Nick D. Skoularikis Date
Directory of Quality

REVISION RECORD

Rev #	Date	Additions/Deletions/Modifications
Initial Issue	4/30/99	
001	12/31/01	Formatting and minor revisions throughout
002	08/09/02	Added requirement for briefing or written work instructions prior to sampling; Added section on field equipment request and vehicle request; Added section on chain-of-custody form; Added section on cooler integrity and shipment.

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Documentation
of
Field Sampling Activities

1. Purpose and Scope

1.1. This document describes procedures to be followed for proper documentation of all activities associated with sampling of environmental media, including tool and instrument preparation, field measurements and sampling, quality assurance/quality control (QA/QC) sample preparation, and chain-of-custody protocols. The use of specific documentation procedures depends on the goals of a particular project and should be dictated by the project-specific work plan. This Standard Operating Procedure (SOP) is to be used in conjunction with other Loureiro Engineering Associates, Inc. (LEA) SOPs and guidance for the performance of the associated field sampling activities. This guidance can be provided verbally through a briefing prior to the field activities or through a document such as written work instructions or a project-specific work plan.

2. Definitions

None

3. Equipment

None

4. Procedure

4.1. General

4.1.1. Field procedures for which documentation covered under this SOP is required include sampling of soil, groundwater, air, surface water, and sediment, and any other media from which samples are collected, as well as associated activities.

Documentation to be provided will include:

- Summary of daily field activities.
- Sample descriptions.
- Equipment used.
- Analyses required.
- Instrument calibration.
- Waste disposal.

4.1.2. All relevant information shall be included on the appropriate field report forms. However, the chain-of-custody record will include only that information necessary for proper sample identification and analysis.

4.2. Paperwork Preparation and Completion

4.2.1. Obtaining field paperwork

4.2.1.1. Prior to the initial start up of field activities, the Project Manager, or a designee, shall submit the proper site information to the Database Manager. This information shall include: project name, client name, commission and task number, site name, site location, directions to site, personnel requirements, type of activities planned for the site, approximate duration of field activities, sample information, and the project start date.

4.2.1.2. Once the correct information is entered into the database, paperwork may be obtained directly by the field personnel through the database or by requesting preparation of the paperwork from the database manager. This task should be completed 24 to 48 hours prior to the initiation of field activities.

4.2.2. Field Equipment and Vehicle Request

4.2.2.1. A field equipment request form should be prepared and submitted to the field services manager. The field services manager will in turn ensure that all equipment are available and in proper condition for the specific project. A field vehicle should also be requested. The vehicle will be assigned to the field team based on availability.

4.2.3. Field Activities Documentation

4.2.3.1. The purpose of field paperwork is to adequately document all field activities. It is important to document field conditions that may have an impact on the field activities, such as weather conditions, physical constraints, nearby construction or dewatering activities (to the extent known).

4.2.3.2. All field paperwork must be filled out accurately and be completed in the field before the end of the workday. The only exception is the preparation of performance evaluation (PE) samples, which should be completed in the office after the PE samples have been properly labeled (LEA SOP 10030). Information on equipment and expendable item usage shall be completed during the day, but checked for omissions at the end of the day.

4.2.3.3. At the conclusion of each sampling day, the field personnel shall conduct a quality control review before leaving the field, using the Quality Assurance Checklist section of the Daily Field Report.

4.2.4. Chain-of-Custody Form

4.2.4.1. Although the chain-of-custody forms vary between laboratories and the analyses requested vary on a project-specific basis, the following information should be provided on the chain-of-custody forms:

- Specify the LEA seven-digit sample number, date and time of collection, sample matrix, the type of analyses requested, and the preservatives used. For aqueous samples, the information provided should clearly indicate which preservative is used for which analyses. The analytical method requested should be specified.

- The cooler containing the samples should be labeled with the appropriate identification information. If the sample cooler does not already have an ID assign and attach a new preprinted seven-digit LEA sample label to the cooler.

- Specify whether an electronic disk deliverable (EDD) or data validation package is required.

- Specify the purchase order number, or for United Technologies Corporation (UTC) projects specify the United Analytical Request Procedure (UARP) number.

- Use the suffix "uf" after the seven-digit LEA sample number to denote unfiltered metal samples, as applicable.

4.2.5. Cooler Integrity and Shipment

4.2.5.1. An iced cooler should be available with laboratory-supplied glassware and preservatives. The cooler should contain ice prior to and during sample collection.

4.2.5.2. A cooler containing samples should never be left unattended during the sampling day. If the field personnel need to leave the site at any time, they can lock the cooler in the trailer, staging area, or field vehicle. A temporary chain-of custody seal shall be used at that time to ensure the integrity of the samples.

4.2.5.3. For projects where an offsite laboratory is being used, the office should be contacted to arrange for cooler shipment. In such cases, the laboratory will provide preprinted air bills for shipment through their preferred carrier or will arrange for direct pickup from the office or from the site.

4.2.5.4. When the sampling is completed and the cooler is being prepared for shipment, fresh ice should be placed in the cooler along with a temperature blank. It is important that the cooler has been assigned a cooler ID so that the laboratory can associate the temperature measured with a specific cooler.

4.2.5.5. The sample jars should be placed in a plastic bag to avoid direct contact with the water, which may cause the labels to peel off.

4.2.5.6. A signed custody seal should be used when sealing the cooler. The date and time should also be recorded on the seal.

4.2.6. Post Field Activities

4.2.6.1. Ensure that the paperwork is complete and that the pages are numbered sequentially.

4.2.6.2. Verify that all waste container information has been recorded.

4.2.6.3. Appropriate entries should be made for all visitors to the site related to the field activities performed.

4.2.6.4. Document on the field forms, whether any photos of the site were taken.

4.2.6.5. Upon completion of the daily field activities and after review of the completed paperwork, a copy of the field paperwork shall be submitted to the database manager. The originals shall be retained for filing in the project notebook.

4.2.6.6. All required information from the field is entered into the database by the database manager or a designee. A data review checklist is printed out upon completion. Included with the data review checklist may be a comment sheet indicating inconsistencies in the data entered that were readily apparent based on electronic comparison of the data or noted by personnel entering the data.

4.3. Data Verification

4.3.1. The data review checklist and the comment sheet shall be obtained from the database manager by the project manager or a designee for review. The data review checklist shall be maintained in the project notebook under the QA/QC section and will be periodically reviewed by the Director of Quality.

4.3.2. Once the project manager or designee completes the review process, any mistakes shall be brought to the attention of the database manager in a timely manner, generally in less than two business days from the day on which the database manager prepared the review sheets.

4.3.3. After the corrected information has been entered into the database, a revised data review checklist (and any necessary additional comment sheets) will be provided to the project manager or designee.

4.3.4. The above process will be repeated as necessary until it has been determined that the information that has been entered into the database is accurate and complete.

5. References

None

END OF DOCUMENT

APPENDIX B

DATA MANAGEMENT DOCUMENTATION

LEA Procedure for Entering and Verifying Electronic Analytical Data

1) Load data into LEA IMS (either with disk or electronic file)

2) The LEA IMS database will create 5 tables as follows:
   a. Sample Summary
   b. Possible exceedances of CT reporting criteria for significant environmental hazards (conservative comparison)
   c. Analytical Results
   d. Analytes Over Detection Limits (conservative comparison)
   e. Performance Evaluation Check (if PE samples are applicable)

3) Each of the tables must be printed and verified for accuracy or evaluated, as follows:
   a. Sample Summary – verify field sample location, sample ID, sample interval (if applicable), and sample date are correct based on field paperwork
   b. Possible exceedances – provide information to PM/key office staff person for evaluation against applicable criteria and reporting requirements
   c. Analytical Results – 1) verify agreement with chain-of-custody (i.e. check that parameters and constituents were analyzed and reported as requested); 2) verify hardcopy analytical data reports versus electronic deliverable and field paperwork
   d. Analytes Over Detection Limits – provide information to PM/key office staff person for evaluation against applicable standards
   e. Performance Evaluation Check – verify information from database (PE check sheet against vendor certified ranges and laboratory hardcopy data).

4) The attached checklist must be used to document that each of the applicable components of the data verification are complete. Any errors or non-conformances that are noted during the review must be corrected before the corresponding item it noted as completed on the checklist.

5) Once complete (i.e. data verification performed and corrections made), the completed checklist must be placed in the project file as the record documenting the data was verified.

Date: June 2001

Documentation for
Verifying Electronic Analytical Data

Commission No.:	
Date Electronic Data Recv'd:	
Verification Date:	
Verification Completed by:	
LEA Sample Ids Verified:	
Sample Date:	

LEA IMS Table	Required Verification	Check if Completed
Sample Summary	Verify field sample locations	
	Verify sample IDs	
	Verify Sample Dates	
Possible exceedances	Provide information to PM/key office staff person for evaluation against reporting requirements .	
Analytical Results	Verify agreement with COC (i.e. check that parameters and constituents were analyzed and reported as requested)	
	Verify hardcopy analytical data reports versus electronic deliverable, including: • Data • Units • Qualifiers • Sample Media/Description (verify hardcopy) • Commission # (verify hardcopy) • Site/Client Source (verify hardcopy)	
Analytes Over Detection Limits	Provide information to PM/key office staff person for evaluation against applicable standards	
Performance Evaluation Check (if applicable)	Verify information from database (PE check sheet against vendor certified ranges and laboratory hardcopy data).	

Notes/Comments: _____

_____

_____

_____

copy: Project File
Project Manager

LOUREIRO ENGINEERING ASSOCIATES, INC.
DATA MANAGEMENT PLAN

January 1991
Revised November 1996
Revised February 2003

Prepared by

LOUREIRO ENGINEERING ASSOCIATES, INC.
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An Employee Owned Company

Comm. No. 100

Table of Contents

		Page
1.	DATA MANAGEMENT PLAN	1
1.1	Introduction	1
1.2	Data Management System	1
1.2.1	Types of Data	1
1.2.2	Data Storage	2
1.2.3	Data Management Process	2
1.3	Data Management Activities	3
1.3.1	Data Management Team	3
1.3.2	Data Management Tasks	3
1.3.2.1	Data Inputs	4
1.3.2.2	Field Sample Tracking	5
1.3.2.3	Data Entry and Storage	6
1.3.2.4	Data Presentation	7

1. DATA MANAGEMENT PLAN

1.1 Introduction

Since a large volume of data is generated during each project at Loureiro Engineering Associates, Inc. (LEA), it is necessary to develop a company-wide Standard Operating Procedure (SOP for data management to ensure the completeness and integrity of all data associated with the program. Information provided in this data management plan addresses the documentation, tracking, and manipulation of data collected during each project. This data management plan identifies the data documentation materials and procedures, and project filing requirements. Given the number and variety of data being collected during our site investigations/remediation projects, it is imperative that the procedures for handling data from the collection to the reporting phase be clearly outlined and documented.

This data management plan identifies the categories of personnel involved in the data management process, the types of activities associated with data management and how those activities are performed, the chronology and flow of data management activities, and the methods and locations for data storage and reporting.

1.2 Data Management System

1.2.1 Types of Data

Many types of data are being generated and managed during our site investigation/remediation projects. Included in the data management process are analytical data collected during field activities (such as measurements of pH, specific conductance, and temperature of groundwater during groundwater sampling events); information related to sample collection (such as location I.D., sample number, sample depth, date and time of sample collection, analyses to be performed); analytical results from screening or field laboratory; analytical results from the fixed laboratory(ies), survey data of sampling locations; and geologic and hydrogeologic data (such as boring logs, well construction diagrams, and water level elevations). These data shall be included in the appropriate electronic data tables for the type of information generated, and will be managed in accordance with the protocols identified in the appropriate subsections of this Data Management Plan. Management procedures for hard copies of the information generated during each project are also identified in relevant subsections of this plan.

1.2.2 Data Storage

Data are maintained in an electronic database. All sampling and analytical information, as well as survey data, boring logs, and miscellaneous data are maintained in LEA's database, a fully relational database management system. Data maintained in this system include but are not necessarily limited to, sampling location information, including name and spatial/survey information, boring logs, well construction diagrams; sample information including depth of sample, sample collection date, responsible field person, sample identification number, results of field measurements; initial laboratory information including chain-of-custody information and analytical requests; and analytical information, including analyte, analysis dates, and results. This system also contains historical information to the extent it is available.

Paper copies of the various field forms and laboratory reports are organized and maintained in a separate filing system, as appropriate for each type of data. Incoming data are logged in both the project analytical database and on hardcopy. The hardcopy is then placed in the appropriate project file. Analytical results from the laboratories are associated with the sample identification numbers assigned during sample collection. Field log books are also kept as part of the project file and considered to be original documents.

Original field notebooks, log sheets, and other information are transferred from the project file to a designated archive location upon the completion of the project. Chemical and physical data generated during the site investigation are stored in paper document form. In addition, computerized data are stored in electronic back-up formats.

1.2.3 Data Management Process

The actual management of data collected during each project is only part of the larger process of sampling design; sample collection; acquisition of analytical data; data retrieval, storage, and presentation; and data evaluation. A schematic diagram illustrating the data management process and how it fits into the overall investigation process is presented in Figure 1. This figure outlines the flow of data from planning stages through collection and analysis to final output and storage. The data management process itself essentially consists of those activities associated with recording, processing, linking, distributing, and reporting of data.

The protocols outlined within this Data Management Plan have been prepared to ensure the accurate capture and retrieval of data needed to achieve the objectives of the project. These protocols ensure that, for each data collection activity, data can be readily incorporated into the appropriate database, correlated with information from other databases and other aspects of the project, and subsequently reported and presented in a variety of formats.

The earliest steps (1-6) in the Data Flow Diagram identify naming conventions to enable database retrieval consistency. These conventions are identified during preparation of the sampling and analysis plans for each project. The Data Management Plan maintains sample integrity through the sample tracking activities highlighted as steps 5, 6, 8, 10, 12, 15, 16, and 17. Field sampling is represented by steps 10 and 11. Data management protocols addressing submittals to and from analytical laboratories are shown in steps 7, 9, 12, and 13. The database manager processes data from field teams in steps 16, 19, 20, and 22. Data verification activities for analytical results incorporated into the analytical database are shown in steps 16 and 17. The spatial and field data will be processed in the independent streams depicted in the data flow diagram by steps 19, 22, and 24. The analytical data is processed in steps 15, 16, 17, and 21. Various data evaluation activities are identified in steps 23, 25, 26, and 27. Archiving is represented in steps 18 and 28.

1.3 Data Management Activities

1.3.1 Data Management Team

The data management team typically consists of the data manager(s), project managers, technical task leaders, field team leaders, field investigation teams, and laboratory contact personnel. The project manager provides guidance and oversight for data management activities.

1.3.2 Data Management Tasks

The data management team will perform the tasks identified in the following paragraphs. The individuals involved with each task will be project specific and will depend on the size and scope of each project.

Data coordination tasks associated with sampling, analysis and field activities include:

- Logging of incoming data and reports into the project file both on the electronic tracking system and hard copy, as appropriate.
- Entering and verifying field data and generating reports.
- Coordination of analytical and field data.
- Tracking chains-of-custody and field screening results.
- Tracking shipment of samples to the off-site laboratory.
- Tracking samples and electronic deliverables from the off-site laboratories.
- Verifying analytical data from off-site laboratories using appropriate protocols.

Tasks associated with database management specifically include:

- Coordinating data preparation, data loading, and data verification for the database;
- Working with project staff to develop schedules for delivery of analytical results;
- Entering and verifying data in the database; and,
- Coordinating with technical task leaders to ensure efficient delivery and presentation of data.

Specific activities associated with various data management tasks are summarized in the following sub-sections.

1.3.2.1 Data Inputs

Field Measurements

Field measurements include physical data (e.g. pH, temperature, specific conductance, turbidity) collected during investigation activities. Measurements will be recorded in the field and transferred manually from the field data sheets to the electronic analytical database. Data from the database will then be verified against the hardcopy field data sheets.

Onsite Analytical Measurements

Analytical measurements determined using a portable gas chromatograph either at the site or at the screening laboratory are reported in both hard-copy and electronic formats. The electronic data is transferred to the analytical database, and the results from that database are verified against the paper copy laboratory reports.

Off-site Analytical Measurements

Off-site analytical measurements are generated by an off-site (fixed) analytical laboratory. These analytical results are typically delivered in both paper copy and electronic formats and are sent to the database manager for incorporation into the analytical database.

Soil Boring and Well Construction Data

Soil boring and well construction data are included in the geologic/hydrogeologic database for the program. Boring logs include such information as lithology, results of standard penetration tests (if appropriate), sample collection information, and VOC screening results. A monitoring well construction diagram is provided for each monitoring well installed during the project.

Survey Data

Surveying of well and boring locations and selected site features may be performed as part of the site characterization process. Tape measurements may be using for locating boring logs. All

survey information is included in the AutoCAD® base drawing for each project site. This information is also used to locate sampling points and other pertinent features on the AutoCAD®-generated drawings that are produced as the base maps for each facility. Survey/spatial data is also stored in the LEA database.

1.3.2.2 Field Sample Tracking

Field sample tracking activities focus on the timely tracking of information regarding field samples collected for each investigation. Other information tracked includes sample identifiers, chain-of-custody information, and sample characteristics. The information is transmitted from field to office personnel through the use of daily field summary sheets and other project information tracking forms.

Samples collected during the project are designated as described below. In general, sample identification information includes the following:

- Site location.
- Date and time.
- Sample class.
- Sample type.
- Sample location identifier.
- Sequential sample number.
- Sample depth interval (where applicable).

Specifically, field sample tracking includes the following tasks:

- Assignment of sample identification numbers and other sample identifiers to new samples to be taken, and entry to a tracking system.
- Production of sample bottle labels from the tracking system.
- Completion of chain-of-custody forms, and entry of this information to the tracking system.
- Entry of additional tracking dates to the tracking system.
- Quality Assurance (QA) checking of the sample tracking information, and processing of change requests.
- Production of tracking reports and summary sheets, with distribution to appropriate project staff.

Daily field forms are completed by each field team leader. The daily field forms detail the daily activities conducted by the staff and contractors, hours logged by staff and contractors, problems

encountered, general field observations, and samples submitted for analyses. Field forms are submitted to the Field Activities Coordinator at the end of each working day or as soon thereafter as possible. The field forms are subsequently placed in the project file.

The field activities coordinator for each project works closely with the specific project manager to ensure that the sample tracking system is functioning at all times.

1.3.2.3 Data Entry and Storage

The electronic analytical database is maintained in a format that is capable of performing the requisite management functions that are described in the following paragraphs.

Database Administration

Database administration includes coordination of data entry and verification and review of data for completeness and correctness. The database manager interfaces with the project manager, task leaders, and field personnel to ensure that the database meets the project objectives.

Electronic Data Entry

Data received from off-site analytical laboratories in electronic format is checked for completeness by comparing data received with data analyses requested in the chain-of-custody forms. Electronic files are logged in, checked to see that the files received match the transmittal paperwork, copied, and archived in the project files.

The electronic data files are downloaded into the LEA database; this downloading process is typically being conducted by the database manager. The data from the download is printed for review during the data verification process. In addition, standard queries are being generated automatically to allow the investigator: (1) to assess that the detection limits have been adequate to allow comparisons to regulatory criteria; (2) to confirm that the holding times have not been exceeded; and (3) to confirm that the Connecticut notification requirements[1] have not been triggered.

During data verification, printouts of the data received in electronic format are compared with paper copies of the original laboratory reports. In addition, the sample identification number, location, constituent, and qualifier codes are verified.

[1] Reporting of certain Environmental Hazards (Public Act 98-134)

Manual Data Entry

Manual data entry will be performed for any analytical data and physical data that is not received in electronic format. The unverified data is manually entered into the analytical database with results marked as "not verified". Following data verification, the electronic data will be flagged as "verified."

Verification of manually entered data will be performed using the following procedures:

- A listing will be produced of data entered to serve as a checkprint.
- Each record entered into the database will be compared to original coded sheets; correct values will be highlighted, and incorrect values will be marked with revisions in red. The first page of each data listing will be signed and dated by the person completing the comparison.
- Corrections will be made to the database.
- Listings will be produced of data corrected, and the comparison will be repeated (only to corrected values). This procedure will be repeated until corrections are completed.

Archiving of Data

Back up of the electronic database files is being routinely accomplished. Data is backed up on a weekly basis. Data is archived at the conclusion of the project, and the files are maintained in designated locations.

1.3.2.4 Data Presentation

The objective of data presentation is to illustrate the analytical and geologic/hydrogeologic data for each site in formats that facilitate data interpretation. These formats may include tables, figures and drawings, as appropriate.

Analytical Data Presentation

Two types of analytical data presentation are provided: final tables that are generated in a format designed for inclusion in a report, and working tables that are generated for specific uses by the various project personnel. Most queries are being performed by the individual investigators. However, more complex queries can be submitted to the data manager in a written format, with clear instructions as to the type of output requested.

Examples of tables to be created include:

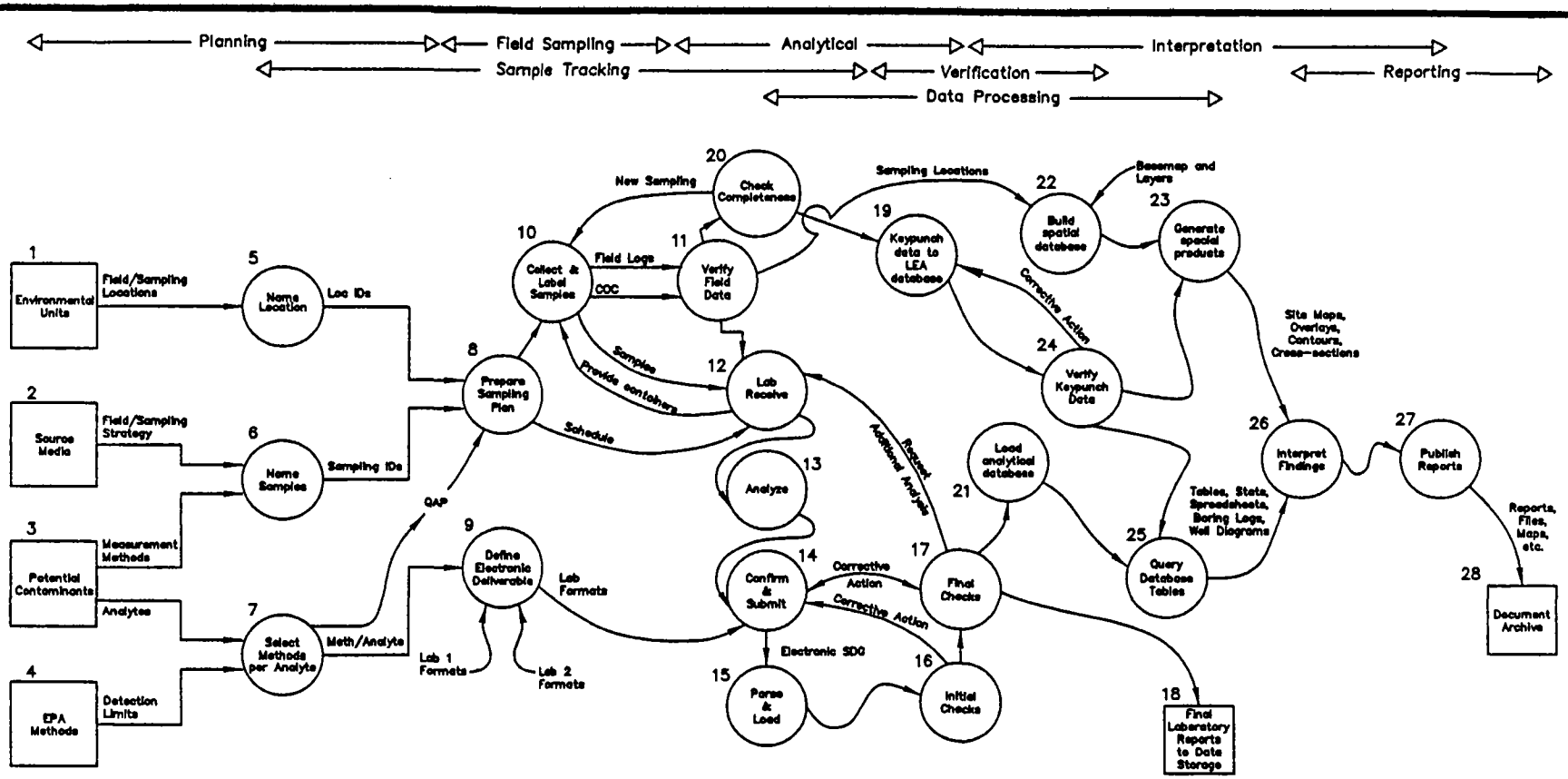
- Appendix-style (tabular listings sorted by location and sample ID).
- Summary of detected values to be included in the final characterization report.
- Site information including measurements of water-table elevation and sample/station location coordinates.
- Analytical data including constituents of concern, analyte concentrations, and qualifiers.
- Exceedances of state and/or federal regulatory criteria.
- Statistical analysis of results.

Graphical Data Presentation

Facility base maps can be created using information stored in AutoCAD®. That base map, which is generated from information derived from a variety of sources, is used as the base for all computer-generated drawings of the facilities. Types of maps and drawings that are used to present data or facility information include:

- Soil and groundwater sampling locations. The analytical data can be entered into the drawings as data blocks which can also point out the exceedances over applicable regulatory criteria. The transfer of the data block information from the LEA database to the AutoCAD® system is being done electronically and is independently verified.
- Locations of pertinent environmental units and facility features.
- Water-table and piezometric surface contour maps.
- Maps showing the distribution of contaminant concentrations.

Information from the AutoCAD® database, including surveyed elevation data, coupled with information from the geologic boring logs and well completion information, will be used to generate geologic cross-sections for each of the sites.



ELEMENTS:

1. Site characteristics defining project purpose
2. Various media to be sampled
3. Array of potential contaminants to be investigated
4. EPA-defined methods and procedures
5. Convention for naming site locations
6. Convention for uniquely referencing each sample
7. Protocols to generate results for target analytes
8. Specification of samples to be collected
9. Specification of chemical results for electronic formats
10. Collection of samples or measurements in the field
11. Verification of field measurements
12. Receipt of samples at chemistry labs
13. Chemical analyses underway with data entering Laboratory Information Management System (LIMS)
14. Laboratory preparations of Sample Delivery Groups (SDG)
15. Database group loads electronic SDG into electronic analytical database
16. Database used to check SDG completeness, dates, etc.
17. Verification of chemical results
18. Store laboratory reports in LEA archive
19. Enter field logs into geotechnical software
20. Check of field information for completeness of sampling
21. Match lab results with verification flags in final analytical database
22. Link base map elements with database location IDs
23. Use AutoCAD to portray site conditions
24. Verify keypunch data
25. Query the database for tabular listings
26. Synthesize various results
27. Merge data products with text into final reports
28. Store all products in LEA archive

LEGEND:

INPUT/OUTPUT

FLOW ELEMENT

COC – Constituent Of Concern
LIMS –Laboratory Information Management System
QAP – Quality Assurance Plan
SDG – Sample Delivery Groups

LOUREIRO ENGINEERING ASSOCIATES, INC.
100 NORTHWEST DRIVE, PLAINVILLE, CONN.

DATA FLOW DIAGRAM OF DATA MANAGEMENT PROCESSES

Comm.No. 0000500

FIGURE 1

LEA

Data Flow Mgmt-2003.dwg

G:\Autocad\PROJECTS\0000600\500CBIA\Data Flow Mgmt-2003.dwg, 02/05/2003 04:35:41 PM

APPENDIX C

FIELD FORMS

DAILY FIELD REPORT

Loureiro Engineering Associates, Inc.

Project 0000100.001
Location Farrel Ansonia
Client LEA, Plainville, CT
William Jayson

Page ____ of ____
Date ___/___/____

Arrived at Site _____ Departed from Site _____ Vehicle _____
Odometer (Start) _____ Return _____

Site Activities

- ☐ Soil Sampling
- ☐ Groundwater Sampling
- ☐ Surface Water Sampling
- ☐ Surface Water Sampling
- ☐ Vapor/Air Sampling
- ☐ Concrete Sampling
- ☐ Other Sampling
- ☐ Well Installation
- ☐ Well Development
- ☐ Geoprobe Work
- ☐ Concrete Coring
- ☐ Construction
- ☐ Inspection
- ☐ Waste Management
- ☐ Waste Management
- ☐ Site Walk Over
- ☐ Surveying
- ☐ Other (Describe)

Non-productive Time

- ☐ None
- ☐ Equipment Breakdown
- ☐ Late
- ☐ Weather
- ☐ Missing Equipment
- ☐ Other (Describe)

Current Project Information

Last Sample Number Used _____
Last Location ID Used _____
Current Location (if not complete) _____
Sampling for _____
Laboratories used _____
Paperwork & Equipment left at/in _____
Site Contact _____
Contractors on Site _____
Time and place to meet contractors _____

Quality Assurance Checks

	Yes	N/A	No
Sample labels complete			
Sample/cooler seals OK			
All samples obtained			
Chains of custody			
All forms/logs complete			
Site walkover			
Site H&S Plan on site			
Instruments calibrated			

Residuals Disposition

Item	Approx. Amount	Container ID
Soil/Solid		
Groundwater		
Decon Fluid		
PPE		
Other		

Instrument Calibrations

pH/Conductivity

Std.	Standard	Meter
☐	pH 4	
☐	pH 7	
☐	pH 10	
___	Cond.	

PID/FID Meter

Std.	Standard	Meter
___		

- ☐ Zero w/Background
- ☐ Zero w/Clean Air

Balance

Std.	Standard	Reading
___	Std. Mass	

Expendable Items Used

Qty	Item	LEA Number
	Bailer, Disposable (spec. size)	090
	Cap, PVC, 1", (Threaded or FJT)	147
	Cap, PVC,1', Slip (S447010)	146
	Coliwasa Disposable Sample Tubes	204
	Concrete, 60 lb. Bag	085
	Decontamination Supplies	081
	Drum, Closed Top 55 gallon	086
	Drum, Open Top 55 Gallon	086
	Filter, In Line	024
	Filter, Zap Cap	024
	Grout mix, bag	237
	Hub, 1' Wood	999
	Locks, Monitoring Well	155
	Marker Paint	999
	Miscellaneous Health & Safety Items	060
	Plug, Locking, 2"	233

Equipment Used

Qty	Item	LEA Number
	Automatic Level, Sokkisha	999
	Balance, Ohaus	031
	Balance, Pocket Pro	061
	Bucket w/ Lid, 5 gallon	999
	Digital Camera	999
	Drill, Core Saw, w/ Attachment	009
	Drill, Hilti, incl. Concrete Anchors	010
	Dump Hopper	193
	Generator 3500 Watt	153
	Hand Auger, w/ attachments	013
	Locator, Metrotech Pipe	053
	Locator, Schonstedt Magnetic	999
	Meter, Conductivity	022
	Meter, pH/Temp	021
	Miscellaneous Small Tools & Equipment	152
	Pallet, Spill	161

Field Personnel _____ _____ ***Signature***
_____ _____ _____

Loureiro Engineering Associates, Inc.

DAILY FIELD REPORT

Supplemental Sheet

	0000100.001	Page _____ of _____
Project	Farrel Ansonia	Date ___/___/____
Location	LEA, Plainville, CT	
Client	William Jayson	

Description of Site Activities

Field Personnel _____ _____ *Signature*

_____ _____ _____

Loureiro Engineering Associates, Inc.

FIELD WORK ASSESSMENT
PROJECT MANAGER'S REPORT

LEA Comm. No.	**0000100.001**		Date ___/___/____
Project	Farrel Ansonia	Field Personnel	
Location	LEA, Plainville, CT		
Client	William Jayson		
Project Manager	Jeffrey Loureiro		

Activites Performed	% Complete	Difficulties

Evaluate Performance

Paperwork Complete and Accurate	Yes / No	If "No", Describe:
IDW Properly Managed	Yes / No / NA	If "No", Describe:
Client/Site Contact Satisfied	Yes / No	If "No", Describe:

SOP's used:

Field Audit Performed	Yes / No	
Auditor	***Signature***	

DAILY GEOPROBE REPORT

Loureiro Engineering Associates, Inc.

	0000100.001	Page ____ of ____
Project	Farrel Ansonia	Date __/__/____
Location	LEA, Plainville, CT	
Client	William Jayson	

Arrived at Site _____ Departed from Site _____ Geoprobe _____

Vehicle Checklist/Condition

Odometer (Start) _____ Return _____

Probe Hours (Start) _____ Finish _____

OK	Geoprobe	OK	Trailer (if used)
	Engine Fluids		Brakes (Incl. battery)
	Transmission		Hitch
	Brakes (Incl. parking)		Safety Chains
	Lights		Lights
	Signals		Signals
	Tires		Tires
	General		General
	Other (describe)		Other (Describe)

Equipment Broken/Needing Repair

All checks above must be OK and signed off before leaving in the morning

Signature _____

Expendable Items Used

Qty	Item	LEA Number
	Bentonite Chips, Bag	089
	Bentonite Pellets, Buckets	
	Cap, End, Vinyl (AT-641K or AT-726K)	150
	Cap, Slip, 0.5" Vinyl (AT-441)	044
	Cap, Slip, 1" PVC (S447010)	146
	Cap, Threaded, 1" PVC	147
	Concrete, 60 lb. Bag	085
	Connectors, Snap Lock (GW-2030)	210
	Core Catchers, MC (AT-8531K)	999
	Decontamination Supplies	081
	Ear Plugs	
	Filter, In Line	024
	Liners, LB PETG (AT-825k)	128
	Liners, MC Acetate	173
	Liners, MC PETG	173
	Locks, Monitoring Well	155
	Miscellaneous Health & Safety Items	060
	Point, Drive, Exp., SP15 (GW-15)	003
	Point, Exp. (spec. GW-2040 or GW-445)	002
	Sand, Filter Pack, Bags	220
	Tubing, 1/2", NOS	007
	Water, Distilled	025
	Well Point, 1" Sch.80 PVC	216
	Well Protector, Road Box (10581)	014
	Well Protector, Roadbox, 7"	014
	Well Protector, Stickup, 4" (10127)	014
	Well Riser, 0.5" PVC, 5' (GW2050)	228
	Well Riser, 1" Sch. 80 PVC, 5' (1058CATB	131
	Well Screen, 1" Sch. 80 PVC, 5' (105810	130
	Well Screen, Pre-Packed, 3' (GW-2010)	224

Equipment Used

Qty	Item	LEA Number
	Exhaust Hose	033
	Miscellaneous Small Tools & Equipment	152
	Probe Rod Jack	119
	Pump, Grout	200
	Thermo-Anemometer	248

Field Personnel _____ _____ ***Signature***

_____ _____ _____

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
MISCELLANEOUS SAMPLES

	0000100.001	Page _____ of _____
Project	Farrel Ansonia	Date ___/___/_____
Location	LEA, Plainville, CT	
Client	William Jayson	

Sample ID	Location ID	Time	Sample Type	Depth (ft)	PID/FID Reading	Comments	Waste Container ID

Field Personnel ____________________ ____________________ ***Signature***

____________________ ____________________ ____________________

Loureiro Engineering Associates, Inc.

FIELD DATA RECORD
MONITORING WELL SAMPLE

	0000100.001	Page ____ of ____
Project	Farrel Ansonia	Date ___/___/____
Location	LEA, Plainville, CT	Time ___:___
Client	William Jayson	

Monitoring Well Number _____ Sample Number(s) _____ _____

Field Data and Measurements

Depth of Well _____ Reference Used _____ Longitude

Depth to Water _____ PID/FID Reading _____ Latitude

Height of Column _____ Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter _____ Material _____

Protector Road Box / Stickup

Ground to Reference _____

Comments _____

General Condition	OK	Bad
Casing Secure		
Collar Intact		
Cover Locked		
Other (describe)		

Purging Information

Purge Volume Factors
0.5" - 0.01
1" - 0.041
1.5" - 0.091
2" - 0.16
4" - 0.65
6" - 1.5

Parameter \ Volumes	Initial					Sample
Gallons						
Temp (C)						
pH (SU)						
Spec. Cond. (umhos)						
Turbidity (NTU)						
Other _____						

Purge Method Peristaltic Pump / Bailer / Inertial Pump / Other (Describe) _____

Waste Container ID _____

Sampling Information

Sampling Method Peristaltic Pump / Bailer / Inertial Pump / Other (Describe) _____

Sample Quality ☐ Clear ☐ Turbid
☐ Colored _____ ☐ Odor _____
☐ Cloudy ☐ Sheen _____

Sample Filtered Yes / No If Yes, with what filter? _____

If No, be sure to use the sample labels with a 'uf' suffix, or add the suffix to the sample number, and record the complete number on the Chain of Custody

Field Decontamination? Yes / No If Yes, with what? _____

Cooler ID(s) _____

Additional Comments

Field Personnel _____ _____ ***Signature***

_____ _____ _____

Loureiro Engineering Associates, Inc.

FIELD DATA RECORD

MONITORING WELL SAMPLE

	0000100.001	Page _____ of _____
Project	Farrel Ansonia	Date ___/___/____
Location	LEA, Plainville, CT	Time ___:___
Client	William Jayson	

Field Personnel _____ _____ ***Signature***

_____ _____

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	**0000100.001**	Page ____ of ____
Project	Farrel Ansonia	Date ___/___/____
Location	LEA, Plainville, CT	Time ___:___
Client	William Jayson	

Monitoring Well Number _____ Sample Number(s) _____ _____

Initial Field Data and Measurements

Depth of Well _____ Reference Used _____

Depth to Water _____ PID/FID Reading _____

Height of Column _____ Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter _____ Material _____

Protector Road Box / Stickup

Ground to Reference _____

Comments _____

_____

General Condition	OK	Bad
Casing Secure		
Collar Intact		
Cover Locked		
Other (describe)		

Development Information

Parameter / Time	Depth to Water	Pump Setting	Purge Rate	Cum. Liters Purged	Temp (C)	Spec. Cond.	pH	ORP (Eh)	DO	Turbidity	Comment

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other _____

Field Decontamination? Yes / No If Yes, with what? _____

Waste Container ID _____

Additional Comments

Field Personnel _____ _____ ***Signature***

_____ _____ _____

WELL COMPLETION REPORT

Project: Farrel Ansonia
0000100.001
Client William Jayson
Location LEA

Start Date | | **Well ID**
End Date | |

Drilling Contractor _____
Drilling Method _____
Sampling Method _____
Groundwater Observation
Depth _____ **at** _____ **Hours**

Logged by
Drilling Foreman _____
Drill Rig _____
GPS Latitude _____
GPS Longitude _____

Protector
- Material _____
- Diameter _____
- Length _____ Ground
- Stickup _____
- Key # _____
- Cover Type _____

Top Seal
- Top _____
- Bottom _____
- Material _____

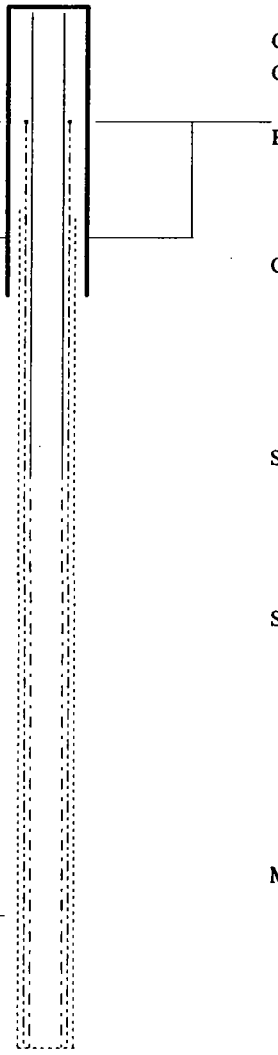
Backfill
- Top _____
- Bottom _____
- Material _____

Secondary Sand
- Top _____
- Bottom _____
- Size _____

Filter Pack
- Top _____
- Bottom _____
- Material _____

Reported depth to bottom of boring _____

Comments



Concrete Diameter _____
Concrete Thickness _____

Reference
- Stickup _____
- Description _____

Casing
- Diameter _____
- Material _____
- Length _____
- Stickup _____

Seal
- Top _____
- Bottom _____
- Material _____

Screen
- Top _____
- Bottom _____
- Material _____
- Diameter _____
- Length _____
- Slot Size _____

Miscellaneous Materials (Quantity Used/Item)
- Cement _____
- Bentonite Chips _____
- Bentonite Pellets _____
- Bentonite Powder _____
- Grout Weight _____
- Filter Pack Sand _____
- Capping Sand _____
- Well Point _____
- Well Plug _____

Signature _____

LEA

Loureiro Engineering Associates, Inc.

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
WELL DEVELOPMENT

	0000100.001	Page ____ of ____
Project	Farrel Ansonia	Date __/__/____
Location	LEA, Plainville, CT	Time __:__
Client	William Jayson	

Monitoring Well Number _____ Sample Number(s) _____ _____

Initial Field Data and Measurements

Depth of Well _____ Reference Used _____

Depth to Water _____ PID/FID Reading _____

Height of Column _____ Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter _____ Material _____

Protector Road Box / Stickup

Ground to Reference _____

Comments _____

General Condition	OK	Bad
Casing Secure		
Collar Intact		
Cover Locked		
Other (describe)		

Development Information

Purge Volume Factors

0.5" - 0.01
1" - 0.041
1.5" - 0.091
2" - 0.16
4" - 0.65
6" - 1.5

Initial Sample Observations

Clear ☐
Colored ☐
Cloudy ☐
Turbid ☐
Odor ☐
Sheen ☐

Volumes \ Parameter	Gallons	Temp (C)	pH (SU)	Spec.Con.	Turbidity	Other
Initial						

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other _____

Field Decontamination? Yes / No If Yes, with what? _____

Waste Container ID _____

Additional Comments

Field Personnel _____ _____ *Signature*

_____ _____ _____

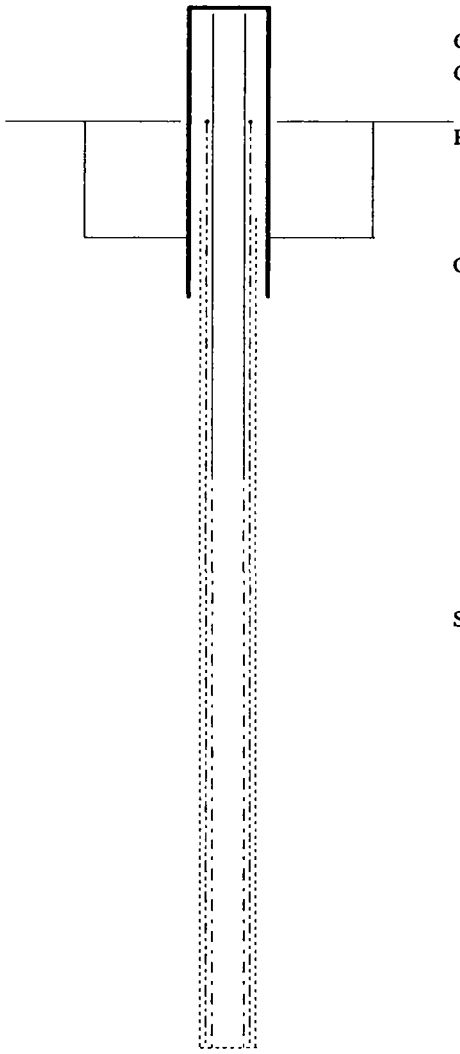
WELL INSPECTION REPORT

Project: Farrel Ansonia 0000100.001 **Client** William Jayson **Location** LEA	**Start Date** **End Date**	**Well ID**

LEA Sample Identification _____
Measured depth to bottom of _____
Measured depth to water/liquid _____
Measured depth to Interface _____
Interface checked by bailer? Yes / No
Separate Phase Lighter / Heavier

Logged by _____
Date ___/___/_____
Time ___:___

Protector
- Material _____
- Diameter _____
- Length _____ Ground
- Stickup _____
- Key # _____
- Cover Type _____
- Condition _____
- Capped? _____
- Locked? _____



Concrete Diameter _____
Concrete Condition _____

Reference
- Stickup _____
- Description _____

Casing
- Diameter _____
- Material _____
- Condition _____
- Stickup _____
- Capped? _____
- Locked? _____

Screen
- Top _____
- Bottom _____
- Material _____
- Diameter _____
- Length _____
- Slot Size _____

Comments

Signature _____

Loureiro Engineering Associates, Inc.

Loureiro Engineering Associates, Inc.

FIELD BORING LOG

BORING ID: _____

	0000100.001		Page ____ of ____
Project	Farrel Ansonia		Date __/__/____
Location	LEA	GPS Latitude	_____
Client	William Jayson	GPS Longitude	_____
Drilling Method	_____	Drilling Contractor	_____
Sampling Method	_____	Drill Foreman	_____
Groundwater Depth	_____ at _____	Drill Rig	_____

Elevation/ Depth	Sample Information						Description of Recovered Material
	Sample Number(s)	Recovery (% or n/n)	Blows/6" / Downforce	Time	PID/FID (ppm)	Mass	(Color, primary grain size and amount, other grain size(s) and amounts, density, moisture, coherence, structure, sorting, other characteristics)

Comments

Waste Container Trip Blank ID(s)

Field Personnel _____ _____ ***Signature***

_____ _____ _____

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
WASTE CONTAINER INSPECTION

	0000100.001	Page _____ of _____
Project	Farrel Ansonia	Date ___/___/____
Location	LEA	
Client	William Jayson	

Waste Container Number _____ Container Size _____
Client's Number _____ Container Opening _____
Container Label _____ Container Material _____
_____
_____

	Container		Contents	
	Primary	Secondary	Primary	Secondary
Cream				
Clear				
Black				
White				
Red				
Green				
Blue				
Brown				
Pink				
Orange				
Yellow				
Grey				
Purple				
Amber				
Green-Blue				

Container Condition	
Good	
Fair	
Poor	

Contents State	
Solid	
Liquid	
Sludge	
Gas	
Trash	
Dirt	
Gel	
Other	

Full	Partial	Empty

Empty Weight _____ Started Filling on _____
Full Weight _____ Filled on _____

Screening Information

Radioactive	☐	Water Reactive	☐	Halide	☐	Cyanide	☐
Acidic	☐	Water Soluble	☐	Inorganic	☐	Flammable	☐
Caustic	☐	PID/FID Reading	☐	Organic	☐	Oxidizer	☐
Air Reactive	☐	Combustible	☐	Alcohol/Aldehyd	☐	Inert/Other	☐

Where is/was this container stored? _____
Shipped to _____ on _____
Shipped by _____
Manifest _____

Comments

Field Personnel _____ _____ ***Signature***
_____ _____ _____

Loureiro Engineering Associates, Inc.

CHAIN OF CUSTODY

001

Case Number

LEA Comm. No.	**0000100.001**
Project	Farrel Ansonia
Location	LEA
Project Manager	Jeffrey Loureiro

Page _____ of _____
Date ___/___/____

Sampling Method _____
Matrix Soil Vapor Water Other _____
Container Type _____

	No. of Cont.		Time	Mass (gm)	PID/FID Reading	Sample Matrix	Analysis(es) Requested
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Comments

Cooler ID(s)

Transfer Number	Item No.	Transfer: Relinquished By	Transfer: Accepted By	Date	Time
1					
2					
3					
4					

Field Personnel _____ _____ ***Signature***
_____ _____ _____

100 Northwest Drive, Plainville, CT 06062 Tel: 860.747.6181 Fax: 860.747.8822 e-mail: tmclemmey@loureiro.com

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
PERFORMANCE SAMPLE

LEA Comm. No.	**0000100.001**	Page _____ of _____
Project	Farrel Ansonia	Date ___/___/____
Location	LEA, Plainville, CT	
Client	William Jayson	

LEA Sample ID _____

LEA Sample ID _____

LEA Sample ID _____

LEA Sample ID _____

LEA Sample ID _____

LEA Sample ID _____

Field Personnel	_____	_____	***Signature***
	_____	_____	_____

EXHIBIT B

Drawings

US EPA New England
RCRA Document Management System
Image Target Sheet

RDMS Document ID # 102733

Facility Name: MacDermid Inc

Facility ID#: CTD001164599

Phase Classification: R-13

Purpose of Target Sheet:

[X] Oversized (in Site File) [ ] Oversized (in Map Drawer)

[ ] Page(s) Missing (Please Specify Below)

[ ] Potential FOIA Exempt [ ] Other (Please Provide Purpose Below)

Description of Oversized Material, if applicable:

Drawing 1: Site Plan 8/25/2004

[X] Map [ ] Photograph [ ] Other (Please Specify Below)

* Please Contact the EPA New England RCRA Records Center to View This Document *

US EPA New England
RCRA Document Management System
Image Target Sheet

RDMS Document ID # 102733

Facility Name: MacDermid Inc

Facility ID#: CTD001164599

Phase Classification: R-13

Purpose of Target Sheet:

[X] Oversized (in Site File) [ ] Oversized (in Map Drawer)

[ ] Page(s) Missing (Please Specify Below)

[ ] Potential FOIA Exempt [ ] Other (Please Provide Purpose Below)

Description of Oversized Material, if applicable:

Drawing 2: Site Detail North Parcel 8/25/2004

[X] Map [ ] Photograph [ ] Other (Please Specify Below)

* Please Contact the EPA New England RCRA Records Center to View This Document *

Attachment 6

Tables

Table 1
SUMMARY OF SAMPLING AND ANALYTICAL INFORMATION
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

Sample Information					Analysis Information							
Location ID	Sample ID	Sample Date	Sampled Interval (ft)	Sample Class		Volatile Organics	Semivolatile Organics	Herbicides	Pesticides/ PCBs	Fuels/Oils	Metals	Miscellaneous Analyses
EQUIPMENT	2108848	07/29/2002		BKE		x				x	x	x
EQUIPMENT	2108838	07/30/2002		BKE		x				x	x	x
EQUIPMENT	1035197	09/22/2003		BKE		x				X	X	
EQUIPMENT	1051348	08/12/2004		BKE		x					x	x
EQUIPMENT	1051354	08/13/2004		BKE		X					x	x
EQUIPMENT	1051339	08/16/2004		BKE		X					x	x
GZ-8A	2102724	02/12/2001	0.00	GW		X	X		x		X	X
MAC-1A	2102726	02/12/2001	0.00	GW		X	x		x		X	X
MW-101	2102442	03/01/1995	26.0 - 36.0	GW		x					X	X
MW-101	2102718	02/12/2001	26.0 - 36.0	GW		X	x		x		X	x
MW-101	2108842	07/30/2002	26.00 - 36.00	GW		x				x	X	x
MW-101	2108843	07/30/2002	26.00 - 36.00	GW		X				x	X	x
MW-101	1035189	09/23/2003	26.00 - 36.00	GW		x				X	X	
MW-101	1051345	08/13/2004	26.00 - 36.00	GWS		x					X	x
MW-102	2102441	03/01/1995	21.7 - 31.7	GW		x					X	X
MW-102	2102719	02/12/2001	21.7 - 31.7	GW		X	x		x		X	x
MW-102	2108841	07/30/2002	21.7 - 31.7	GW		X				X	X	x
MW-102	1035190	09/23/2003	21.70 - 31.70	GW		X				X	X	
MW-102	1051344	08/13/2004	21.70 - 31.70	GWS		x					X	x
MW-103	2102431	03/01/1995	25.0 - 35.0	GW		x					X	x
MW-103	2102720	02/12/2001	25.0 - 35.0	GW		X	x		x		X	x
MW-103	2108840	07/30/2002	25.00 - 35.00	GW		x				X	X	x
MW-103	1051351	08/16/2004		GWS		X					X	x
MW-104	2102443	03/01/1995	0.00	GW		X					X	x
MW-105	2102435	03/01/1995	27.0 - 37.0	GW		X					X	X
MW-105	2102721	02/12/2001	27.0 - 37.0	GW		X	x		x		X	x
MW-105	2108830	07/29/2002	37.00	GW		X				X	X	x
MW-105	1035177	09/22/2003	37.00	GW		X				X	X	
MW-105	1051342	08/12/2004	27.00 - 37.00	GWS		X					X	x
MW-106	2102440	03/01/1995	0.00	GW		X					X	X
MW-107	2102439	03/01/1995	0.00	GW		X					X	X
MW-108	2102437	03/01/1995	25.0 - 35.0	GW		X					X	X

Legend: x - mass, t - TCLP, s - SPLP, e - EPTOX, z - ZHE, d - Thermal Desorption, r - Charcoal Tube, a - SEM/AVS, m - Methanol, nr - not received; Capitalized - at least one analyte in class detected

Printed on 08/26/2004

Table 1
SUMMARY OF SAMPLING AND ANALYTICAL INFORMATION
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

Sample Information					Analysis Information							
Location ID	Sample ID	Sample Date	Sampled Interval (ft)	Sample Class		Volatile Organics	Semivolatile Organics	Herbicides	Pesticides/ PCBs	Fuels/Oils	Metals	Miscellaneous Analyses
MW-108	2102735	02/12/2001	25.0 - 35.0	GW					x			
MW-108	2102722	02/12/2001	35.00 - 35.0	GW		X	X		x		X	X
MW-108	2102731	02/12/2001	35.00 - 35.0	GW						X		
MW-109	2102723	02/12/2001	25.0 - 35.0	GW		X	X		x		X	X
MW-109	2108835	07/29/2002	25.00 - 35.00	GW		X				X	X	x
MW-109	1035188	09/22/2003	35.00	GW		X				X	X	
MW-109	1051334	08/13/2004		GWS		X					X	x
MW-110	2102438	03/01/1995	0.00	GW		X					X	X
MW-110	2102725	02/12/2001	0.00	GW		X	x		x		X	X
MW-110	2102730	02/12/2001	0.00	GW							X	
MW-110	2108839	07/29/2002	0.00	GW		X				X	X	x
MW-110	1035187	09/22/2003	0.00	GW		X				X	X	
MW-110	1051343	08/12/2004		GWS		X					X	x
MW-111	2102434	03/01/1995	25.0 - 35.0	GW		X					X	X
MW-111	2102727	02/12/2001	25.0 - 35.0	GW		X	x		x		X	x
MW-111	2108832	07/29/2002	25.0 - 35.0	GW		X				X	X	x
MW-111	1035180	09/22/2003	35.00	GW		X				X	X	
MW-111	1051336	08/12/2004		GWS		X					X	x
MW-112	2102432	03/01/1995	25.0 - 35.0	GW		X					X	x
MW-112	2102728	02/12/2001	25.0 - 35.0	GW		X	x		x		X	x
MW-112	2108834	07/29/2002	25.0 - 35.0	GW		X				X	X	x
MW-112	1035184	09/22/2003	35.00	GW		X				X	X	
MW-112	1051333	08/13/2004	25.00 - 35.00	GWS		X					X	x
MW-113	2102433	03/01/1995	30.00 - 40.00	GW		x					X	x
MW-113	2110584	03/01/1995	30.00 - 40.00	GW		x					X	x
MW-113	2102729	02/12/2001	30.00 - 40.00	GW		X	X		x		X	x
MW-113	2108833	07/29/2002	30.0 - 40.0	GW		x				X	X	x
MW-113	1035181	09/22/2003	40.00	GW		X				X	X	
MW-113	1051331	08/12/2004		GWS		x					X	x
MW-114	2110555	09/05/2002	28.00 - 38.00	GW		X				X	X	x
MW-114	2110556	09/05/2002	28.00 - 38.00	GW		X				X	X	x
MW-114	1035178	09/22/2003	28.00 - 38.00	GW		X				X	X	

Legend: x - mass, t - TCLP, s - SPLP, e - EPTOX, z - ZHE, d - Thermal Desorption, r - Charcoal Tube, a - SEM/AVS, m - Methanol, nr - not received; Capitalized - at least one analyte in class detected

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Table 1
SUMMARY OF SAMPLING AND ANALYTICAL INFORMATION
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

Sample Information					Analysis Information						
Location ID	Sample ID	Sample Date	Sampled Interval (ft)	Sample Class	Volatile Organics	Semivolatile Organics	Herbicides	Pesticides/ PCBs	Fuels/Oils	Metals	Miscellaneous Analyses
MW-114	1035196	09/22/2003	28.00 - 38.00	GW	X				X	X	
MW-114	1051337	08/12/2004	28.00 - 38.00	GWS	X					X	x
MW-115	2110554	09/05/2002	28.00 - 38.00	GW	X				X	X	X
MW-115	1035179	09/22/2003	28.00 - 38.00	GW	X				X	X	
MW-115	1051338	08/12/2004	28.00 - 38.00	GWS	X					X	x
MW-116D	1035185	09/22/2003	60.00	GW	X				X	X	
MW-116D	1051332	08/12/2004	50.00 - 60.00	GWS	x					X	x
MW-116S	1035186	09/22/2003	38.00	GW	X				X	X	
MW-116S	1051352	08/13/2004	28.00 - 38.00	GWS	X					X	x
MW-117D	1051335	08/16/2004	45.00 - 55.00	GWS	X					X	x
MW-117S	1051341	08/16/2004	28.00 - 38.00	GWS	X					X	x
MW-118D	1051340	08/13/2004	50.00 - 60.00	GWS	X					X	x
MW-118D	1051353	08/13/2004	50.00 - 60.00	GWS	X					X	x
MW-118S	1051349	08/16/2004	28.00 - 38.00	GWS	X					X	x
MW-118S	1051350	08/16/2004	28.00 - 38.00	GWS	X					X	x
TRIP BLANK	2108847	07/29/2002		BKT	x						
TRIP BLANK	2108846	07/30/2002		BKT	X						
TRIP BLANK	2110557	09/05/2002		BKT	x						
TRIP BLANK	1035198	09/22/2003		BKT	X						
TRIP BLANK	1051347	08/12/2004		BKT	x						
TRIP BLANK	1051355	08/13/2004		BKT	X						
TRIP BLANK	1051346	08/16/2004		BKT	X						

Legend: x - mass, t - TCLP, s - SPLP, e - EPTOX, z - ZHE, d - Thermal Desorption, r - Charcoal Tube, a - SEM/AVS, m - Methanol, nr - not received; Capitalized - at least one analyte in class detected

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Table 2a
EXCEEDANCES OF US FEDERAL (EPA) MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	GZ-8A	MAC-1A	MW-105	MW-105	MW-105	MW-105	MW-105
	Sample ID	2102724	2102726	2102435	2102721	2108830	1035177	1051342
	Sample Date	02/12/2001	02/12/2001	03/01/1995	02/12/2001	07/29/2002	09/22/2003	08/12/2004
	Sample Time					09:20	10:15	11:00
	Sample Depth	0.00'	0.00'	27.0' - 37.0'	27.0' - 37.0'	37.00'	37.00'	27.00' - 37.0
	Laboratory	EAS	EAS	GZA	EAS	AEL	EAS	AEL
	Lab. Number	01020133-07	01020133-10	41462-16	01020133-05	AEL02006468	AE10908	AEL04007411
Constituent	Criterion							
Depth of Well	Ft					36.70	38.10	38.10
Depth To Water	Ft					32.39	32.15	32.60
Date Metals Analyzed	-						09/25/2003	
Date Organics Analyzed	-					08/05/2002	09/24/2003	08/16/2004
Arsenic	0.05 mg/L							
Cadmium	0.005 mg/L		0.089 mg/L				0.0098 mg/L	
Chromium, Total	0.1 mg/L							
Chromium, Total (unfiltered)	0.1 mg/L							
Mercury	0.002 mg/L	0.0081 mg/L						
Nickel	0.1 mg/L	0.74 mg/L	1.6 mg/L					
Nickel (unfiltered)	0.1 mg/L							
Selenium	0.05 mg/L							
Cyanide	.2 mg/L							
Fluoride - Total	4 mg/L							
Chloroform	80 ug/l							
1,1,2-Trichloroethane	5 ug/l							
1,2-Dichloroethane	5 ug/l	6.5 ug/L						
1,1-Dichloroethylene	7 ug/l							
Vinyl Chloride	2. ug/l							
Tetrachloroethylene (PCE)	5 ug/l		94 ug/L	17 ug/L	8.2 ug/L	8.4 ug/l	6.9 ug/l	6.1 ug/l
Trichloroethylene (TCE)	5 ug/l							
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Criterion values from US Federal (EPA) Maximum Contaminant Levels for Drinking Water

Printed on 08/26/2004

Table 2a
EXCEEDANCES OF US FEDERAL (EPA) MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	MW-106	MW-106	MW-106	MW-107	MW-107	MW-108	MW-108
	Sample ID	2102440	2102440	2102440	2102439	2102439	2102437	2102722
	Sample Date	03/01/1995	03/01/1995	03/01/1995	03/01/1995	03/01/1995	03/01/1995	02/12/2001
	Sample Time							
	Sample Depth	0.00'	0.00'	0.00'	0.00'	0.00'	25.0' - 35.0'	35.00' - 35.0
	Laboratory	GZA	MATR	MATR	GZA	MATR	GZA	EAS
	Lab. Number	41462-21	50620808-003	50620809-003	41462-20	50620808-002	41462-18	01020133-08
Constituent	Criterion							
Depth of Well	Ft							
Depth To Water	Ft							
Date Metals Analyzed	-							
Date Organics Analyzed	-							
Arsenic	0.05 mg/L				0.069 mg/L			
Cadmium	0.005 mg/L				0.014 mg/L			
Chromium, Total	0.1 mg/L				0.200 mg/L			
Chromium, Total (unfiltered)	0.1 mg/L							
Mercury	0.002 mg/L							
Nickel	0.1 mg/L	0.342 mg/L			0.412 mg/L		0.408 mg/L	0.24 mg/L
Nickel (unfiltered)	0.1 mg/L							
Selenium	0.05 mg/L	0.056 mg/L			0.094 mg/L			
Cyanide	.2 mg/L			0.35 mg/L				
Fluoride - Total	4 mg/L		4.1 mg/L			10.0 mg/L		
Chloroform	80 ug/l							
1,1,2-Trichloroethane	5 ug/l							
1,2-Dichloroethane	5 ug/l							
1,1-Dichloroethylene	7 ug/l							
Vinyl Chloride	2. ug/l							2.7 ug/L
Tetrachloroethylene (PCE)	5 ug/l						9.3 ug/L	16 ug/L
Trichloroethylene (TCE)	5 ug/l							
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Criterion values from US Federal (EPA) Maximum Contaminant Levels for Drinking Water

Printed on 08/26/2004

Table 2a
EXCEEDANCES OF US FEDERAL (EPA) MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	MW-109	MW-109	MW-109	MW-109	MW-110	MW-110	MW-110
	Sample ID	2102723	2108835	1035188	1051334	2102438	2102438	2102438
	Sample Date	02/12/2001	07/29/2002	09/22/2003	08/13/2004	03/01/1995	03/01/1995	03/01/1995
	Sample Time		14:03	02:00	11:37			
	Sample Depth	25.0' - 35.0'	25.00' - 35.0	35.00'		0.00'	0.00'	0.00'
	Laboratory	EAS	AEL	EAS	AEL	GZA	MATR	MATR
	Lab. Number	01020133-06	AEL02006472	AE10913	AEL04007429	41462-19	50620808-001	50620809-001
Constituent	Criterion							
Depth of Well	Ft		34.41	35.10	35.10			
Depth To Water	Ft		31.87	32.07	32.55			
Date Metals Analyzed	-		08/14/2002	09/25/2003				
Date Organics Analyzed	-			09/25/2003	08/16/2004			
Arsenic	0.05 mg/L					0.058 mg/L		
Cadmium	0.005 mg/L			0.0095 mg/L		0.037 mg/L		
Chromium, Total	0.1 mg/L		0.155 mg/L	1.4 mg/L		0.500 mg/L		
Chromium, Total (unfiltered)	0.1 mg/L							
Mercury	0.002 mg/L	0.008 mg/L		0.007 mg/L				
Nickel	0.1 mg/L	0.85 mg/L	1.25 mg/L	0.15 mg/L		0.846 mg/L		
Nickel (unfiltered)	0.1 mg/L							
Selenium	0.05 mg/L							
Cyanide	.2 mg/L							0.60 mg/L
Fluoride - Total	4 mg/L						8.4 mg/L	
Chloroform	80 ug/l							
1,1,2-Trichloroethane	5 ug/l							
1,2-Dichloroethane	5 ug/l	5.7 ug/L						
1,1-Dichloroethylene	7 ug/l							
Vinyl Chloride	2. ug/l							
Tetrachloroethylene (PCE)	5 ug/l			8.2 ug/l	5.1 ug/l	12 ug/L		
Trichloroethylene (TCE)	5 ug/l							
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Criterion values from US Federal (EPA) Maximum Contaminant Levels for Drinking Water

Printed on 08/26/2004

Table 2a
EXCEEDANCES OF US FEDERAL (EPA) MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	MW-110	MW-110	MW-110	MW-110	MW-110	MW-111	MW-111
	Sample ID	2102725	2102730	2108839	1035187	1051343	2102434	2102727
	Sample Date	02/12/2001	02/12/2001	07/29/2002	09/22/2003	08/12/2004	03/01/1995	02/12/2001
	Sample Time			11:50	02:00	14:05		
	Sample Depth	0.00'	0.00'	0.00'	0.00'		25.0' - 35.0'	25.0' - 35.0'
	Laboratory	EAS	EAS	AEL	EAS	AEL	GZA	EAS
	Lab. Number	01020133-09	01020133-16	AEL02006473	AE10912	AEL04007413	41462-15	01020133-04
Constituent	Criterion							
Depth of Well	Ft			39.41	40.09	40.09		
Depth To Water	Ft			32.63	32.82	33.28		
Date Metals Analyzed	-			08/14/2002	09/25/2003			
Date Organics Analyzed	-			08/06/2002	09/24/2003	08/16/2004		
Arsenic	0.05 mg/L							
Cadmium	0.005 mg/L	0.083 mg/L	0.11 mg/L	0.0499 mg/L				
Chromium, Total	0.1 mg/L		1.4 mg/L	0.117 mg/L				
Chromium, Total (unfiltered)	0.1 mg/L							
Mercury	0.002 mg/L		0.006 mg/L	0.0025 mg/L	0.0065 mg/L			
Nickel	0.1 mg/L	1.5 mg/L	1.6 mg/L	1.53 mg/L	0.22 mg/L			
Nickel (unfiltered)	0.1 mg/L							
Selenium	0.05 mg/L							
Cyanide	.2 mg/L							
Fluoride - Total	4 mg/L							
Chloroform	80 ug/l							
1,1,2-Trichloroethane	5 ug/l							
1,2-Dichloroethane	5 ug/l							17 ug/L
1,1-Dichloroethylene	7 ug/l							
Vinyl Chloride	2. ug/l							
Tetrachloroethylene (PCE)	5 ug/l			95 ug/l	48 ug/l	20 H ug/l	6.0 ug/L	9.4 ug/L
Trichloroethylene (TCE)	5 ug/l							
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Criterion values from US Federal (EPA) Maximum Contaminant Levels for Drinking Water

Printed on 08/26/2004

Table 2a
EXCEEDANCES OF US FEDERAL (EPA) MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	MW-111	MW-111	MW-112	MW-112	MW-112	MW-113	MW-114
	Sample ID	2108832	1035180	2102432	2108834	1035184	1035181	2110555
	Sample Date	07/29/2002	09/22/2003	03/01/1995	07/29/2002	09/22/2003	09/22/2003	09/05/2002
	Sample Time	10:20	03:20		13:25	11:27	04:30	12:05
	Sample Depth	25.0' - 35.0'	35.00'	25.0' - 35.0'	25.0' - 35.0'	35.00'	40.00'	28.00' - 38.0
	Laboratory	AEL	EAS	GZA	AEL	EAS	EAS	AEL
	Lab. Number	AEL02006469	AE10914	41462-13	AEL02006471	AE10909	AE10918	AEL02007618
Constituent	Criterion							
Depth of Well	Ft	34.72	35.51		34.75	35.20	40.50	37.63
Depth To Water	Ft	31.71	31.48		31.78	31.69	34.03	31.91
Date Metals Analyzed	-					09/25/2003	09/25/2003	
Date Organics Analyzed	-	08/06/2002	09/25/2003		08/07/2002	09/24/2003		09/06/2002
Arsenic	0.05 mg/L							
Cadmium	0.005 mg/L					0.008 mg/L	0.019 mg/L	
Chromium, Total	0.1 mg/L							
Chromium, Total (unfiltered)	0.1 mg/L							
Mercury	0.002 mg/L							
Nickel	0.1 mg/L							
Nickel (unfiltered)	0.1 mg/L							
Selenium	0.05 mg/L							
Cyanide	.2 mg/L							
Fluoride - Total	4 mg/L							
Chloroform	80 ug/l							
1,1,2-Trichloroethane	5 ug/l							
1,2-Dichloroethane	5 ug/l	84 ug/l	9.8 ug/l					
1,1-Dichloroethylene	7 ug/l							
Vinyl Chloride	2. ug/l							
Tetrachloroethylene (PCE)	5 ug/l	20 ug/l	6.2 ug/l	12 ug/L	6.2 ug/l	9.7 ug/l		9.5 ug/l
Trichloroethylene (TCE)	5 ug/l							
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Criterion values from US Federal (EPA) Maximum Contaminant Levels for Drinking Water

Printed on 08/26/2004

Table 2a
EXCEEDANCES OF US FEDERAL (EPA) MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	MW-114	MW-114	MW-114	MW-115	MW-115	MW-115	MW-115
	Sample ID	2110556	1035178	1035196	2110554	1035179	1051338	1051338
	Sample Date	09/05/2002	09/22/2003	09/22/2003	09/05/2002	09/22/2003	08/12/2004	08/12/2004
	Sample Time	12:05	02:55		11:40	16:03	16:25	16:25
	Sample Depth	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0
	Laboratory	AEL	EAS	EAS	AEL	EAS	AEL	AEL
	Lab. Number	AEL02007619	AE10915	AE10916	AEL02007617	AE10917	AEL04007409	AEL04007410
Constituent	Criterion							
Depth of Well	Ft	37.63	38.38		37.71	38.31	38.31	38.31
Depth To Water	Ft	31.91	31.55		32.25	31.94	33.76	33.76
Date Metals Analyzed	-				07/13/2002	09/25/2003		08/19/2004
Date Organics Analyzed	-	09/06/2002	09/25/2003	09/25/2003	09/06/2002	09/25/2003	08/16/2004	
Arsenic	0.05 mg/L							
Cadmium	0.005 mg/L							
Chromium, Total	0.1 mg/L				0.238 mg/L	0.40 mg/L		
Chromium, Total (unfiltered)	0.1 mg/L							0.526 mg/L
Mercury	0.002 mg/L							
Nickel	0.1 mg/L				0.480 mg/L	0.38 mg/L		
Nickel (unfiltered)	0.1 mg/L							0.382 mg/L
Selenium	0.05 mg/L							
Cyanide	.2 mg/L							
Fluoride - Total	4 mg/L							
Chloroform	80 ug/l				180 H ug/l			
1,1,2-Trichloroethane	5 ug/l				34 H ug/l			
1,2-Dichloroethane	5 ug/l				150 H ug/l	16 ug/l	12 ug/l	
1,1-Dichloroethylene	7 ug/l				160 H ug/l	72 ug/l	60 ug/l	
Vinyl Chloride	2. ug/l							
Tetrachloroethylene (PCE)	5 ug/l	8.5 ug/l	8.3 ug/l	8.3 ug/l	350 H ug/l	380 ug/l	280 ug/l	
Trichloroethylene (TCE)	5 ug/l				150 H ug/l	27 ug/l	20 ug/l	
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Criterion values from US Federal (EPA) Maximum Contaminant Levels for Drinking Water

Printed on 08/26/2004

Table 2a
EXCEEDANCES OF US FEDERAL (EPA) MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	MW-116D	MW-116S	MW-118S	MW-118S			
	Sample ID	1035185	1035186	1051349	1051350			
	Sample Date	09/22/2003	09/22/2003	08/16/2004	08/16/2004			
	Sample Time	12:37	01:10	11:30	11:30			
	Sample Depth	60.00'	38.00'	28.00' - 38.0	28.00' - 38.0			
	Laboratory	EAS	EAS	AEL	AEL			
	Lab. Number	AE10910	AE10911	AEL04007467	AEL04007468			
Constituent	Criterion							
Depth of Well	Ft	57.92	34.50	38.00	38.00			
Depth To Water	Ft	31.69	31.39	31.78	31.78			
Date Metals Analyzed	-		09/25/2003					
Date Organics Analyzed	-	09/24/2003		08/17/2004	08/17/2004			
Arsenic	0.05 mg/L							
Cadmium	0.005 mg/L		0.018 mg/L					
Chromium, Total	0.1 mg/L		0.79 mg/L					
Chromium, Total (unfiltered)	0.1 mg/L							
Mercury	0.002 mg/L		0.0022 mg/L					
Nickel	0.1 mg/L		0.57 mg/L					
Nickel (unfiltered)	0.1 mg/L							
Selenium	0.05 mg/L							
Cyanide	.2 mg/L							
Fluoride - Total	4 mg/L							
Chloroform	80 ug/l							
1,1,2-Trichloroethane	5 ug/l							
1,2-Dichloroethane	5 ug/l							
1,1-Dichloroethylene	7 ug/l							
Vinyl Chloride	2. ug/l	5.5 ug/l						
Tetrachloroethylene (PCE)	5 ug/l			14 ug/l	15 ug/l			
Trichloroethylene (TCE)	5 ug/l							
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Criterion values from US Federal (EPA) Maximum Contaminant Levels for Drinking Water

Printed on 08/26/2004

INSPECTION LOG

Check appropriate column for each inspection item:

S = Satisfactory - no further action required

U = Unsatisfactory - described deficiency in space below

INSPECTION	FREQUENCY	S.	U.
FACILITY WIDE	MONTHLY		
1. Interior Facility: Check to ensure facility is clean and orderly, materials stored properly. Check process tanks for leaks and damage.	MONTHLY		
2. Exterior Facility: Check to ensure all material is stored properly and dumpsters are covered. Truck loading/unloading areas and delivery routes should be clean and orderly.	MONTHLY		
STORMWATER DISCHARGES	MONTHLY		
1. Check for oil sheen, sediment buildup, signs of erosion			
Deficiencies Noted and Corrective Action Taken:			
Inspector:	Date:		
Received and reviewed by Pollution Prevention Team Leader			
Signature:			

INSPECTION LOG

Check appropriate column for each inspection item:

S = Satisfactory - no further action required

U = Unsatisfactory - described deficiency in space below

INSPECTION	FREQUENCY	S.	U.
FACILITY WIDE	MONTHLY		
1. Interior Facility: Check to ensure facility is clean and orderly, materials stored properly. Check process tanks for leaks and damage.	MONTHLY		
2. Exterior Facility: Check to ensure all material is stored properly and dumpsters are covered. Truck loading/unloading areas and delivery routes should be clean and orderly.	MONTHLY		
STORMWATER DISCHARGES	MONTHLY		
1. Check for oil sheen, sediment buildup, signs of erosion			
Deficiencies Noted and Corrective Action Taken:			
Inspector:	Date:		
Received and reviewed by Pollution Prevention Team Leader			
Signature:			

INSPECTION LOG

Check appropriate column for each inspection item:
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INSPECTION	FREQUENCY	S.	U.
FACILITY WIDE	MONTHLY		
1. Interior Facility: Check to ensure facility is clean and orderly, materials stored properly. Check process tanks for leaks and damage.	MONTHLY		
2. Exterior Facility: Check to ensure all material is stored properly and dumpsters are covered. Truck loading/unloading areas and delivery routes should be clean and orderly.	MONTHLY		
STORMWATER DISCHARGES	MONTHLY		
1. Check for oil sheen, sediment buildup, signs of erosion			
Deficiencies Noted and Corrective Action Taken:			
Inspector:	Date:		
Received and reviewed by Pollution Prevention Team Leader			
Signature:			

Table 3a
EXCEEDANCES OF CT VOLATILIZATION CRITERIA - GW, RESIDENTIAL
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	MW-108	MW-111	MW-115	MW-115	MW-115	MW-116D	
	Sample ID	2102722	2108832	2110554	1035179	1051338	1035185	
	Sample Date	02/12/2001	07/29/2002	09/05/2002	09/22/2003	08/12/2004	09/22/2003	
	Sample Time		10:20	11:40	16:03	16:25	12:37	
	Sample Depth	35.00' - 35.0	25.0' - 35.0'	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0	60.00'	
	Laboratory	EAS	AEL	AEL	EAS	AEL	EAS	
	Lab. Number	01020133-08	AEL02006469	AEL02007617	AE10917	AEL04007409	AE10910	
Constituent	Criterion							
Depth of Well	Ft		34.72	37.71	38.31	38.31	57.92	
Depth To Water	Ft		31.71	32.25	31.94	33.76	31.69	
Date Organics Analyzed	-		08/06/2002	09/06/2002	09/25/2003	08/17/2004	09/24/2003	
1,2-Dichloroethane	21 ug/l		84 ug/l	150 H ug/l				
1,1-Dichloroethylene	1 ug/l		2.0 ug/l	160 H ug/l	72 ug/l	60 ug/l		
Vinyl Chloride	2 ug/l	2.7 ug/L					5.5 ug/l	

Criterion values from CT Volatilization Criteria - GW, Residential

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Table 3b
EXCEEDANCES OF CT VOLATILIZATION CRITERIA - GW, INDUSTRIAL/COMMERCIAL
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	MW-108	MW-115	MW-115	MW-115	MW-116D		
	Sample ID	2102722	2110554	1035179	1051338	1035185		
	Sample Date	02/12/2001	09/05/2002	09/22/2003	08/12/2004	09/22/2003		
	Sample Time		11:40	16:03	16:25	12:37		
	Sample Depth	35.00' - 35.0	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0	60.00'		
	Laboratory	EAS	AEL	EAS	AEL	EAS		
	Lab. Number	01020133-08	AEL02007617	AE10917	AEL04007409	AE10910		
Constituent	Criterion							
Depth of Well	Ft		37.71	38.31	38.31	57.92		
Depth To Water	Ft		32.25	31.94	33.76	31.69		
Date Organics Analyzed	-		09/06/2002	09/25/2003	08/17/2004	09/24/2003		
1,2-Dichloroethane	90 ug/l		150 H ug/l					
1,1-Dichloroethylene	6 ug/l		160 H ug/l	72 ug/l	60 ug/l			
Vinyl Chloride	2 ug/l	2.7 ug/L				5.5 ug/l		

Criterion values from CT Volatilization Criteria - GW, Industrial/Commercial

Printed on 08/26/2004

NOTES

1. A "J" qualifier indicates an estimated value where the percent difference of daily laboratory calibration standard is outside the laboratory control limits.
2. A "H" qualifier indicates an estimated value where the constituent concentration is detected above the laboratory calibration range.
3. A "L" qualifier indicates that spectral evidence confirms the presence of the compound at a concentration below the laboratory calibration limit but above the laboratory method detection limit.
4. A "B" qualifier indicates that that the constituent concentration qualified due to the presence of the compound in the blank.
5. A "I" qualifier indicates that the internal standard response is outside the acceptable limits.

Proposed
Revisions

Connecticut's
Remediation Standard Regulations
Volatilization Criteria

March 2003

Permitting, Enforcement and Remediation Division
Bureau of Water Management
Connecticut Department of Environmental Protection

Comments regarding this document may be sent to:

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before
June 30, 2003

Table of Contents

INTRODUCTION

BASIS FOR DEVELOPMENT OF ORIGINAL VOLATILIZATION CRITERIA
- Original Transport Model
- Original Target Indoor Air Concentrations
- Ceiling Value for Groundwater Volatilization Criteria
- Quantification Limits

PROPOSED REVISIONS TO THE VOLATILIZATION CRITERIA
- Revised Transport Model
- Revised and Updated Target Indoor Air Concentrations
  - Toxicity Values
  - Exposure Assumptions
  - Increased Exposure and Susceptibility of Children to Carcinogens
  - Background Concentrations in Indoor Air
  - TAC Ceiling Value
- Current Quantification Limits
- Criteria for New Chemicals

APPLICATION OF THE VOLATILIZATION CRITIERIA

SUMMARY

REFERENCES

TABLES
Table 1 – Proposed Target Indoor Air Concentrations
Table 2 – Proposed Ground Water Volatilization Criteria
Table 3 – Proposed Soil Vapor Volatilization Criteria

APPENDICES
Appendix A -- Johnson and Ettinger Model
- Table A1 – Definition of Variables
- Table A2 – Calculated Variables
- Table A3 – Default Input Values
- Table A4 – Henry's Law Constants and Molecular Weights

Appendix B – Development of Target Indoor Air Concentrations
- Table B1 – Target Air Concentrations (TACs) for Residential Scenario
- Table B2 -- Target Air Concentrations (TACs) for Industrial/Commercial Scenario

Appendix C – Comparison to 1996 Volatilization Criteria
- Table C1 – Comparison of Target Indoor Air Concentrations
- Table C2 – Comparison of Ground Water Volatilization Criteria
- Table C3 – Comparison of Soil Vapor Volatilization Criteria

INTRODUCTION

The volatilization criteria were developed to identify situations where contaminants in groundwater and soil vapor volatilize, travel into an overlying building and result in the potential risk to human health from the inhalation of the contaminants by occupants of the building. Since the development and adoption of the volatilization criteria in the Remediation Standard Regulations (RSRs) in 1996, the Department of Environmental Protection (DEP), the Department of Public Health (DPH), the U.S. Environmental Protection Agency (USEPA), other state agencies and researchers across the country have collected additional laboratory and field information regarding the volatilization of contaminants. This work has resulted in a better understanding of the vapor migration pathway and the associated risk to public health posed by volatile organic compounds present in the subsurface. Consequently, DEP, with the assistance and input of DPH, is proposing revisions to the volatilization criteria. This document describes the basis for the proposed criteria, as well as the basis for the original criteria issued in 1996 for comparison.

The proposed revisions reflect new toxicological information, a revised transport model and additional information and understanding of this potential pathway of exposure that have all become available since the RSRs were formally adopted in 1996. The proposed revised target indoor air concentrations, groundwater volatilization criteria and soil vapor volatilization criteria are presented in Tables 1, 2 and 3, respectively.

The CTDEP is proposing revisions to the volatilization criteria at this time as part of the Department's application to the USEPA for authorization of the RCRA Corrective Action Program. These proposed changes make Connecticut's criteria more consistent with the EPA Draft Guidance "Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soil" that was issued in November 2002.

BASIS FOR DEVELOPMENT OF ORIGINAL VOALTLIZATION CRITERIA

The numerical volatilization criteria adopted in 1996 are listed in Appendices E and F of the RSRs and also in Tables C1, C2 and C3 in Appendix C of this document. These numerical criteria were developed using the transport model presented in ASTM ES 38-94 "Emergency Standard Guide for Risk Based Corrective Action Applied at Petroleum Release Sites" and toxicity information that was available in 1995.

Original Transport Model

The original transport model presented in the ASTM ES 38-94 was based on a model developed by Johnson and Ettinger and utilized a simplified approach for simulating the transport of volatiles from groundwater, through the soil media and building foundations, and into building structures as airborne contaminants. That model was based on the assumption that diffusion is the sole method of transport from subsurface contamination into the indoor air environment. Diffusion is the process resulting from random motion of molecules by which there is a net flow of matter from a region of high concentration to a region of low concentration. Equations used to develop the original volatilization criteria are shown in Appendix G of the RSRs and in Tables X2.1, X2.2, and X2.3 of ASTM ES 38-94.

The original transport model required the input of a variety of parameters to define the subsurface conditions, the building foundation and the interior environment of the building. Since these parameters are widely variable depending on site-specific conditions, default values were developed. Default values for the various parameters used in the model are presented in Appendix G of the RSRs and are the default values recommended in Tables X2.4 and X2.5 of ASTM ES 38-94. In general, these input parameters describe a conservative scenario in an effort to best protect human health and the environment in the generic or broad application of these criteria.

Original Target Indoor Air Concentrations

The volatilization criteria were developed by calculating a target indoor air concentration (TAC) for each chemical using risk assessment algorithms and toxicity values recommended by USEPA in 1995 and exposure assumptions recommended in ASTM ES 39-94. Background concentrations for certain chemicals were also taken into consideration when establishing the TACs. The background concentrations were described in Table 4 of ASTM ES 38-94 and in Table 3-1 of Massachusetts DEP's "Background Documentation for the Development of the MCP Numerical Standards". For some chemicals, the background concentrations were greater than the calculated risk-based concentrations. For these chemicals, the TACs were set at the background concentrations.

Ceiling Value for Groundwater Volatilization Criteria

A ceiling value of 50,000 micrograms per liter ("µg/L") was applied to all of the groundwater volatilization criteria for which the risked-based criteria were greater than 50,000 µg/L. The purpose of the ceiling value was to prevent gross contamination from being overlooked and to ensure that remediation in accordance with these criteria would address potential odor problems.

Quantification Limits

In general, if the risk-based criteria for a contaminant in soil, groundwater or soil vapor was a concentration lower than that which could be reasonably quantified, the RSR criteria was adjusted upward to a level that could be quantified by laboratories in Connecticut. In 1996, the soil vapor volatilization criteria were adjusted such that any risk-based soil vapor volatilization criteria that was determined to be less than one part per million ("ppm") was adjusted up to 1 ppm.

PROPOSED REVISIONS TO THE VOLATILIZATION CRITERIA

The proposed volatilization criteria are based on:

1) The Johnson and Ettinger (1991) model, incorporating its extensions developed in 1998 and 1999 (Johnson et al. 1998 and Johnson et al. 1999),
2) New toxicity information,
3) New exposure assumptions,
4) Ceiling values for target indoor air concentrations, and
5) Updated quantification limits.

Proposed revised target indoor air concentrations, groundwater volatilization criteria and soil vapor volatilization criteria are shown in Tables 1, 2 and 3 of this document.

Revised Transport Model

The revised Johnson and Ettinger model incorporates both diffusion and advection as the mechanisms of transport of subsurface contamination into the indoor air environment. While diffusion is a passive process, advection is an active process brought about by pressure gradients. Gases will move from areas of high pressure to areas of low pressure. Buildings, particularly under wintertime conditions, are depressurized due to warmed air constantly rising towards the roof. This allows influx of air from the soil gas, which follows the pressure gradient from soil gas into the basement. The greater the depressurization of the building, the greater the zone of influence will be. The zone of influence is the depth from which soil gas can be drawn into the building.

Since the revised model incorporates both diffusion and advection as transport mechanisms, the total amount of transport is greater than that calculated using the original model. Sampling at sites in Connecticut show that the original model under-predicted indoor air concentrations based on groundwater and soil vapor sample results. Therefore, the revised model provides a more accurate and realistic representation of volatile transport. USEPA is also currently using the revised Johnson and Ettinger model to develop their "Guidance for Evaluating the Vapor Intrusion into Indoor Air". In addition, many states including Massachusetts, Michigan, Pennsylvania, Virginia, West Virginia and California are also using this model to develop criteria for this exposure pathway. Appendix A describes the revised model in detail.

The default input values used in the revised model are the same as those used in the 1996 model with one exception, Q_{soil}/Q_B. Q_{soil}/Q_B is the ratio of soil gas intrusion rate to building ventilation rate and was not part of the original model. The default input value used for Q_{soil}/Q_B is taken from USEPA's "Guidance for Evaluating the Vapor Intrusion into Indoor Air". All variables used in the revised model are listed and defined in Tables A1 and A2. Table A3 shows the typical values or range of values for these parameters as well as the default values used to calculate the proposed volatilization criteria.

Revised and Updated Target Indoor Air Concentrations

The target indoor air concentrations (TACs) were again derived by CT DPH for each chemical using risk-based calculations recommended by USEPA, the chemical-specific reference concentrations (RfCs) and cancer unit risks currently available. Appendix B presents these risk-based equations. The following issues were addressed in the TAC revisions:

1) Updated toxicity values,
2) Revised exposure assumptions for industrial/commercial settings,
3) Increased exposure and susceptibility for children for residential settings,
4) Updated background concentrations, and
5) Ceiling value for TACs.

Toxicity Values

All of the toxicity values have been reviewed and revised to reflect up-to-date toxicity values. The most significant changes are the toxicity values for several chlorinated hydrocarbons including 1,1-dichloroethylene ("DCE"), trichloroethylene ("TCE"), and vinyl chloride. 1,1-Dichloroethylene is no longer regulated as a low dose linear carcinogen; although, there remains considerable uncertainty regarding its potential carcinogenicity, which is reflected in the new TAC. The net result of this is an increase in the 1,1-DCE TAC by 200 fold over the former value. The evidence for the carcinogenicity of trichloroethylene in humans has become strengthened with an associated increase in USEPA's estimate of its cancer potency (Cogliano, et al., 2001). This change would have led to a considerable lowering of the TCE TAC, if not for the fact that TCE is a background indoor air contaminant. Setting the TAC for TCE at its background concentration leads to a 5 fold lowering of the TAC, relative to the 1996 value. USEPA's carcinogenicity reassessment of vinyl chloride has led to a decrease in its potency estimate by 10 fold, leading to a commensurate increase in the TAC for vinyl chloride.

While USEPA's Integrated Risk Information System (IRIS) database was relied upon as the primary source of toxicity values, other federal and state risk assessment databases (USEPA's Health Effects Assessment Summary Tables – HEAST, ATSDR's Chronic Minimum Risk Levels – MRLs, California EPA's Chronic RELs) were reviewed to determine the consistency of toxicity values across agencies. These other data sources were used in derivation of TACs in cases where USEPA did not have a value listed on IRIS. Appendix B presents all of the new toxicity values and how they were used in deriving TACs for both residential and industrial/commercial scenarios.

Exposure Assumptions

Exposure assumptions for the residential scenario have not changed: 30 year residence at the affected location, daily exposure for 350 days/year, with an inhalation rate of 20 m^3/day for a 70 kg adult. The exposure assumptions for the industrial/commercial scenario are revised to better reflect likely workplace exposures. The inhalation rate per day has been reduced by one half to 10 m^3/day to reflect a shorter exposure time in the industrial/commercial exposure scenario. The other exposure assumptions for this scenario have not changed (25 years exposure, 250 days/year, 70 kg body weight).

Increased Exposure and Susceptibility of Children to Carcinogens

Increased exposure and susceptibility of children in a residential scenario to carcinogens was taken into consideration during these revisions. The residential scenario involves young children, which is a receptor group that is likely to be at elevated risk relative to adults due to several factors: 1) their greater respiratory rate per body weight and lung surface area (Child-Specific Exposure Factors Handbook, USEPA, 2000; Thurlbeck, 1982); and 2) due to the likelihood that they have increased sensitivity to carcinogens (Ginsberg, 2003; USEPA, 2003; USEPA, 2000). TACs based on adult exposure parameters and sensitivity may not be adequately protective of children.

The first factor, children's increased inhalation rate, is the basis for a 2-fold adjustment of the TAC to ensure protection of children.

The second factor, increased sensitivity to carcinogens, was the rationale for an additional 2-fold adjustment factor, but in this case it is applied only for genotoxic carcinogens. Juvenile animal studies indicate that even very brief exposures in early life can lead to substantial cancer risk (Vessinovitch, 1979; Toth, 1968). However, the standard rodent cancer bioassay upon which unit risks are derived starts dosing after this period of development. For these reasons, the development of TACs for the residential scenario incorporates a children's carcinogen sensitivity factor. This factor is applied to genotoxicants, a type of carcinogen whose effects in early life are most clearly documented at the present time. The adjustment factor is 2 fold based upon the vinyl chloride example on IRIS (USEPA, 2000). The underlying principle is that the risk from short-term early life exposure can be equal to the risk stemming from much longer exposure beginning later in life, and that risks must be additive across these age groups (Ginsberg, 2003). This approach is consistent with USEPA's IRIS file for vinyl chloride and draft Cancer Risk Assessment Guidelines (USEPA, 2000; USEPA, 2003).

Background Concentrations in Indoor Air

Since 1996, there has been an increased focus around the United States on measuring indoor air quality in impacted and non-impacted (or "background") homes, offices, schools and other environments. This had led to an enhanced database for background indoor air data (Foster, et al., 2002; Kurtz and Folkes, 2002; NYSDOH, 1997; Clayton, et al., 1999; Shields, et al., 1996; USEPA/BASE Study, 1999). These datasets, along with the pre-existing indoor air datasets (Stolwick, 1990; Vermont DOH, 1992; Brown, et al., 1994; Daisey, et al., 1994; Sheldon, et al., 1992; Shah and Singh, 1988) have been reviewed while giving particular attention to those volatile oraganic compounds (VOCs) (typically carcinogens) with risk-based TACs that approach or are below what can be considered background. VOC indoor air measurements are typically lognormally distributed; therefore, the central tendency background concentration (the median) was chosen to represent background. While higher concentrations may be found in certain background locations, the central tendency was used because of the way it would be applied: 1) to replace a risk-based TAC such that the background concentration would already be above a risk target; and 2) to back-calculate the allowable contribution from subsurface VOC contamination, such that the amount that is from background sources plus the amount allowed from subsurface sources would still be within the range of the background data distribution.

VOC background concentrations and how they are used in the derivation of TACs are shown chemical-by-chemical in Appendix B.

TAC Ceiling Value

A ceiling value of 500 ug/m^3 was applied to both the residential and industrial/commercial scenarios for those VOCs with risk-based TACs exceeding

this ceiling value. This ceiling value was derived as an upper bound concentration that signals the presence of an unusual indoor air source for an individual VOC. It is prudent to keep the concentration of individual VOCs below this level to avoid odor complaints, degraded air quality, or non-specific health complaints. VOC odor thresholds were separately considered but only in isolated cases where the odor threshold is the key factor in setting a TAC. Appendix B provides a detailed discussion of this topic.

Current Quantification Limits

Based on the use of current analytical methods, concentrations in soil vapor can be reliably quantified at a level significantly lower than 1ppm. Therefore, the soil vapor volatilization criteria were adjusted such that any risk-based soil vapor volatilization criteria that are determined to be less than 0.5 ppb, are adjusted up to 0.5 ppb. The only criteria adjusted up to 0.5 ppb, is the residential soil vapor volatilization criteria for ethylene dibromide (EDB).

Criteria for New Chemicals

Since 1996, the DEP has approved volatilization criteria for a number of compounds for which criteria had not been established in the original regulations. Based on all of the requests for additional criteria for additional chemicals submitted since 1996, the following compounds have been added to the list of volatilization criteria: trichlorofluoromethane, chloroethane, chloromethane, dichlorodiflouromethane, isopropylbenzene (cumene), cis-1,2-dichloroethene, trans-1,2-dichloroethene, bromodichloromethane, n-butylbenzene, sec-butylbenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene and 4-isopropyltoluene (4-cymene).

APPLICATION OF THE VOLATILIZATION CRITERIA

Under the current regulations, the groundwater volatilization criteria are applicable to "all ground water polluted with a volatile organic substance within 15 feet of the ground surface or a building". However, research since 1996 has demonstrated that volatiles in groundwater at depths much deeper than 15 feet have been the source of vapor intrusion into overlying structures at concentrations that pose a risk to public health. The USEPA in their "Guidance for Evaluating the Vapor Intrusion into Indoor Air" is recommending applying criteria up to buildings up to 100 feet from the contamination source. Other states including Michigan and Pennsylvania require that volatilization issues be addressed when polluted ground water is within 30 feet of the surface. After evaluating geology and hydrogeology in Connecticut, DEP is proposing that the volatilization criteria should be applied to groundwater within 30 feet of the ground surface or a building.

The RSRs adopted in 1996 provide baseline numeric criteria that can be used to demonstrate compliance or that can be used as a screening level. The regulations also provide the option of developing a site-specific criteria by calculating an attenuation factor using input parameters that are appropriate for the circumstances at a specific site. The site-specific option will also be retained in the proposed revisions to the regulations. However, the revised Johnson and Ettinger model should be used for such calculations. Further, the option to take measures that would prevent the migration of volatiles into indoor air rather than remediate the ground water

and the option to record a land use restriction that would prohibit the construction of a building over ground water polluted by VOCs will be retained in the revised regulations.

SUMMARY

DEP is proposing to revise the volatilization criteria to better protect human health and to remain consistent with federal programs. The revisions proposed in this document are in keeping with the following objectives:

- The proposed revised volatilization criteria are similar to those used by USEPA and other states.
- The revised transport model more accurately predicts indoor air concentrations.
- The toxicity information has been updated to current toxicity values.
- The exposure assumptions have been refined to be both protective and realistic.
- The depth to groundwater to which these criteria should be applied has been increased to 30 feet based on new research that demonstrates indoor exposures resulting from the migration of volatiles from a ground water source significantly deeper than 15 feet.

A comparison of 1996 TACs and volatilization criteria to proposed revised TACs and volatilization criteria is presented in the three tables in Appendix C.

DEP is seeking comments from the public on these revisions before proposing revised regulations in July 2003. Please send you comments to:

Ruth Lepley Parks
Permitting, Enforcement and Remediation Division
Connecticut Department of Environmental Protection
79 Elm Street
Hartford, Ct 06106

before
June 30, 2003

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Table 1

Proposed Target Indoor Air Concentrations

Compound	CAS Number	Residential TAC (ug/m^3)	Industrial/Commercial TAC (ug/m^3)
Acetone	67641	180	500[1]
Acrylonitrile	107131	NA	NA
Benzene	71432	3.3[2]	3.3[2]
Bromoform	75252	0.55	7.3
2-Butanone (MEK)	78933	500[1]	500[1]
Carbon tetrachloride	56235	0.5[2]	0.54
Chlorobenzene	108907	37	200
Chloroform	67663	0.5[2]	0.5[2]
Dibromochloromethane	124481	NA	NA
1,2-Dichlorobenzene	95501	73	410
1,3-Dichlorobenzene	541731	73	410
1,4-Dichlorobenzene	106467	24	24
1,1-Dichloroethane	75343	77	430
1,2-Dichloroethane	107062	0.07	0.31
1,1-Dichloroethylene	75354	10	20
cis-1,2-Dichlroethylene	156592	See **New Criteria** below	See **New Criteria** below
trans-1,2-Dichloroethylene	156605	See **New Criteria** below	See **New Criteria** below
1,2-Dichloropropane	78875	0.13	0.42
1,3-Dichloropropene	542756	0.21	2.9
Ethyl benzene	100414	53	290
Ethylene dibromide (EDB)	106934	0.0028	0.038
Methyl-tert-butyl-ether	1634044	160	190[3]
Methyl isobutyl ketone	108101	37	200
Methylene chloride	75092	3[2]	17
Styrene	100425	52	290

Table 1
(Continued)

Proposed Target Indoor Air Concentrations

Compound	CAS Number	Residential TAC (ug/m^3)	Industrial/Commercial TAC (ug/m^3)
1,1,1,2-Tetrachloroethane	630206	0.082	1.1
1,1,2,2-Tetrachloroethane	79345	0.011	0.14
Tetrachloroethylene	127184	5[2]	5[2]
Toluene	108883	210	500[1]
1,1,1 Trichloroethane	71556	500	500[1]
1,1,2-Trichloroethane	79005	2.2	12
Trichloroethylene	79016	1[2]	1[2]
Vinyl chloride	75014	0.14	1.9
Xylenes	1330207	220	500[1]
New Criteria			
Trichlorofluoromethane	75694	370	500[1]
Chloroethane	75003	500[1]	500[1]
Chloromethane	74873	14	80
Dichlorodiflouromethane	75718	91	500[1]
Isopropylbenzene (Cumene)	98828	120[3]	120[3]
cis-1,2-dichloroethene	156592	18	100
trans-1,2-dichloroethene	156605	37	200
Bromodichloromethane	75274	0.034	0.46
N-butylbenzene	104518	73	410
Sec-butylbenzene	135988	73	410
1,2,4-trimethylbenzene	95636	9.3	52
1,3,5-trimethylbenzene	108678	9.3	52
4-isopropyltoluene (4-cymene)	99876	67	370

[1] Based on a ceiling value. [2] Based on a background concentration.
[3] Based on an odor threshold concentration.

Table 2

Proposed Ground Water Volatilization Criteria

Compound	CAS Number	Residential GWVC (ug/L)	Industrial/Commercial GWVC (ug/L)
Acetone	67641	50000	50000
Acrylonitrile	107131	NA	NA
Benzene	71432	130	310
Bromoform	75252	75	2300
2-Butanone (MEK)	78933	50000	50000
Carbon tetrachloride	56235	5.3	14
Chlorobenzene	108907	1800	23000
Chloroform	67663	26	62
Dibromochloromethane	124481	NA	NA
1,2-Dichlorobenzene	95501	5100	50000
1,3-Dichlorobenzene	541731	4300	50000
1,4-Dichlorobenzene	106467	1400	3400
1,1-Dichloroethane	75343	3000	41000
1,2-Dichloroethane	107062	6.5	68
1,1-Dichloroethylene	75354	190	920
cis-1,2-Dichlroethylene	156592	See **New Criteria** below	See **New Criteria** below
trans-1,2-Dichloroethylene	156605	See **New Criteria** below	See **New Criteria** below
1,2-Dichloropropane	78875	7.4	58
1,3-Dichloropropene	542756	11	360
Ethyl benzene	100414	2700	36000
Ethylene dibromide (EDB)	106934	0.3	11
Methyl-tert-butyl-ether	1634044	21000	50000
Methyl isobutyl ketone	108101	13000	50000
Methylene chloride	75092	160	2200
Styrene	100425	3100	42000

Table 2
(Continued)

Proposed Ground Water Volatilization Criteria

Compound	CAS Number	Residential GWVC (ug/L)	Industrial/Commercial GWVC (ug/L)
1,1,1,2-Tetrachloroethane	630206	2	64
1,1,2,2-Tetrachloroethane	79345	1.8	54
Tetrachloroethylene	127184	340	810
Toluene	108883	7100	41000
1,1,1 Trichloroethane	71556	6500	16000
1,1,2-Trichloroethane	79005	220	2900
Trichloroethylene	79016	27	67
Vinyl chloride	75014	1.6	52
Xylenes	1330207	8700	48000
New Criteria			
Trichlorofluoromethane	75694	1300	4200
Chloroethane	75003	12000	29000
Chloromethane	74873	390	5500
Dichlorodiflouromethane	75718	93	1200
Isopropylbenzene (Cumene)	98828	2800	6800
Cis-1,2-dichloroethene	156592	830	11000
trans-1,2-dichloroethene	156605	1000	13000
Bromodichloromethane	75274	2.3	73
N-butylbenzene	104518	1500	21000
Sec-butylbenzene	135988	1500	20000
1,2,4-trimethylbenzene	95636	360	4800
1,3,5-trimethylbenzene	108678	280	3900
4-isopropyltoluene (4-cymene)	99876	1600	22000

Table 3

Proposed Soil Vapor Volatilization Criteria

Compound	CAS Number	Residential SVVC (ppm)	Industrial/Commercial SVVC (ppm)
Acetone	67641	57	290
Acrylonitrile	107131	NA	NA
Benzene	71432	0.78	1.4
Bromoform	75252	0.04	0.98
2-Butanone (MEK)	78933	130	230
Carbon tetrachloride	56235	0.06	0.12
Chlorobenzene	108907	6.1	60
Chloroform	67663	0.078	0.14
Dibromochloromethane	124481	NA	NA
1,2-Dichlorobenzene	95501	9.2	95
1,3-Dichlorobenzene	541731	9.2	95
1,4-Dichlorobenzene	106467	3	5.5
1,1-Dichloroethane	75343	14	150
1,2-Dichloroethane	107062	0.013	0.11
1,1-Dichloroethylene	75354	1.9	7
cis-1,2-Dichlroethylene	156592	See **New Criteria** below	See **New Criteria** below
trans-1,2-Dichloroethylene	156605	See **New Criteria** below	See **New Criteria** below
1,2-Dichloropropane	78875	0.021	0.13
1,3-Dichloropropene	542756	0.035	0.89
Ethyl benzene	100414	9.3	93
Ethylene dibromide (EDB)	106934	0.0005	0.007
Methyl-tert-butyl-ether	1634044	34	73
Methyl isobutyl ketone	108101	6.8	68
Methylene chloride	75092	0.65	6.8
Styrene	100425	9.3	95

Table 3
(Continued)

Proposed Soil Vapor Volatilization Criteria

Compound	CAS Number	Residential SVVC (ppm)	Industrial/Commercial SVVC (ppm)
1,1,1,2-Tetrachloroethane	630206	0.009	0.22
1,1,2,2-Tetrachloroethane	79345	0.0012	0.028
Tetrachloroethylene	127184	0.56	1
Toluene	108883	42	180
1,1,1 Trichloroethane	71556	70	130
1,1,2-Trichloroethane	79005	0.31	3.1
Trichloroethylene	79016	0.14	0.26
Vinyl chloride	75014	0.041	1
Xylenes	1330207	38	160
New Criteria			
Trichlorofluoromethane	75694	50	120
Chloroethane	75003	140	260
Chloromethane	74873	5.1	53
Dichlorodiflouromethane	75718	14	140
Isopropylbenzene (Cumene)	98828	19	34
Cis-1,2-dichloroethene	156592	3.4	35
trans-1,2-dichloroethene	156605	7.1	70
Bromodichloromethane	75274	0.0038	0.095
N-butylbenzene	104518	10	100
Sec-butylbenzene	135988	10	100
1,2,4-trimethylbenzene	95636	1.4	15
1,3,5-trimethylbenzene	108678	1.4	15
4-isopropyltoluene (4-cymene)	99876	9.3	94

Appendix A

Johnson and Ettinger Model

APPENDIX A

JOHNSON AND ETTINGER MODEL

The revised Johnson and Ettinger model incorporates both diffusion and advection as mechanisms of transport of subsurface contamination into indoor air environment. Diffusion is the mechanism by which vapor moves from a region of higher concentration to a region of lower concentration. Diffusion is typically the vertical component of transport in this model. Advection is the transport mechanism by which vapor moves to a region where there is a difference in pressure, temperature or other factor. This Johnson and Ettinger model is the most widely used vapor transport model across the United States.

The Johnson and Ettinger model uses the conservation of mass principle and makes the following assumptions:

- Steady state conditions exist
- An infinite source of contamination exists
- The subsurface is homogeneous
- Air mixing in the building is uniform
- Preferential pathways do not exist
- Biodegradation (or any other transformation process) does not occur
- Contaminants are homogeneously distributed
- Contaminant vapors enter a building primarily through cracks and other openings in the foundation and walls
- Ventilation rates and pressure differences are assumed to remain constant

The output of the Johnson and Ettinger model is the dimensionless attenuation factor (α) that represents the ratio of the indoor air concentration to the vapor concentration at a subsurface source. Using the attenuation factor and the recommended target indoor air concentrations, allowable soil vapor and ground water concentrations were back calculated. These concentrations are the recommended volatilization criteria. The Connecticut Department of Public Health recommended appropriate target indoor air concentrations for residential and industrial/commercial scenarios.

- For ground water volatilization criteria:

  GWVC (ug/L) = Target Indoor Air Concentration ($\mu g/m^3$) / (1000 L/m^3 x α x H)

  where H = Henry's Law Constant (unitless)

- For soil vapor volatlization criteria:

  SVVC (mg/m^3) = Target Indoor Air Concentration ($\mu g/m^3$) / (1000 $\mu g/mg$ x α)

  SVVC (ppm) = SVVC (mg/m^3) x 24.45 / Molecular Weight

  where 24.45 = molar volume in liters at 760 torr barometric pressure at 25 ° C

The Johnson and Ettinger model calculates the attenuation factor as follows:

Attenuation Factor for Diffusion and Advection –

$$\alpha = (A \times e^B) / [e^B + A + (A/C)(e^B-1)]$$

where:

$$A = (D^{eff}_T A_B) / (Q_B L_T) \quad \textit{or} \quad (D^{eff}_T) / (E_B(V_B/A_B)L_T)$$

$$B = (Q_{soil} L_{crack}) / (D^{eff}_{crack} \eta A_B) \quad \textit{or} \quad [(Q_{soil}/Q_b)E_B(V_B/A_B)L_{crack}] / [D^{eff}_{crack}\eta]$$

$$C = Q_{soil}/Q_B$$

where:

$$D^{eff}_T = L_T / [(L_{vadose}/D^{eff}_{vadose}) + (L_{cap}/D^{eff}_{cap})$$

$$D^{eff}_{crack} = D^{air}(\theta_{V\text{-}crack}{}^{3.33}/\theta_{T\text{-}crack}{}^2) + (D^{water}/H)(\theta_{m\text{-}crack}{}^{3.33}/\theta_{T\text{-}crack}{}^2)$$

where:

$$D^{eff}_{vadose} = D^{air}(\theta_{V\text{-}vadose}{}^{3.33}/\theta_{T\text{-}vadose}{}^2) + (D^{water}/H)(\theta_{m\text{-}vadose}{}^{3.33}/\theta_{T\text{-}vadose}{}^2)$$

$$D^{eff}_{cap} = D^{air}(\theta_{V\text{-}cap}{}^{3.33}/\theta_{T\text{-}cap}{}^2) + (D^{water}/H)(\theta_{m\text{-}cap}{}^{3.33}/\theta_{T\text{-}cap}{}^2)$$

The input values for these equations are defined in Tables A1 and A2 of this Appendix. Conservative default values for each input variable were used to calculate the generic volatilization criteria listed in Tables 2 and 3. The acceptable ranges for these default values are presented in Table A3 along with the default input values used by CTDEP to calculate the generic criteria. In addition, Table A4 presents molecular weights and Henry's Law Constants (H) used by CTDEP.

Basically the input values describe the vapor transport pathway including the

- subsurface soils and stratigraphy;
- foundation of the structure;
- interior environment of the structure; and
- transport properties of the contaminants.

The subsurface soils are assumed to be sand and the stratigraphy is assumed to be homogeneous. The default input values for the moisture content (θ_m) and vapor content (θ_V) of the soils in both the vadose zone and the capillary fringe were chosen to represent sandy soils in the subsurface. The thickness of the capillary fringe (L_{cap}) is also based on an estimated thickness of capillary fringe for a typical sand. The default input values used for the total depth (L_T) to groundwater and the total depth to a soil vapor sample are 3 meters and 1 meter, respectively.

The default values used to describe the foundation of the building are the thickness of the foundation (L_{crack}) assumed at 0.15 meters and the areal fraction of cracks in foundation (η) assumed at 0.01 (worst case value). Also, the soil properties of the soil in the cracks (θ_m and θ_V) are estimated based on a sand soil type. The default values used to describe the indoor

environment are the enclosed space air exchange rate (E_B), the volume of the building divided by the area of the building (or just the height of the building) (V_B/A_B) and the ratio of soil gas intrusion rate to the building ventilation rate (Q_{soil}/Q_B). These values differ for the residential scenario and the industrial commercial scenario.

The default values used describe the transport properties of the contaminants are Henry's Law Constants (H) listed for specific chemical on Table A4, and the diffusion in water (D^{water}) and the diffusion in air (D^{air}). Though the diffusion rates can be chemical-specific, a general diffusion rates in air (8.64×10^{-5} M^2/d) and in water (7.26×10^{-1} M^2/d) were used for all of the chemicals.

All of the default input values used in this current model were also used in the original model with the exception of the ratio Q_{soil}/Q_B. This ratio was not part of the original model. The default input value used for Q_{soil}/Q_B is also the default value used in USEPA's "Guidance of revaluating the Vapor Intrusion into Indoor Air" dated November 2002. The default input values used in the original model remain unchanged. The default values are those recommended by ASTM 38-94 in Tables X2.4 and X2.5.

The article written by Johnson titled "Identification of Critical Parameters for the Johnson and Ettinger (1991) Vapor Intrusion Model" dated May 2002 provides additional information regarding the input values and the sensitivity of the final attenuation factor to various input values.

The attenuation factors used to calculate the proposed revised criteria are based on the default input values listed in Table A3 and the revised Johnson and Ettinger model. In general, the attenuation factors used to calculate the proposed revised criteria are greater than the attenuation factors used to calculate the original criteria in 1996. For the ground water scenario, the attenuation factor increased by a multiple of approximately 2.5, from about 8×10^{-5} to 2×10^{-4} for the residential scenario and from 3×10^{-5} to 7×10^{-5} for the industrial/commercial scenario. For the soil vapor scenario, the attenuation factor increased by a multiple of approximately 10, from about 1.5×10^{-4} to 1.3×10^{-3} for residential the scenario and from 6×10^{-5} to 7×10^{-4} for the industrial/commercial scenario. The revised Johnson and Ettinger model produces a more conservative attenuation factor compared to the original model.

Table A1

Definition of Variables

	Definition	Units
H	Chemical Specific Henry's Law constant	$\mu g/m^3$-vapor / $\mu g/m^3$-H_2O
$\theta_{m\text{-}vadose}$	Volumetric Moisture Content in Vadose Zone	m^3-H_2O / m^3-soil
$\theta_{T\text{-}vadose}$	Total Porosity in Vadose Zone	m^3-voids / m^3-soil
$\theta_{m\text{-}crack}$	Volumetric Moisture Content in Cracks	m^3-H_2O / m^3-soil
$\theta_{T\text{-}crack}$	Total Porosity in Cracks	m^3-voids / m^3-soil
$\theta_{m\text{-}cap}$	Volumetric Moisture Content in Cracks in Capillary Fringe	m^3-H_2O / m^3-soil
$\theta_{T\text{-}cap}$	Total Porosity in Capillary Fringe	m^3-voids / m^3-soil
D^{air}	Chemical Specific Molecular Diffusion Coefficient in Air	m^2 / d
D^{water}	Chemical Specific Molecular Diffusion Coefficient in Water	m^2 / d
K	Soil Permeability (near foundation) to Air Flow	m^2
ΔP	Indoor-Outdoor Air Pressure Difference	g / ms^2
X_{crack}	Total Length of Cracks through which Soil Gas Vapors are Flowing	m
μ	Viscosity of Air	g / ms
Z_{crack}	Crack Opening Depth Below Grade	m
η	Fraction of Enclosed Space Area Open for Vapor Intrusion	m^2 / m^2
A_B	Surface Area of the Enclosed Space in Contact with Soil	m^2
V_B	Enclosed Space Volume	m^3
E_B	Enclosed Space Air Exchange Rate	1/d
L_T	Depth from Foundation to Source	m
L_{cap}	Thickness of Capillary Fringe	m
L_{crack}	Foundation Thickness	m

Table A2

Calculated Variables

	Definition	Calculation	Units
V_B/A_B	Ratio of Enclosed Space Volume to Exposed Surface Area		m
Q_B	Enclosed Space Volumetric Air Flow Rate	$= V_B E_B$	m^3 / d
R_{crack}	Effective Crack Radius or Width	$= \eta A_B / X_{crack}$	m
$\theta_{V\text{-}vadose}$	Volumetric Vapor Content in Vadose Zone	$= \theta_{T\text{-}vadose} - \theta_{m\text{-}vadose}$	m^3-vapor / m^3-soil
$\theta_{V\text{-}crack}$	Volumetric Vapor Content in Cracks	$= \theta_{T\text{-}crack} - \theta_{m\text{-}crack}$	m^3-vapor / m^3-soil
$\theta_{V\text{-}cap}$	Volumetric Vapor Content in Capillary Fringe	$= \theta_{T\text{-}cap} - \theta_{m\text{-}cap}$	m^3-vapor / m^3-soil
Q_{soil}	Pressure Driven Soil Gas Flow Rate from the subsurface into the enclosed space	$= (2\pi k \Delta P X_{crack}) / [\mu \ln(2Z_{crack}/R_{crack})]$	m^3 / d
Q_{soil}/Q_B	Ratio of Soil Gas Intrusion Rate to Building Ventilation Rate		unitless
D^{water}/D^{air}	Ratio of Molecular Diffusion in water to air		unitless
L_{vadose}	Thickness of Vadose Zone	$= L_T - L_{cap}$	m

Table A3

Default Input Values

	Units	Typical Value Range [1]	Notes	Res GWVC	I/C GWVC	Res SVVC	I/C SVVC
H	µg/m³-vapor / µg/m³-H_2O	0.01 - 1.0	For most aromatic & chlorinated solvents	---	---	---	---
$\theta_{m\text{-}vadose}$	m^3-H_2O / m^3-soil		ASTM default value. *Typical for sand.*	0.12	0.12	0.12	0.12
$\theta_{T\text{-}vadose}$	m^3-voids / m^3-soil		ASTM default value. Typical for sand.	0.38	0.38	0.38	0.38
$\theta_{m\text{-}crack}$	m^3-H_2O / m^3-soil		ASTM default value. Typical for sand.	0.12	0.12	0.12	0.12
$\theta_{T\text{-}crack}$	m^3-voids / m^3-soil		ASTM default value. Typical for sand.	0.38	0.38	0.38	0.38
$\theta_{m\text{-}cap}$	m^3-H_2O / m^3-soil		ASTM default value. Typical for sand.	0.342	0.342	0.342	0.342
$\theta_{T\text{-}cap}$	m^3-voids / m^3-soil		ASTM default value. Typical for sand.	0.38	0.38	0.38	0.38
D^{air}	M^2 / d	0.1 - 1	For most chemicals	7.26E-01	7.26E-01	7.26E-01	7.26E-01
D^{water}	M^2 / d			8.64E-05	8.64E-05	8.64E-05	8.64E-05
k	m^2	1E-6 - 1E-12					
ΔP	g / ms^2	0 - 200	or 0 to 20 Pascals				
X_{crack}	m						
µ	g / ms						
Z_{crack}	m						
η	m^2 / m^2	0.0005 - 0.005	ASTM default value. 0.01 for worst-case scenario.	0.01	0.01	0.01	0.01
A_B	m^2						
V_B	m^3	147 - 672	Range from USDOE (1995)				
E_B	1/d	4.8 - 24	ASTM default values. 12 for Residential scenario and 19.9 for Industrial/Commercial scenario.	12	19.9	12	19.9
L_T	m	0.01 - 50	ASTM default values. 3 for Groundwater criteria and 1 for Soil Vapor criteria.	3	3	1	1
L_{cap}	m		ASTM default values. 0.05 for Groundwater criteria and 0 for Soil Vapor criteria.	0.05	0.05	0	0
L_{crack}	m	0.15 - 0.5	ASTM default value.	0.15	0.15	0.15	0.15

Table A3
(continued)

Default Input Values

	Units	Typical Value Range [1]	Notes	Res GWVC	I/C GWVC	Res SVVC	I/C SVVC
V_B/A_B	m	2 - 3	ASTM default values. 2 for Residential scenario and 3 for Industrial/Commercial scenario.	2	3	2	3
Q_B	m^3/d						
R_{crack}	m						
$\theta_{V\text{-}vadose}$	m^3-vapor / m^3-soil		ASTM default value. Typical for sand.	0.26	0.26	0.26	0.26
$\theta_{V\text{-}crack}$	m^3-vapor / m^3-soil		ASTM default value. Typical for sand.	0.26	0.26	0.26	0.26
$\theta_{V\text{-}cap}$	m^3-vapor / m^3-soil		ASTM default value. Typical for sand.	0.038	0.038	0.038	0.038
Q_{soil}	m^3/d						
Q_{soil}/Q_B	unitless	0.0001 – 0.05	EPA Vapor Intrusion Guidance default value.	0.003	0.003	0.003	0.003
D^{water}/D^{air}	unitless	~ 1E-4		1.19E-04	1.19E-04	1.19E-04	1.19E-04
L_{vadose}	m		ASTM default value. 2.95 for Groundwater criteria and 1 for Soil Vapor criteria.	2.95	2.95	1	1

[1] Johnson, (2002), *Identification of Critical Parameters for the Johnson and Ettinger (1991) Vapor Intrusion Model*, API Bulletin #17, May.

Table A4

Henry's Law Constants and Molecular Weights

Compound	CAS Number	Henry's Law Constant (unitless)	Molecular Weight (g/mole)
Acetone	67641	1.75E-03	58
Acrylonitrile	107131		
Benzene	71432	2.26E-01	78
Bromoform	75252	2.18E-02	253
2-Butanone (MEK)	78933	1.12E-03	72
Carbon tetrachloride	56235	1.20E+00	154
Chlorobenzene	108907	1.61E-01	113
Chloroform	67663	1.39E-01	119
Dibromochloromethane	124481		
1,2-Dichlorobenzene	95501	7.95E-02	147
1,3-Dichlorobenzene	541731	1.08E-01	147
1,4-Dichlorobenzene	106467	1.12E-01	147
1,1-Dichloroethane	75343	2.23E-01	99
1,2-Dichloroethane	107062	4.51E-02	99
1,1-Dichloroethylene	75354	6.11E-01	97
cis-1,2-Dichlroethylene	156592	See listing below	See listing below
trans-1,2-Dichloroethylene	156605	See listing below	See listing below
1,2-Dichloropropane	78875	1.16E-01	113
1,3-Dichloropropene	542756	1.44E-01	111
Ethyl benzene	100414	1.41E-01	106
Ethylene dibromide (EDB)	106934	2.76E-02	188
Methyl-tert-butyl-ether	1634044	2.42E-02	88
Methyl isobutyl ketone	108101	5.66E-03	100
Methylene chloride	75092	1.31E-01	85
Styrene	100425	1.07E-01	104

Table A4
(Continued)

Henry's Law Constants and Molecular Weights

Compound	CAS Number	Henry's Law Constant (unitless)	Molecular Weight (g/mole)
1,1,1,2-Tetrachloroethane	630206	4.51E-01	168
1,1,2,2-Tetrachloroethane	79345	1.56E-02	168
Tetrachloroethylene	127184	8.36E-02	166
Toluene	108883	2.74E-01	92
1,1,1 Trichloroethane	71556	9.47E-01	133
1,1,2-Trichloroethane	79005	3.73E-02	133
Trichloroethylene	79016	3.74E-01	131
Vinyl chloride	75014	1.14E+00	63
Xylenes	1330207	2.16E-01	106
New Criteria			
Trichlorofluoromethane	75694	4.00E+00	137
Chloroethane	75003	4.50E-01	65
Chloromethane	74873	3.60E-01	51
Dichlorodiflouromethane	75718	1.40E+01	121
Isopropylbenzene (Cumene)	98828	4.70E-01	120
Cis-1,2-dichloroethene	156592	1.70E-01	97
trans-1,2-dichloroethene	156605	3.80E-01	97
Bromodichloromethane	75274	8.70E-02	164
N-butylbenzene	104518	5.24E-01	134
Sec-butylbenzene	135988	5.68E-01	134
1,2,4-trimethylbenzene	95636	2.30E-01	120
1,3,5-trimethylbenzene	108678	3.20E-01	120
4-isopropyltoluene (4-cymene)	99876	4.51E-01	134

Appendix B

Derivation of
Target Indoor Air Concentrations

APPENDIX B

DERIVATION OF TARGET INDOOR AIR CONCENTRATIONS

This Appendix presents the derivation of target indoor air concentrations (TACs) for the volatile organic compounds (VOCs) listed in the existing Remediation Standard Regulations (RSR) volatilization criteria, together with TACs for 13 additional VOCs not previously listed. These additional VOCs though not originally listed, have appeared in groundwater and/or soil gas at sites in Connecticut. This Appendix includes two tables that list the TACs and the underlying toxicity values, modifying factors and background considerations. The following is a brief overview of the risk-based derivation methodology followed by the specific approaches used for the residential and industrial/commercial scenarios.

General TAC Methodology

TACs are air concentrations within homes or workplaces that are not expected to cause adverse health effects from chronic exposure. TACs rely upon chemical-specific toxicity values that describe the VOC's potency in terms of: 1) the reference concentration (RfC) - air concentration which will be free of risk for non-cancer health effects from chronic exposure; or 2) the unit risk factor – potency of VOC to produce carcinogenic effects per microgram per cubic meter (ug/m^3) of air chronically inhaled. These toxicity values are typically derived by USEPA from studies in which laboratory animals were exposed for chronic periods, with the toxic response based upon continuous exposure (24 hours per day (hr/d), every day of the year). Therefore, these targets need modification for exposure scenarios in which less than continuous exposure is likely (e.g., the industrial/commerical scenario). The TACs are set such that the lifetime cancer risk is at the de minimis risk level (one in a million or 1E-06) and the hazard index (TAC/RfC_m where RfC_m is the RfC modified for the time-weight averaged amount of exposure in the specific scenario) for non-carcinogens is equal to unity.

While USEPA's Integrated Risk Information System (IRIS) database is the primary source of toxicology information for TAC development, other toxicology databases are also recognized as having well documented and widely used toxicity values. These include the Agency for Toxic Substances and Disease Registry (ATSDR)'s chronic Minimum Risk Levels (MRLs), California EPA's chronic Reference Exposure Levels (RELs) and USEPA's Health Effects Assessment Summary Tables (HEAST). In cases where a toxicity value was not available on IRIS, the value was sought from these other data sources. If still no value could be found, CTDPH conducted its own chemical-specific risk assessment. In certain cases, USEPA has listed provisional toxicity values that rely upon the best available science currently available, but these values may be somewhat more uncertain and are not supported by USEPA to the same extent as those values on IRIS. CTDPH has examined the basis for these particular values closely and, in isolated cases, has made adjustments.

A number of VOCs in the TAC list are possible rather than proven animal carcinogens, or, if proven, their cancer mechanism has uncertain relevance to low dose exposures in humans. These types of carcinogens were labeled as Group C carcinogens in USEPA's former cancer guidelines and are considered as Class 3 agents by IARC. Their carcinogenicity database is either too uncertain or incomplete to allow an extrapolation of risk to low dose human exposures. Rather than applying the classical low dose linear approach on the one hand, or ignoring their carcinogenic potential on the other, this derivation lowers the RfC by an uncertainty factor to account for this potential hazard. This approach is consistent with that developed by USEPA's Office of Drinking Water to establish Maximum Contaminant Levels

(MCLs). The default cancer uncertainty factor is 10 fold, although 3.33 fold (one half log lower) was used in cases where the uncertainty already built into the RfC was large (1000 fold or greater); this reduction in the cancer uncertainty factor was used to keep the overall uncertainty factor to less than 10,000.

In several cases toxicity values were available for the oral but not inhalation dose route. A dose route extrapolation to convert from the reference dose (in mg/kg/d) to RfC (ug/m^3) was used as long as the target site was not local to the site of bodily entry, but rather was at a systemic location (i.e., internal organs or systems).

The following are the general equations for the derivation of TACs. These equations and most of the parameter value inputs have not changed since the setting of the 1996 RSRs

For carcinogenic effects:

$$TAC = \frac{TR \times BW \times AT_c \times 365\ d/yr \times 10^3 \mu g/mg}{Sf_i \times IR_{air} \times EF \times ED}$$

For non-carcinogenic effects:

$$TAC = \frac{THQ \times BW \times RfD_i \times AT_n \times 365\ d/yr \times 10^3 \mu g/mg}{IR_{air} \times EF \times ED}$$

where:

AT_c = averaging time for carcinogens, years
Use AT_c = 70 years

AT_n = averaging time for non-carcinogens, years
For residential use AT_n = 30 years
For commercial/industrial use AT_n = 25 years

BW = adult body weight, kg
Use BW = 70 kg

ED = exposure duration, years
For residential use ED = 30 years
For commercial/industrial use ED = 25 years

EF = exposure frequency, days/years
For residential use EF = 350 days/year
For commercial/industrial use EF = 250 days/year

IR_{air} = *daily indoor inhalation rate, m^3/day*
For residential use IR_{air} = 20 m^3/day
For commercial/industrial use IR_{air} = 10 m^3/day

TAC = target indoor air concentration, µg/m^3-air

RfD_i = inhalation chronic reference dose, mg/kg-day
Use numbers from IRIS and/or HEAST and/or other sources.

SF_i = inhalation cancer slope factor, kg-day/mg
Use numbers from IRIS and/or HEAST and/or other sources.

THQ = target hazard quotient for individual constituents, dimensionless
Use THQ = 1

TR = target excess individual lifetime cancer risk, dimensionless
Use TR = 1×10^{-6}

Modifications to the Residential Scenario

The exposure assumptions shown in the equations above pertain to adults (70 kg body weight, 20 m^3/d inhalation rate). However, young children inhale more air per body weight and respiratory surface area than do adults (Child-Specific Exposure Factors Handbook, USEPA, 2000; Thurlbeck, 1982). This is an especially important consideration with regards to VOCs that can cause respiratory irritation and thus have the potential to exacerbate asthma due to the local dose in the lung. However, it also applies to systemic toxicants. The child/adult dose differential from inhalation exposure is approximately 2 fold over the first six years of life (e.g., at 1 year of age: 4.5 m^3/d inhalation rate for 7.4 kg body weight for an inhalation rate/body weight ratio that is 2.1 fold larger than the adult assumption). Thus, the systemic and local respiratory tract dose to young children can be assumed to be approximately 2 fold larger than in adults for a significant portion of childhood. Since young children may be more generally sensitive to toxicants (many systems are immature and rapidly developing - Faustman, 2000), the potential importance of this exposure differential is accentuated. Thus, to be protective of children as potentially the most highly exposed and sensitive group, the residential TACs are adjusted by a 2 fold factor that corresponds with the greater inhalation exposure rate in children.

Children's increased vulnerability to toxicants has perhaps been best characterized in the area of carcinogenic risk. Standard cancer bioassays from which most unit risk values are derived, begin chemical administration when rodents are 4-6 weeks of age. At this age the animals are sexually mature and growth is not as rapid as in juvenile animals. Thus, this type of cancer study misses a potentially important vulnerability window. In fact, numerous cancer studies in which rodents were dosed beginning in early life demonstrate considerably greater potency in the neonatal period than at older ages (Vesselinovitch, et al., 1979; Toth, 1968; Maltoni, et al., 1981).

The reason for this greater susceptibility likely stems from the greater time period for expression of cancer when testing begins earlier in life, and because rapidly dividing tissues are more sensitive to genotoxicants (Laib, et al., 1985, Anderson, 2000). These issues have recently been summarized in a publication by CTDPH (Ginsberg, 2003) and by USEPA in their draft revisions to the cancer risk assessment guidelines (USEPA, 2003). The case of vinyl chloride sensitivity in early life stages has been evaluated closely by USEPA to support their recent revision to the vinyl chloride IRIS file (USEPA, 2000). That assessment showed that brief exposures in early life produced a cancer response later in life that was roughly equivalent to what would be seen from an adult-only (lifetime) exposure. On that basis, the IRIS file recommends that the unit risk factor for vinyl chloride derived for adults be doubled if there will be long-term exposure that will include children. Analysis of other juvenile animal bioassays indicates that this also appears to be true for a wide variety of chemicals, particularly those with a genotoxic mode of action (Ginsberg, 2003; USEPA, 2003). For this reason, the revised TACs for genotoxic carcinogens have an adjustment factor (2 fold lowering of TAC) to account for the greater sensitivity of early life stages (Ginsberg, 2003; USEPA, 2003).

In summary, the residential scenario includes a 2 fold adjustment factor for children's increased inhalation exposure rate relative to adults, and a 2 fold adjustment factor for children's increased sensitivity when exposed to genotoxic carcinogens. In this latter case, the combined children's adjustment factor is 4 fold. This approach is consistent with USEPA's IRIS file for vinyl chloride and draft Cancer Risk Assessment Guidelines. The Table B1 shows the use of these factors in deriving TACs.

Industrial/Commercial TAC Calculations

The industrial/commercial scenario is simpler than the residential scenario in that it only involves adults. The exposure parameters shown above for this scenario indicate that relative to the assumptions that go into RfCs and cancer unit risk values, workers will be exposed to less inhaled contaminant due to fewer hours/day of exposure (8 instead of 24 hr), fewer days per year of exposure (250 instead of 365), and fewer total years of exposure (25 instead of 70). The shorter hours per day of worker exposure is partially compensated for by the higher breathing rate workers may have compared to the general public. This leads to the assumption that 50% of the day's inhalation volume occurs while at work. In setting TACs for the workplace it is appropriate to increase the RfC by a factor of 2 for inhalation rate ($20m^3/d$ vs. 10 m^3/d) and by a factor of 1.46 for exposure days per year (365 vs. 250). This yields a combined workplace adjustment factor for RfCs of 2.92 (i.e., the workplace TAC can be 2.92 fold higher than the RfC). For carcinogens, the cumulative number of years is also part of the exposure calculation and so the 70/25 yr factor (2.8) is multiplied by 2.92 to yield a combined 8.176 adjustment factor. This factor is multiplied by the air concentration associated with de minimis risk for the general public to yield the air concentration corresponding to de minimus risk for workers. These exposure factors are in the Table B2 to show their use in deriving TACs for this scenario.

Ceiling TAC

The Tables B1 and B2 list a number of VOCs whose risk-based TAC is relatively high, a value that would allow gross contamination of indoor air. In these cases a ceiling value of 500 ug/m^3 is used. The ceiling value is based upon datasets showing that individual VOC concentrations in buildings tend to average less than 500 ug/m^3 across a broad array of building types and indoor air contaminants (Brown, et al., Indoor Air 4: 123-134, 1994). The 98th percentile value for these indoor air contaminants was highly variable but most values were between 50 and 1000 ug/m^3, indicating that a level of 500 ug/m^3 represents an upper bound concentration that stems from an unusual contamination source. Such high concentrations may contribute to decreases in air quality that are noticeable to building inhabitants (Otto, et al., 1990). Therefore, this ceiling value is a prudent default value that can be replaced when more specific information becomes available (e.g., odor threshold data), as indicated for several VOCs in this derivation.

Indoor Air Background Concentrations

Since 1996, there has been an increased focus around the United States on measuring indoor air quality in impacted and non-impacted (or "background") homes, offices, schools and other environments. This had led to an enhanced database for background indoor air data (Foster, et al., 2002; Kurtz and Folkes, 2002; NYSDOH, 1997; Clayton, et al., 1999; Shields, et al., 1996; Girman, et al. report of USEPA/BASE Study, 1999). These datasets, along with the pre-existing indoor air datasets (Stolwick, 1990; Vermont DOH, 1992; Brown, et al., 1994; Daisey, et al., 1994; Sheldon, et al., 1992; Shah and Singh, 1988) have been reviewed while giving particular attention to those VOCs (typically carcinogens) with risk-based TACs that are in the range where they may approach or are below what can be considered background. VOC indoor air measurements are typically lognormally distributed; therefore, the central tendency background concentration (the median) was chosen to represent background. While higher concentrations may be found in certain background locations, the central tendency was used because of the way it would be applied: 1) to replace a risk-based TAC such that the background concentration would already be above a risk target; and 2) to back-calculate the allowable contribution from subsurface VOC contamination, such that the amount that is from

background sources plus the amount allowed from subsurface sources would still be within the range of the background data distribution.

VOC background concentrations and how they are used in the derivation of TACs are shown *chemical-by-chemical in Tables B1 and B2.*

Table B1

Target Air Concentrations (TACs) for Residential Scenario (Page 1)

VOC	Toxicity Value[1]	Modifying Factors[2]	Risk-Based TAC[4]	Background	TAC
Acetone	IRIS RfD (0.1mg-kg-d) converted to RfC (350 ug/m^3)	2x CexpF	183 ug/m^3	---[7]	180 ug/m^3
Benzene	IRIS unit risk (8.3E-6/ug/m^3)	2x CexpF; 2x CsensF	0.07 ug/m^3	3.25 ug/m^3	3.3 ug/m^3
Bromoform	IRIS unit risk (1.1E-6/ug/m^3)	2x CexpF; 2x CsensF	2.2 ug/m^3	Not available	0.55 ug/m^3
2-Butanone (MEK)	IRIS RfC (1000 ug/m^3)	2x CexpF	520 ug/m^3	---[7]	500 ug/m^3 – C[3]
Carbon Tetrachloride	IRIS unit risk (1.5E-5/ug/m^3)	2x CexpF; 2x CsensF	0.04 ug/m^3	0.5 ug/m^3	0.5 ug/m^3
Chlorobenzene	IRIS RfD (0.02 mg-kg-d) converted to RfC (70 ug/m^3)	2x CexpF	37 ug/m^3	---[7]	37 ug/m^3
Chloroform	IRIS unit risk (2.3E-5/ug/m^3)	2x CexpF	0.05 ug/m^3	0.5 ug/m^3	0.5 ug/m^3
1,2-Dichlorobenzene	HEAST RfC (140 ug/m3)	2x CexpF	73 ug/m^3	---[7]	73 ug/m^3
1,3-Dichlorobenzene	Analogy with 1,2-DCB	2x CexpF	73 ug/m^3	---[7]	73 ug/m^3
1,4-Dichlorobenzene	EPA Provisional unit risk (6.3E-06/ug/m^3)	None – since provisional unit risk	0.39 ug/m^3	24 ug/m^3	24 ug/m^3
1,1-Dichloroethane	HEAST ("A") RfC (490ug/m^3)	3.33x Cancer UF; 2x CexpF	77 ug/m^3	---[7]	77 ug/m^3
1,2-Dichloroethane	IRIS unit risk (2.6E-5/ug/m^3)	2x CexpF; 2x CsensF	0.023 ug/m^3	0.07 ug/m^3	0.07 ug/m^3
1,1-Dichloroethylene	CalEPA REL (70 ug/m^3); ATSDR MRL (80 ug/m^3)	10x Cancer UF	7 ug/m^3	<5 ug/m^3	10 ug/m^3
1,2-Dichloropropane	EPA provisional oral slope → unit risk (1.9E-05/ug/m^3)	None – since provisional unit risk	0.13 ug/m^3	Not available	0.13 ug/m^3
1,3-Dichloropropene	IRIS unit risk (2.9E-6/ug/m^3)	2x CexpF; 2x CsensF	0.21 ug/m^3	Not available	0.21 ug/m^3
Ethylbenzene	IRIS RfC (1000 ug/m^3)	10x Cancer UF; 2x CexpF	53 ug/m^3	<10 ug/m^3	53 ug/m^3
Ethylene dibromide	IRIS unit risk (2.2E-04)	2x CexpF; 2x CsensF	0.003 ug/m^3	Not available	0.0028 ug/m^3

Table B1

Target Air Concentrations (TACs) for Residential Scenario (Page 2)

VOC	Toxicity Value[1]	Modifying Factors[2]	Risk-Based TAC[4]	Background	TAC
Methyl-t-butyl ether	IRIS RfC (3000 ug/m^3)	10x Cancer UF; 2x CexpF	160 ug/m^3	---[7]	160 ug/m^3
Methyl isobutyl ketone	HEAST(A") RfC (70 ug/m^3)	2x CexpF	37 ug/m^3	---[7]	37 ug/m^3
Methylene chloride	IRIS unit risk (4.7E-07/ug/m^3)	2x CexpF	2.6 ug/m^3	3 ug/m^3	3 ug/m^3
Styrene	IRIS RfC (1000 ug/m^3)	10x Cancer UF; 2x CexpF	52 ug/m^3	---[7]	52 ug/m^3
1,1,1,2-Tetrachloroethane	IRIS unit risk (7.43E-06/ug/m^3)	2x CexpF; 2x CsensF	0.082 ug/m^3	Not available	0.082 ug/m^3
1,1,2,2-Tetrachloroethane	IRIS unit risk (5.7E-05/ug-m3)	2x CexpF; 2x CsensF	0.01 ug/m^3	Not available	0.01 ug/m^3
Tetrachloroethylene (PERC)	CalEPA unit risk (5.9E-06/ug/m^3)	2x CexpF	0.21 ug/m^3	5 ug/m^3	5 ug/m^3
Toluene	IRIS RfC (400 ug/m^3)	2x CexpF	208 ug/m^3	---[7]	210 ug/m^3
1,1,1-Trichloroethane	CalEPA REL (1000 ug/m^3)	2x CexpF	520 ug/m^3	---[7]	500 ug/m^3 - C[3]
1,1,2-Trichloroethane	IRIS RfD converted to RfC (14 ug/m^3)	3.33x Cancer UF; 2x CexpF	2.2 ug/m^3	0.03 ug/m^3	2.2 ug/m^3
Trichloroethylene	IRIS provisional unit risk (1.1E-04/ug/m^3)	2x CexpF; 2x CsensF	0.006 ug/m^3	1 ug/m^3	1 ug/m^3
Vinyl chloride	IRIS unit risk for early life + adult exposure (8.6E-06/ug/m^3)	2x CexpF	0.14 ug/m^3	0.01 ug/m^3	0.14 ug/m^3
Xylenes	ATSDR MRL (430 ug/m^3)	2x CexpF	220 ug/m^3	---[7]	220 ug/m^3
Trichlorofluoromethane	HEAST ("A")RfC (700 ug/m^3)	2x CexpF	365 ug/m^3	---[7]	370 ug/m^3

Table B1

Target Air Concentrations (TACs) for Residential Scenario (Page 3)

VOC	Toxicity Value[1]	Modifying Factors[2]	Risk-Based TAC[4]	Background	TAC
Chloroethane	IRIS RfC (10,000 ug/m^3)	10x Cancer UF; 2x CexpF	520 ug/m^3	---[7]	500 ug/m^3 - C[3]
Chloromethane	IRIS RfC (90 ug/m^3)	3.33x Cancer UF; 2x CexpF	14 ug/m^3	Not available	14 ug/m^3
Dichlorodifluoromethane	HEAST ("A")RfC (175 ug/m^3)	2x CexpF	91 ug/m^3	---[7]	91 ug/m^3
Isopropylbenzene (cumene)	IRIS RfC (385 ug/m^3)	2x CexpF	200 ug/m^3	---[7]	120 ug/m^3 (odor threshold)
cis-1,2-Dichloroethene	HEAST RfD → RfC (35 ug/m^3)	2x CexpF	18 ug/m^3	Not available	18 ug/m^3
trans-1,2-Dichloroethane	IRIS RfD → RfC (70 ug/m^3)	2x CexpF	37 ug/m^3	---[7]	37 ug/m^3
Bromodichloromethane	IRIS oral slope factor → unit risk (1.8E-05/ug/m^3)	2x CexpF; 2x CsensF	0.034 ug/m^3	Not available	0.034 ug/m^3
n-Butylbenzene	EPA provisional RfD → RfC (140 ug/m^3)	2x CexpF	73 ug/m^3	---[7]	73 ug/m^3
sec-Butylbenzene	EPA provisional RfD → RfC (140 ug/m^3)	2x CexpF	73 ug/m^3	---[7]	73 ug/m^3
1,2,4-Trimethylbenzene	EPA Provisional RfC (6 ug/m^3)	RfC ↑ed 3x[5] 2x CexpF	9 ug/m^3	Not available	9.3 ug/m^3
1,3,5Trimethylbenzene	EPA Provisional RfC (6 ug/m^3)	RfC ↑ed 3x[5] 2x CexpF	9 ug/m^3	Not available	9.3 ug/m^3
4-Isopropyltoluene	DPH risk assessment[6] yields RfC of 133 ug/m^3	2x CexpF	67 ug/m^3	---[7]	67 ug/m^3

Footnotes for Residential TAC Table B1

[1] Tox Value Notes: Values from IRIS, HEAST, CalEPA chronic RELs or ATSDR chronic MRLs; EPA provisional values have been derived by the agency but not fully documented or supported; HEAST "A" refers to values from Alternative Table within HEAST. Dose route extrapolation conducted when no inhalation tox value available and oral toxicity is to systemic sites.

[2] Modifying Factors: CexpF = children's exposure factor for increased respiratory rate per body wt and respiratory surface area;
CsensF = children's sensitivity factor for genotoxic carcinogens
Cancer UF = uncertainty factor for evidence of carcinogenicity but extrapolation to low dose uncertain.

[3] "C" designation indicates ceiling value of 500 ug/m^3.

[4] TACs based upon de minimis (1 in a million) cancer risk or a hazard index of 1 for non-cancer effects.

[5] EPA provisional RfC for 1,2,4- and 1,3,5-TMB have unnecesarily large uncertainty factors which drive very low RfC.

[6] 4-Isopropyltoluene risk assessment based upon analogy with isopropylbenzene with evidence neurotoxicity as key endpoint (4-IPT 3x > potency than IPB).

[7] Background concentration not sought since risk-based TAC is relatively high and unlikely to be in range of background.

Table B2

Target Air Concentrations (TACs) for Industrial/Commercial Scenario (Page 1)

VOC	Toxicity Value[1]	Modifying Factors[2]	Risk-Based TAC[4]	Background	TAC
Acetone	IRIS RfD (0.1mg-kg-d) converted to RfC (350 ug/m^3)	2.92 less worker exp.	1022 ug/m^3	---[7]	500 ug/m^3 – C[3]
Benzene	IRIS unit risk (8.3E-6/ug/m^3)	8.176 less worker exp.	0.99 ug/m^3	3.25 ug/m^3	3.3 ug/m^3
Bromoform	IRIS unit risk (1.1E-6/ug/m^3)	8.176 less worker exp.	7.34 ug/m^3	Not available	7.3 ug/m^3
2-Butanone (MEK)	IRIS RfC (1000 ug/m^3)	2.92 less worker exp.	2900 ug/m^3	---[7]	500 ug/m^3 – C[3]
Carbon Tetrachloride	IRIS unit risk (1.5E-5/ug/m^3)	8.176 less worker exp.	0.54 ug/m^3	0.5 ug/m^3	0.54 ug/m^3
Chlorobenzene	IRIS RfD (0.02 mg-kg-d) converted to RfC (70 ug/m^3)	2.92 less worker exp.	200 ug/m^3	---[7]	200 ug/m^3
Chloroform	IRIS unit risk (2.3E-5/ug/m^3)	8.176 less worker exp.	0.36 ug/m^3	0.5 ug/m^3	0.5 ug/m^3
1,2-Dichlorobenzene	HEAST RfC (140 ug/m^3)	2.92 less worker exp.	410 ug/m^3	---[7]	410 ug/m^3
1,3-Dichlorobenzene	Analogy with 1,2-DCB	2.92 less worker exp.	410 ug/m^3	---[7]	410 ug/m^3
1,4-Dichlorobenzene	EPA Provisional unit risk (6.3E-06/ug/m^3)	8.176 less worker exp.	1.3 ug/m^3	24 ug/m^3	24 ug/m^3
1,1-Dichloroethane	HEAST ("A") RfC (490 ug/m^3)	3.33x Cancer UF; 2.92 less worker exp.	430 ug/m^3	---[7]	430 ug/m^3
1,2-Dichloroethane	IRIS unit risk (2.6E-5/ug/m^3)	8.176 less worker exp.	0.31 ug/m^3	0.07 ug/m^3	0.31 ug/m^3
1,1-Dichloroethylene	CalEPA REL (70 ug/m^3); ATSDR MRL (80 ug/m^3)	10x Cancer UF	20 ug/m^3	<5 ug/m^3	20 ug/m^3
1,2-Dichloropropane	EPA provisional oral slope → unit risk (1.9E-05/ug/m^3)	8.176 less worker exp.	0.42 ug/m^3	Not available	0.42 ug/m^3
1,3-Dichloropropene	IRIS unit risk (2.9E-6/ug/m^3)	8.176 less worker exp.	2.9 ug/m^3	Not available	2.9 ug/m^3
Ethylbenzene	IRIS RfC (1000 ug/m^3)	10x Cancer UF; 2.92 less worker exp.	290 ug/m^3	<10 ug/m^3	290 ug/m^3
Ethylene dibromide	IRIS unit risk (2.2E-04)	8.176 less worker exp.	0.038 ug/m^3	Not available	0.038 ug/m^3

Table B2

Target Air Concentrations (TACs) for Industrial/Commercial Scenario (Page 2)

VOC	Toxicity Value[1]	Modifying Factors[2]	Risk-Based TAC[4]	Background	TAC
Methyl-t-butyl ether	IRIS RfC (3000 ug/m^3)	10x Cancer UF; 2.92 less worker exp.	876 ug/m^3	---[7]	190 ug/m^3 (odor threshold)
Methyl isobutyl ketone	HEAST(A") RfC (70 ug/m^3)	2.92 less worker exp.	200 ug/m^3	---[7]	200 ug/m^3
Methylene chloride	IRIS unit risk (4.7E-07/ug/m^3)	8.176 less worker exp.	17 ug/m^3	3 ug/m^3	17 ug/m^3
Styrene	IRIS RfC (1000 ug/m^3)	10x Cancer UF; 2.92 less worker exp.	290 ug/m^3	---[7]	290 ug/m^3
1,1,1,2-Tetrachloroethane	IRIS unit risk (7.43E-06/ug-3)	8.176 less worker exp.	1.1 ug/m^3	Not available	1.1 ug/m^3
1,1,2,2-Tetrachloroethane	IRIS unit risk (5.7E-05/ug-m3)	8.176 less worker exp.	0.14 ug/m^3	Not available	0.14 ug/m^3
Tetrachloroethylene (PERC)	CalEPA unit risk (5.9E-06/ug/m^3)	8.176 less worker exp.	1.4 ug/m^3	5 ug/m^3	5 ug/m^3
Toluene	IRIS RfC (400 ug/m^3)	2.92 less worker exp.	1165 ug/m^3	---[7]	500 ug/m^3 - C^3
1,1,1-Trichloroethane	CalEPA REL (1000 ug/m^3)	2.92 less worker exp.	2900 ug/m^3	---[7]	500 ug/m^3 - C^3
1,1,2-Trichloroethane	IRIS RfD converted to RfC (14 ug/m^3)	3.33x Cancer UF; 2.92 less worker exp.	12.3 ug/m^3	0.03 ug/m^3	12 ug/m^3
Trichloroethylene	IRIS provisional unit risk (1.1E-04/ug/m^3)	8.176 less worker exp.	0.074 ug/m^3	1 ug/m^3	1 ug/m^3
Vinyl chloride	IRIS unit risk for adult exposure (4.3E-6/ug/m^3)	8.176 less worker exp.	1.9 ug/m^3	0.01 ug/m^3	1.9 ug/m^3
Xylenes	ATSDR MRL (430 ug/m^3)	2.92 less worker exp.	1256 ug/m^3	---[7]	500 ug/m^3 - C^3
Trichlorofluoromethane	HEAST ("A")RfC (700 ug/m^3)	2.92 less worker exp.	2044 ug/m^3	---[7]	500 ug/m^3– C^3

Table B2

Target Air Concentrations (TACs) for Industrial/Commercial Scenario (Page 3)

VOC	Toxicity Value[1]	Modifying Factors[2]	Risk-Based TAC[4]	Background	TAC
Chloroethane	IRIS RfC (10,000 ug/m^3)	10x Cancer UF; 2.92 less worker exp.	2920 ug/m^3	---[7]	500 ug/m^3 - C[3]
Chloromethane	IRIS RfC (90 ug/m^3)	3.33x Cancer UF; 2.92 less worker exp.	80 ug/m^3	Not available	80 ug/m^3
Dichlorodifluoromethane	HEAST ("A")RfC (175 ug/m^3)	2.92 less worker exp.	511 ug/m^3	---[7]	500 ug/m^3 - C[3]
Isopropylbenzene (cumene)	IRIS RfC (385 ug/m^3)	2.92 less worker exp.	1168 ug/m^3	---[7]	120 ug/m^3 (odor threshold)
cis-1,2-Dichloroethene	HEAST RfD → RfC (35 ug/m^3)	2.92 less worker exp.	102 ug/m^3	Not available	100 ug/m^3
trans-1,2-Dichloroethane	IRIS RfD → RfC (70 ug/m^3)	2.92 less worker exp.	204 ug/m3	---[7]	200 ug/m^3
Bromodichloromethane	IRIS oral slope factor → unit risk (1.8E-05/ug/m^3)	8.176 fold less exp.	0.46 ug/m^3	Not available	0.46 ug/m^3
n-Butylbenzene	EPA provisional RfD → RfC (140 ug/m^3)	2.92 less worker exp.	410 ug/m^3	---[7]	410 ug/m^3
sec-Butylbenzene	EPA provisional RfD → RfC (140 ug/m^3)	2.92 less worker exp.	410 ug/m^3	---[7]	410 ug/m^3
1,2,4-Trimethylbenzene	EPA Provisional RfC (6 ug/m^3)	RfC ↑ed 3x[5] 2.92 less worker exp.	52 ug/m^3	Not available	52 ug/m^3
1,3,5-Trimethylbenzene	EPA Provisional RfC (6 ug/m^3)	RfC ↑ed 3x[5] 2.92 less worker exp.	52 ug/m^3	Not available	52 ug/m^3
4-Isopropyltoluene	DPH risk assessment[6] yields RfC of 133 ug/m^3	2.92 less worker exp.	370 ug/m^3	---[7]	370 ug/m^3

Footnotes for Industrial/Commercial TAC Table

[1] Tox Value Notes: Values from IRIS, HEAST, CalEPA chronic RELs or ATSDR chronic MRLs; EPA provisional values have been derived by the agency but not fully documented or supported; HEAST "A" refers to values from Alternative Table within HEAST. Dose route extrapolation conducted when no inhalation tox value available and oral toxicity is to systemic sites.

[2] Modifying Factors: Worker exposure assumptions for non-cancer effects: 250d/year and $10m^3$ inhaled per day leads to 2.92 fold less cumulative exposure than assumed for RfC – general public. For carcinogenic effects, this factor is increased 2.8 fold because workers exposed 25 yr instead of 70 yr leading to an overall 8.176 fold lower cumulative exposure than general public.

[3] "C" designation indicates ceiling value of 500 ug/m^3.

[4] TACs based upon de minimis (1 in a million) cancer risk or a hazard index of 1 for non-cancer effects.

[5] EPA provisional RfCs for 1,2,4- and 1,3,5-TMB have unnecessarily large uncertainty factors which drive very low RfC.

[6] 4-Isopropyltoluene risk assessment based upon analogy with isopropylbenzene with neurotoxicity as key endpoint (4-IPT 3x > potency than IPB).

[7] Background concentration not sought since risk-based TAC is relatively high and unlikely to be in range of background.

Appendix C

Comparison to
1996 Volatilization Criteria

Table C1

Comparison of Target Indoor Air Concentrations

Compound	CAS Number	Residential TAC (ug/m^3)	1995 Residential TAC (ug/m^3)	Ind/Com TAC (ug/m^3)	1995 Ind/Com TAC (ug/m^3)
Acetone	67641	▼180	834	▼500[1]	1170
Acrylonitrile	107131	NA	NA	NA	NA
Benzene	71432	►3.3[2]	3.25[2]	▼3.3[2]	21.5[2]
Bromoform	75252	▼0.55	2.21	▲7.3	3.72
2-Butanone (MEK)	78933	▼500[1]	1040	▼500[1]	1460
Carbon tetrachloride	56235	▼0.5[2]	1[2]	▼0.54	1[2]
Chlorobenzene	108907	▲37	20.9	▲200	29.2
Chloroform	67663	▼0.5[2]	3[2]	▼0.5[2]	3[2]
Dibromochloromethane	124481	NA	NA	NA	NA
1,2-Dichlorobenzene	95501	▼73	209	▲410	292
1,3-Dichlorobenzene	541731	▼73	209	▲410	292
1,4-Dichlorobenzene	106467	▼24[2]	834	▼24[2]	1170
1,1-Dichloroethane	75343	▼77	521	▼430	730
1,2-Dichloroethane	107062	▼0.07	0.0936	▲0.31	0.157
1,1-Dichloroethylene	75354	▲10	0.0487	▲20	0.0818
cis-1,2-Dichlroethylene	156592	See **New Criteria** below	NA	See **New Criteria** below	NA
trans-1,2-Dichloroethylene	156605	See **New Criteria** below	NA	See **New Criteria** below	NA
1,2-Dichloropropane	78875	►0.13	0.128	▲0.42	0.215
1,3-Dichloropropene	542756	▲0.21	0.0658	▲2.9	0.11
Ethyl benzene	100414	▼53	1040	▼290	1460
Ethylene dibromide (EDB)	106934	▼0.0028	0.0111	▲0.038	0.0186
Methyl-tert-butyl-ether	1634044	▼160	521	▼190[3]	730
Methyl isobutyl ketone	108101	▼37	83.4	▲200	117
Methylene chloride	75092	▼3[2]	45[2]	▼17	45[2]
Styrene	100425	▲52	5[2]	▲290	7.17

Table C1
(Continued)

Comparison of Target Indoor Air Concentrations

Compound	CAS Number	Residential TAC (ug/m^3)	1996 Residential TAC (ug/m^3)	Ind/Com TAC (ug/m^3)	1996 Ind/Com TAC (ug/m^3)
1,1,1,2-Tetrachloroethane	630206	▼0.082	0.329	▲1.1	0.552
1,1,2,2-Tetrachloroethane	79345	▼0.011	0.042	▲0.14	0.0705
Tetrachloroethylene	127184	▼5[2]	11[2]	▼5[2]	11[2]
Toluene	108883	▼210	417	▼500[1]	584
1,1,1 Trichloroethane	71556	▼500	1040	▼500[1]	1460
1,1,2-Trichloroethane	79005	▼2.2	30[2]	▼12	30[2]
Trichloroethylene	79016	▼1[2]	5[2]	▼1[2]	5[2]
Vinyl chloride	75014	▲0.14	0.029	▲1.9	0.0487
Xylenes	1330207	▼220	313	▲500[1]	438
New Criteria					
Trichlorofluoromethane	75694	370	NA	500[1]	NA
Chloroethane	75003	500[1]	NA	500[1]	NA
Chloromethane	74873	14	NA	80	NA
Dichlorodiflouromethane	75718	91	NA	500[1]	NA
Isopropylbenzene (Cumene)	98828	120[3]	NA	120[3]	NA
cis-1,2-dichloroethene	156592	18	NA	100	NA
trans-1,2-dichloroethene	156605	37	NA	200	NA
Bromodichloromethane	75274	0.034	NA	0.46	NA
N-butylbenzene	104518	73	NA	410	NA
Sec-butylbenzene	135988	73	NA	410	NA
1,2,4-trimethylbenzene	95636	9.3	NA	52	NA
1,3,5-trimethylbenzene	108678	9.3	NA	52	NA
4-isopropyltoluene (4-cymene)	99876	67	NA	370	NA

[1] Based on a ceiling value. [2] Based on a background concentration. [3] Based on an odor threshold concentration. ▲TAC increased. ▼ TAC decreased. ► TAC stayed the same.

Table C2

Comparison of Ground Water Volatilization Criteria

Compound	CAS Number	Residential GWVC (ug/L)	1996 Residential GWVC (ug/L)	Ind/Com GWVC (ug/L)	1996 Ind/Com GWVC (ug/L)
Acetone	67641	▶50000	50000	▶50000	50000
Acrylonitrile	107131	NA	NA	NA	NA
Benzene	71432	▼130	215	▼310	3491
Bromoform	75252	▼75	920	▼2300	3800
2-Butanone (MEK)	78933	▶50000	50000	▶50000	50000
Carbon tetrachloride	56235	▼5.3	16	▼14	40
Chlorobenzene	108907	▶1800	1800	▲23000	6150
Chloroform	67663	▼26	287	▼62	710
Dibromochloromethane	124481	NA	NA	NA	NA
1,2-Dichlorobenzene	95501	▼5100	30500	▶50000	50000
1,3-Dichlorobenzene	541731	▼4300	24200	▶50000	50000
1,4-Dichlorobenzene	106467	▼1400	50000	▼3400	50000
1,1-Dichloroethane	75343	▼3000	34600	▼41000	50000
1,2-Dichloroethane	107062	▼6.5	21	▼68	90
1,1-Dichloroethylene	75354	▲190	1	▲920	6
cis-1,2-Dichlroethylene	156592	See New Criteria below	NA	See New Criteria below	NA
trans-1,2-Dichloroethylene	156605	See New Criteria below	NA	See New Criteria below	NA
1,2-Dichloropropane	78875	▼7.4	14	▶58	60
1,3-Dichloropropene	542756	▲11	6	▲360	25
Ethyl benzene	100414	▼2700	50000	▼36000	50000
Ethylene dibromide (EDB)	106934	▼0.3	4	▼11	16
Methyl-tert-butyl-ether	1634044	▼21000	50000	▶50000	50000
Methyl isobutyl ketone	108101	▼13000	50000	▶50000	50000
Methylene chloride	75092	▼160	4512	▼2200	11117
Styrene	100425	▲3100	580	▲42000	2065

Table C2
(Continued)

Comparison of Ground Water Volatilization Criteria

Compound	CAS Number	Residential GWVC (ug/L)	1996 Residential GWVC (ug/L)	Ind/Com GWVC (ug/L)	1996 Ind/Com GWVC (ug/L)
1,1,1,2-Tetrachloroethane	630206	▼2	12	▲64	50
1,1,2,2-Tetrachloroethane	79345	▼1.8	23	▼54	100
Tetrachloroethylene	127184	▼340	1500	▼810	3820
Toluene	108883	▼7100	23500	▼41000	50000
1,1,1-Trichloroethane	71556	▼6500	20400	▼16000	50000
1,1,2-Trichloroethane	79005	▼220	8000	▼2900	19600
Trichloroethylene	79016	▼27	219	▼67	540
Vinyl chloride	75014	►1.6	2	▲52	2
Xylenes	1330207	▼8700	21300	▼48000	50000
New Criteria					
Trichlorofluoromethane	75694	1300	NA	4200	NA
Chloroethane	75003	12000	NA	29000	NA
Chloromethane	74873	390	NA	5500	NA
Dichlorodiflouromethane	75718	93	NA	1200	NA
Isopropylbenzene (Cumene)	98828	2800	NA	6800	NA
Cis-1,2-dichloroethene	156592	830	NA	11000	NA
trans-1,2-dichloroethene	156605	1000	NA	13000	NA
Bromodichloromethane	75274	2.3	NA	73	NA
N-butylbenzene	104518	1500	NA	21000	NA
Sec-butylbenzene	135988	1500	NA	20000	NA
1,2,4-trimethylbenzene	95636	360	NA	4800	NA
1,3,5-trimethylbenzene	108678	280	NA	3900	NA
4-isopropyltoluene (4-cymene)	99876	1600	NA	22000	NA

▲GWVC increased. ▼ GWVC decreased. ► GWVC stayed the same.

Table C3

Comparison of Soil Vapor Volatilization Criteria

Compound	CAS Number	Residential SVVC (ppm)	1996 Residential SVVC (ppm)	Ind/Com SVVC (ppm)	1996 Ind/Com SVVC (ppm)
Acetone	67641	▼57	2400	▼290	8250
Acrylonitrile	107131	NA	NA	NA	NA
Benzene	71432	▼0.78	1	▼1.4	113
Bromoform	75252	▼0.04	1.5	▼0.98	6
2-Butanone (MEK)	78933	▼130	2400	▼230	8285
Carbon tetrachloride	56235	▼0.06	1	▼0.12	2.7
Chlorobenzene	108907	▼6.1	31	▼60	106
Chloroform	67663	▼0.078	4.5	▼0.14	10.4
Dibromochloromethane	124481	NA	NA	NA	NA
1,2-Dichlorobenzene	95501	▼9.2	240	▼95	818
1,3-Dichlorobenzene	541731	▼9.2	240	▼95	818
1,4-Dichlorobenzene	106467	▼3	950	▼5.5	3270
1,1-Dichloroethane	75343	▼14	850	▼150	3037
1,2-Dichloroethane	107062	▼0.013	1	▼0.11	1
1,1-Dichloroethylene	75354	▲1.9	1	▲7	1
cis-1,2-Dichlroethylene	156592	See New Criteria below	NA	See New Criteria below	NA
trans-1,2-Dichloroethylene	156605	See New Criteria below	NA	See New Criteria below	NA
1,2-Dichloropropane	78875	▼0.021	1	▼0.13	1
1,3-Dichloropropene	542756	▼0.035	1	▼0.89	1
Ethyl benzene	100414	▼9.3	1650	▼93	5672
Ethylene dibromide (EDB)	106934	▼0.0005	1	▼0.007	1
Methyl-tert-butyl-ether	1634044	▼34	1000	▼73	3415
Methyl isobutyl ketone	108101	▼6.8	140	▼68	480
Methylene chloride	75092	▼0.65	89	▼6.8	218
Styrene	100425	▲9.3	8	▲95	28

Table C3
(Continued)

Comparison of Soil Vapor Volatilization Criteria

Compound	CAS Number	Residential SVVC (ppm)	1996 Residential SVVC (ppm)	Ind/Com SVVC (ppm)	1996 Ind/Com SVVC (ppm)
1,1,1,2-Tetrachloroethane	630206	▼0.009	1	▼0.22	1.5
1,1,2,2-Tetrachloroethane	79345	▼0.0012	1	▼0.028	1
Tetrachloroethylene	127184	▼0.56	11	▼1	27
Toluene	108883	▼42	760	▼180	2615
1,1,1 Trichloroethane	71556	▼70	1310	▼130	4520
1,1,2-Trichloroethane	79005	▼0.31	40	▼3.1	93
Trichloroethylene	79016	▼0.14	7	▼0.26	16
Vinyl chloride	75014	▼0.041	1	►1	1
Xylenes	1330207	▼38	500	▼160	1702
New Criteria					
Trichlorofluoromethane	75694	50	NA	120	NA
Chloroethane	75003	140	NA	260	NA
Chloromethane	74873	5.1	NA	53	NA
Dichlorodiflouromethane	75718	14	NA	140	NA
Isopropylbenzene (Cumene)	98828	19	NA	34	NA
Cis-1,2-dichloroethene	156592	3.4	NA	35	NA
trans-1,2-dichloroethene	156605	7.1	NA	70	NA
Bromodichloromethane	75274	0.0038	NA	0.095	NA
N-butylbenzene	104518	10	NA	100	NA
Sec-butylbenzene	135988	10	NA	100	NA
1,2,4-trimethylbenzene	95636	1.4	NA	15	NA
1,3,5-trimethylbenzene	108678	1.4	NA	15	NA
4-isopropyltoluene (4-cymene)	99876	9.3	NA	94	NA

▲SVVC increased. ▼ SVVC decreased. ► SVVC stayed the same.

EXHIBIT D

Monitoring Well and Piezometer Completion Reports

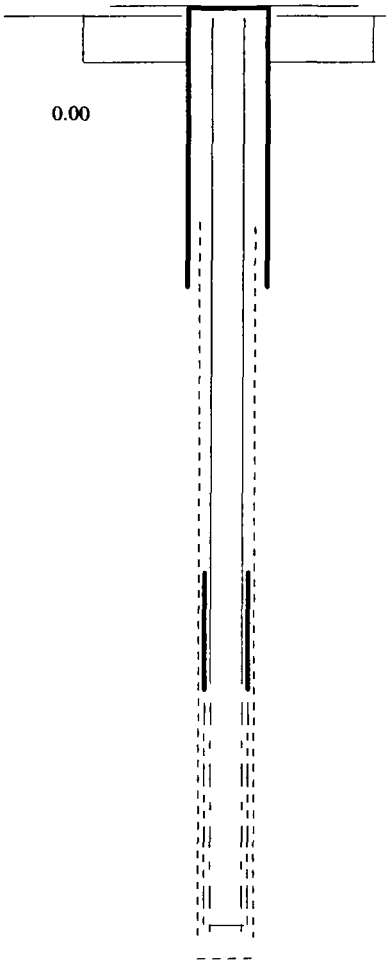
WELL COMPLETION LOG

Project: MacDermid - Huntingdon **LEA Commission Number** 91MH401.001 **Client** MacDermid Incorporated - RNav **Location** MacDermid - Huntingdon Avenue	**Start Date** 08/05/2004 **End Date** 08/05/2004	**Well ID** **PZ-01**

Drilling Contractor Connecticut Test
Drilling Method Hollow Stem Auger
Sampling Method Hollow Stem Auger
Groundwater Observation
Depth **at** **Hours**

Logged by
Drilling Foreman Chris DeAngelis
Drill Rig CME 75

Latitude
Longitude



Protector
- Material steel
- Diameter 6"
- Length 12" Ground 0.00
- Stickup No
- Key # NA
- Cover Type road box

Top Seal
- Top
- Bottom
- Material

Backfill
- Top 2'
- Bottom 24
- Material grout

Secondary Sand
- Top 27'
- Bottom 40'
- Size No. 0 Sand

Filter Pack
- Top 29.0
- Bottom 39.0
- Material FilterPrepackNo.0Sand

Reported depth to bottom of boring 40.00
Last measured depth

Concrete Diameter 2'
Concrete Thickness 2'

Reference
- Elevation 0.00
- Description

Casing
- Diameter 1.5"
- Material Sch 40 PVC
- Length 29'
- Top Elevation 960.60

Seal
- Top 24.0
- Bottom 29.0
- Material bentonite chips

Screen
- Top 29.00
- Bottom 39.00
- Material Steel Mesh
- Diameter 1.5"
- Length 10.0'
- Slot Size 0.010"
- Soil Description

Comments

Top of road box elevation = 961.00. Northing = 5100.19. Easting = 5494.75. Well Screen = Geoprobe Filter Prepack Steel Mesh.

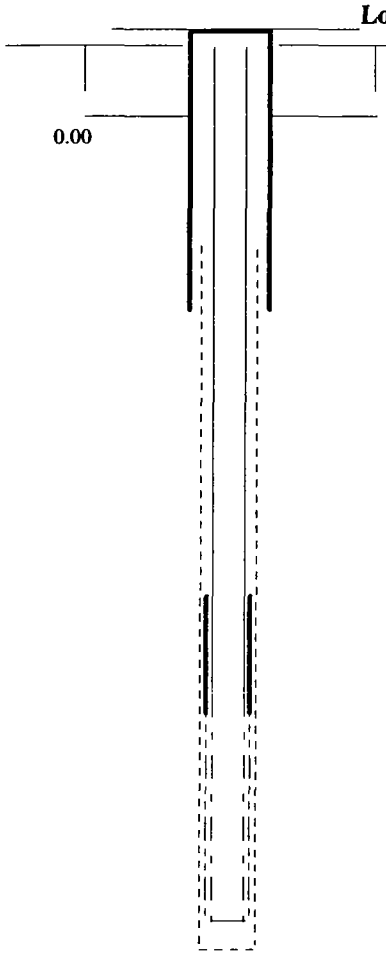
Vertical scale ~ 1:100

WELL COMPLETION LOG

Project: MacDermid - Huntingdon **LEA Commission Number** 91MH401.001 **Client** MacDermid Incorporated - RNav **Location** MacDermid - Huntingdon Avenue	**Start Date** 08/05/2004 **End Date** 08/05/2004	**Well ID** **PZ-02**

Drilling Contractor Connecticut Test
Drilling Method Hollow Stem Auger
Sampling Method Hollow Stem Auger
Groundwater Observation
Depth **at** **Hours**

Logged by
Drilling Foreman Chris DeAngelis
Drill Rig CME 75
Latitude
Longitude



Protector
- Material steel
- Diameter 6"
- Length 12"
- Stickup No
- Key # NA
- Cover Type road box

Ground 0.00

Top Seal
- Top
- Bottom
- Material

Backfill
- Top 2'
- Bottom 23
- Material grout

Secondary Sand
- Top 26'
- Bottom 28'
- Size No. 0 Sand

Filter Pack
- Top 28.0
- Bottom 38.0
- Material Filterprepack #0 Sand

Reported depth to bottom of boring 39.00
Last measured depth

Concrete
- Diameter 2'
- Thickness 2'

Reference
- Elevation 0.00
- Description

Casing
- Diameter 1.5"
- Material Sch 40 PVC
- Length 28'
- Top Elevation 968.00

Seal
- Top 23.0
- Bottom 28.0
- Material bentonite chips

Screen
- Top 28.00
- Bottom 38.00
- Material Steel Mesh
- Diameter 1.5"
- Length 10.0'
- Slot Size 0.010"
- Soil Description

Comments

Field documentation identifies this well as PZ-02C. Road box elevation = 968.71. Northin = 5346.15. Easting = 5333.45. Well screen = Geoprobe Filter Prepack Steel Mesh.

Vertical scale ~ 1:100

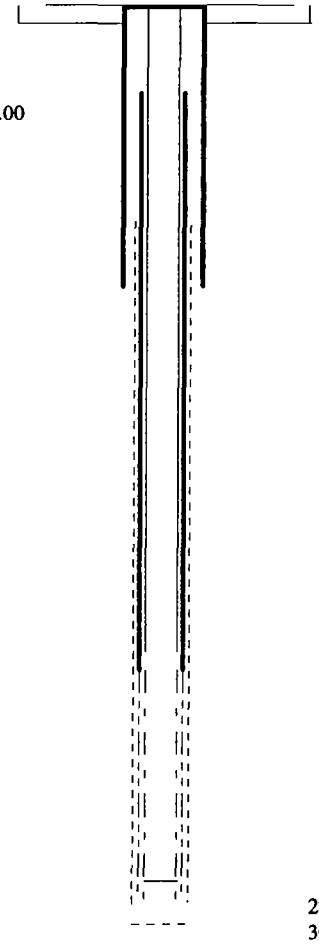
WELL COMPLETION LOG

Project: MacDermid - Huntingdon
LEA Commission Number 91MH401.001
Client MacDermid Incorporated - RNav
Location MacDermid - Huntingdon Avenue

Start Date	Well ID
07/01/2004	PZ-03
End Date	
07/01/2004	

Drilling Contractor Loureiro Engineering
Drilling Method direct push
Sampling Method direct push
Groundwater Observation
Depth 32 **at** **Hours**

Logged by Dave S. Vasiliou
Drilling Foreman Alex Clarke
Drill Rig Geoprobe 6610DT
Latitude
Longitude



Protector
- Material steel
- Diameter 6"
- Length 12" Ground 0.00
- Stickup No
- Key # NA
- Cover Type road box

Top Seal
- Top
- Bottom
- Material

Backfill
- Top 0.8"
- Bottom 3
- Material grout

Secondary Sand
- Top 26'
- Bottom 39'
- Size No. 0 Sand

Filter Pack
- Top 28.0
- Bottom 38.0
- Material Filterprepack #0 Sand

Reported depth to bottom of boring 39.00
Last measured depth

Comments
Top of road box elevation = 968.33. Northing = 5229.06. Easting = 5266.77. Well screen = Geoprobe filter prepack steel mesh.

Concrete Diameter 0.8"
Concrete Thickness 0.8"

Reference
- Elevation 0.00
- Description

Casing
- Diameter 1.5"
- Material Sch 40 PVC
- Length 28'
- Top Elevation 967.87

Seal
- Top 3.0
- Bottom 28.0
- Material bentonite grout

Screen
- Top 28.00
- Bottom 38.00
- Material steel mesh
- Diameter 1.5"
- Length 10.0'
- Slot Size 0.010"
- Soil Description

28' to 30': tan very fine SAND, bedded
30' to 32': tan very fine SAND, bedded
32' to 34': tan very fine SAND, bedded, wet
34' to 36': tan very fine SAND, bedded, wet
36' to 38': tan very fine SAND, bedded, wet

Vertical scale ~ 1:100

WELL COMPLETION LOG

Project: MacDermid - Huntingdon **LEA Commission Number** 91MH401.001 **Client** MacDermid Incorporated - RNav **Location** MacDermid - Huntingdon Avenue	**Start Date** 08/05/2004 **End Date** 08/05/2004	**Well ID** **PZ-04**

Drilling Contractor Connecticut Test
Drilling Method Hollow Stem Auger
Sampling Method Hollow Stem Auger
Groundwater Observation
Depth 35 **at** **Hours**

Logged by
Drilling Foreman Chris DeAngelis
Drill Rig CME 75
Latitude
Longitude

Protector
- Material steel
- Diameter 6"
- Length 12" Ground 0.00
- Stickup No
- Key # NA
- Cover Type road box

Top Seal
- Top
- Bottom
- Material

Backfill
- Top 2'
- Bottom 24
- Material grout

Secondary Sand
- Top 27'
- Bottom 40'
- Size No. 0 Sand

Filter Pack
- Top 29.0
- Bottom 39.0
- Material Filterprepack #0 Sand

Reported depth to bottom of boring 40.00
Last measured depth

Concrete Diameter 2'
Concrete Thickness 2'

Reference
- Elevation 0.00
- Description

Casing
- Diameter 1.5"
- Material Sch 40 PVC
- Length 29'
- Top Elevation 962.84

Seal
- Top 24.0
- Bottom 29.0
- Material bentonite chips

Screen
- Top 29.00
- Bottom 39.00
- Material steel mesh
- Diameter 1.5"
- Length 10.0'
- Slot Size 0.010"
- Soil Description

Comments

Top of road box elevation = 962.59. Northing = 5044.29. Easting = 5086.87. Well screen = Geoprobe filter prepack steel mesh. Product thickness = 3.99'.

Vertical scale ~ 1:100

WELL COMPLETION LOG

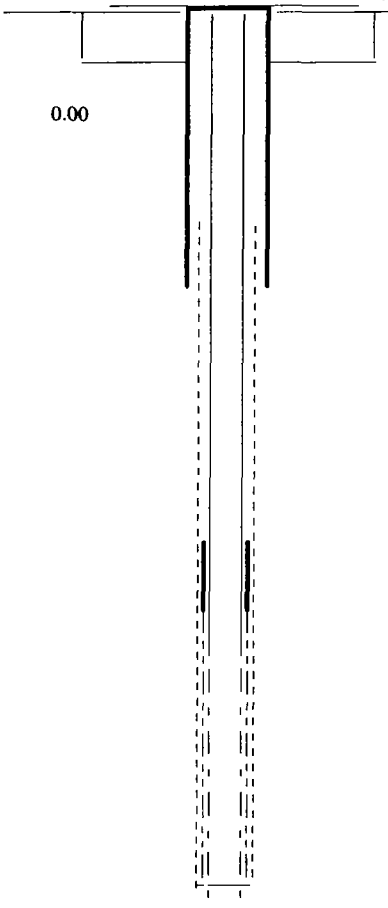
Project: MacDermid - Huntingdon
LEA Commission Number 91MH401.
Client MacDermid Incorporated - RNav
Location MacDermid - Huntingdon Avenue

Start Date 08/07/2004
End Date 08/07/2004

Well ID **MW-117S**

Drilling Contractor Connecticut Test
Drilling Method Hollow Stem Auger
Sampling Method Hollow Stem Auger
Groundwater Observation
Depth 34.3 **at** **Hours**
Average depth to water is 34.27

Logged by
Drilling Foreman Chris DeAngelis
Drill Rig CME 75
Latitude
Longitude



Protector
- Material steel
- Diameter 6"
- Length 12" Ground 0.00
- Stickup No
- Key # NA
- Cover Type road box

Top Seal
- Top 2'
- Bottom 2.5'
- Material bentonite grout

Backfill
- Top 2.5'
- Bottom 23
- Material Grout

Secondary Sand
- Top
- Bottom
- Size

Filter Pack
- Top 26.0
- Bottom 38.0
- Material No. 0 Sand

Concrete Diameter 2'
Concrete Thickness 2'

Reference
- Elevation 0.00
- Description

Casing
- Diameter 2"
- Material Sch 40 PVC
- Length 28'
- Top Elevation 962.55

Seal
- Top 23.0
- Bottom 26.0
- Material Bentonite Chips

Screen
- Top 28.00
- Bottom 38.00
- Material Sch 40 PVC
- Diameter 2"
- Length 10.0'
- Slot Size 0.040"
- Soil Description

Reported depth to bottom of boring 38.00
Last measured depth 38

Comments

This well replaced original well in same location. This well ID'd in field documentation as MW-117-RW.
Road box elevation=962.77.
Northing = 5027.31. Easting = 4942.45.

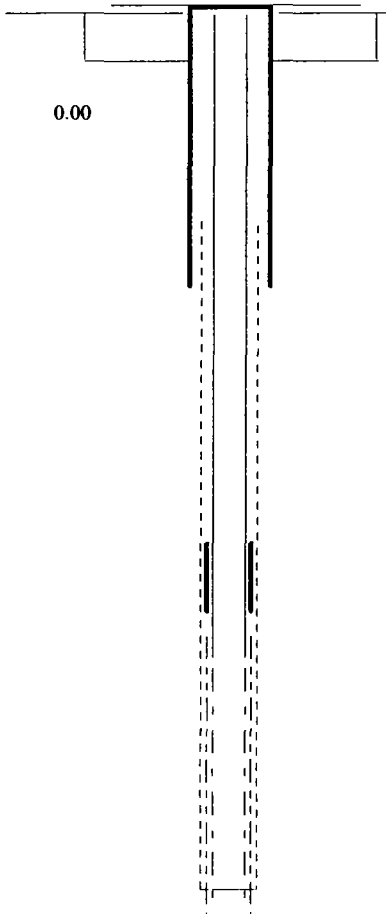
Vertical scale ~ 1:100

WELL COMPLETION LOG

Project: MacDermid - Huntingdon **LEA Commission Number** 91MH401. **Client** MacDermid Incorporated - RNav **Location** MacDermid - Huntingdon Avenue	**Start Date** 08/07/2004 **End Date** 08/07/2004	**Well ID** **MW-118S**

Drilling Contractor Connecticut Test
Drilling Method Hollow Stem Auger
Sampling Method Hollow Stem Auger
Groundwater Observation
Depth 31.8 **at** **Hours**
Average depth to water is 31.78

Logged by
Drilling Foreman Chris DeAngelis
Drill Rig CME 75
Latitude
Longitude



Protector
- Material steel
- Diameter 6"
- Length 12" Ground 0.00
- Stickup No
- Key # NA
- Cover Type road box

Top Seal
- Top 2'
- Bottom 2.5'
- Material bentonite grout

Backfill
- Top 2.5'
- Bottom 23
- Material Grout

Secondary Sand
- Top
- Bottom
- Size

Filter Pack
- Top 26.0
- Bottom 38.0
- Material No. 0 Sand

Concrete Diameter 2'
Concrete Thickness 2'

Reference
- Elevation 0.00
- Description

Casing
- Diameter 2"
- Material Sch 40 PVC
- Length 28'
- Top Elevation 962.22

Seal
- Top 23.0
- Bottom 26.0
- Material bentonite chips

Screen
- Top 28.00
- Bottom 38.00
- Material Sch 40 PVC
- Diameter 2"
- Length 10.0'
- Slot Size 0.040"
- Soil Description

Reported depth to bottom of boring 38.00
Last measured depth 38.00

Comments
Top of road box elevation = 962.54. Northing=4882.01. Easting =4958.19.

Vertical scale ~ 1:100

WELL COMPLETION LOG

Project: MacDermid - Huntingdon **LEA Commission Number** 91MH401.001 **Client** MacDermid Incorporated - RNav **Location** MacDermid - Huntingdon Avenue	**Start Date** 08/11/2004 **End Date** 08/11/2004	**Well ID** **MW-117D**

Drilling Contractor Connecticut Test
Drilling Method Hollow Stem Auger
Sampling Method Hollow Stem Auger
Groundwater Observation
Depth 31.6 **at** **Hours**
Average depth to water is 31.59

Logged by Dave S. Vasiliou
Drilling Foreman Chris DeAngelis
Drill Rig CME 75
Latitude
Longitude

Protector
- Material steel
- Diameter 6"
- Length 12" Ground 0.00
- Stickup No
- Key # NA
- Cover Type road box

Top Seal
- Top 2'
- Bottom 2.5'
- Material bentonite grout

Backfill
- Top 2.5'
- Bottom 40
- Material grout

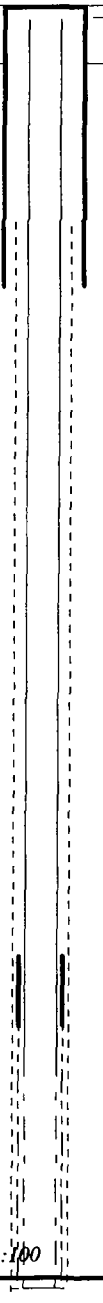
Secondary Sand
- Top
- Bottom
- Size

Filter Pack
- Top 43.0
- Bottom 55.0
- Material No. 0 Sand

Reported depth to bottom of boring 55.00
Last measured depth 55.00

Comments

Original MW-117D abandoned due to poor construction. Field documentation IDs this well as MW-117D-RW. Elevation of road box=962.9. Northing = 5020.48. Easting = 4939.17



Vertical scale ~ 1:100

Concrete Diameter 2'
Concrete Thickness 2'

Reference
- Elevation 0.00
- Description

Casing
- Diameter 2"
- Material Sch 40 PVC
- Length 45.0'
- Top Elevation 962.42

Seal
- Top 40.0
- Bottom 43.0
- Material bentonite chips

Screen
- Top 45.00
- Bottom 55.00
- Material Sch 40 PVC
- Diameter 2"
- Length 10.0'
- Slot Size 0.040"
- Soil Description

44' to 46': yellow brown fine SAND, some Silt, wet
46' to 48': yellow brown fine SAND, some Silt, wet
48' to 50': yellow brown fine SAND, some Silt, wet
50' to 52': yellow brown fine SAND, some Silt, wet
52' to 54': 0" - 8" yellow brown fine SAND, some Silt, wet
8" - 24" [NOTE: recovery states 22" recovery] red coarse GRAVEL and yellow brown SAND, angular Gravel
54' to 55': red coarse GRAVEL and yellow brown SAND, angular Gravel
[NOTE: log states refusal at 55'. 12" drive. Recovery states

WELL COMPLETION LOG

Project: MacDermid - Huntingdon
LEA Commission Number 91MH401.001
Client MacDermid Incorporated - RNav
Location MacDermid - Huntingdon Avenue

Start Date	Well ID
08/06/2004	MW-118D
End Date	
08/06/2004	

Drilling Contractor Connecticut Test
Drilling Method Hollow Stem Auger
Sampling Method Hollow Stem Auger
Groundwater Observation
Depth 33.7 **at** **Hours**
Average depth to water is 33.70

Logged by Eric Boswell
Drilling Foreman Chris DeAngelis
Drill Rig CME 75
Latitude
Longitude

Protector
- Material steel
- Diameter 6"
- Length 12' Ground 0.00
- Stickup No
- Key # NA
- Cover Type road box

Top Seal
- Top
- Bottom
- Material bentonite grout

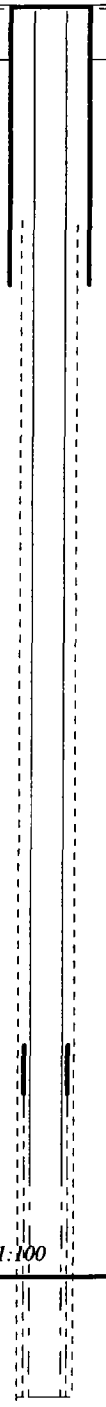
Backfill
- Top 2'
- Bottom 45
- Material grout

Secondary Sand
- Top
- Bottom
- Size

Filter Pack
- Top 47.0
- Bottom 60.0
- *Material* *No. 0 Sand*

Reported depth to bottom of boring 60.00
Last measured depth 60.00

Comments
Top of road box elevation = 962.55. Northing = 4881.18. Easting = 4953.96.



Vertical scale ~ 1:100

Concrete Diameter 2'
Concrete Thickness 2'

Reference
- Elevation 0.00
- Description

Casing
- Diameter 2"
- Material Sch 40 PVC
- Length 50.0'
- Top Elevation 962.38

Seal
- Top 45.0
- Bottom 47.0
- Material bentonite chips

Screen
- Top 50.00
- Bottom 60.00
- Material Sch 40 PVC
- Diameter 2'
- Length 10.0'
- Slot Size 0.040"

Soil Description

50' to 52': dark yellow brown very fine SAND and SILT, wet, laminae observed
52' to 54': dark yellow brown very fine SAND and SILT, wet, laminae observed
54' to 56': dark yellow brown very fine SAND and SILT, wet, laminae observed
56' to 58': yellow brown fine SAND, some Silt, trace medium Sand, wet
58' to 60': yellow brown fine SAND, some Silt, trace medium Sand, wet

EXHIBIT E

Tables

Table 1
SUMMARY OF SAMPLING AND ANALYTICAL INFORMATION
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

Sample Information					Analysis Information							
Location ID	Sample ID	Sample Date	Sampled Interval (ft)	Sample Class		Volatile Organics	Semivolatile Organics	Herbicides	Pesticides/ PCBs	Fuels/Oils	Metals	Miscellaneous Analyses
EQUIPMENT	1051348	08/12/2004		BKE		x					x	x
EQUIPMENT	1051354	08/13/2004		BKE		X					x	x
EQUIPMENT	1051339	08/16/2004		BKE		X					x	x
MW-101	1051345	08/13/2004	26.00 - 36.00	GWS		x					X	x
MW-102	1051344	08/13/2004	21.70 - 31.70	GWS		x					X	x
MW-103	1051351	08/16/2004		GWS		X					X	x
MW-105	1051342	08/12/2004	27.00 - 37.00	GWS		X					X	x
MW-109	1051334	08/13/2004		GWS		X					X	x
MW-110	1051343	08/12/2004		GWS		X					X	x
MW-111	1051336	08/12/2004		GWS		X					X	x
MW-112	1051333	08/13/2004	25.00 - 35.00	GWS		X					X	x
MW-113	1051331	08/12/2004		GWS		x					X	x
MW-114	1051337	08/12/2004	28.00 - 38.00	GWS		X					X	x
MW-115	1051338	08/12/2004	28.00 - 38.00	GWS		X					X	x
MW-116D	1051332	08/12/2004	50.00 - 60.00	GWS		x					X	x
MW-116S	1051352	08/13/2004	28.00 - 38.00	GWS		X					X	x
MW-117D	1051335	08/16/2004	45.00 - 55.00	GWS		X					X	x
MW-117S	1051341	08/16/2004	28.00 - 38.00	GWS		X					X	x
MW-118D	1051340	08/13/2004	50.00 - 60.00	GWS		X					X	x
MW-118D	1051353	08/13/2004	50.00 - 60.00	GWS		X					X	x
MW-118S	1051349	08/16/2004	28.00 - 38.00	GWS		X					X	x
MW-118S	1051350	08/16/2004	28.00 - 38.00	GWS		X					X	x
TRIP BLANK	1051347	08/12/2004		BKT		x						
TRIP BLANK	1051355	08/13/2004		BKT		X						
TRIP BLANK	1051346	08/16/2004		BKT		X						

Legend: x - mass, t - TCLP, s - SPLP, e - EPTOX, z - ZHE, d - Thermal Desorption, r - Charcoal Tube, a - SEM/AVS, m - Methanol, nr - not received; Capitalized - at least one analyte in class detected

Printed on 08/25/2004

Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	EQUIPMENT	EQUIPMENT	EQUIPMENT	EQUIPMENT	EQUIPMENT	EQUIPMENT	MW-101
	Sample ID	1051348	1051348	1051354	1051354	1051339	1051339	1051345
	Sample Date	08/12/2004	08/12/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004	08/13/2004
	Sample Time	17:00	17:00	14:00	14:00	14:30	14:30	
	Sample Depth							26.00' - 36.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007415	AEL04007416	AEL04007435	AEL04007444	AEL04007469	AEL04007475	AEL04007432
Constituent	Units							
Depth of Well	Ft							33.04
Depth To Water	Ft							6.05
Specific Conductivity (field)	umhos							117
pH (field measurement)	SU							7.56
Date Metals Analyzed	-		08/19/2004		08/19/2004		08/19/2004	
Date Organics Analyzed	-	08/16/2004		08/16/2004		08/17/2004		08/16/2004
Date Physical Analyzed	-	08/19/2004		08/20/2004		08/20/2004		08/19/2004
Arsenic (unfiltered)	mg/L		<0.004 U		<0.004 U		<0.004 U	
Barium (unfiltered)	mg/L		<0.010 U		<0.010 U		<0.010 U	
Cadmium (unfiltered)	mg/L		<0.002 U		<0.002 U		<0.002 U	
Chromium, Total (unfiltered)	mg/L		<0.005 U		<0.005 U		<0.005 U	
Copper (unfiltered)	mg/L		<0.005 U		<0.005 U		<0.005 U	
Lead (unfiltered)	mg/L		<0.0050 U		<0.0050 U		<0.0050 U	
Mercury (unfiltered)	mg/L		<0.0002 U		<0.0002 U		<0.0002 U	
Nickel (unfiltered)	mg/L		<0.010 U		<0.010 U		<0.010 U	
Selenium (unfiltered)	mg/L		<0.005 U		<0.005 U		<0.005 U	
Silver (unfiltered)	mg/L		<0.005 U		<0.005 U		<0.005 U	
Zinc (unfiltered)	mg/L		<0.010 U		<0.010 U		<0.010 U	
Cyanide	mg/L	<0.005 U		<0.005 U		<0.005 U		<0.005 U
Vinyl Acetate	ug/l	<0.5 UJ		<0.5 UJ		<0.5 UJ		<0.5 UJ
Acetone	ug/l	<10 U		<10 U		<10 U		<10 U
Acrolein	ug/l	<0.5 UJ		<0.5 UJ		<0.5 UJ		<0.5 UJ
Acrylonitrile	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Benzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Bromobenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Chlorobenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Ethylbenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,3-Dichlorobenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U

Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	EQUIPMENT	EQUIPMENT	EQUIPMENT	EQUIPMENT	EQUIPMENT	EQUIPMENT	MW-101
	Sample ID	1051348	1051348	1051354	1051354	1051339	1051339	1051345
	Sample Date	08/12/2004	08/12/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004	08/13/2004
	Sample Time	17:00	17:00	14:00	14:00	14:30	14:30	
	Sample Depth							26.00' - 36.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007415	AEL04007416	AEL04007435	AEL04007444	AEL04007469	AEL04007475	AEL04007432
Constituent	Units							
1,2-Dichlorobenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,4-Dichlorobenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Methyl Ethyl ketone (2-Butanone)	ug/l	<2.0 U		<2.0 U		<2.0 U		<2.0 U
Carbon Disulfide	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Carbon Tetrachloride	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Chloroform	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,1,1,2-Tetrachloroethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,1,1-Trichloroethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,1,2,2-Tetrachloroethane	ug/l	<0.5 UJ		<0.5 UJ		<0.5 U		<0.5 UJ
1,1,2-Trichloroethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,1-Dichloroethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,2-Dichloroethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Chloroethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
2-Chloroethyl Vinyl ether	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Methyl-tert-butyl-ether	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,1-Dichloroethylene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
trans-1,2-Dichloroethene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
cis-1,2-Dichloroethylene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Vinyl Chloride	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Tetrachloroethylene (PCE)	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Trichloroethylene (TCE)	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
2-Hexanone	ug/l	<1.0 U		<1.0 U		<1.0 U		<1.0 U
Bromomethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Bromodichloromethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Chloromethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Dibromochloromethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Dibromomethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Methylene Chloride	ug/l	<0.5 U		1.0 L		1.1 L		<0.5 U

Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	EQUIPMENT	EQUIPMENT	EQUIPMENT	EQUIPMENT	EQUIPMENT	EQUIPMENT	MW-101
	Sample ID	1051348	1051348	1051354	1051354	1051339	1051339	1051345
	Sample Date	08/12/2004	08/12/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004	08/13/2004
	Sample Time	17:00	17:00	14:00	14:00	14:30	14:30	
	Sample Depth							26.00' - 36.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007415	AEL04007416	AEL04007435	AEL04007444	AEL04007469	AEL04007475	AEL04007432
Constituent	Units							
Dichlorodifluoromethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Bromoform	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Trichlorofluoromethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Methyl Isobutyl ketone (4-Methyl-2-Pentanone)	ug/l	<2.0 U		<2.0 U		<2.0 U		<2.0 U
1,2,3-Trichloropropane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,2-Dichloropropane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
trans-1,3-Dichloropropene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
cis-1,3-Dichloropropene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Styrene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Toluene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
2-Chlorotoluene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
4-Chlorotoluene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Xylenes	ug/l	<1.0 U		<1.0 U		<1.0 U		<1.0 U
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Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-101	MW-102	MW-102	MW-103	MW-103	MW-105	MW-105
	Sample ID	1051345	1051344	1051344	1051351	1051351	1051342	1051342
	Sample Date	08/13/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004	08/12/2004	08/12/2004
	Sample Time				14:35	14:35	11:00	11:00
	Sample Depth	26.00' - 36.0	21.70' - 31.7	21.70' - 31.7			27.00' - 37.0	27.00' - 37.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007441	AEL04007431	AEL04007440	AEL04007466	AEL04007472	AEL04007411	AEL04007412
Constituent	Units							
Depth of Well	Ft	33.04	34.59	34.59	34.84	34.84	38.10	38.10
Depth To Water	Ft	6.05	26.06	26.06	31.25	31.25	32.60	32.60
Specific Conductivity (field)	umhos	117	56	56	59	59	75	75
pH (field measurement)	SU	7.56	5.46	5.46	5.40	5.40	5.75	5.75
Date Metals Analyzed	-	08/19/2004		08/19/2004		08/19/2004		08/19/2004
Date Organics Analyzed	-		08/16/2004		08/17/2004		08/16/2004	
Date Physical Analyzed	-		08/19/2004		08/20/2004		08/19/2004	
Arsenic (unfiltered)	mg/L	0.008		<0.004 U		<0.004 U		<0.004 U
Barium (unfiltered)	mg/L	<0.010 U		<0.010 U		0.025 L		0.027 L
Cadmium (unfiltered)	mg/L	<0.002 U		<0.002 U		<0.002 U		<0.002 U
Chromium, Total (unfiltered)	mg/L	<0.005 U		<0.005 U		<0.005 U		<0.005 U
Copper (unfiltered)	mg/L	<0.005 U		<0.005 U		<0.005 U		<0.005 U
Lead (unfiltered)	mg/L	<0.0050 U		<0.0050 U		<0.0050 U		<0.0050 U
Mercury (unfiltered)	mg/L	<0.0002 U		<0.0002 U		<0.0002 U		<0.0002 U
Nickel (unfiltered)	mg/L	<0.010 U		0.027 L		<0.010 U		<0.010 U
Selenium (unfiltered)	mg/L	<0.005 U		<0.005 U		<0.005 U		<0.005 U
Silver (unfiltered)	mg/L	<0.005 U		<0.005 U		<0.005 U		<0.005 U
Zinc (unfiltered)	mg/L	0.145		0.016		0.010 L		0.010 L
Cyanide	mg/L		<0.005 U		<0.005 U		<0.005 U	
Vinyl Acetate	ug/l		<0.5 UJ		<0.5 UJ		<0.5 UJ	
Acetone	ug/l		<10 U		<10 U		<10 U	
Acrolein	ug/l		<0.5 UJ		<0.5 UJ		<0.5 UJ	
Acrylonitrile	ug/l		<0.5 U		<0.5 U		<0.5 U	
Benzene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Bromobenzene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Chlorobenzene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Ethylbenzene	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,3-Dichlorobenzene	ug/l		<0.5 U		<0.5 U		<0.5 U	

Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-101	MW-102	MW-102	MW-103	MW-103	MW-105	MW-105
	Sample ID	1051345	1051344	1051344	1051351	1051351	1051342	1051342
	Sample Date	08/13/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004	08/12/2004	08/12/2004
	Sample Time				14:35	14:35	11:00	11:00
	Sample Depth	26.00' - 36.0	21.70' - 31.7	21.70' - 31.7			27.00' - 37.0	27.00' - 37.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007441	AEL04007431	AEL04007440	AEL04007466	AEL04007472	AEL04007411	AEL04007412
Constituent	Units							
1,2-Dichlorobenzene	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,4-Dichlorobenzene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Methyl Ethyl ketone (2-Butanone)	ug/l		<2.0 U		<2.0 U		<2.0 U	
Carbon Disulfide	ug/l		<0.5 U		<0.5 U		<0.5 U	
Carbon Tetrachloride	ug/l		<0.5 U		<0.5 U		<0.5 U	
Chloroform	ug/l		<0.5 U		<0.5 U		0.6 L	
1,1,1,2-Tetrachloroethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,1,1-Trichloroethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,1,2,2-Tetrachloroethane	ug/l		<0.5 UJ		<0.5 U		<0.5 UJ	
1,1,2-Trichloroethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,1-Dichloroethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,2-Dichloroethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Chloroethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
2-Chloroethyl Vinyl ether	ug/l		<0.5 U		<0.5 U		<0.5 U	
Methyl-tert-butyl-ether	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,1-Dichloroethylene	ug/l		<0.5 U		<0.5 U		<0.5 U	
trans-1,2-Dichloroethene	ug/l		<0.5 U		<0.5 U		<0.5 U	
cis-1,2-Dichloroethylene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Vinyl Chloride	ug/l		<0.5 U		<0.5 U		<0.5 U	
Tetrachloroethylene (PCE)	ug/l		<0.5 U		<0.5 U		6.1	
Trichloroethylene (TCE)	ug/l		<0.5 U		<0.5 U		<0.5 U	
2-Hexanone	ug/l		<1.0 U		<1.0 U		<1.0 U	
Bromomethane	ug/l		<0.5 U		<0.5 U		1.7	
Bromodichloromethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Chloromethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Dibromochloromethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Dibromomethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Methylene Chloride	ug/l		<0.5 U		0.8 L		<0.5 U	

Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-101	MW-102	MW-102	MW-103	MW-103	MW-105	MW-105
	Sample ID	1051345	1051344	1051344	1051351	1051351	1051342	1051342
	Sample Date	08/13/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004	08/12/2004	08/12/2004
	Sample Time				14:35	14:35	11:00	11:00
	Sample Depth	26.00' - 36.0	21.70' - 31.7	21.70' - 31.7			27.00' - 37.0	27.00' - 37.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007441	AEL04007431	AEL04007440	AEL04007466	AEL04007472	AEL04007411	AEL04007412
Constituent	Units							
Dichlorodifluoromethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Bromoform	ug/l		<0.5 U		<0.5 U		<0.5 U	
Trichlorofluoromethane	ug/l		<0.5 U		<0.5 U		8.1	
Methyl Isobutyl ketone (4-Methyl-2-Pentanone)	ug/l		<2.0 U		<2.0 U		<2.0 U	
1,2,3-Trichloropropane	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,2-Dichloropropane	ug/l		<0.5 U		<0.5 U		<0.5 U	
trans-1,3-Dichloropropene	ug/l		<0.5 U		<0.5 U		<0.5 U	
cis-1,3-Dichloropropene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Styrene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Toluene	ug/l		<0.5 U		<0.5 U		<0.5 U	
2-Chlorotoluene	ug/l		<0.5 U		<0.5 U		<0.5 U	
4-Chlorotoluene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Xylenes	ug/l		<1.0 U		<1.0 U		<1.0 U	
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Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-109	MW-109	MW-110	MW-110	MW-111	MW-111	MW-112
	Sample ID	1051334	1051334	1051343	1051343	1051336	1051336	1051333
	Sample Date	08/13/2004	08/13/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004	08/13/2004
	Sample Time	11:37	11:37	14:05	14:05	11:10	11:10	09:50
	Sample Depth							25.00' - 35.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007429	AEL04007438	AEL04007413	AEL04007414	AEL04007405	AEL04007406	AEL04007428
Constituent	Units							
Depth of Well	Ft	35.10	35.10	40.09	40.09	33.51	33.51	35.20
Depth To Water	Ft	32.55	32.55	33.28	33.28	33.00	33.00	32.86
Specific Conductivity (field)	umhos	1156	1156	504	504	140	140	285
pH (field measurement)	SU	5.51	5.51	5.75	5.75	4.54	4.54	5.91
Date Metals Analyzed	-		08/19/2004		08/19/2004		08/19/2004	
Date Organics Analyzed	-	08/16/2004		08/16/2004		08/14/2004		08/16/2004
Date Physical Analyzed	-	08/19/2004		08/19/2004		08/19/2004		08/19/2004
Arsenic (unfiltered)	mg/L		0.007		<0.004 U		<0.004 U	
Barium (unfiltered)	mg/L		0.024 L		0.018 L		0.042 L	
Cadmium (unfiltered)	mg/L		<0.002 U		<0.002 U		<0.002 U	
Chromium, Total (unfiltered)	mg/L		0.032 L		0.011 L		<0.005 U	
Copper (unfiltered)	mg/L		0.291		0.512		<0.005 U	
Lead (unfiltered)	mg/L		<0.0050 U		<0.0050 U		<0.0050 U	
Mercury (unfiltered)	mg/L		<0.0002 U		0.0003 L		<0.0002 U	
Nickel (unfiltered)	mg/L		0.077		0.019 L		<0.010 U	
Selenium (unfiltered)	mg/L		<0.005 U		<0.005 U		<0.005 U	
Silver (unfiltered)	mg/L		<0.005 U		<0.005 U		<0.005 U	
Zinc (unfiltered)	mg/L		0.015		0.063		0.065	
Cyanide	mg/L	<0.005 U		<0.005 U		<0.005 U		<0.005 U
Vinyl Acetate	ug/l	<0.5 UJ		<0.5 UJ		<0.5 UJ		<0.5 UJ
Acetone	ug/l	<10 U		<10 U		<10 U		<10 U
Acrolein	ug/l	<0.5 UJ		<0.5 UJ		<0.5 UJ		<0.5 UJ
Acrylonitrile	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Benzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Bromobenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Chlorobenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Ethylbenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,3-Dichlorobenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U

Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-109	MW-109	MW-110	MW-110	MW-111	MW-111	MW-112
	Sample ID	1051334	1051334	1051343	1051343	1051336	1051336	1051333
	Sample Date	08/13/2004	08/13/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004	08/13/2004
	Sample Time	11:37	11:37	14:05	14:05	11:10	11:10	09:50
	Sample Depth							25.00' - 35.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007429	AEL04007438	AEL04007413	AEL04007414	AEL04007405	AEL04007406	AEL04007428
Constituent	Units							
1,2-Dichlorobenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,4-Dichlorobenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Methyl Ethyl ketone (2-Butanone)	ug/l	<2.0 U		<2.0 U		3.5		<2.0 U
Carbon Disulfide	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Carbon Tetrachloride	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Chloroform	ug/l	0.6 L		<0.5 U		0.5 L		<0.5 U
1,1,1,2-Tetrachloroethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,1,1-Trichloroethane	ug/l	0.8 L		<0.5 U		<0.5 U		<0.5 U
1,1,2,2-Tetrachloroethane	ug/l	<0.5 UJ		<0.5 UJ		<0.5 U		<0.5 UJ
1,1,2-Trichloroethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,1-Dichloroethane	ug/l	<0.5 U		<0.5 U		1.2		<0.5 U
1,2-Dichloroethane	ug/l	1.1		<0.5 U		2.5		<0.5 U
Chloroethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
2-Chloroethyl Vinyl ether	ug/l	<0.5 U		<0.5 U		<0.5 UJ		<0.5 U
Methyl-tert-butyl-ether	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,1-Dichloroethylene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
trans-1,2-Dichloroethene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
cis-1,2-Dichloroethylene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Vinyl Chloride	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Tetrachloroethylene (PCE)	ug/l	5.1		20 H		2.3		4.9
Trichloroethylene (TCE)	ug/l	<0.5 U		<0.5 U		<0.5 U		0.9 L
2-Hexanone	ug/l	<1.0 U		<1.0 U		<1.0 U		<1.0 U
Bromomethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Bromodichloromethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Chloromethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Dibromochloromethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Dibromomethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Methylene Chloride	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U

Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-109	MW-109	MW-110	MW-110	MW-111	MW-111	MW-112
	Sample ID	1051334	1051334	1051343	1051343	1051336	1051336	1051333
	Sample Date	08/13/2004	08/13/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004	08/13/2004
	Sample Time	11:37	11:37	14:05	14:05	11:10	11:10	09:50
	Sample Depth							25.00' - 35.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007429	AEL04007438	AEL04007413	AEL04007414	AEL04007405	AEL04007406	AEL04007428
Constituent	Units							
Dichlorodifluoromethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Bromoform	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Trichlorofluoromethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Methyl Isobutyl ketone (4-Methyl-2-Pentanone)	ug/l	<2.0 U		<2.0 U		<2.0 U		<2.0 U
1,2,3-Trichloropropane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,2-Dichloropropane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
trans-1,3-Dichloropropene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
cis-1,3-Dichloropropene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Styrene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Toluene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
2-Chlorotoluene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
4-Chlorotoluene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Xylenes	ug/l	<1.0 U		<1.0 U		<1.0 U		<1.0 U
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Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-112	MW-113	MW-113	MW-114	MW-114	MW-115	MW-115
	Sample ID	1051333	1051331	1051331	1051337	1051337	1051338	1051338
	Sample Date	08/13/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004
	Sample Time	09:50	10:20	10:20	14:20	14:20	16:25	16:25
	Sample Depth	25.00' - 35.0			28.00' - 38.0	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007437	AEL04007401	AEL04007402	AEL04007407	AEL04007408	AEL04007409	AEL04007410
Constituent	Units							
Depth of Well	Ft	35.20	40.50	40.50	38.38	38.38	38.31	38.31
Depth To Water	Ft	32.86	34.45	34.45	33.74	33.74	33.76	33.76
Specific Conductivity (field)	umhos	285	357	357	940	940	811	811
pH (field measurement)	SU	5.91	5.32	5.32	3.35	3.35	4.90	4.90
Date Metals Analyzed	-	08/19/2004		08/19/2004		08/19/2004		08/19/2004
Date Organics Analyzed	-		08/14/2004		08/16/2004		08/16/2004	
Date Physical Analyzed	-		08/19/2004		08/19/2004		08/19/2004	
Arsenic (unfiltered)	mg/L	<0.004 U		<0.004 U		<0.004 U		<0.004 U
Barium (unfiltered)	mg/L	0.027 L		0.032 L		0.146		0.060
Cadmium (unfiltered)	mg/L	<0.002 U		<0.002 U		<0.002 U		<0.002 U
Chromium, Total (unfiltered)	mg/L	0.027 L		<0.005 U		<0.005 U		0.526
Copper (unfiltered)	mg/L	<0.005 U		<0.005 U		<0.005 U		0.007 L
Lead (unfiltered)	mg/L	<0.0050 U		<0.0050 U		<0.0050 U		<0.0050 U
Mercury (unfiltered)	mg/L	<0.0002 U		<0.0002 U		<0.0002 U		<0.0002 U
Nickel (unfiltered)	mg/L	<0.010 U		<0.010 U		<0.010 U		0.382
Selenium (unfiltered)	mg/L	<0.005 U		<0.005 U		<0.005 U		<0.005 U
Silver (unfiltered)	mg/L	<0.005 U		<0.005 U		<0.005 U		<0.005 U
Zinc (unfiltered)	mg/L	0.012 L		0.014 L		0.014 L		<0.010 U
Cyanide	mg/L		<0.005 U		<0.005 U		<0.005 U	
Vinyl Acetate	ug/l		<0.5 UJ		<0.5 UJ		<0.5 UJ	
Acetone	ug/l		<10 U		<10 U		<10 U	
Acrolein	ug/l		<0.5 UJ		<0.5 UJ		<0.5 UJ	
Acrylonitrile	ug/l		<0.5 U		<0.5 U		<0.5 U	
Benzene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Bromobenzene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Chlorobenzene	ug/l		<0.5 U		<0.5 U		1.0 L	
Ethylbenzene	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,3-Dichlorobenzene	ug/l		<0.5 U		<0.5 U		<0.5 U	

Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-112	MW-113	MW-113	MW-114	MW-114	MW-115	MW-115
	Sample ID	1051333	1051331	1051331	1051337	1051337	1051338	1051338
	Sample Date	08/13/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004
	Sample Time	09:50	10:20	10:20	14:20	14:20	16:25	16:25
	Sample Depth	25.00' - 35.0			28.00' - 38.0	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007437	AEL04007401	AEL04007402	AEL04007407	AEL04007408	AEL04007409	AEL04007410
Constituent	Units							
1,2-Dichlorobenzene	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,4-Dichlorobenzene	ug/l		<0.5 U		<0.5 U		0.5 L	
Methyl Ethyl ketone (2-Butanone)	ug/l		<2.0 U		<2.0 U		<2.0 U	
Carbon Disulfide	ug/l		<0.5 U		<0.5 U		<0.5 U	
Carbon Tetrachloride	ug/l		<0.5 U		<0.5 U		<0.5 U	
Chloroform	ug/l		<0.5 U		0.5 L		26	
1,1,1,2-Tetrachloroethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,1,1-Trichloroethane	ug/l		<0.5 U		<0.5 U		25	
1,1,2,2-Tetrachloroethane	ug/l		<0.5 U		<0.5 UJ		<0.5 UJ	
1,1,2-Trichloroethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,1-Dichloroethane	ug/l		<0.5 U		<0.5 U		1.0	
1,2-Dichloroethane	ug/l		<0.5 U		<0.5 U		12	
Chloroethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
2-Chloroethyl Vinyl ether	ug/l		<0.5 UJ		<0.5 U		<0.5 U	
Methyl-tert-butyl-ether	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,1-Dichloroethylene	ug/l		<0.5 U		<0.5 U		60	
trans-1,2-Dichloroethene	ug/l		<0.5 U		<0.5 U		<0.5 U	
cis-1,2-Dichloroethylene	ug/l		<0.5 U		<0.5 U		1.6	
Vinyl Chloride	ug/l		<0.5 U		<0.5 U		<0.5 U	
Tetrachloroethylene (PCE)	ug/l		<0.5 U		4.1		280	
Trichloroethylene (TCE)	ug/l		<0.5 U		<0.5 U		20	
2-Hexanone	ug/l		<1.0 U		<1.0 U		<1.0 U	
Bromomethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Bromodichloromethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Chloromethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Dibromochloromethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Dibromomethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Methylene Chloride	ug/l		<0.5 U		<0.5 U		6.2	

Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-112	MW-113	MW-113	MW-114	MW-114	MW-115	MW-115
	Sample ID	1051333	1051331	1051331	1051337	1051337	1051338	1051338
	Sample Date	08/13/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004
	Sample Time	09:50	10:20	10:20	14:20	14:20	16:25	16:25
	Sample Depth	25.00' - 35.0			28.00' - 38.0	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007437	AEL04007401	AEL04007402	AEL04007407	AEL04007408	AEL04007409	AEL04007410
Constituent	Units							
Dichlorodifluoromethane	ug/l		<0.5 U		2.1		2.6	
Bromoform	ug/l		<0.5 U		<0.5 U		<0.5 U	
Trichlorofluoromethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Methyl Isobutyl ketone (4-Methyl-2-Pentanone)	ug/l		<2.0 U		<2.0 U		<2.0 U	
1,2,3-Trichloropropane	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,2-Dichloropropane	ug/l		<0.5 U		<0.5 U		<0.5 U	
trans-1,3-Dichloropropene	ug/l		<0.5 U		<0.5 U		<0.5 U	
cis-1,3-Dichloropropene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Styrene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Toluene	ug/l		<0.5 U		<0.5 U		<0.5 U	
2-Chlorotoluene	ug/l		<0.5 U		<0.5 U		<0.5 U	
4-Chlorotoluene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Xylenes	ug/l		<1.0 U		<1.0 U		1.2 L	
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Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-116D	MW-116D	MW-116S	MW-116S	MW-117D	MW-117D	MW-117S
	Sample ID	1051332	1051332	1051352	1051352	1051335	1051335	1051341
	Sample Date	08/12/2004	08/12/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004	08/16/2004
	Sample Time	14:59	14:59	09:40	09:40	09:55	09:55	12:40
	Sample Depth	50.00' - 60.0	50.00' - 60.0	28.00' - 38.0	28.00' - 38.0	45.00' - 55.0	45.00' - 55.0	28.00' - 38.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007403	AEL04007404	AEL04007433	AEL04007442	AEL04007464	AEL04007470	AEL04007465
Constituent	Units							
Depth of Well	Ft	57.92	57.92	34.50	34.50	55.00	55.00	38
Depth To Water	Ft	31.88	31.88	33.64	33.64	31.59	31.59	34.27
Specific Conductivity (field)	umhos	24	24	23	23	0.851	0.851	0.210
pH (field measurement)	SU	4.19	4.19	5.15	5.15	5.91	5.91	5.90
Date Metals Analyzed	-		08/19/2004		08/19/2004		08/19/2004	
Date Organics Analyzed	-	08/14/2004		08/16/2004		08/17/2004		08/17/2004
Date Physical Analyzed	-	08/19/2004		08/19/2004		08/20/2004		08/20/2004
Arsenic (unfiltered)	mg/L		<0.004 U		<0.004 U		<0.004 U	
Barium (unfiltered)	mg/L		<0.010 U		0.031 L		0.085	
Cadmium (unfiltered)	mg/L		<0.002 U		<0.002 U		0.002 L	
Chromium, Total (unfiltered)	mg/L		<0.005 U		<0.005 U		<0.005 U	
Copper (unfiltered)	mg/L		<0.005 U		<0.005 U		<0.005 U	
Lead (unfiltered)	mg/L		<0.0050 U		<0.0050 U		<0.0050 U	
Mercury (unfiltered)	mg/L		<0.0002 U		<0.0002 U		<0.0002 U	
Nickel (unfiltered)	mg/L		<0.010 U		<0.010 U		0.022 L	
Selenium (unfiltered)	mg/L		<0.005 U		<0.005 U		<0.005 U	
Silver (unfiltered)	mg/L		<0.005 U		<0.005 U		<0.005 U	
Zinc (unfiltered)	mg/L		0.026		0.012 L		0.011 L	
Cyanide	mg/L	<0.005 U		<0.005 U		<0.005 U		<0.005 U
Vinyl Acetate	ug/l	<0.5 UJ		<0.5 UJ		<0.5 UJ		<0.5 UJ
Acetone	ug/l	<10 U		<10 U		<10 U		<10 U
Acrolein	ug/l	<0.5 UJ		<0.5 UJ		<0.5 UJ		<0.5 UJ
Acrylonitrile	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Benzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Bromobenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Chlorobenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Ethylbenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,3-Dichlorobenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U

Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-116D	MW-116D	MW-116S	MW-116S	MW-117D	MW-117D	MW-117S
	Sample ID	1051332	1051332	1051352	1051352	1051335	1051335	1051341
	Sample Date	08/12/2004	08/12/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004	08/16/2004
	Sample Time	14:59	14:59	09:40	09:40	09:55	09:55	12:40
	Sample Depth	50.00' - 60.0	50.00' - 60.0	28.00' - 38.0	28.00' - 38.0	45.00' - 55.0	45.00' - 55.0	28.00' - 38.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007403	AEL04007404	AEL04007433	AEL04007442	AEL04007464	AEL04007470	AEL04007465
Constituent	Units							
1,2-Dichlorobenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,4-Dichlorobenzene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Methyl Ethyl ketone (2-Butanone)	ug/l	<2.0 U		<2.0 U		<2.0 U		<2.0 U
Carbon Disulfide	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Carbon Tetrachloride	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Chloroform	ug/l	<0.5 U		<0.5 U		2.3		0.6 L
1,1,1,2-Tetrachloroethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,1,1-Trichloroethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,1,2,2-Tetrachloroethane	ug/l	<0.5 U		<0.5 UJ		<0.5 U		<0.5 U
1,1,2-Trichloroethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,1-Dichloroethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,2-Dichloroethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Chloroethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
2-Chloroethyl Vinyl ether	ug/l	<0.5 UJ		<0.5 U		<0.5 U		<0.5 U
Methyl-tert-butyl-ether	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,1-Dichloroethylene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
trans-1,2-Dichloroethene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
cis-1,2-Dichloroethylene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Vinyl Chloride	ug/l	<0.5 U		<0.5 U		0.6 L		<0.5 U
Tetrachloroethylene (PCE)	ug/l	<0.5 U		1.6		<0.5 U		<0.5 U
Trichloroethylene (TCE)	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
2-Hexanone	ug/l	<1.0 U		<1.0 U		<1.0 U		<1.0 U
Bromomethane	ug/l	<0.5 U		1.7		<0.5 U		<0.5 U
Bromodichloromethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Chloromethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Dibromochloromethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Dibromomethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Methylene Chloride	ug/l	<0.5 U		<0.5 U		0.8 L		<0.5 U

Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-116D	MW-116D	MW-116S	MW-116S	MW-117D	MW-117D	MW-117S
	Sample ID	1051332	1051332	1051352	1051352	1051335	1051335	1051341
	Sample Date	08/12/2004	08/12/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004	08/16/2004
	Sample Time	14:59	14:59	09:40	09:40	09:55	09:55	12:40
	Sample Depth	50.00' - 60.0	50.00' - 60.0	28.00' - 38.0	28.00' - 38.0	45.00' - 55.0	45.00' - 55.0	28.00' - 38.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007403	AEL04007404	AEL04007433	AEL04007442	AEL04007464	AEL04007470	AEL04007465
Constituent	Units							
Dichlorodifluoromethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Bromoform	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Trichlorofluoromethane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Methyl Isobutyl ketone (4-Methyl-2-Pentanone)	ug/l	<2.0 U		<2.0 U		<2.0 U		<2.0 U
1,2,3-Trichloropropane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
1,2-Dichloropropane	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
trans-1,3-Dichloropropene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
cis-1,3-Dichloropropene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Styrene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Toluene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
2-Chlorotoluene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
4-Chlorotoluene	ug/l	<0.5 U		<0.5 U		<0.5 U		<0.5 U
Xylenes	ug/l	<1.0 U		<1.0 U		<1.0 U		<1.0 U
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Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-117S	MW-118D	MW-118D	MW-118D	MW-118D	MW-118S	MW-118S
	Sample ID	1051341	1051340	1051340	1051353	1051353	1051349	1051349
	Sample Date	08/16/2004	08/13/2004	08/13/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004
	Sample Time	12:40	13:55	13:55	14:10	14:10	11:30	11:30
	Sample Depth	28.00' - 38.0	50.00' - 60.0	50.00' - 60.0	50.00' - 60.0	50.00' - 60.0	28.00' - 38.0	28.00' - 38.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007471	AEL04007430	AEL04007439	AEL04007434	AEL04007443	AEL04007467	AEL04007473
Constituent	Units							
Depth of Well	Ft	38	60.00	60.00	60.00	60.00	38.00	38.00
Depth To Water	Ft	34.27	33.70	33.70	33.70	33.70	31.78	31.78
Specific Conductivity (field)	umhos	0.210	419	419	419	419	277	277
pH (field measurement)	SU	5.90	5.13	5.13	5.13	5.13	5.79	5.79
Date Metals Analyzed	-	08/19/2004		08/19/2004		08/19/2004		08/19/2004
Date Organics Analyzed	-		08/16/2004		08/16/2004		08/17/2004	
Date Physical Analyzed	-		08/19/2004		08/20/2004		08/20/2004	
Arsenic (unfiltered)	mg/L	<0.004 U		<0.004 U		<0.004 U		<0.004 U
Barium (unfiltered)	mg/L	0.060		0.051		0.052		0.037 L
Cadmium (unfiltered)	mg/L	<0.002 U		<0.002 U		<0.002 U		<0.002 U
Chromium, Total (unfiltered)	mg/L	<0.005 U		<0.005 U		<0.005 U		<0.005 U
Copper (unfiltered)	mg/L	<0.005 U		<0.005 U		<0.005 U		<0.005 U
Lead (unfiltered)	mg/L	<0.0050 U		<0.0050 U		<0.0050 U		<0.0050 U
Mercury (unfiltered)	mg/L	<0.0002 U		<0.0002 U		<0.0002 U		<0.0002 U
Nickel (unfiltered)	mg/L	<0.010 U		<0.010 U		<0.010 U		<0.010 U
Selenium (unfiltered)	mg/L	<0.005 U		<0.005 U		<0.005 U		<0.005 U
Silver (unfiltered)	mg/L	<0.005 U		<0.005 U		<0.005 U		<0.005 U
Zinc (unfiltered)	mg/L	0.010 L		<0.010 U		0.021		0.037
Cyanide	mg/L		<0.005 U		<0.005 U		<0.005 U	
Vinyl Acetate	ug/l		<0.5 UJ		<0.5 UJ		<0.5 UJ	
Acetone	ug/l		<10 U		<10 U		<10 U	
Acrolein	ug/l		<0.5 UJ		<0.5 UJ		<0.5 UJ	
Acrylonitrile	ug/l		<0.5 U		<0.5 U		<0.5 U	
Benzene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Bromobenzene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Chlorobenzene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Ethylbenzene	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,3-Dichlorobenzene	ug/l		<0.5 U		<0.5 U		<0.5 U	

Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-117S	MW-118D	MW-118D	MW-118D	MW-118D	MW-118S	MW-118S
	Sample ID	1051341	1051340	1051340	1051353	1051353	1051349	1051349
	Sample Date	08/16/2004	08/13/2004	08/13/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004
	Sample Time	12:40	13:55	13:55	14:10	14:10	11:30	11:30
	Sample Depth	28.00' - 38.0	50.00' - 60.0	50.00' - 60.0	50.00' - 60.0	50.00' - 60.0	28.00' - 38.0	28.00' - 38.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007471	AEL04007430	AEL04007439	AEL04007434	AEL04007443	AEL04007467	AEL04007473
Constituent	Units							
1,2-Dichlorobenzene	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,4-Dichlorobenzene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Methyl Ethyl ketone (2-Butanone)	ug/l		<2.0 U		<2.0 U		<2.0 U	
Carbon Disulfide	ug/l		<0.5 U		<0.5 U		<0.5 U	
Carbon Tetrachloride	ug/l		<0.5 U		<0.5 U		0.7 L	
Chloroform	ug/l		2.0		2.0		0.8 L	
1,1,1,2-Tetrachloroethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,1,1-Trichloroethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,1,2,2-Tetrachloroethane	ug/l		<0.5 UJ		<0.5 UJ		<0.5 U	
1,1,2-Trichloroethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,1-Dichloroethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,2-Dichloroethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Chloroethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
2-Chloroethyl Vinyl ether	ug/l		<0.5 U		<0.5 U		<0.5 U	
Methyl-tert-butyl-ether	ug/l		6.2		5.6		2.8	
1,1-Dichloroethylene	ug/l		<0.5 U		<0.5 U		<0.5 U	
trans-1,2-Dichloroethene	ug/l		<0.5 U		<0.5 U		<0.5 U	
cis-1,2-Dichloroethylene	ug/l		1.9		1.8		0.5 L	
Vinyl Chloride	ug/l		<0.5 U		<0.5 U		<0.5 U	
Tetrachloroethylene (PCE)	ug/l		<0.5 U		<0.5 U		14	
Trichloroethylene (TCE)	ug/l		0.6 L		0.6 L		2.8	
2-Hexanone	ug/l		<1.0 U		<1.0 U		<1.0 U	
Bromomethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Bromodichloromethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Chloromethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Dibromochloromethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Dibromomethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Methylene Chloride	ug/l		0.6 L		<0.5 U		0.9 L	

Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-117S	MW-118D	MW-118D	MW-118D	MW-118D	MW-118S	MW-118S
	Sample ID	1051341	1051340	1051340	1051353	1051353	1051349	1051349
	Sample Date	08/16/2004	08/13/2004	08/13/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004
	Sample Time	12:40	13:55	13:55	14:10	14:10	11:30	11:30
	Sample Depth	28.00' - 38.0	50.00' - 60.0	50.00' - 60.0	50.00' - 60.0	50.00' - 60.0	28.00' - 38.0	28.00' - 38.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007471	AEL04007430	AEL04007439	AEL04007434	AEL04007443	AEL04007467	AEL04007473
Constituent	Units							
Dichlorodifluoromethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Bromoform	ug/l		<0.5 U		<0.5 U		<0.5 U	
Trichlorofluoromethane	ug/l		<0.5 U		<0.5 U		<0.5 U	
Methyl Isobutyl ketone (4-Methyl-2-Pentanone)	ug/l		<2.0 U		<2.0 U		<2.0 U	
1,2,3-Trichloropropane	ug/l		<0.5 U		<0.5 U		<0.5 U	
1,2-Dichloropropane	ug/l		<0.5 U		<0.5 U		<0.5 U	
trans-1,3-Dichloropropene	ug/l		<0.5 U		<0.5 U		<0.5 U	
cis-1,3-Dichloropropene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Styrene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Toluene	ug/l		<0.5 U		<0.5 U		<0.5 U	
2-Chlorotoluene	ug/l		<0.5 U		<0.5 U		<0.5 U	
4-Chlorotoluene	ug/l		<0.5 U		<0.5 U		<0.5 U	
Xylenes	ug/l		<1.0 U		<1.0 U		<1.0 U	
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Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-118S	MW-118S	TRIP BLANK	TRIP BLANK	TRIP BLANK		
	Sample ID	1051350	1051350	1051347	1051355	1051346		
	Sample Date	08/16/2004	08/16/2004	08/12/2004	08/13/2004	08/16/2004		
	Sample Time	11:30	11:30	16:55	14:05	09:00		
	Sample Depth	28.00' - 38.0	28.00' - 38.0					
	Laboratory	AEL	AEL	AEL	AEL	AEL		
	Lab. Number	AEL04007468	AEL04007474	AEL04007417	AEL04007436	AEL04007476		
Constituent	Units							
Depth of Well	Ft	38.00	38.00					
Depth To Water	Ft	31.78	31.78					
Specific Conductivity (field)	umhos	277	277					
pH (field measurement)	SU	5.79	5.79					
Date Metals Analyzed	-		08/19/2004					
Date Organics Analyzed	-	08/17/2004		08/16/2004	08/16/2004	08/17/2004		
Date Physical Analyzed	-	08/20/2004						
Arsenic (unfiltered)	mg/L		<0.004 U					
Barium (unfiltered)	mg/L		0.036 L					
Cadmium (unfiltered)	mg/L		<0.002 U					
Chromium, Total (unfiltered)	mg/L		<0.005 U					
Copper (unfiltered)	mg/L		<0.005 U					
Lead (unfiltered)	mg/L		<0.0050 U					
Mercury (unfiltered)	mg/L		<0.0002 U					
Nickel (unfiltered)	mg/L		<0.010 U					
Selenium (unfiltered)	mg/L		<0.005 U					
Silver (unfiltered)	mg/L		<0.005 U					
Zinc (unfiltered)	mg/L		<0.010 U					
Cyanide	mg/L	<0.005 U						
Vinyl Acetate	ug/l	<0.5 UJ		<0.5 UJ	<0.5 UJ	<0.5 UJ		
Acetone	ug/l	<10 U		<10 U	<10 U	<10 U		
Acrolein	ug/l	<0.5 UJ		<0.5 UJ	<0.5 UJ	<0.5 UJ		
Acrylonitrile	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Benzene	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Bromobenzene	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Chlorobenzene	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Ethylbenzene	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
1,3-Dichlorobenzene	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		

Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-118S	MW-118S	TRIP BLANK	TRIP BLANK	TRIP BLANK		
	Sample ID	1051350	1051350	1051347	1051355	1051346		
	Sample Date	08/16/2004	08/16/2004	08/12/2004	08/13/2004	08/16/2004		
	Sample Time	11:30	11:30	16:55	14:05	09:00		
	Sample Depth	28.00' - 38.0	28.00' - 38.0					
	Laboratory	AEL	AEL	AEL	AEL	AEL		
	Lab. Number	AEL04007468	AEL04007474	AEL04007417	AEL04007436	AEL04007476		
Constituent	Units							
1,2-Dichlorobenzene	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
1,4-Dichlorobenzene	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Methyl Ethyl ketone (2-Butanone)	ug/l	<2.0 U		<2.0 U	<2.0 U	<2.0 U		
Carbon Disulfide	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Carbon Tetrachloride	ug/l	0.5 L		<0.5 U	<0.5 U	<0.5 U		
Chloroform	ug/l	0.8 L		<0.5 U	<0.5 U	<0.5 U		
1,1,1,2-Tetrachloroethane	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
1,1,1-Trichloroethane	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
1,1,2,2-Tetrachloroethane	ug/l	<0.5 U		<0.5 UJ	<0.5 UJ	<0.5 U		
1,1,2-Trichloroethane	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
1,1-Dichloroethane	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
1,2-Dichloroethane	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Chloroethane	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
2-Chloroethyl Vinyl ether	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Methyl-tert-butyl-ether	ug/l	2.9		<0.5 U	<0.5 U	<0.5 U		
1,1-Dichloroethylene	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
trans-1,2-Dichloroethene	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
cis-1,2-Dichloroethylene	ug/l	0.5 L		<0.5 U	<0.5 U	<0.5 U		
Vinyl Chloride	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Tetrachloroethylene (PCE)	ug/l	15		<0.5 U	<0.5 U	<0.5 U		
Trichloroethylene (TCE)	ug/l	3.0		<0.5 U	<0.5 U	<0.5 U		
2-Hexanone	ug/l	<1.0 U		<1.0 U	<1.0 U	<1.0 U		
Bromomethane	ug/l	1.9		<0.5 U	<0.5 U	<0.5 U		
Bromodichloromethane	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Chloromethane	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Dibromochloromethane	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Dibromomethane	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Methylene Chloride	ug/l	0.8 L		<0.5 U	0.6 L	0.8 L		

Table 2
SUMMARY OF ANALYTICAL RESULTS
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-118S	MW-118S	TRIP BLANK	TRIP BLANK	TRIP BLANK		
	Sample ID	1051350	1051350	1051347	1051355	1051346		
	Sample Date	08/16/2004	08/16/2004	08/12/2004	08/13/2004	08/16/2004		
	Sample Time	11:30	11:30	16:55	14:05	09:00		
	Sample Depth	28.00' - 38.0	28.00' - 38.0					
	Laboratory	AEL	AEL	AEL	AEL	AEL		
	Lab. Number	AEL04007468	AEL04007474	AEL04007417	AEL04007436	AEL04007476		
Constituent	Units							
Dichlorodifluoromethane	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Bromoform	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Trichlorofluoromethane	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Methyl Isobutyl ketone (4-Methyl-2-Pentanone)	ug/l	<2.0 U		<2.0 U	<2.0 U	<2.0 U		
1,2,3-Trichloropropane	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
1,2-Dichloropropane	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
trans-1,3-Dichloropropene	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
cis-1,3-Dichloropropene	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Styrene	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Toluene	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
2-Chlorotoluene	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
4-Chlorotoluene	ug/l	<0.5 U		<0.5 U	<0.5 U	<0.5 U		
Xylenes	ug/l	<1.0 U		<1.0 U	<1.0 U	<1.0 U		
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Table 3
SUMMARY OF ANALYTICAL RESULTS (DETECTS)
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	EQUIPMENT	EQUIPMENT	MW-101	MW-102	MW-103	MW-103	MW-105
	Sample ID	1051354	1051339	1051345	1051344	1051351	1051351	1051342
	Sample Date	08/13/2004	08/16/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004	08/12/2004
	Sample Time	14:00	14:30			14:35	14:35	11:00
	Sample Depth			26.00' - 36.0	21.70' - 31.7			27.00' - 37.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007435	AEL04007469	AEL04007441	AEL04007440	AEL04007466	AEL04007472	AEL04007411
Constituent	Units							
Depth of Well	Ft			33.04	34.59	34.84	34.84	38.10
Depth To Water	Ft			6.05	26.06	31.25	31.25	32.60
Specific Conductivity (field)	umhos			117	56	59	59	75
pH (field measurement)	SU			7.56	5.46	5.40	5.40	5.75
Date Metals Analyzed	-			08/19/2004	08/19/2004		08/19/2004	
Date Organics Analyzed	-	08/16/2004	08/17/2004			08/17/2004		08/16/2004
Arsenic (unfiltered)	mg/L			0.008				
Barium (unfiltered)	mg/L						0.025 L	
Cadmium (unfiltered)	mg/L							
Chromium, Total (unfiltered)	mg/L							
Copper (unfiltered)	mg/L							
Mercury (unfiltered)	mg/L							
Nickel (unfiltered)	mg/L				0.027 L			
Zinc (unfiltered)	mg/L			0.145	0.016		0.010 L	
Chlorobenzene	ug/l							
1,4-Dichlorobenzene	ug/l							
Methyl Ethyl ketone (2-Butanone)	ug/l							
Carbon Tetrachloride	ug/l							
Chloroform	ug/l							0.6 L
1,1,1-Trichloroethane	ug/l							
1,1-Dichloroethane	ug/l							
1,2-Dichloroethane	ug/l							
Methyl-tert-butyl-ether	ug/l							
1,1-Dichloroethylene	ug/l							
cis-1,2-Dichloroethylene	ug/l							
Vinyl Chloride	ug/l							
Tetrachloroethylene (PCE)	ug/l							6.1
Trichloroethylene (TCE)	ug/l							

Table 3
SUMMARY OF ANALYTICAL RESULTS (DETECTS)
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	EQUIPMENT	EQUIPMENT	MW-101	MW-102	MW-103	MW-103	MW-105
	Sample ID	1051354	1051339	1051345	1051344	1051351	1051351	1051342
	Sample Date	08/13/2004	08/16/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004	08/12/2004
	Sample Time	14:00	14:30			14:35	14:35	11:00
	Sample Depth			26.00' - 36.0	21.70' - 31.7			27.00' - 37.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007435	AEL04007469	AEL04007441	AEL04007440	AEL04007466	AEL04007472	AEL04007411
Constituent	Units							
Bromomethane	ug/l							1.7
Methylene Chloride	ug/l	1.0 L	1.1 L			0.8 L		
Dichlorodifluoromethane	ug/l							
Trichlorofluoromethane	ug/l							8.1
Xylenes	ug/l							

Table 3
SUMMARY OF ANALYTICAL RESULTS (DETECTS)
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-105	MW-109	MW-109	MW-110	MW-110	MW-111	MW-111
	Sample ID	1051342	1051334	1051334	1051343	1051343	1051336	1051336
	Sample Date	08/12/2004	08/13/2004	08/13/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004
	Sample Time	11:00	11:37	11:37	14:05	14:05	11:10	11:10
	Sample Depth	27.00' - 37.0						
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007412	AEL04007429	AEL04007438	AEL04007413	AEL04007414	AEL04007405	AEL04007406
Constituent	Units							
Depth of Well	Ft	38.10	35.10	35.10	40.09	40.09	33.51	33.51
Depth To Water	Ft	32.60	32.55	32.55	33.28	33.28	33.00	33.00
Specific Conductivity (field)	umhos	75	1156	1156	504	504	140	140
pH (field measurement)	SU	5.75	5.51	5.51	5.75	5.75	4.54	4.54
Date Metals Analyzed	-	08/19/2004		08/19/2004		08/19/2004		08/19/2004
Date Organics Analyzed	-		08/16/2004		08/16/2004		08/14/2004	
Arsenic (unfiltered)	mg/L			0.007				
Barium (unfiltered)	mg/L	0.027 L		0.024 L		0.018 L		0.042 L
Cadmium (unfiltered)	mg/L							
Chromium, Total (unfiltered)	mg/L			0.032 L		0.011 L		
Copper (unfiltered)	mg/L			0.291		0.512		
Mercury (unfiltered)	mg/L					0.0003 L		
Nickel (unfiltered)	mg/L			0.077		0.019 L		
Zinc (unfiltered)	mg/L	0.010 L		0.015		0.063		0.065
Chlorobenzene	ug/l							
1,4-Dichlorobenzene	ug/l							
Methyl Ethyl ketone (2-Butanone)	ug/l						3.5	
Carbon Tetrachloride	ug/l							
Chloroform	ug/l		0.6 L				0.5 L	
1,1,1-Trichloroethane	ug/l		0.8 L					
1,1-Dichloroethane	ug/l						1.2	
1,2-Dichloroethane	ug/l		1.1				2.5	
Methyl-tert-butyl-ether	ug/l							
1,1-Dichloroethylene	ug/l							
cis-1,2-Dichloroethylene	ug/l							
Vinyl Chloride	ug/l							
Tetrachloroethylene (PCE)	ug/l		5.1		20 H		2.3	
Trichloroethylene (TCE)	ug/l							

Table 3
SUMMARY OF ANALYTICAL RESULTS (DETECTS)
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-105	MW-109	MW-109	MW-110	MW-110	MW-111	MW-111
	Sample ID	1051342	1051334	1051334	1051343	1051343	1051336	1051336
	Sample Date	08/12/2004	08/13/2004	08/13/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004
	Sample Time	11:00	11:37	11:37	14:05	14:05	11:10	11:10
	Sample Depth	27.00' - 37.0						
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007412	AEL04007429	AEL04007438	AEL04007413	AEL04007414	AEL04007405	AEL04007406
Constituent	Units							
Bromomethane	ug/l							
Methylene Chloride	ug/l							
Dichlorodifluoromethane	ug/l							
Trichlorofluoromethane	ug/l							
Xylenes	ug/l							

Table 3
SUMMARY OF ANALYTICAL RESULTS (DETECTS)
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-112	MW-112	MW-113	MW-114	MW-114	MW-115	MW-115
	Sample ID	1051333	1051333	1051331	1051337	1051337	1051338	1051338
	Sample Date	08/13/2004	08/13/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004
	Sample Time	09:50	09:50	10:20	14:20	14:20	16:25	16:25
	Sample Depth	25.00' - 35.0	25.00' - 35.0		28.00' - 38.0	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007428	AEL04007437	AEL04007402	AEL04007407	AEL04007408	AEL04007409	AEL04007410
Constituent	Units							
Depth of Well	Ft	35.20	35.20	40.50	38.38	38.38	38.31	38.31
Depth To Water	Ft	32.86	32.86	34.45	33.74	33.74	33.76	33.76
Specific Conductivity (field)	umhos	285	285	357	940	940	811	811
pH (field measurement)	SU	5.91	5.91	5.32	3.35	3.35	4.90	4.90
Date Metals Analyzed	-		08/19/2004	08/19/2004		08/19/2004		08/19/2004
Date Organics Analyzed	-	08/16/2004			08/16/2004		08/16/2004	
Arsenic (unfiltered)	mg/L							
Barium (unfiltered)	mg/L		0.027 L	0.032 L		0.146		0.060
Cadmium (unfiltered)	mg/L							
Chromium, Total (unfiltered)	mg/L		0.027 L					0.526
Copper (unfiltered)	mg/L							0.007 L
Mercury (unfiltered)	mg/L							
Nickel (unfiltered)	mg/L							0.382
Zinc (unfiltered)	mg/L		0.012 L	0.014 L		0.014 L		
Chlorobenzene	ug/l						1.0 L	
1,4-Dichlorobenzene	ug/l						0.5 L	
Methyl Ethyl ketone (2-Butanone)	ug/l							
Carbon Tetrachloride	ug/l							
Chloroform	ug/l				0.5 L		26	
1,1,1-Trichloroethane	ug/l						25	
1,1-Dichloroethane	ug/l						1.0	
1,2-Dichloroethane	ug/l						12	
Methyl-tert-butyl-ether	ug/l							
1,1-Dichloroethylene	ug/l						60	
cis-1,2-Dichloroethylene	ug/l						1.6	
Vinyl Chloride	ug/l							
Tetrachloroethylene (PCE)	ug/l	4.9			4.1		280	
Trichloroethylene (TCE)	ug/l	0.9 L					20	

Table 3
SUMMARY OF ANALYTICAL RESULTS (DETECTS)
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-112	MW-112	MW-113	MW-114	MW-114	MW-115	MW-115
	Sample ID	1051333	1051333	1051331	1051337	1051337	1051338	1051338
	Sample Date	08/13/2004	08/13/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004	08/12/2004
	Sample Time	09:50	09:50	10:20	14:20	14:20	16:25	16:25
	Sample Depth	25.00' - 35.0	25.00' - 35.0		28.00' - 38.0	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007428	AEL04007437	AEL04007402	AEL04007407	AEL04007408	AEL04007409	AEL04007410
Constituent	Units							
Bromomethane	ug/l							
Methylene Chloride	ug/l						6.2	
Dichlorodifluoromethane	ug/l				2.1		2.6	
Trichlorofluoromethane	ug/l							
Xylenes	ug/l						1.2 L	

Table 3
SUMMARY OF ANALYTICAL RESULTS (DETECTS)
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-116D	MW-116S	MW-116S	MW-117D	MW-117D	MW-117S	MW-117S
	Sample ID	1051332	1051352	1051352	1051335	1051335	1051341	1051341
	Sample Date	08/12/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004	08/16/2004	08/16/2004
	Sample Time	14:59	09:40	09:40	09:55	09:55	12:40	12:40
	Sample Depth	50.00' - 60.0	28.00' - 38.0	28.00' - 38.0	45.00' - 55.0	45.00' - 55.0	28.00' - 38.0	28.00' - 38.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007404	AEL04007433	AEL04007442	AEL04007464	AEL04007470	AEL04007465	AEL04007471
Constituent	Units							
Depth of Well	Ft	57.92	34.50	34.50	55.00	55.00	38	38
Depth To Water	Ft	31.88	33.64	33.64	31.59	31.59	34.27	34.27
Specific Conductivity (field)	umhos	24	23	23	0.851	0.851	0.210	0.210
pH (field measurement)	SU	4.19	5.15	5.15	5.91	5.91	5.90	5.90
Date Metals Analyzed	-	08/19/2004		08/19/2004		08/19/2004		08/19/2004
Date Organics Analyzed	-		08/16/2004		08/17/2004		08/17/2004	
Arsenic (unfiltered)	mg/L							
Barium (unfiltered)	mg/L			0.031 L		0.085		0.060
Cadmium (unfiltered)	mg/L					0.002 L		
Chromium, Total (unfiltered)	mg/L							
Copper (unfiltered)	mg/L							
Mercury (unfiltered)	mg/L							
Nickel (unfiltered)	mg/L					0.022 L		
Zinc (unfiltered)	mg/L	0.026		0.012 L		0.011 L		0.010 L
Chlorobenzene	ug/l							
1,4-Dichlorobenzene	ug/l							
Methyl Ethyl ketone (2-Butanone)	ug/l							
Carbon Tetrachloride	ug/l							
Chloroform	ug/l				2.3		0.6 L	
1,1,1-Trichloroethane	ug/l							
1,1-Dichloroethane	ug/l							
1,2-Dichloroethane	ug/l							
Methyl-tert-butyl-ether	ug/l							
1,1-Dichloroethylene	ug/l							
cis-1,2-Dichloroethylene	ug/l							
Vinyl Chloride	ug/l				0.6 L			
Tetrachloroethylene (PCE)	ug/l		1.6					
Trichloroethylene (TCE)	ug/l							

Table 3
SUMMARY OF ANALYTICAL RESULTS (DETECTS)
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-116D	MW-116S	MW-116S	MW-117D	MW-117D	MW-117S	MW-117S
	Sample ID	1051332	1051352	1051352	1051335	1051335	1051341	1051341
	Sample Date	08/12/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004	08/16/2004	08/16/2004
	Sample Time	14:59	09:40	09:40	09:55	09:55	12:40	12:40
	Sample Depth	50.00' - 60.0	28.00' - 38.0	28.00' - 38.0	45.00' - 55.0	45.00' - 55.0	28.00' - 38.0	28.00' - 38.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007404	AEL04007433	AEL04007442	AEL04007464	AEL04007470	AEL04007465	AEL04007471
Constituent	Units							
Bromomethane	ug/l		1.7					
Methylene Chloride	ug/l				0.8 L			
Dichlorodifluoromethane	ug/l							
Trichlorofluoromethane	ug/l							
Xylenes	ug/l							

Table 3
SUMMARY OF ANALYTICAL RESULTS (DETECTS)
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-118D	MW-118D	MW-118D	MW-118D	MW-118S	MW-118S	MW-118S
	Sample ID	1051340	1051340	1051353	1051353	1051349	1051349	1051350
	Sample Date	08/13/2004	08/13/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004	08/16/2004
	Sample Time	13:55	13:55	14:10	14:10	11:30	11:30	11:30
	Sample Depth	50.00' - 60.0	50.00' - 60.0	50.00' - 60.0	50.00' - 60.0	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007430	AEL04007439	AEL04007434	AEL04007443	AEL04007467	AEL04007473	AEL04007468
Constituent	Units							
Depth of Well	Ft	60.00	60.00	60.00	60.00	38.00	38.00	38.00
Depth To Water	Ft	33.70	33.70	33.70	33.70	31.78	31.78	31.78
Specific Conductivity (field)	umhos	419	419	419	419	277	277	277
pH (field measurement)	SU	5.13	5.13	5.13	5.13	5.79	5.79	5.79
Date Metals Analyzed	-		08/19/2004		08/19/2004		08/19/2004	
Date Organics Analyzed	-	08/16/2004		08/16/2004		08/17/2004		08/17/2004
Arsenic (unfiltered)	mg/L							
Barium (unfiltered)	mg/L		0.051		0.052		0.037 L	
Cadmium (unfiltered)	mg/L							
Chromium, Total (unfiltered)	mg/L							
Copper (unfiltered)	mg/L							
Mercury (unfiltered)	mg/L							
Nickel (unfiltered)	mg/L							
Zinc (unfiltered)	mg/L				0.021		0.037	
Chlorobenzene	ug/l							
1,4-Dichlorobenzene	ug/l							
Methyl Ethyl ketone (2-Butanone)	ug/l							
Carbon Tetrachloride	ug/l					0.7 L		0.5 L
Chloroform	ug/l	2.0		2.0		0.8 L		0.8 L
1,1,1-Trichloroethane	ug/l							
1,1-Dichloroethane	ug/l							
1,2-Dichloroethane	ug/l							
Methyl-tert-butyl-ether	ug/l	6.2		5.6		2.8		2.9
1,1-Dichloroethylene	ug/l							
cis-1,2-Dichloroethylene	ug/l	1.9		1.8		0.5 L		0.5 L
Vinyl Chloride	ug/l							
Tetrachloroethylene (PCE)	ug/l					14		15
Trichloroethylene (TCE)	ug/l	0.6 L		0.6 L		2.8		3.0

Table 3
SUMMARY OF ANALYTICAL RESULTS (DETECTS)
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-118D	MW-118D	MW-118D	MW-118D	MW-118S	MW-118S	MW-118S
	Sample ID	1051340	1051340	1051353	1051353	1051349	1051349	1051350
	Sample Date	08/13/2004	08/13/2004	08/13/2004	08/13/2004	08/16/2004	08/16/2004	08/16/2004
	Sample Time	13:55	13:55	14:10	14:10	11:30	11:30	11:30
	Sample Depth	50.00' - 60.0	50.00' - 60.0	50.00' - 60.0	50.00' - 60.0	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0
	Laboratory	AEL	AEL	AEL	AEL	AEL	AEL	AEL
	Lab. Number	AEL04007430	AEL04007439	AEL04007434	AEL04007443	AEL04007467	AEL04007473	AEL04007468
Constituent	Units							
Bromomethane	ug/l							1.9
Methylene Chloride	ug/l	0.6 L				0.9 L		0.8 L
Dichlorodifluoromethane	ug/l							
Trichlorofluoromethane	ug/l							
Xylenes	ug/l							

Table 3
SUMMARY OF ANALYTICAL RESULTS (DETECTS)
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-118S	TRIP BLANK	TRIP BLANK				
	Sample ID	1051350	1051355	1051346				
	Sample Date	08/16/2004	08/13/2004	08/16/2004				
	Sample Time	11:30	14:05	09:00				
	Sample Depth	28.00' - 38.0						
	Laboratory	AEL	AEL	AEL				
	Lab. Number	AEL04007474	AEL04007436	AEL04007476				
Constituent	Units							
Depth of Well	Ft	38.00						
Depth To Water	Ft	31.78						
Specific Conductivity (field)	umhos	277						
pH (field measurement)	SU	5.79						
Date Metals Analyzed	-	08/19/2004						
Date Organics Analyzed	-		08/16/2004	08/17/2004				
Arsenic (unfiltered)	mg/L							
Barium (unfiltered)	mg/L	0.036 L						
Cadmium (unfiltered)	mg/L							
Chromium, Total (unfiltered)	mg/L							
Copper (unfiltered)	mg/L							
Mercury (unfiltered)	mg/L							
Nickel (unfiltered)	mg/L							
Zinc (unfiltered)	mg/L							
Chlorobenzene	ug/l							
1,4-Dichlorobenzene	ug/l							
Methyl Ethyl ketone (2-Butanone)	ug/l							
Carbon Tetrachloride	ug/l							
Chloroform	ug/l							
1,1,1-Trichloroethane	ug/l							
1,1-Dichloroethane	ug/l							
1,2-Dichloroethane	ug/l							
Methyl-tert-butyl-ether	ug/l							
1,1-Dichloroethylene	ug/l							
cis-1,2-Dichloroethylene	ug/l							
Vinyl Chloride	ug/l							
Tetrachloroethylene (PCE)	ug/l							
Trichloroethylene (TCE)	ug/l							

Table 3
SUMMARY OF ANALYTICAL RESULTS (DETECTS)
MacDermid - Huntingdon Avenue, Waterbury, Connecticut - TECHNICAL MEMORANDUM
2004

Loureiro Engineering Associates, Inc.

	Location ID	MW-118S	TRIP BLANK	TRIP BLANK				
	Sample ID	1051350	1051355	1051346				
	Sample Date	08/16/2004	08/13/2004	08/16/2004				
	Sample Time	11:30	14:05	09:00				
	Sample Depth	28.00' - 38.0						
	Laboratory	AEL	AEL	AEL				
	Lab. Number	AEL04007474	AEL04007436	AEL04007476				
Constituent	Units							
Bromomethane	ug/l							
Methylene Chloride	ug/l		0.6 L	0.8 L				
Dichlorodifluoromethane	ug/l							
Trichlorofluoromethane	ug/l							
Xylenes	ug/l							

MacDermid
526 Huntingdon Avenue, Waterbury, CT

TABLE 4
WATER-LEVELMEASUREMENTS
AUGUST 17, 2004

Monitoring Well and Piezometer ID	Well Screen Interval (feet)	Depth to Bottom (feet) [a]	Depth to Water (feet) [b, c]	Depth to Product (feet) [b]	Elevation to Groundsurface (feet) [d, e]	Elevation to Top of Riser (feet) [d]	Water-Level Elevation (feet) [f]
MW-101	26-36	32.71	----	NA	----	----	----
MW-102	22-32	33.78	----	NA	----	----	----
MW-103	25-35	34.84	31.15	NA	962.79	962.70	931.55
MW-105	27-37	36.98	32.42	NA	963.58	963.31	930.89
MW-108	25-35	NP	33.62	32.95	964.13	963.79	P
MW-109	25-35	34.60	32.22	NA	964.05	963.75	931.53
MW-110	NP	39.63	32.92	NA	964.42	964.05	931.13
MW-111	25-35	34.90	31.75	NA	962.02	961.92	930.17
MW-112	25-35	34.95	31.86	NA	962.82	962.54	930.68
MW-113	30-40	40.07	34.26	NA	964.15	964.01	929.75
MW-114	28-38	37.84	31.82	NA	962.52	962.02	930.20
MW-115	28-38	37.98	32.05	NA	963.09	962.69	930.64
MW-116S	28-38	33.97	31.58	NA	962.61	962.4	930.82
MW-116D	50-60	57.37	31.78	NA	962.61	962.41	930.63
MW-117S	28-38	37.72	30.95	NA	962.77	962.55	931.60
MW-117D	45-55	51.99	31.56	NA	962.90	962.42	930.86
MW-118S	28-38	36.35	31.74	NA	962.54	962.22	930.48
MW-118D	50-60	60.10	31.89	NA	962.55	962.38	930.49
PZ-01	29-39	40	29.80	NA	961.00	960.60	930.80
PZ-02	28-38	39	36.90	NA	968.71	968.00	931.10
PZ-03	28-38	39	36.56	NA	968.23	967.87	931.31
PZ-04	29-39	40	35.17	31.78	962.59	962.84	P

Notes:

[a] Depth to bottom measurements were collected on August 16, 2004.

[b] Depth to water and depth to product measurements were collected on August 17, 2004.

[c] Depth to water measurements obtained from top of riser.

[d] Well survey completed on August 12 and 13, 2004. Physical locales at the Site were used as reference points.

[e] Groundwsurface is defined as the top of the roadbox. The exceptions are MW-114 and MW-112 where the road box was depressed. Therefore, abutting groundsurface was u

[f] Water-level elevation from top of riser.

FM indicates flush mounted.

PP indicates pre-packed filter screen with 0.010 well screen slot size.

SU indicates stick-up.

SS indicates well screen slot size.

P indicates product.

NP indicates not provided and NA indicates not applicable.

Monitoring wells MW-101 and MW-102 are located on the North Parcel.

EXHIBIT F

Geologic Boring Logs

GEOLOGIC BORING LOG

Project: MacDermid - Huntingdon		**Start Date**	**Boring ID**
LEA Commission Number 91MH401.001		07/02/2004	**MW-117D**
Client MacDermid Incorporated - RNav		**End Date**	
Location MacDermid - Huntingdon Avenue		08/06/2004	
Drilling Contractor Connecticut Test Boring	**Logged by**	Dave S. Vasiliou	
Drilling Method Hollow Stem Auger	**Drilling Foreman**	Chris DeAngelis	
Sampling Method split spoon	**Drill Rig**	CME 75	
Groundwater Observation	**Surface Elevation**	0.00	
Depth 31.6 **at** **Hours**	**Latitude**		
Depth **at** **Hours**	**Longitude**		

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-	1049007	50		0" - 8" asphalt 8" - 14" brown fine to medium SAND, some Gravel, some Cobble	0.0
2.4-	1049008	50		0" - 7" brown fine to medium SAND, some Gravel, some Cobble 7" - 18" orangish brown very fine to fine SAND, little Silt, trace Cobble	0.0
4-	1049009	92		0" - 2" orangish brown very fine to fine SAND, little Silt, trace Cobble 2" - 4" black very fine to fine SAND and GRAVEL, tight, dry 4" - 21" light brown fine to medium SAND and GRAVEL, some Cobbles	0.0
5.9					
6-	1049010	92		light brown fine to medium SAND and GRAVEL, some Cobbles	0.0
8-	1049011	69		light brown fine to medium SAND and GRAVEL, some Cobbles	0.0
10-	1049012	69		light brown fine to medium SAND and GRAVEL, some Cobbles	0.0
12-	1049013	100		0" - 8" light brown fine to medium SAND and GRAVEL, some Cobbles 8" - 13" dark brown fine SAND and SILT, some Gravel 13" - 24" tan fine to medium SAND, some Gravel	0.0
14-	1049014	100		0" - 4" brown medium SAND, little Gravel, very tight 20" - 24" tan fine to medium SAND and GRAVEL, some Cobble	0.0
16-	1049015	63		tan fine to medium SAND and GRAVEL, some Cobble	0.0
18-	1049016	63		brown fine to medium SAND and GRAVEL, some Cobble	0.0
20-	1049017	100		0" - 15" brown fine to medium SAND and GRAVEL, some Cobble 15" - 24" light brown very fine SAND, bedded	0.0
22-	1049018	100		light brown very fine SAND, bedded	0.0

Project: MacDermid - Huntingdon		**Start Date** 07/02/2004	**Boring ID** MW-117D
LEA Commission Number 91MH401.001		**End Date** 08/06/2004	
Client MacDermid Incorporated - RNav			
Location MacDermid - Huntingdon Avenue			
Drilling Contractor Connecticut Test Boring		**Logged by** Eric Boswell	
Drilling Method Hollow Stem Auger		**Drilling Foreman** Chris DeAngelis	
Sampling Method split spoon		**Drill Rig** CME 75	
Groundwater Observation		**Surface Elevation** 0.00	
Depth 31.6 **at** **Hours**		**Latitude**	
Depth **at** **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
24-	1049019	54		light brown very fine SAND, bedded	0.0
26-	1049020	54		light brown very fine SAND, bedded	0.0
28-	1049021	77		0" - 2" light brown very fine SAND, bedded 2" - 18" brown fine to medium SAND, some Gravel, very tight	0.0
30- V	1049022, 1049068	77		0" - 2" brown fine to medium SAND, some Gravel, very tight 2" - 19" tan very fine SAND, bedded	0.1
32-	1049023, 1049069	35		tan very fine SAND, bedded, wet, refusal at 33.5'	0.0
34-	1049070	83		yellow brown fine SAND, some Silt, some medium Sand, altering [sic] layers of laminae, well solid, wet	0.0
36- 38	1049071	100		yellow brown fine SAND, some Silt, some medium Sand, altering [sic] layers of laminae, well solid, wet	0.0
40-	1049072	50		yellow brown fine SAND, some Silt, wet	0.0
42-	1049073	100		yellow brown fine SAND, some Silt, wet	0.0
44-	1049074	100		yellow brown fine SAND, some Silt, wet	0.0
46-	1049075	100		yellow brown fine SAND, some Silt, wet	0.0
48-	1049076	75		yellow brown fine SAND, some Silt, wet	0.0

GEOLOGIC BORING LOG

Project: MacDermid - Huntingdon		**Start Date** 07/02/2004	**Boring ID** MW-117D
LEA Commission Number 91MH401.001		**End Date** 08/06/2004	
Client MacDermid Incorporated - RNav			
Location MacDermid - Huntingdon Avenue			
Drilling Contractor Connecticut Test Boring		**Logged by** Eric Boswell	
Drilling Method Hollow Stem Auger		**Drilling Foreman** Chris DeAngelis	
Sampling Method split spoon		**Drill Rig** CME 75	
Groundwater Observation		**Surface Elevation** 0.00	
Depth 31.6 **at** **Hours**		**Latitude**	
Depth **at** **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
50-	1049077	92		yellow brown fine SAND, some Silt, wet	0.0
52-	1049078	92		0" - 8" yellow brown fine SAND, some Silt, wet 8" - 24" [NOTE: recovery states 22" recovery] red coarse GRAVEL and yellow brown SAND, angular Gravel	0.0
54- 55	1049079	4		red coarse GRAVEL and yellow brown SAND, angular Gravel [NOTE: log states refusal at 55', 12" drive. Recovery states 10" recovery from 24" drive]	0.0

Project: MacDermid - Huntingdon **LEA Commission Number** 91MH401.001 **Client** MacDermid Incorporated - RNav **Location** MacDermid - Huntingdon Avenue	**Start Date** 07/21/2004 **End Date** 08/06/2004	**Boring ID** **MW-118D**

Drilling Contractor	Connecticut Test Boring	**Logged by**	eric boswell
Drilling Method	Hollow Stem Auger	**Drilling Foreman**	Chris DeAngelis
Sampling Method		**Drill Rig**	CME 75
Groundwater Observation		**Surface Elevation**	0.00
Depth 33.7 **at** **Hours**		**Latitude**	
Depth **at** **Hours**		**Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
0-	1049051	75		0" - 1" no record 1" - 4" light brown fine SAND 4" - 6" grey SILT and fine SAND 6" - 8" yellow fine SAND 8" - 24" brown medium to fine SAND	15.1
2-	1049052	75		0" - 24" brown medium and fine SAND, trace coarse Sand	15.6
4-	1049053	95		yellow brown coarse SAND, some Gravel, dry, loose	15.7
6-	1049054	95		yellow to white to grey coarse and very coarse SAND and GRAVEL, some large Gravel, dry, loose	16.0
8-	1049055	95		yellow to white to grey coarse and very coarse SAND and GRAVEL, some large Gravel, dry, loose	16.0
10-	1049056	95		yellow to white to grey coarse and very coarse SAND and GRAVEL, some large Gravel, dry, loose 3.5' - 3.8' yellow brown fine SAND	16.1
12-	1049057	100		0" - 12" medium to coarse and very coarse SAND and GRAVEL, dark grey brown loose 12" - 24" light yellow brown fine SAND, moist	121
14-	1049058	100		yellow brown fine SAND, dense, moist	378
16-	1049059	80		grey to grey brown COBBLES and GRAVEL, some Sand	52.9
18-	1049060	80		yellow brown fine SAND	21.7
20-	1051439				0.0

Project: MacDermid - Huntingdon **LEA Commission Number** 91MH401.001 **Client** MacDermid Incorporated - RNav **Location** MacDermid - Huntingdon Avenue		**Start Date** 07/21/2004 **End Date** 08/06/2004	**Boring ID** **MW-118D**
Drilling Contractor Connecticut Test Boring **Drilling Method** Hollow Stem Auger **Sampling Method** split spoon **Groundwater Observation** **Depth** 33.7 **at** **Hours** **Depth** **at** **Hours**		**Logged by** eric boswell **Drilling Foreman** Chris DeAngelis **Drill Rig** CME 75 **Surface Elevation** 0.00 **Latitude** **Longitude**	

Depth	Sample Information			Soil Description	PID/FID ppm
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
28-	1051430	83		medium to fine yellow brown SAND, moist at 10"	0.0
30-	1051431	75		fine to very fine yellow brown SAND, wet	0.0
32- V	1051432	100		fine to very fine yellow brown SAND, wet	0.0
34-	1051433	100		yellow brown very fine SAND and SILT, wet	0.0
36-	1051434	100		yellow brown very fine SAND and SILT, wet	0.0
38-	1051435	58		yellow brown very fine SAND and SILT, wet	0.0
40-	1051436	92		yellow brown very fine SAND and SILT, laminates observed, wet	0.0
42-	1051437	100		yellow brown very fine SAND and SILT, laminates observed, wet	0.0
44-	1051438	100		yellow brown very fine SAND and SILT, laminates observed, wet	0.0
46-	1049061	83		dark yellow brown very fine SAND and SILT, wet, laminae observed	0.0

Project: MacDermid - Huntingdon **LEA Commission Number** 91MH401.001 **Client** MacDermid Incorporated - RNav **Location** MacDermid - Huntingdon Avenue		**Start Date** 07/21/2004 **End Date** 08/06/2004	**Boring ID** **MW-118D**
Drilling Contractor Connecticut Test Boring **Drilling Method** Hollow Stem Auger **Sampling Method** **Groundwater Observation** **Depth** 33.7 **at** **Hours** **Depth** **at** **Hours**		**Logged by** Eric Boswell **Drilling Foreman** Chris DeAngelis **Drill Rig** CME 75 **Surface Elevation** 0.00 **Latitude** **Longitude**	

Depth	Sample Information			Soil Description	PID/FID *ppm*
	Sample No.	Recovery (%)	Blows /6"	Color, Primary Grain Size, Secondary Grain Sizes, Moisture, Sorting, Sphericity, Angularity, Sedimentary Structure, Density, Cohesiveness, Other	
48-	1049062	54		dark yellow brown very fine SAND and SILT, wet, laminae observed	0.0
50-	1049063	83		dark yellow brown very fine SAND and SILT, wet, laminae observed	0.0
52-	1049064	100		dark yellow brown very fine SAND and SILT, wet, laminae observed	0.0
54-	1049065	92		dark yellow brown very fine SAND and SILT, wet, laminae observed	0.0
56-	1049066	100		yellow brown fine SAND, some Silt, trace medium Sand, wet	0.0
58-	1049067	100		yellow brown fine SAND, some Silt, trace medium Sand, wet	0.0
60					

EXHIBIT G

Analytical Laboratory Results

AVERILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 38798

PROJECT NAME: MAC-DERMID - HUNTINGDON AVE

PROJECT LOCATION: WATERBURY CT

PROJECT NUMBER: 91MH401

REPORT TO:

INVOICE TO: LEA

Source Codes: W = Well, O = Outfall, RO = Run Off, R = River/Stream, B = Bottom Sediment, MW = Monitoring Well, S = Soil, SG = Sludge, LF = Landfill, L = Lake/Ocean, T = Treatment Facility, X = Other, Specify AQUEOUS

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	TYPE	SIZE	PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	1051342	MW	~~3~~ 2 JBS	E	40ml	I,H	8260B ✓ ~~(missing 1 VOA)~~ 7411	RUSH - DUE TUES AUG 17th	✓			
2	1051342	MW	1	P	1/2 G	I,R	CYANIDE ✓	RUSH - DUE AUG 20th	✓			
3	1051342uf	MW	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn 7412 TOTAL ✓	RUSH - DUE AUG 20th	✓			
4	1051342	MW	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn (FILTERED) ✓	HOLD	✓			
5	1051343	MW	~~3~~ 2 JBS	E	40ml	I,H	8260B ✓ 7413	RUSH - DUE TUES AUG 17th	✓			
6	1051343	MW	1	P	1/2 G	I,R	CYANIDE ✓	RUSH - DUE AUG 20th	✓			
7	1051343uf	MW	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn 7414 TOTAL ✓	RUSH - DUE AUG 20	✓			
8	1051343	MW	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn (FILTERED) ✓	HOLD	✓			
9	1051348	MW	3	E	40ml	I,H	8260B ✓ 7415	RUSH - DUE TUES AUG 17th	✓			
10	1051348	X	1	P	1/2 G	I,R	CYANIDE ✓	RUSH - DUE AUG 20	✓			
11	1051348uf	X	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn TOTAL 7416 ✓	RUSH DUE AUG 20	✓			
12	1051348	X	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn FILTERED ✓	HOLD	✓			
13	1051347	X	1	E	40ml	I,H	8260B ✓ 7417	RUSH - DUE TUES AUG 17th.	✓			

Container Code: P = Plastic, E = EPA VIAL, C = Cube, G = Glass, A = Amber Glass, B = Bacteria Bottle
Preservative Code: I = Iced, F = Filtered, N = Nitric Acid (HNO_3), H - Hydrochloric Acid (HCl), R = Sodium Hydroxide (NaOH), T = Sodium Thiosulfate, S = Sulfuric Acid (H_2SO_4), O = Other, Specify

Sampler's Signature	Affiliation	Date	Time
[signature]	LEA	8/12/04	1745

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-13	[signature]	[signature]	8/12/04	5:45 PM
2	1-13	[signature]	[signature]	8/13/04	09:35
3	1-13		"FRIGE"	8/13/04	1015
4					

AVERILL ENVIRONMENTAL LABORATORY, INC.

CT Laboratory ID No. PH-0513 | 100 Northwest Drive, Plainville, Connecticut 06062 | NH Laboratory ID No. 2506
MA Laboratory ID No. M-CT0513 | (860) 747-0676 Fax: (860) 747-9264 CT ONLY 1-(800) 870-7904 | ME Laboratory ID No. CT029
NY Laboratory ID No. 11599 | Lawton S. Averill - Director Alan G. Jacobs - Co-Director | EPA Laboratory ID No. CT00029

LABORATORY REPORT

Prepared for:

Barbara Heemink

Loureiro Engineering Associates

Report Date: Monday, August 23, 2004

AEL Lab No.	Client Sample ID:	Source	Client Project#:	Collect Date
AEL04007401	1051331	MacDermid, Waterbury, CT	91MH401	8/12/04
AEL04007402	1051331 UF	MacDermid, Waterbury, CT	91MH401	8/12/04
AEL04007403	1051332	MacDermid, Waterbury, CT	91MH401	8/12/04
AEL04007404	1051332 UF	MacDermid, Waterbury, CT	91MH401	8/12/04
AEL04007405	1051336	MacDermid, Waterbury, CT	91MH401	8/12/04
AEL04007406	1051336 UF	MacDermid, Waterbury, CT	91MH401	8/12/04
AEL04007407	1051337	MacDermid, Waterbury, CT	91MH401	8/12/04
AEL04007408	1051337 UF	MacDermid, Waterbury, CT	91MH401	8/12/04
AEL04007409	1051338	MacDermid, Waterbury, CT	91MH401	8/12/04
AEL04007410	1051338 UF	MacDermid, Waterbury, CT	91MH401	8/12/04
AEL04007411	1051342	MacDermid, Waterbury, CT	91MH401	8/12/04
AEL04007412	1051342 UF	MacDermid, Waterbury, CT	91MH401	8/12/04
AEL04007413	1051343	MacDermid, Waterbury, CT	91MH401	8/12/04
AEL04007414	1051343 UF	MacDermid, Waterbury, CT	91MH401	8/12/04
AEL04007415	1051348	MacDermid, Waterbury, CT	91MH401	8/12/04
AEL04007416	1051348 UF	MacDermid, Waterbury, CT	91MH401	8/12/04
AEL04007417	1051347	MacDermid, Waterbury, CT	91MH401	8/12/04

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007401 **Client Sample ID:** 1051331

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Thursday, August 12, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007401	Cyanide, Total	<	0.005		mg/L	RR	8/19/04	SW-846 9014	26850
AEL04007401	Acetone	<	10		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Acrolein	<	0.5	J	ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Acrylonitrile	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Benzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Bromobenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Bromodichloromethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Bromoform	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Bromomethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Carbon disulfide	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Carbon Tetrachloride	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Chlorobenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Chloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Chloroform	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Chloromethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Dibromochloromethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Dibromomethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	1,1-Dichloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	1,2-Dichloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	1,2-Dichloropropane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Ethylbenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	2-Hexanone	<	1.0		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Methylene chloride	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Methyl ethyl ketone	<	2.0		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786

AEL04007401	Styrene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Tetrachloroethylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Toluene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Trichloroethylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Trichlorofluoromethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Vinyl acetate	<	0.5	J	ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Vinyl chloride	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	Xylenes (Total)	<	1.0		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007401	pH of EPA Vial		2			MS	8/14/04	SW-846 8260B	26786

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007402 **Client Sample ID:** 1051331 UF

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Thursday, August 12, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007402	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007402	Lead	<	0.0050	mg/L	JM	8/17/04	SW-846 7421	26823
AEL04007402	Selenium	<	0.005	mg/L	JM	8/18/04	SW-846 7740	26837
AEL04007402	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007402	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007402	Barium	L	0.032	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007402	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007402	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007402	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007402	Nickel	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007402	Zinc	L	0.014	mg/L	RR	8/19/04	SW-846 6010B	26864

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007403 **Client Sample ID:** 1051332

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Thursday, August 12, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007403	Cyanide, Total	<	0.005		mg/L	RR	8/19/04	SW-846 9014	26850
AEL04007403	Acetone	<	10		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Acrolein	<	0.5	J	ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Acrylonitrile	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Benzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Bromobenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Bromodichloromethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Bromoform	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Bromomethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Carbon disulfide	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Carbon Tetrachloride	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Chlorobenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Chloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Chloroform	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Chloromethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Dibromochloromethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Dibromomethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	1,1-Dichloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	1,2-Dichloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	1,2-Dichloropropane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Ethylbenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	2-Hexanone	<	1.0		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Methylene chloride	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Methyl ethyl ketone	<	2.0		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786

AEL04007403	Styrene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Tetrachloroethylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Toluene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Trichloroethylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Trichlorofluoromethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Vinyl acetate	<	0.5	J	ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Vinyl chloride	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	Xylenes (Total)	<	1.0		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007403	pH of EPA Vial		2			MS	8/14/04	SW-846 8260B	26786

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007404 **Client Sample ID:** 1051332 UF

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Thursday, August 12, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007404	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007404	Lead	<	0.0050	mg/L	JM	8/17/04	SW-846 7421	26823
AEL04007404	Selenium	<	0.005	mg/L	JM	8/18/04	SW-846 7740	26837
AEL04007404	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007404	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007404	Barium	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007404	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007404	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007404	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007404	Nickel	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007404	Zinc		0.026	mg/L	RR	8/19/04	SW-846 6010B	26864

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REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007405 **Client Sample ID:** 1051336

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Thursday, August 12, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007405	Cyanide, Total	<	0.005		mg/L	RR	8/19/04	SW-846 9014	26850
AEL04007405	Acetone	<	10		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Acrolein	<	0.5	J	ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Acrylonitrile	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Benzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Bromobenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Bromodichloromethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Bromoform	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Bromomethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Carbon disulfide	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Carbon Tetrachloride	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Chlorobenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Chloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Chloroform	L	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Chloromethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Dibromochloromethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Dibromomethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	1,1-Dichloroethane		1.2		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	1,2-Dichloroethane		2.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	1,2-Dichloropropane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Ethylbenzene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	2-Hexanone	<	1.0		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Methylene chloride	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Methyl ethyl ketone		3.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786

AEL04007405	Styrene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Tetrachloroethylene		2.3		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Toluene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Trichloroethylene	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Trichlorofluoromethane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Vinyl acetate	<	0.5	J	ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Vinyl chloride	<	0.5		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	Xylenes (Total)	<	1.0		ug/L	MS	8/14/04	SW-846 8260B	26786
AEL04007405	pH of EPA Vial		2			MS	8/14/04	SW-846 8260B	26786

AVERILL
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REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007406 **Client Sample ID:** 1051336 UF

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Thursday, August 12, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007406	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007406	Lead	<	0.0050	mg/L	JM	8/17/04	SW-846 7421	26823
AEL04007406	Selenium	<	0.005	mg/L	JM	8/18/04	SW-846 7740	26837
AEL04007406	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007406	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007406	Barium	L	0.042	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007406	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007406	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007406	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007406	Nickel	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007406	Zinc		0.065	mg/L	RR	8/19/04	SW-846 6010B	26864

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REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007407 **Client Sample ID:** 1051337

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Thursday, August 12, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007407	Cyanide, Total	<	0.005		mg/L	RR	8/19/04	SW-846 9014	26850
AEL04007407	Acetone	<	10		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Acrolein	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Acrylonitrile	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Benzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Bromobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Bromodichloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Bromoform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Bromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Carbon disulfide	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Carbon Tetrachloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Chlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Chloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Chloroform	L	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Chloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Dibromochloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Dibromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Dichlorodifluoromethane		2.1		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	1,1-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	1,2-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	1,2-Dichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Ethylbenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	2-Hexanone	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Methylene chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Methyl ethyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787

AEL04007407	Styrene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	1,1,2,2-Tetrachloroethane	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Tetrachloroethylene		4.1		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Toluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Trichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Trichlorofluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Vinyl acetate	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Vinyl chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	Xylenes (Total)	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007407	pH of EPA Vial		2			MS	8/16/04	SW-846 8260B	26787

AVERILL
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REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007408 **Client Sample ID:** 1051337 UF

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Thursday, August 12, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007408	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007408	Lead	<	0.0050	mg/L	JM	8/17/04	SW-846 7421	26823
AEL04007408	Selenium	<	0.005	mg/L	JM	8/18/04	SW-846 7740	26837
AEL04007408	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007408	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007408	Barium		0.146	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007408	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007408	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007408	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007408	Nickel	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007408	Zinc	L	0.014	mg/L	RR	8/19/04	SW-846 6010B	26864

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REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007409 **Client Sample ID:** 1051338

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Thursday, August 12, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007409	Cyanide, Total	<	0.005		mg/L	RR	8/19/04	SW-846 9014	26850
AEL04007409	Acetone	<	10		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Acrolein	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Acrylonitrile	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Benzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Bromobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Bromodichloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Bromoform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Bromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Carbon disulfide	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Carbon Tetrachloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Chlorobenzene	L	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Chloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Chloroform		26		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Chloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Dibromochloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Dibromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	1,4-Dichlorobenzene	L	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Dichlorodifluoromethane		2.6		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	1,1-Dichloroethane		1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	1,2-Dichloroethane		12		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	1,1-Dichloroethylene		60		ug/L	MS	8/17/04	SW-846 8260B	26787
AEL04007409	cis-1,2-Dichloroethylene		1.6		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	1,2-Dichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Ethylbenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	2-Hexanone	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Methylene chloride		6.2		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Methyl ethyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787

AEL04007409	Styrene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	1,1,2,2-Tetrachloroethane	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Tetrachloroethylene		280		ug/L	MS	8/17/04	SW-846 8260B	26787
AEL04007409	Toluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	1,1,1-Trichloroethane		25		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Trichloroethylene		20		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Trichlorofluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Vinyl acetate	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Vinyl chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	Xylenes (Total)	L	1.2		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007409	pH of EPA Vial		2			MS	8/16/04	SW-846 8260B	26787

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007410 **Client Sample ID:** 1051338 UF

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Thursday, August 12, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007410	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007410	Lead	<	0.0050	mg/L	JM	8/17/04	SW-846 7421	26823
AEL04007410	Selenium	<	0.005	mg/L	JM	8/18/04	SW-846 7740	26837
AEL04007410	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007410	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007410	Barium		0.060	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007410	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007410	Chromium, Total		0.526	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007410	Copper	L	0.007	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007410	Nickel		0.382	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007410	Zinc	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864

AVERILL
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REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007411 **Client Sample ID:** 1051342

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Thursday, August 12, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007411	Cyanide, Total	<	0.005		mg/L	RR	8/19/04	SW-846 9014	26850
AEL04007411	Acetone	<	10		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Acrolein	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Acrylonitrile	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Benzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Bromobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Bromodichloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Bromoform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Bromomethane		1.7		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Carbon disulfide	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Carbon Tetrachloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Chlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Chloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Chloroform	L	0.6		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Chloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Dibromochloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Dibromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	1,1-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	1,2-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	1,2-Dichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Ethylbenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	2-Hexanone	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Methylene chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Methyl ethyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787

AEL04007411	Styrene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	1,1,2,2-Tetrachloroethane	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Tetrachloroethylene		6.1		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Toluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Trichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Trichlorofluoromethane		8.1		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Vinyl acetate	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Vinyl chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	Xylenes (Total)	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007411	pH of EPA Vial		2			MS	8/16/04	SW-846 8260B	26787

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007412 **Client Sample ID:** 1051342 UF

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Thursday, August 12, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007412	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007412	Lead	<	0.0050	mg/L	JM	8/17/04	SW-846 7421	26823
AEL04007412	Selenium	<	0.005	mg/L	JM	8/18/04	SW-846 7740	26837
AEL04007412	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007412	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007412	Barium	L	0.027	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007412	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007412	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007412	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007412	Nickel	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007412	Zinc	L	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864

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REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007413 **Client Sample ID:** 1051343

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Thursday, August 12, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007413	Cyanide, Total	<	0.005		mg/L	RR	8/19/04	SW-846 9014	26850
AEL04007413	Acetone	<	10		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Acrolein	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Acrylonitrile	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Benzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Bromobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Bromodichloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Bromoform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Bromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Carbon disulfide	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Carbon Tetrachloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Chlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Chloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Chloroform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Chloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Dibromochloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Dibromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	1,1-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	1,2-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	1,2-Dichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Ethylbenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	2-Hexanone	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Methylene chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Methyl ethyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787

AEL04007413	Styrene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	1,1,2,2-Tetrachloroethane	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Tetrachloroethylene	H	20		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Toluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Trichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Trichlorofluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Vinyl acetate	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Vinyl chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	Xylenes (Total)	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007413	pH of EPA Vial		2			MS	8/16/04	SW-846 8260B	26787

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007414 **Client Sample ID:** 1051343 UF

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Thursday, August 12, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007414	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007414	Lead	<	0.0050	mg/L	JM	8/17/04	SW-846 7421	26823
AEL04007414	Selenium	<	0.005	mg/L	JM	8/18/04	SW-846 7740	26837
AEL04007414	Mercury	L	0.0003	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007414	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007414	Barium	L	0.018	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007414	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007414	Chromium, Total	L	0.011	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007414	Copper		0.512	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007414	Nickel	L	0.019	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007414	Zinc		0.063	mg/L	RR	8/19/04	SW-846 6010B	26864

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REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007415 **Client Sample ID:** 1051348

Sample Matrix: Water **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Thursday, August 12, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Equipment Blank for Monitoring Well Samples

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007415	Cyanide, Total	<	0.005		mg/L	RR	8/19/04	SW-846 9014	26850
AEL04007415	Acetone	<	10		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Acrolein	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Acrylonitrile	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Benzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Bromobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Bromodichloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Bromoform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Bromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Carbon disulfide	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Carbon Tetrachloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Chlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Chloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Chloroform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Chloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Dibromochloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Dibromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	1,1-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	1,2-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	1,2-Dichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Ethylbenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	2-Hexanone	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Methylene chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Methyl ethyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787

AEL04007415	Styrene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	1,1,2,2-Tetrachloroethane	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Tetrachloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Toluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Trichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Trichlorofluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Vinyl acetate	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Vinyl chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	Xylenes (Total)	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007415	pH of EPA Vial		2			MS	8/16/04	SW-846 8260B	26787

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007416 **Client Sample ID:** 1051348 UF

Sample Matrix: Water **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Thursday, August 12, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Equipment Blank for Monitoring Well Samples

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007416	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007416	Lead	<	0.0050	mg/L	JM	8/17/04	SW-846 7421	26823
AEL04007416	Selenium	<	0.005	mg/L	JM	8/18/04	SW-846 7740	26837
AEL04007416	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007416	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007416	Barium	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007416	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007416	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007416	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007416	Nickel	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007416	Zinc	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007417 **Client Sample ID:** 1051347

Sample Matrix: Water **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Thursday, August 12, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Trip Blank for Monitoring Well Samples

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007417	Acetone	<	10		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Acrolein	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Acrylonitrile	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Benzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Bromobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Bromodichloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Bromoform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Bromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Carbon disulfide	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Carbon Tetrachloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Chlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Chloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Chloroform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Chloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Dibromochloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Dibromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	1,1-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	1,2-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	1,2-Dichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Ethylbenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	2-Hexanone	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Methylene chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Methyl ethyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Styrene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787

AEL04007417	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	1,1,2,2-Tetrachloroethane	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Tetrachloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Toluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Trichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Trichlorofluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Vinyl acetate	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Vinyl chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	Xylenes (Total)	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007417	pH of EPA Vial		2			MS	8/16/04	SW-846 8260B	26787

QUALITY CONTROL REPORT

QC Lab#	QC Type	Analyte	Batch#	% Recovery/ Blank Result	RPD	Low Limit	Upper Limit
AEL04007151R	Surrogate	4-Bromofluorobenzene	26786	89.8		73	155
AEL04007151R	Surrogate	Dibromofluoromethane	26786	95.4		82	119
AEL04007151R	Surrogate	Toluene-d8	26786	91.2		77	115
AEL04007152R	Surrogate	4-Bromofluorobenzene	26786	92		73	155
AEL04007152R	Surrogate	Dibromofluoromethane	26786	93.6		82	119
AEL04007152R	Surrogate	Toluene-d8	26786	90.8		77	115
AEL04007401R	Surrogate	4-Bromofluorobenzene	26786	98.6		73	155
AEL04007401R	Surrogate	Dibromofluoromethane	26786	110.2		82	119
AEL04007401R	Surrogate	Toluene-d8	26786	91.8		77	115
AEL04007403R	Surrogate	4-Bromofluorobenzene	26786	94		73	155
AEL04007403R	Surrogate	Dibromofluoromethane	26786	112.2		82	119
AEL04007403R	Surrogate	Toluene-d8	26786	93		77	115
AEL04007405R	Surrogate	4-Bromofluorobenzene	26786	96		73	155
AEL04007405R	Surrogate	Dibromofluoromethane	26786	102.8		82	119
AEL04007405R	Surrogate	Toluene-d8	26786	92.6		77	115
AEL04007420R	Surrogate	4-Bromofluorobenzene	26786	95.2		73	155
AEL04007420R	Surrogate	Dibromofluoromethane	26786	112.4		82	119
AEL04007420R	Surrogate	Toluene-d8	26786	93.4		77	115
AEL04007421R	Surrogate	4-Bromofluorobenzene	26786	100.4		73	155
AEL04007421R	Surrogate	Dibromofluoromethane	26786	111.2		82	119
AEL04007421R	Surrogate	Toluene-d8	26786	93.6		77	115
AEL04007422R	Surrogate	4-Bromofluorobenzene	26786	95.4		73	155
AEL04007422R	Surrogate	Dibromofluoromethane	26786	110.8		82	119
AEL04007422R	Surrogate	Toluene-d8	26786	93.2		77	115
Blank		1,1,1,2-Tetrachloroethane	26786	0			
Blank		1,1,1-Trichloroethane	26786	0			
Blank		1,1,2,2-Tetrachloroethane	26786	0			
Blank		1,1,2-Trichloroethane	26786	0			
Blank		1,1-Dichloroethane	26786	0			
Blank		1,1-Dichloroethylene	26786	0			
Blank		1,2,3-Trichloropropane	26786	0			
Blank		1,2-Chlorotoluene	26786	0			
Blank		1,2-Dichlorobenzene	26786	0			
Blank		1,2-Dichloroethane	26786	0			
Blank		1,2-Dichloropropane	26786	0			
Blank		1,3-Dichlorobenzene	26786	0			
Blank		1,4-Chlorotoluene	26786	0			
Blank		1,4-Dichlorobenzene	26786	0			
Blank		2-Chloroethyl vinyl ether	26786	0			
Blank		2-Hexanone	26786	0			
Blank		Acetone	26786	0			

Blank	Acrolein	26786	0	
Blank	Acrylonitrile	26786	0	
Blank	Benzene	26786	0	
Blank	Bromobenzene	26786	0	
Blank	Bromodichloromethane	26786	0	
Blank	Bromoform	26786	0	
Blank	Bromomethane	26786	0	
Blank	Carbon disulfide	26786	0	
Blank	Carbon Tetrachloride	26786	0	
Blank	Chlorobenzene	26786	0	
Blank	Chloroethane	26786	0	
Blank	Chloroform	26786	0	
Blank	Chloromethane	26786	0	
Blank	cis-1,2-Dichloroethylene	26786	0	
Blank	cis-1,3-Dichloropropylene	26786	0	
Blank	Dibromochloromethane	26786	0	
Blank	Dibromomethane	26786	0	
Blank	Dichlorodifluoromethane	26786	0	
Blank	Ethylbenzene	26786	0	
Blank	Methyl ethyl ketone	26786	0	
Blank	Methyl iso-butyl ketone	26786	0	
Blank	Methyl tert-butyl ether	26786	0	
Blank	Methylene chloride	26786	0.53	
Blank	Styrene	26786	0	
Blank	Tetrachloroethylene	26786	0	
Blank	Toluene	26786	0	
Blank	trans-1,2-Dichloroethylene	26786	0	
Blank	trans-1,3-Dichloropropylene	26786	0	
Blank	Trichloroethylene	26786	0	
Blank	Trichlorofluoromethane	26786	0	
Blank	Vinyl acetate	26786	0	
Blank	Vinyl chloride	26786	0	
Blank	Xylenes (Total)	26786	0	
Calib Check	1,1,1,2-Tetrachloroethane	26786	98.13	70 - 130
Calib Check	1,1,1-Trichloroethane	26786	93.7	70 - 130
Calib Check	1,1,2,2-Tetrachloroethane	26786	125.6	70 - 130
Calib Check	1,1,2-Trichloroethane	26786	102.18	70 - 130
Calib Check	1,1-Dichloroethane	26786	85.05	70 - 130
Calib Check	1,1-Dichloroethylene	26786	93.68	70 - 130
Calib Check	1,2,3-Trichloropropane	26786	109.05	70 - 130
Calib Check	1,2-Chlorotoluene	26786	96.65	70 - 130
Calib Check	1,2-Dichlorobenzene	26786	86.7	70 - 130
Calib Check	1,2-Dichloroethane	26786	100.73	70 - 130
Calib Check	1,2-Dichloropropane	26786	103.15	70 - 130

Calib Check	1,3-Dichlorobenzene	26786	81.48	70 - 130
Calib Check	1,4-Chlorotoluene	26786	93.4	70 - 130
Calib Check	1,4-Dichlorobenzene	26786	84.08	70 - 130
Calib Check	2-Chloroethyl vinyl ether	26786	60.18	70 - 130
Calib Check	2-Hexanone	26786	100.66	70 - 130
Calib Check	Acetone	26786	86.38	70 - 130
Calib Check	Acrolein	26786	144.69	70 - 130
Calib Check	Acrylonitrile	26786	97.05	70 - 130
Calib Check	Benzene	26786	102.5	70 - 130
Calib Check	Bromobenzene	26786	92.85	70 - 130
Calib Check	Bromodichloromethane	26786	100.98	70 - 130
Calib Check	Bromoform	26786	107.2	70 - 130
Calib Check	Bromomethane	26786	123.98	70 - 130
Calib Check	Carbon disulfide	26786	95.58	70 - 130
Calib Check	Carbon Tetrachloride	26786	107.25	70 - 130
Calib Check	Chlorobenzene	26786	95.03	70 - 130
Calib Check	Chloroethane	26786	73.38	70 - 130
Calib Check	Chloroform	26786	90.75	70 - 130
Calib Check	Chloromethane	26786	88.13	70 - 130
Calib Check	cis-1,2-Dichloroethylene	26786	89.13	70 - 130
Calib Check	cis-1,3-Dichloropropylene	26786	97.6	70 - 130
Calib Check	Dibromochloromethane	26786	97.45	70 - 130
Calib Check	Dibromomethane	26786	97.25	70 - 130
Calib Check	Dichlorodifluoromethane	26786	95.88	70 - 130
Calib Check	Ethylbenzene	26786	95.15	70 - 130
Calib Check	Methyl ethyl ketone	26786	93.85	70 - 130
Calib Check	Methyl iso-butyl ketone	26786	100.84	70 - 130
Calib Check	Methyl tert-butyl ether	26786	88.7	70 - 130
Calib Check	Methylene chloride	26786	84.85	70 - 130
Calib Check	Styrene	26786	93.38	70 - 130
Calib Check	Tetrachloroethylene	26786	104.1	70 - 130
Calib Check	Toluene	26786	94.3	70 - 130
Calib Check	trans-1,2-Dichloroethylene	26786	90.13	70 - 130
Calib Check	trans-1,3-Dichloropropylene	26786	97.88	70 - 130
Calib Check	Trichloroethylene	26786	81.43	70 - 130
Calib Check	Trichlorofluoromethane	26786	100.58	70 - 130
Calib Check	Vinyl chloride	26786	94.58	70 - 130
Calib Check	Xylenes (Total)	26786	95.04	70 - 130
LCS	1,1,1,2-Tetrachloroethane	26786	114.75	70 - 130
LCS	1,1,1-Trichloroethane	26786	99	70 - 130
LCS	1,1,2,2-Tetrachloroethane	26786	100.75	70 - 130
LCS	1,1,2-Trichloroethane	26786	122.25	70 - 130
LCS	1,1-Dichloroethane	26786	75.5	70 - 130
LCS	1,1-Dichloroethylene	26786	95	70 - 130

LCS		1,2,3-Trichloropropane	26786	142.25	70 - 130
LCS		1,2-Chlorotoluene	26786	105	70 - 130
LCS		1,2-Dichlorobenzene	26786	111.25	70 - 130
LCS		1,2-Dichloroethane	26786	120.5	70 - 130
LCS		1,2-Dichloropropane	26786	119.25	70 - 130
LCS		1,3-Dichlorobenzene	26786	99	70 - 130
LCS		1,4-Chlorotoluene	26786	111.25	70 - 130
LCS		1,4-Dichlorobenzene	26786	105.25	70 - 130
LCS		Benzene	26786	112.25	70 - 130
LCS		Bromobenzene	26786	105.25	70 - 130
LCS		Bromodichloromethane	26786	116	70 - 130
LCS		Bromoform	26786	126.75	70 - 130
LCS		Bromomethane	26786	268	70 - 130
LCS		Carbon Tetrachloride	26786	114	70 - 130
LCS		Chlorobenzene	26786	106	70 - 130
LCS		Chloroethane	26786	76.75	70 - 130
LCS		Chloroform	26786	98.5	70 - 130
LCS		Chloromethane	26786	89.75	70 - 130
LCS		cis-1,2-Dichloroethylene	26786	92.25	70 - 130
LCS		cis-1,3-Dichloropropylene	26786	128.75	70 - 130
LCS		Dibromochloromethane	26786	112.25	70 - 130
LCS		Dibromomethane	26786	116.25	70 - 130
LCS		Dichlorodifluoromethane	26786	100.75	70 - 130
LCS		Ethylbenzene	26786	103	70 - 130
LCS		Methylene chloride	26786	93.25	70 - 130
LCS		Styrene	26786	105	70 - 130
LCS		Tetrachloroethylene	26786	111.75	70 - 130
LCS		Toluene	26786	105	70 - 130
LCS		trans-1,2-Dichloroethylene	26786	96.5	70 - 130
LCS		trans-1,3-Dichloropropylene	26786	133	70 - 130
LCS		Trichloroethylene	26786	112.75	70 - 130
LCS		Trichlorofluoromethane	26786	103.75	70 - 130
LCS		Vinyl chloride	26786	101.75	70 - 130
LCS		Xylenes (Total)	26786	105.17	70 - 130
AEL04007314R	Surrogate	4-Bromofluorobenzene	26787	88.6	73 - 155
AEL04007314R	Surrogate	Dibromofluoromethane	26787	108.4	82 - 119
AEL04007314R	Surrogate	Toluene-d8	26787	90.4	77 - 115
AEL04007315R	Surrogate	4-Bromofluorobenzene	26787	91.4	73 - 155
AEL04007315R	Surrogate	Dibromofluoromethane	26787	105.4	82 - 119
AEL04007315R	Surrogate	Toluene-d8	26787	91.8	77 - 115
AEL04007407R	Surrogate	4-Bromofluorobenzene	26787	92.8	73 - 155
AEL04007407R	Surrogate	Dibromofluoromethane	26787	105.8	82 - 119
AEL04007407R	Surrogate	Toluene-d8	26787	92.6	77 - 115
AEL04007409R	Surrogate	4-Bromofluorobenzene	26787	100.4	73 - 155

AEL04007409R	Surrogate	Dibromofluoromethane	26787	101.6	82 - 119
AEL04007409R	Surrogate	Toluene-d8	26787	95.4	77 - 115
AEL04007411R	Surrogate	4-Bromofluorobenzene	26787	94	73 - 155
AEL04007411R	Surrogate	Dibromofluoromethane	26787	111.2	82 - 119
AEL04007411R	Surrogate	Toluene-d8	26787	94	77 - 115
AEL04007413R	Surrogate	4-Bromofluorobenzene	26787	96.2	73 - 155
AEL04007413R	Surrogate	Dibromofluoromethane	26787	107.6	82 - 119
AEL04007413R	Surrogate	Toluene-d8	26787	93.2	77 - 115
AEL04007415R	Surrogate	4-Bromofluorobenzene	26787	89.4	73 - 155
AEL04007415R	Surrogate	Dibromofluoromethane	26787	108.8	82 - 119
AEL04007415R	Surrogate	Toluene-d8	26787	91.2	77 - 115
AEL04007417R	Surrogate	4-Bromofluorobenzene	26787	90.6	73 - 155
AEL04007417R	Surrogate	Dibromofluoromethane	26787	112.2	82 - 119
AEL04007417R	Surrogate	Toluene-d8	26787	92.8	77 - 115
AEL04007428R	Surrogate	4-Bromofluorobenzene	26787	92.2	73 - 155
AEL04007428R	Surrogate	Dibromofluoromethane	26787	111.4	82 - 119
AEL04007428R	Surrogate	Toluene-d8	26787	93.8	77 - 115
AEL04007429R	Surrogate	4-Bromofluorobenzene	26787	100.2	73 - 155
AEL04007429R	Surrogate	Dibromofluoromethane	26787	103.4	82 - 119
AEL04007429R	Surrogate	Toluene-d8	26787	93.4	77 - 115
AEL04007430R	Surrogate	4-Bromofluorobenzene	26787	91.2	73 - 155
AEL04007430R	Surrogate	Dibromofluoromethane	26787	116.8	82 - 119
AEL04007430R	Surrogate	Toluene-d8	26787	93.4	77 - 115
AEL04007431R	Surrogate	4-Bromofluorobenzene	26787	91	73 - 155
AEL04007431R	Surrogate	Dibromofluoromethane	26787	114.2	82 - 119
AEL04007431R	Surrogate	Toluene-d8	26787	92.8	77 - 115
AEL04007432R	Surrogate	4-Bromofluorobenzene	26787	81	73 - 155
AEL04007432R	Surrogate	Dibromofluoromethane	26787	113.4	82 - 119
AEL04007432R	Surrogate	Toluene-d8	26787	92.8	77 - 115
AEL04007433R	Surrogate	4-Bromofluorobenzene	26787	87.6	73 - 155
AEL04007433R	Surrogate	Dibromofluoromethane	26787	111.8	82 - 119
AEL04007433R	Surrogate	Toluene-d8	26787	93	77 - 115
AEL04007434R	Surrogate	4-Bromofluorobenzene	26787	88.2	73 - 155
AEL04007434R	Surrogate	Dibromofluoromethane	26787	117.4	82 - 119
AEL04007434R	Surrogate	Toluene-d8	26787	93.6	77 - 115
AEL04007435R	Surrogate	4-Bromofluorobenzene	26787	85.8	73 - 155
AEL04007435R	Surrogate	Dibromofluoromethane	26787	109.4	82 - 119
AEL04007435R	Surrogate	Toluene-d8	26787	92.8	77 - 115
AEL04007436R	Surrogate	4-Bromofluorobenzene	26787	85.2	73 - 155
AEL04007436R	Surrogate	Dibromofluoromethane	26787	112.2	82 - 119
AEL04007436R	Surrogate	Toluene-d8	26787	95.2	77 - 115
Blank		1,1,1,2-Tetrachloroethane	26787	0	
Blank		1,1,1-Trichloroethane	26787	0	
Blank		1,1,2,2-Tetrachloroethane	26787	0	

Blank	1,1,2-Trichloroethane	26787	0
Blank	1,1-Dichloroethane	26787	0
Blank	1,1-Dichloroethylene	26787	0
Blank	1,2,3-Trichloropropane	26787	0
Blank	1,2-Chlorotoluene	26787	0
Blank	1,2-Dichlorobenzene	26787	0
Blank	1,2-Dichloroethane	26787	0
Blank	1,2-Dichloropropane	26787	0
Blank	1,3-Dichlorobenzene	26787	0
Blank	1,4-Chlorotoluene	26787	0
Blank	1,4-Dichlorobenzene	26787	0
Blank	2-Chloroethyl vinyl ether	26787	0
Blank	2-Hexanone	26787	0
Blank	Acetone	26787	0
Blank	Acrolein	26787	0
Blank	Acrylonitrile	26787	0
Blank	Benzene	26787	0
Blank	Bromobenzene	26787	0
Blank	Bromodichloromethane	26787	0
Blank	Bromoform	26787	0
Blank	Bromomethane	26787	0
Blank	Carbon disulfide	26787	0
Blank	Carbon Tetrachloride	26787	0
Blank	Chlorobenzene	26787	0
Blank	Chloroethane	26787	0
Blank	Chloroform	26787	0
Blank	Chloromethane	26787	0
Blank	cis-1,2-Dichloroethylene	26787	0
Blank	cis-1,3-Dichloropropylene	26787	0
Blank	Dibromochloromethane	26787	0
Blank	Dibromomethane	26787	0
Blank	Dichlorodifluoromethane	26787	0
Blank	Ethylbenzene	26787	0
Blank	Methyl ethyl ketone	26787	0
Blank	Methyl iso-butyl ketone	26787	0
Blank	Methyl tert-butyl ether	26787	0
Blank	Methylene chloride	26787	0.38
Blank	Styrene	26787	0
Blank	Tetrachloroethylene	26787	0
Blank	Toluene	26787	0
Blank	trans-1,2-Dichloroethylene	26787	0
Blank	trans-1,3-Dichloropropylene	26787	0
Blank	Trichloroethylene	26787	0
Blank	Trichlorofluoromethane	26787	0

Blank	Vinyl acetate	26787	0	
Blank	Vinyl chloride	26787	0	
Blank	Xylenes (Total)	26787	0	
Calib Check	1,1,1,2-Tetrachloroethane	26787	104.45	70 - 130
Calib Check	1,1,1-Trichloroethane	26787	112.9	70 - 130
Calib Check	1,1,2,2-Tetrachloroethane	26787	136.38	70 - 130
Calib Check	1,1,2-Trichloroethane	26787	105.2	70 - 130
Calib Check	1,1-Dichloroethane	26787	94.25	70 - 130
Calib Check	1,1-Dichloroethylene	26787	111.03	70 - 130
Calib Check	1,2,3-Trichloropropane	26787	109.65	70 - 130
Calib Check	1,2-Chlorotoluene	26787	105.43	70 - 130
Calib Check	1,2-Dichlorobenzene	26787	92.33	70 - 130
Calib Check	1,2-Dichloroethane	26787	103.75	70 - 130
Calib Check	1,2-Dichloropropane	26787	109.75	70 - 130
Calib Check	1,3-Dichlorobenzene	26787	90.4	70 - 130
Calib Check	1,4-Chlorotoluene	26787	101.68	70 - 130
Calib Check	1,4-Dichlorobenzene	26787	91.4	70 - 130
Calib Check	2-Chloroethyl vinyl ether	26787	70.5	70 - 130
Calib Check	2-Hexanone	26787	101.7	70 - 130
Calib Check	Acetone	26787	91.7	70 - 130
Calib Check	Acrolein	26787	176.74	70 - 130
Calib Check	Acrylonitrile	26787	91.63	70 - 130
Calib Check	Benzene	26787	111.95	70 - 130
Calib Check	Bromobenzene	26787	100.45	70 - 130
Calib Check	Bromodichloromethane	26787	105.85	70 - 130
Calib Check	Bromoform	26787	110.63	70 - 130
Calib Check	Bromomethane	26787	102.38	70 - 130
Calib Check	Carbon disulfide	26787	114.08	70 - 130
Calib Check	Carbon Tetrachloride	26787	119.68	70 - 130
Calib Check	Chlorobenzene	26787	102.88	70 - 130
Calib Check	Chloroethane	26787	88.23	70 - 130
Calib Check	Chloroform	26787	105.13	70 - 130
Calib Check	Chloromethane	26787	103.13	70 - 130
Calib Check	cis-1,2-Dichloroethylene	26787	103.8	70 - 130
Calib Check	cis-1,3-Dichloropropylene	26787	102.4	70 - 130
Calib Check	Dibromochloromethane	26787	100.73	70 - 130
Calib Check	Dibromomethane	26787	97.85	70 - 130
Calib Check	Dichlorodifluoromethane	26787	116.58	70 - 130
Calib Check	Ethylbenzene	26787	106.73	70 - 130
Calib Check	Methyl ethyl ketone	26787	101.74	70 - 130
Calib Check	Methyl iso-butyl ketone	26787	100.85	70 - 130
Calib Check	Methyl tert-butyl ether	26787	96.6	70 - 130
Calib Check	Methylene chloride	26787	93.03	70 - 130
Calib Check	Styrene	26787	100.43	70 - 130

Calib Check	Tetrachloroethylene	26787	116.33	70 - 130
Calib Check	Toluene	26787	105.45	70 - 130
Calib Check	trans-1,2-Dichloroethylene	26787	107.33	70 - 130
Calib Check	trans-1,3-Dichloropropylene	26787	100.18	70 - 130
Calib Check	Trichloroethylene	26787	85.9	70 - 130
Calib Check	Trichlorofluoromethane	26787	121.98	70 - 130
Calib Check	Vinyl acetate	26787	105.5	70 - 130
Calib Check	Vinyl chloride	26787	109.08	70 - 130
Calib Check	Xylenes (Total)	26787	105.16	70 - 130
LCS	1,1,1,2-Tetrachloroethane	26787	115.75	70 - 130
LCS	1,1,1-Trichloroethane	26787	111.5	70 - 130
LCS	1,1,2,2-Tetrachloroethane	26787	153.5	70 - 130
LCS	1,1,2-Trichloroethane	26787	112.75	70 - 130
LCS	1,1-Dichloroethane	26787	81.25	70 - 130
LCS	1,1-Dichloroethylene	26787	107.5	70 - 130
LCS	1,2,3-Trichloropropane	26787	131.25	70 - 130
LCS	1,2-Chlorotoluene	26787	110.75	70 - 130
LCS	1,2-Dichlorobenzene	26787	108.5	70 - 130
LCS	1,2-Dichloroethane	26787	116	70 - 130
LCS	1,2-Dichloropropane	26787	120	70 - 130
LCS	1,3-Dichlorobenzene	26787	102	70 - 130
LCS	1,4-Chlorotoluene	26787	115.5	70 - 130
LCS	1,4-Dichlorobenzene	26787	107.75	70 - 130
LCS	Benzene	26787	119.5	70 - 130
LCS	Bromobenzene	26787	105	70 - 130
LCS	Bromodichloromethane	26787	115.5	70 - 130
LCS	Bromoform	26787	113.5	70 - 130
LCS	Bromomethane	26787	319.5	70 - 130
LCS	Carbon Tetrachloride	26787	122.75	70 - 130
LCS	Chlorobenzene	26787	108.25	70 - 130
LCS	Chloroethane	26787	88	70 - 130
LCS	Chloroform	26787	106.25	70 - 130
LCS	Chloromethane	26787	100.5	70 - 130
LCS	cis-1,2-Dichloroethylene	26787	101	70 - 130
LCS	cis-1,3-Dichloropropylene	26787	129	70 - 130
LCS	Dibromochloromethane	26787	103.75	70 - 130
LCS	Dibromomethane	26787	111.5	70 - 130
LCS	Dichlorodifluoromethane	26787	115	70 - 130
LCS	Ethylbenzene	26787	111	70 - 130
LCS	Methylene chloride	26787	99.5	70 - 130
LCS	Styrene	26787	107.5	70 - 130
LCS	Tetrachloroethylene	26787	118	70 - 130
LCS	Toluene	26787	111	70 - 130
LCS	trans-1,2-Dichloroethylene	26787	108	70 - 130

LCS		trans-1,3-Dichloropropylene	26787	129		70 - 130
LCS		Trichloroethylene	26787	92.25		70 - 130
LCS		Trichlorofluoromethane	26787	118.25		70 - 130
LCS		Vinyl chloride	26787	111.75		70 - 130
LCS		Xylenes (Total)	26787	110.33		70 - 130
AEL04007100S	Spike	Lead	26823	95.67		70 - 130
AEL04007122M	Spike Dup	Lead, SPLP	26823	100.63	0.14	70 - 130
AEL04007122S	Spike	Lead, SPLP	26823	100.48		70 - 130
AEL04007177M	Spike Dup	Lead	26823	101.58	0.34	70 - 130
AEL04007177S	Spike	Lead	26823	101.1		70 - 130
AEL04007376M	Spike Dup	Lead	26823	99.82	0.13	70 - 130
AEL04007376S	Spike	Lead	26823	99.69		70 - 130
AEL04007408M	Spike Dup	Lead	26823	99.3	0.75	70 - 130
AEL04007408S	Spike	Lead	26823	98.55		70 - 130
AEL04007440S	Spike	Lead	26823	92.65		70 - 130
Blank		Lead	26823	-0.000315		
Blank		Lead	26823	-0.000489		
Blank		Lead	26823	-0.00023		
Blank		Lead	26823	-0.000376		
Calib Check		Lead	26823	99.72		70 - 130
End Blank		Lead	26823	-0.000027		
End Standard		Lead	26823	103.52		70 - 130
LCS		Lead	26823	99.3		70 - 130
LCS		Lead	26823	100.83		70 - 130
LCS		Lead	26823	98.78		70 - 130
LCS		Lead	26823	102.98		70 - 130
QC Blank		Lead	26823	-0.000159		
SPLP Blank		Lead, SPLP	26823	-0.000389		
AEL04006952M	Spike Dup	Selenium	26837	112.54	0.63	70 - 130
AEL04006952S	Spike	Selenium	26837	113.22		70 - 130
AEL04007009S	Spike	Selenium	26837	96.84		70 - 130
AEL04007122M	Spike Dup	Selenium, SPLP	26837	111.61	2.34	70 - 130
AEL04007122S	Spike	Selenium, SPLP	26837	109.11		70 - 130
AEL04007408M	Spike Dup	Selenium	26837	98.59	6.97	70 - 130
AEL04007408S	Spike	Selenium	26837	92.04		70 - 130
AEL04007440S	Spike	Selenium	26837	90.3		70 - 130
Blank		Selenium	26837	-0.002065		
Blank		Selenium	26837	-0.000959		
Blank		Selenium	26837	-0.003149		
Blank		Selenium	26837	-0.002362		
Blank		Selenium, SPLP	26837	-0.001285		
LCS		Selenium	26837	104		70 - 130
LCS		Selenium	26837	103.53		70 - 130
LCS		Selenium	26837	110.18		70 - 130

LCS		Selenium	26837	104.1		70 - 130
LCS		Selenium, SPLP	26837	99.25		70 - 130
SPLP Blank		Selenium, SPLP	26837	-0.002103		
AEL04007412M	Spike Dup	Mercury	26845	82.59	0.8	70 - 130
AEL04007412S	Spike	Mercury	26845	81.93		70 - 130
AEL04007470S	Spike	Mercury	26845	100.48		70 - 130
Blank		Mercury	26845	0.000045		
LCS		Mercury	26845	100.44		70 - 130
AEL04007408M	Spike Dup	Barium	26864	96.12	1.26	70 - 130
AEL04007408M	Spike Dup	Cadmium	26864	95.6	3.22	70 - 130
AEL04007408M	Spike Dup	Chromium, Total	26864	99.7	2.32	70 - 130
AEL04007408M	Spike Dup	Copper	26864	98.9	1.34	70 - 130
AEL04007408M	Spike Dup	Nickel	26864	97.42	2.92	70 - 130
AEL04007408M	Spike Dup	Silver	26864	87.3	2.94	70 - 130
AEL04007408M	Spike Dup	Zinc	26864	99.74	1.86	70 - 130
AEL04007408S	Spike	Barium	26864	97.52		70 - 130
AEL04007408S	Spike	Cadmium	26864	98.75		70 - 130
AEL04007408S	Spike	Chromium, Total	26864	102.04		70 - 130
AEL04007408S	Spike	Copper	26864	100.22		70 - 130
AEL04007408S	Spike	Nickel	26864	100.32		70 - 130
AEL04007408S	Spike	Silver	26864	90		70 - 130
AEL04007408S	Spike	Zinc	26864	101.64		70 - 130
AEL04007440S	Spike	Barium	26864	97.74		70 - 130
AEL04007440S	Spike	Cadmium	26864	98.2		70 - 130
AEL04007440S	Spike	Chromium, Total	26864	100.74		70 - 130
AEL04007440S	Spike	Copper	26864	100.76		70 - 130
AEL04007440S	Spike	Nickel	26864	98.94		70 - 130
AEL04007440S	Spike	Silver	26864	95.5		70 - 130
AEL04007440S	Spike	Zinc	26864	100.61		70 - 130
Blank		Barium	26864	-0.0005		
Blank		Cadmium	26864	-0.0003		
Blank		Chromium, Total	26864	-0.0018		
Blank		Copper	26864	-0.0013		
Blank		Nickel	26864	0.0009		
Blank		Silver	26864	0.0012		
Blank		Zinc	26864	0.0074		
LCS		Barium	26864	100.1		70 - 130
LCS		Cadmium	26864	107.7		70 - 130
LCS		Chromium, Total	26864	107.54		70 - 130
LCS		Copper	26864	102.36		70 - 130
LCS		Nickel	26864	108.7		70 - 130
LCS		Silver	26864	102.5		70 - 130
LCS		Zinc	26864	107		70 - 130
AEL04006903M	Spike Dup	Arsenic	26880	99.73	1.52	70 - 130

AEL04006903S	Spike	Arsenic	26880	102.28		70 - 130
AEL04006952M	Spike Dup	Arsenic	26880	105.38	0.24	70 - 130
AEL04006952S	Spike	Arsenic	26880	105.63		70 - 130
AEL04007009S	Spike	Arsenic	26880	102.44		70 - 130
AEL04007122M	Spike Dup	Arsenic, SPLP	26880	104.9	1.85	70 - 130
AEL04007122S	Spike	Arsenic, SPLP	26880	102.93		70 - 130
AEL04007408M	Spike Dup	Arsenic	26880	101.75	2.4	70 - 130
AEL04007408S	Spike	Arsenic	26880	99.35		70 - 130
AEL04007440S	Spike	Arsenic	26880	107.33		70 - 130
AEL04007472S	Spike	Arsenic	26880	105.6		70 - 130
Blank		Arsenic	26880	-0.0002		
Blank		Arsenic	26880	0.00007		
Blank		Arsenic	26880	-0.00022		
Blank		Arsenic	26880	-0.00003		
Blank		Arsenic	26880	0.00011		
Blank		Arsenic, SPLP	26880	-0.00014		
Calib Check		Arsenic	26880	101.52		70 - 130
Calib Check		Arsenic	26880	98.7		70 - 130
End Blank		Arsenic	26880	0.00042		
End Standard		Arsenic	26880	100.16		70 - 130
LCS		Arsenic	26880	102.78		70 - 130
LCS		Arsenic	26880	106.33		70 - 130
LCS		Arsenic	26880	107.3		70 - 130
LCS		Arsenic	26880	108.58		70 - 130
LCS		Arsenic	26880	104.78		70 - 130
LCS		Arsenic, SPLP	26880	104.13		70 - 130
QC Blank		Arsenic	26880	-0.00013		
QC Blank		Arsenic	26880	0.00004		
SPLP Blank		Arsenic, SPLP	26880	-0.00019		

EXPLANATION OF QUALIFIERS

Qualifier	Definition
J	Estimated Value: %Difference of daily calibration standard outside control limits.
H	Estimated Value: Concentration above calibration range.
L	Spectral evidence confirms the presence of this compound at a concentration below the calibration limit but above the Method Detection Limit.
B	Qualified due to the presence of compound in the blank.
I	Qualified: Internal standard response outside of acceptable limits.
XC	Qualified due to coelution.

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(aggj)

Averill Environmental Laboratory, Inc.

ENVIRONMENTAL LABORATORY INC.
100 Northwest Drive
Plainville, Connecticut 06062
Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 38799

PROJECT NAME:	PROJECT LOCATION:	PROJECT NUMBER:
MAC-DERMID - HUNTINGDON AVE	WATERBURY CT	91MH401

REPORT TO:

INVOICE TO: LEA

Source Codes: W = Well; O = Outfall; RO = Run Off; R = River/Stream; B = Bottom Sediment; MW = Monitoring Well; S = Soil; SG = Sludge; LF = Landfill; L = Lake/Ocean; T = Treatment Facility; X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	1051331	MW	3	E	40ml	I,H	8260 B ✓ 7401	RUSH - DUE TUES AUG 17th	✓			
2	1051331	MW	1	P	1/2L	I,R	CYANIDE ✓	RUSH - DUE AUG 20th	✓			
3	1051331UF	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn 7402 TOTAL ✓	RUSH - DUE AUG 20th	✓			
4	1051331	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn (FILTERED) ✓	HOLD	✓			
5	1051332	MW	3	E	40ml	I,H	8260 B ✓	RUSH - DUE TUES AUG 17th.	✓			
6	1051332	MW	1	P	1/2L	I,R	CYANIDE ✓ 7403	RUSH - DUE AUG 20th	✓			
7	1051332UF	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn 7404 ✓ TOTAL	RUSH - DUE AUG 20th	✓			
8	1051332	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn (FILTERED) ✓	HOLD	✓			

Container Code: P = Plastic; E = EPA VIAL; C = Cube; G = Glass; A = Amber Glass; B = Bacteria Bottle

Preservative Code: I = Iced; F = Filtered; N = Nitric Acid (HNO_3); H - Hydrochloric Acid (HCl); R = Sodium Hydroxide (NaOH); T = Sodium Thiosulfate; S = Sulfuric Acid (H_2SO_4); O = Other, *Specify*

Sampler's Signature	Affiliation	Date	Time
	LEA	8/12/04	1745

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-8		Barbara Lemke	8/12/04	5:45 PM
2	1-8		M Ferruccio	8/13/04	9:35
3	1-8		FRIDGE	8/13/04	1015
4					

AVERILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 38797

PROJECT NAME:	PROJECT LOCATION:	PROJECT NUMBER:
MAC-DERMID-HUNTINGDON AVE	WATERBURY CT	91MH401

REPORT TO:

INVOICE TO: LEA

Source Codes: W = Well O = Outfall RO = Run Off R = River/Stream B = Bottom Sediment
MW = Monitoring Well S = Soil SG = Sludge LF = Landfill L = Lake/Ocean T = Treatment Facility
X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	1051336	MW	3	E	40ml	I,H	8260 B ✓ 7465	RUSH - DUE TUES AUG 17th.	✓			
2	1051336	MW	1	P	1/2G	I,R	CYANIDE ✓	RUSH - DUE AUG 20th	✓			
3	1051336 UF	MW	1	A	1/2L	I,N	RCRA 8 MET Cu,Ni,Zn TOTAL ✓ 7406	RUSH - DUE AUG 20th	✓			
4	1051336 F JES	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu,Ni,Zn (FILTERED) ✓	HOLD	✓			
5	1051337	MW	3	E	40ml	I,H	8260 B 7407	RUSH DUE TUES AUG 17th	✓			
6	1051337	MW	1	P	1/2G	I,R	CYANIDE ✓	RUSH - DUE AUG 20th	✓			
7	1051337 UF	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu,Ni,Zn 7408 TOTAL ✓	RUSH - DUE AUG 20th	✓			
8	1051337 F JES	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu,Ni,Zn (FILTERED) ✓	HOLD	✓			
9	1051338	MW	3	E	40ml	I,H	8260B ✓ 7409	RUSH - DUE TUES AUG 17th.	✓			
10	1051338	MW	1	P	1/2G	I,R	CYANIDE ✓	RUSH - DUE AUG 20th	✓			
11	1051338 UF	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu,Ni,Zn TOTAL 7410 ✓	RUSH - DUE AUG 20th	✓			
12	1051338 F	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu,Ni,Zn (FILTERED) ✓	HOLD	✓			

Container Code: P = Plastic E = EPA VIAL C = Cube G = Glass A = Amber Glass B = Bacteria Bottle
Preservative Code: I = Iced F = Filtered N = Nitric Acid (HNO_3) H = Hydrochloric Acid (HCl) R = Sodium Hydroxide (NaOH) T = Sodium Thiosulfate S = Sulfuric Acid (H_2SO_4)
O = Other, Specify

Sampler's Signature	Affiliation	Date	Time
	LEA	8/12/04	1745

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-12			8/12/04	5:45 PM
2	1-12			8/13/04	0935
3	1-12		- FRUGE -	8-13-04	1015
4					

AVERILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 38798

PROJECT NAME: MAC-DERMID - HUNTINGDON AVE

PROJECT LOCATION: WATERBURY CT

PROJECT NUMBER: 91MH401

REPORT TO:

INVOICE TO: LEA

Source Codes: W = Well, O = Outfall, RO = Run Off, R = River/Stream, B = Bottom Sediment, MW = Monitoring Well, S = Soil, SG = Sludge, LF = Landfill, L = Lake/Ocean, T = Treatment Facility, X = Other, Specify AQUEOUS

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	TYPE	SIZE	PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	1051342	MW	~~3~~ 2 JBS	E	40ml	I,H	8260B ✓ ~~(HSGW + VOA)~~ 7411	RUSH - DUE TUES AUG 17th	✓			
2	1051342	MW	1	P	1/2 G	I,R	CYANIDE ✓	RUSH - DUE AUG 20th	✓			
3	1051342uf	MW	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn 7412 TOTAL ✓	RUSH - DUE AUG 20th	✓			
4	1051342	MW	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn (FILTERED) ✓	HOLD	✓			
5	1051343	MW	~~3~~ 2 JBS	E	40ml	I,H	8260B ✓ 7413	RUSH - DUE TUES AUG 17th	✓			
6	1051343	MW	1	P	1/2 G	I,R	CYANIDE ✓	RUSH - DUE AUG 20th	✓			
7	1051343uf	MW	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn 7414 TOTAL ✓	RUSH - DUE AUG 20	✓			
8	1051343	MW	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn (FILTERED) ✓	HOLD	✓			
9	1051348	MW	3	E	40ml	I,H	8260B ✓ 7415	RUSH - DUE TUES AUG 17th	✓			
10	1051348	X	1	P	1/2 G	I,R	CYANIDE ✓	RUSH - DUE AUG 20	✓			
11	1051348uf	X	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn TOTAL 7416 ✓	RUSH DUE AUG 20	✓			
12	1051348	X	1	A	1/2 L	I,N	RCRA 8 MET, Cu, Ni, Zn FILTERED ✓	HOLD	✓			
13	1051347	X	1	E	40ml	I,H	8260B ✓ 7417	RUSH - DUE TUES AUG 17th.	✓			

Container Code: P = Plastic, E = EPA VIAL, C = Cube, G = Glass, A = Amber Glass, B = Bacteria Bottle
Preservative Code: I = Iced, F = Filtered, N = Nitric Acid (HNO_3), H - Hydrochloric Acid (HCl), R = Sodium Hydroxide (NaOH), T = Sodium Thiosulfate, S = Sulfuric Acid (H_2SO_4), O = Other, Specify

Sampler's Signature	Affiliation	Date	Time
[signature]	LEA	8/12/04	1745

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-13	[signature]	[signature]	8/12/04	5:45 PM
2	1-13	[signature]	[signature]	8/13/04	09:35
3	1-13		"FRIGE"	8/13/04	1015
4					

AVERILL ENVIRONMENTAL LABORATORY, INC.

CT Laboratory ID No. PH-0513 | 100 Northwest Drive, Plainville, Connecticut 06062 | NH Laboratory ID No. 2506
MA Laboratory ID No. M-CT0513 | (860) 747-0676 Fax: (860) 747-9264 CT ONLY 1-(800) 870-7904 | ME Laboratory ID No. CT029
NY Laboratory ID No. 11599 | Lawton S. Averill - Director Alan G. Jacobs - Co-Director | EPA Laboratory ID No. CT00029

LABORATORY REPORT

Prepared for:

Barbara Heemink

Loureiro Engineering Associates

Report Date: Monday, August 23, 2004

AEL Lab No.	Client Sample ID:	Source	Client Project#:	Collect Date
AEL04007428	1051333	MacDermid, Waterbury, CT	91MH401	8/13/04
AEL04007429	1051334	MacDermid, Waterbury, CT	91MH401	8/13/04
AEL04007430	1051340	MacDermid, Waterbury, CT	91MH401	8/13/04
AEL04007431	1051344	MacDermid, Waterbury, CT	91MH401	8/13/04
AEL04007432	1051345	MacDermid, Waterbury, CT	91MH401	8/13/04
AEL04007433	1051352	MacDermid, Waterbury, CT	91MH401	8/13/04
AEL04007434	1051353	MacDermid, Waterbury, CT	91MH401	8/13/04
AEL04007435	1051354	MacDermid, Waterbury, CT	91MH401	8/13/04
AEL04007436	1051355	MacDermid, Waterbury, CT	91MH401	8/13/04
AEL04007437	1051333 UF	MacDermid, Huntington Ave.		8/13/04
AEL04007438	1051334 UF	MacDermid, Huntington Ave.		8/13/04
AEL04007439	1051340 UF	MacDermid, Huntington Ave.		8/13/04
AEL04007440	1051344 UF	MacDermid, Huntington Ave.		8/13/04
AEL04007441	1051345 UF	MacDermid, Huntington Ave.		8/13/04
AEL04007442	1051352 UF	MacDermid, Huntington Ave.		8/13/04
AEL04007443	1051353 UF	MacDermid, Huntington Ave.		8/13/04
AEL04007444	1051354 UF	MacDermid, Huntington Ave.		8/13/04

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007428 **Client Sample ID:** 1051333

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Friday, August 13, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007428	Cyanide, Total	<	0.005		mg/L	RR	8/19/04	SW-846 9014	26850
AEL04007428	Acetone	<	10		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Acrolein	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Acrylonitrile	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Benzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Bromobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Bromodichloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Bromoform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Bromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Carbon disulfide	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Carbon Tetrachloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Chlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Chloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Chloroform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Chloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Dibromochloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Dibromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	1,1-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	1,2-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	1,2-Dichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Ethylbenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	2-Hexanone	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Methylene chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Methyl ethyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787

AEL04007428	Styrene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	1,1,2,2-Tetrachloroethane	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Tetrachloroethylene		4.9		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Toluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Trichloroethylene	L	0.9		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Trichlorofluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Vinyl acetate	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Vinyl chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	Xylenes (Total)	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007428	pH of EPA Vial		2			MS	8/16/04	SW-846 8260B	26787

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007429 **Client Sample ID:** 1051334

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Friday, August 13, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007429	Cyanide, Total	<	0.005		mg/L	RR	8/19/04	SW-846 9014	26850
AEL04007429	Acetone	<	10		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Acrolein	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Acrylonitrile	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Benzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Bromobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Bromodichloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Bromoform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Bromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Carbon disulfide	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Carbon Tetrachloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Chlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Chloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Chloroform	L	0.6		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Chloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Dibromochloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Dibromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	1,1-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	1,2-Dichloroethane		1.1		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	1,2-Dichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Ethylbenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	2-Hexanone	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Methylene chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Methyl ethyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787

AEL04007429	Styrene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	1,1,2,2-Tetrachloroethane	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Tetrachloroethylene		5.1		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Toluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	1,1,1-Trichloroethane	L	0.8		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Trichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Trichlorofluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Vinyl acetate	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Vinyl chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	Xylenes (Total)	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007429	pH of EPA Vial		2			MS	8/16/04	SW-846 8260B	26787

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007430 **Client Sample ID:** 1051340

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Friday, August 13, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007430	Cyanide, Total	<	0.005		mg/L	RR	8/19/04	SW-846 9014	26850
AEL04007430	Acetone	<	10		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Acrolein	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Acrylonitrile	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Benzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Bromobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Bromodichloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Bromoform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Bromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Carbon disulfide	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Carbon Tetrachloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Chlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Chloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Chloroform		2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Chloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Dibromochloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Dibromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	1,1-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	1,2-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	cis-1,2-Dichloroethylene		1.9		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	1,2-Dichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Ethylbenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	2-Hexanone	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Methylene chloride	L	0.6		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Methyl ethyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Methyl tert-butyl ether		6.2		ug/L	MS	8/16/04	SW-846 8260B	26787

AEL04007430	Styrene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	1,1,2,2-Tetrachloroethane	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Tetrachloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Toluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Trichloroethylene	L	0.6		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Trichlorofluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Vinyl acetate	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Vinyl chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	Xylenes (Total)	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007430	pH of EPA Vial		2			MS	8/16/04	SW-846 8260B	26787

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007431 **Client Sample ID:** 1051344

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Friday, August 13, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007431	Cyanide, Total	<	0.005		mg/L	RR	8/19/04	SW-846 9014	26850
AEL04007431	Acetone	<	10		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Acrolein	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Acrylonitrile	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Benzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Bromobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Bromodichloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Bromoform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Bromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Carbon disulfide	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Carbon Tetrachloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Chlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Chloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Chloroform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Chloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Dibromochloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Dibromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	1,1-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	1,2-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	1,2-Dichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Ethylbenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	2-Hexanone	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Methylene chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Methyl ethyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787

AEL04007431	Styrene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	1,1,2,2-Tetrachloroethane	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Tetrachloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Toluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Trichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Trichlorofluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Vinyl acetate	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Vinyl chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	Xylenes (Total)	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007431	pH of EPA Vial		2			MS	8/16/04	SW-846 8260B	26787

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007432 **Client Sample ID:** 1051345

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Friday, August 13, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007432	Cyanide, Total	<	0.005		mg/L	RR	8/19/04	SW-846 9014	26850
AEL04007432	Acetone	<	10		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Acrolein	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Acrylonitrile	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Benzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Bromobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Bromodichloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Bromoform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Bromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Carbon disulfide	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Carbon Tetrachloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Chlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Chloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Chloroform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Chloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Dibromochloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Dibromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	1,1-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	1,2-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	1,2-Dichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Ethylbenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	2-Hexanone	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Methylene chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Methyl ethyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787

AEL04007432	Styrene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	1,1,2,2-Tetrachloroethane	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Tetrachloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Toluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Trichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Trichlorofluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Vinyl acetate	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Vinyl chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	Xylenes (Total)	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007432	pH of EPA Vial		2			MS	8/16/04	SW-846 8260B	26787

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007433 **Client Sample ID:** 1051352

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Friday, August 13, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007433	Cyanide, Total	<	0.005		mg/L	RR	8/19/04	SW-846 9014	26850
AEL04007433	Acetone	<	10		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Acrolein	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Acrylonitrile	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Benzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Bromobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Bromodichloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Bromoform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Bromomethane		1.7		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Carbon disulfide	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Carbon Tetrachloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Chlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Chloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Chloroform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Chloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Dibromochloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Dibromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	1,1-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	1,2-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	1,2-Dichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Ethylbenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	2-Hexanone	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Methylene chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Methyl ethyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787

AEL04007433	Styrene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	1,1,2,2-Tetrachloroethane	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Tetrachloroethylene		1.6		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Toluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Trichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Trichlorofluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Vinyl acetate	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Vinyl chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	Xylenes (Total)	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007433	pH of EPA Vial		2			MS	8/16/04	SW-846 8260B	26787

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007434 **Client Sample ID:** 1051353

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Friday, August 13, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007434	Cyanide, Total	<	0.005		mg/L	RR	8/20/04	SW-846 9014	26868
AEL04007434	Acetone	<	10		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Acrolein	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Acrylonitrile	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Benzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Bromobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Bromodichloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Bromoform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Bromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Carbon disulfide	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Carbon Tetrachloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Chlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Chloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Chloroform		2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Chloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Dibromochloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Dibromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	1,1-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	1,2-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	cis-1,2-Dichloroethylene		1.8		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	1,2-Dichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Ethylbenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	2-Hexanone	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Methylene chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Methyl ethyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Methyl tert-butyl ether		5.6		ug/L	MS	8/16/04	SW-846 8260B	26787

AEL04007434	Styrene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	1,1,2,2-Tetrachloroethane	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Tetrachloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Toluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Trichloroethylene	L	0.6		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Trichlorofluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Vinyl acetate	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Vinyl chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	Xylenes (Total)	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007434	pH of EPA Vial		2			MS	8/16/04	SW-846 8260B	26787

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007435 **Client Sample ID:** 1051354

Sample Matrix: Water **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Friday, August 13, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Equipment Blank for Monitoring Well Samples

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007435	Cyanide, Total	<	0.005		mg/L	RR	8/20/04	SW-846 9014	26868
AEL04007435	Acetone	<	10		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Acrolein	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Acrylonitrile	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Benzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Bromobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Bromodichloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Bromoform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Bromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Carbon disulfide	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Carbon Tetrachloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Chlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Chloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Chloroform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Chloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Dibromochloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Dibromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	1,1-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	1,2-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	1,2-Dichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Ethylbenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	2-Hexanone	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Methylene chloride	L	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Methyl ethyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787

AEL04007435	Styrene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	1,1,2,2-Tetrachloroethane	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Tetrachloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Toluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Trichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Trichlorofluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Vinyl acetate	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Vinyl chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	Xylenes (Total)	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007435	pH of EPA Vial		2			MS	8/16/04	SW-846 8260B	26787

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007436 **Client Sample ID:** 1051355

Sample Matrix: Water **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Friday, August 13, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Trip Blank for Monitoring Well Samples

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007436	Acetone	<	10		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Acrolein	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Acrylonitrile	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Benzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Bromobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Bromodichloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Bromoform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Bromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Carbon disulfide	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Carbon Tetrachloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Chlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Chloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Chloroform	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Chloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Dibromochloromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Dibromomethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	1,1-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	1,2-Dichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	1,2-Dichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Ethylbenzene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	2-Hexanone	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Methylene chloride	L	0.6		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Methyl ethyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Styrene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787

AEL04007436	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	1,1,2,2-Tetrachloroethane	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Tetrachloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Toluene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Trichloroethylene	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Trichlorofluoromethane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Vinyl acetate	<	0.5	J	ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Vinyl chloride	<	0.5		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	Xylenes (Total)	<	1.0		ug/L	MS	8/16/04	SW-846 8260B	26787
AEL04007436	pH of EPA Vial		2			MS	8/16/04	SW-846 8260B	26787

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007437 **Client Sample ID:** 1051333 UF

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Friday, August 13, 2004

Source: MacDermid, Huntington Ave.

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007437	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007437	Lead	<	0.0050	mg/L	JM	8/17/04	SW-846 7421	26823
AEL04007437	Selenium	<	0.005	mg/L	JM	8/18/04	SW-846 7740	26837
AEL04007437	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007437	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007437	Barium	L	0.027	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007437	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007437	Chromium, Total	L	0.027	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007437	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007437	Nickel	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007437	Zinc	L	0.012	mg/L	RR	8/19/04	SW-846 6010B	26864

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REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007438 **Client Sample ID:** 1051334 UF

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Friday, August 13, 2004

Source: MacDermid, Huntington Ave.

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007438	Arsenic		0.007	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007438	Lead	<	0.0050	mg/L	JM	8/17/04	SW-846 7421	26823
AEL04007438	Selenium	<	0.005	mg/L	JM	8/18/04	SW-846 7740	26837
AEL04007438	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007438	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007438	Barium	L	0.024	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007438	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007438	Chromium, Total	L	0.032	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007438	Copper		0.291	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007438	Nickel		0.077	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007438	Zinc		0.015	mg/L	RR	8/19/04	SW-846 6010B	26864

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LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007439 **Client Sample ID:** 1051340 UF

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Friday, August 13, 2004

Source: MacDermid, Huntington Ave.

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007439	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007439	Lead	<	0.0050	mg/L	JM	8/17/04	SW-846 7421	26823
AEL04007439	Selenium	<	0.005	mg/L	JM	8/18/04	SW-846 7740	26837
AEL04007439	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007439	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007439	Barium		0.051	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007439	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007439	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007439	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007439	Nickel	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007439	Zinc	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864

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REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007440 **Client Sample ID:** 1051344 UF

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Friday, August 13, 2004

Source: MacDermid, Huntington Ave.

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007440	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007440	Lead	<	0.0050	mg/L	JM	8/17/04	SW-846 7421	26823
AEL04007440	Selenium	<	0.005	mg/L	JM	8/18/04	SW-846 7740	26837
AEL04007440	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007440	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007440	Barium	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007440	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007440	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007440	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007440	Nickel	L	0.027	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007440	Zinc		0.016	mg/L	RR	8/19/04	SW-846 6010B	26864

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REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007441 **Client Sample ID:** 1051345 UF

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Friday, August 13, 2004

Source: MacDermid, Huntington Ave.

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007441	Arsenic		0.008	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007441	Lead	<	0.0050	mg/L	JM	8/17/04	SW-846 7421	26823
AEL04007441	Selenium	<	0.005	mg/L	JM	8/18/04	SW-846 7740	26837
AEL04007441	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007441	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007441	Barium	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007441	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007441	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007441	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007441	Nickel	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007441	Zinc		0.145	mg/L	RR	8/19/04	SW-846 6010B	26864

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REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007442 **Client Sample ID:** 1051352 UF

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Friday, August 13, 2004

Source: MacDermid, Huntington Ave.

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007442	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007442	Lead	<	0.0050	mg/L	JM	8/17/04	SW-846 7421	26823
AEL04007442	Selenium	<	0.005	mg/L	JM	8/18/04	SW-846 7740	26837
AEL04007442	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007442	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007442	Barium	L	0.031	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007442	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007442	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007442	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007442	Nickel	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007442	Zinc	L	0.012	mg/L	RR	8/19/04	SW-846 6010B	26864

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REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007443 **Client Sample ID:** 1051353 UF

Sample Matrix: Groundwater **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Friday, August 13, 2004

Source: MacDermid, Huntington Ave.

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007443	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007443	Lead	<	0.0050	mg/L	JM	8/17/04	SW-846 7421	26823
AEL04007443	Selenium	<	0.005	mg/L	JM	8/18/04	SW-846 7740	26837
AEL04007443	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007443	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007443	Barium		0.052	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007443	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007443	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007443	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007443	Nickel	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007443	Zinc		0.021	mg/L	RR	8/19/04	SW-846 6010B	26864

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REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007444 **Client Sample ID:** 1051354 UF

Sample Matrix: Water **Received Date:** Friday, August 13, 2004

Collected By: LEA **Collect Date:** Friday, August 13, 2004

Source: MacDermid, Huntington Ave.

Sample ID: Equipment Blank for Monitoring Well Samples

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007444	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007444	Lead	<	0.0050	mg/L	JM	8/17/04	SW-846 7421	26823
AEL04007444	Selenium	<	0.005	mg/L	JM	8/18/04	SW-846 7740	26837
AEL04007444	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007444	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007444	Barium	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007444	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007444	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007444	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007444	Nickel	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864
AEL04007444	Zinc	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26864

QUALITY CONTROL REPORT

QC Lab#	QC Type	Analyte	Batch#	% Recovery/ Blank Result	RPD	Low Limit	Upper Limit
AEL04007314R	Surrogate	4-Bromofluorobenzene	26787	88.6		73	155
AEL04007314R	Surrogate	Dibromofluoromethane	26787	108.4		82	119
AEL04007314R	Surrogate	Toluene-d8	26787	90.4		77	115
AEL04007315R	Surrogate	4-Bromofluorobenzene	26787	91.4		73	155
AEL04007315R	Surrogate	Dibromofluoromethane	26787	105.4		82	119
AEL04007315R	Surrogate	Toluene-d8	26787	91.8		77	115
AEL04007407R	Surrogate	4-Bromofluorobenzene	26787	92.8		73	155
AEL04007407R	Surrogate	Dibromofluoromethane	26787	105.8		82	119
AEL04007407R	Surrogate	Toluene-d8	26787	92.6		77	115
AEL04007409R	Surrogate	4-Bromofluorobenzene	26787	100.4		73	155
AEL04007409R	Surrogate	Dibromofluoromethane	26787	101.6		82	119
AEL04007409R	Surrogate	Toluene-d8	26787	95.4		77	115
AEL04007411R	Surrogate	4-Bromofluorobenzene	26787	94		73	155
AEL04007411R	Surrogate	Dibromofluoromethane	26787	111.2		82	119
AEL04007411R	Surrogate	Toluene-d8	26787	94		77	115
AEL04007413R	Surrogate	4-Bromofluorobenzene	26787	96.2		73	155
AEL04007413R	Surrogate	Dibromofluoromethane	26787	107.6		82	119
AEL04007413R	Surrogate	Toluene-d8	26787	93.2		77	115
AEL04007415R	Surrogate	4-Bromofluorobenzene	26787	89.4		73	155
AEL04007415R	Surrogate	Dibromofluoromethane	26787	108.8		82	119
AEL04007415R	Surrogate	Toluene-d8	26787	91.2		77	115
AEL04007417R	Surrogate	4-Bromofluorobenzene	26787	90.6		73	155
AEL04007417R	Surrogate	Dibromofluoromethane	26787	112.2		82	119
AEL04007417R	Surrogate	Toluene-d8	26787	92.8		77	115
AEL04007428R	Surrogate	4-Bromofluorobenzene	26787	92.2		73	155
AEL04007428R	Surrogate	Dibromofluoromethane	26787	111.4		82	119
AEL04007428R	Surrogate	Toluene-d8	26787	93.8		77	115
AEL04007429R	Surrogate	4-Bromofluorobenzene	26787	100.2		73	155
AEL04007429R	Surrogate	Dibromofluoromethane	26787	103.4		82	119
AEL04007429R	Surrogate	Toluene-d8	26787	93.4		77	115
AEL04007430R	Surrogate	4-Bromofluorobenzene	26787	91.2		73	155
AEL04007430R	Surrogate	Dibromofluoromethane	26787	116.8		82	119
AEL04007430R	Surrogate	Toluene-d8	26787	93.4		77	115
AEL04007431R	Surrogate	4-Bromofluorobenzene	26787	91		73	155
AEL04007431R	Surrogate	Dibromofluoromethane	26787	114.2		82	119
AEL04007431R	Surrogate	Toluene-d8	26787	92.8		77	115
AEL04007432R	Surrogate	4-Bromofluorobenzene	26787	81		73	155
AEL04007432R	Surrogate	Dibromofluoromethane	26787	113.4		82	119
AEL04007432R	Surrogate	Toluene-d8	26787	92.8		77	115
AEL04007433R	Surrogate	4-Bromofluorobenzene	26787	87.6		73	155
AEL04007433R	Surrogate	Dibromofluoromethane	26787	111.8		82	119

AEL04007433R	Surrogate	Toluene-d8	26787	93	77 - 115
AEL04007434R	Surrogate	4-Bromofluorobenzene	26787	88.2	73 - 155
AEL04007434R	Surrogate	Dibromofluoromethane	26787	117.4	82 - 119
AEL04007434R	Surrogate	Toluene-d8	26787	93.6	77 - 115
AEL04007435R	Surrogate	4-Bromofluorobenzene	26787	85.8	73 - 155
AEL04007435R	Surrogate	Dibromofluoromethane	26787	109.4	82 - 119
AEL04007435R	Surrogate	Toluene-d8	26787	92.8	77 - 115
AEL04007436R	Surrogate	4-Bromofluorobenzene	26787	85.2	73 - 155
AEL04007436R	Surrogate	Dibromofluoromethane	26787	112.2	82 - 119
AEL04007436R	Surrogate	Toluene-d8	26787	95.2	77 - 115
Blank		1,1,1,2-Tetrachloroethane	26787	0	
Blank		1,1,1-Trichloroethane	26787	0	
Blank		1,1,2,2-Tetrachloroethane	26787	0	
Blank		1,1,2-Trichloroethane	26787	0	
Blank		1,1-Dichloroethane	26787	0	
Blank		1,1-Dichloroethylene	26787	0	
Blank		1,2,3-Trichloropropane	26787	0	
Blank		1,2-Chlorotoluene	26787	0	
Blank		1,2-Dichlorobenzene	26787	0	
Blank		1,2-Dichloroethane	26787	0	
Blank		1,2-Dichloropropane	26787	0	
Blank		1,3-Dichlorobenzene	26787	0	
Blank		1,4-Chlorotoluene	26787	0	
Blank		1,4-Dichlorobenzene	26787	0	
Blank		2-Chloroethyl vinyl ether	26787	0	
Blank		2-Hexanone	26787	0	
Blank		Acetone	26787	0	
Blank		Acrolein	26787	0	
Blank		Acrylonitrile	26787	0	
Blank		Benzene	26787	0	
Blank		Bromobenzene	26787	0	
Blank		Bromodichloromethane	26787	0	
Blank		Bromoform	26787	0	
Blank		Bromomethane	26787	0	
Blank		Carbon disulfide	26787	0	
Blank		Carbon Tetrachloride	26787	0	
Blank		Chlorobenzene	26787	0	
Blank		Chloroethane	26787	0	
Blank		Chloroform	26787	0	
Blank		Chloromethane	26787	0	
Blank		cis-1,2-Dichloroethylene	26787	0	
Blank		cis-1,3-Dichloropropylene	26787	0	
Blank		Dibromochloromethane	26787	0	
Blank		Dibromomethane	26787	0	

Blank	Dichlorodifluoromethane	26787	0	
Blank	Ethylbenzene	26787	0	
Blank	Methyl ethyl ketone	26787	0	
Blank	Methyl iso-butyl ketone	26787	0	
Blank	Methyl tert-butyl ether	26787	0	
Blank	Methylene chloride	26787	0.38	
Blank	Styrene	26787	0	
Blank	Tetrachloroethylene	26787	0	
Blank	Toluene	26787	0	
Blank	trans-1,2-Dichloroethylene	26787	0	
Blank	trans-1,3-Dichloropropylene	26787	0	
Blank	Trichloroethylene	26787	0	
Blank	Trichlorofluoromethane	26787	0	
Blank	Vinyl acetate	26787	0	
Blank	Vinyl chloride	26787	0	
Blank	Xylenes (Total)	26787	0	
Calib Check	1,1,1,2-Tetrachloroethane	26787	104.45	70 - 130
Calib Check	1,1,1-Trichloroethane	26787	112.9	70 - 130
Calib Check	1,1,2,2-Tetrachloroethane	26787	136.38	70 - 130
Calib Check	1,1,2-Trichloroethane	26787	105.2	70 - 130
Calib Check	1,1-Dichloroethane	26787	94.25	70 - 130
Calib Check	1,1-Dichloroethylene	26787	111.03	70 - 130
Calib Check	1,2,3-Trichloropropane	26787	109.65	70 - 130
Calib Check	1,2-Chlorotoluene	26787	105.43	70 - 130
Calib Check	1,2-Dichlorobenzene	26787	92.33	70 - 130
Calib Check	1,2-Dichloroethane	26787	103.75	70 - 130
Calib Check	1,2-Dichloropropane	26787	109.75	70 - 130
Calib Check	1,3-Dichlorobenzene	26787	90.4	70 - 130
Calib Check	1,4-Chlorotoluene	26787	101.68	70 - 130
Calib Check	1,4-Dichlorobenzene	26787	91.4	70 - 130
Calib Check	2-Chloroethyl vinyl ether	26787	70.5	70 - 130
Calib Check	2-Hexanone	26787	101.7	70 - 130
Calib Check	Acetone	26787	91.7	70 - 130
Calib Check	Acrolein	26787	176.74	70 - 130
Calib Check	Acrylonitrile	26787	91.63	70 - 130
Calib Check	Benzene	26787	111.95	70 - 130
Calib Check	Bromobenzene	26787	100.45	70 - 130
Calib Check	Bromodichloromethane	26787	105.85	70 - 130
Calib Check	Bromoform	26787	110.63	70 - 130
Calib Check	Bromomethane	26787	102.38	70 - 130
Calib Check	Carbon disulfide	26787	114.08	70 - 130
Calib Check	Carbon Tetrachloride	26787	119.68	70 - 130
Calib Check	Chlorobenzene	26787	102.88	70 - 130
Calib Check	Chloroethane	26787	88.23	70 - 130

Calib Check	Chloroform	26787	105.13	70 - 130
Calib Check	Chloromethane	26787	103.13	70 - 130
Calib Check	cis-1,2-Dichloroethylene	26787	103.8	70 - 130
Calib Check	cis-1,3-Dichloropropylene	26787	102.4	70 - 130
Calib Check	Dibromochloromethane	26787	100.73	70 - 130
Calib Check	Dibromomethane	26787	97.85	70 - 130
Calib Check	Dichlorodifluoromethane	26787	116.58	70 - 130
Calib Check	Ethylbenzene	26787	106.73	70 - 130
Calib Check	Methyl ethyl ketone	26787	101.74	70 - 130
Calib Check	Methyl iso-butyl ketone	26787	100.85	70 - 130
Calib Check	Methyl tert-butyl ether	26787	96.6	70 - 130
Calib Check	Methylene chloride	26787	93.03	70 - 130
Calib Check	Styrene	26787	100.43	70 - 130
Calib Check	Tetrachloroethylene	26787	116.33	70 - 130
Calib Check	Toluene	26787	105.45	70 - 130
Calib Check	trans-1,2-Dichloroethylene	26787	107.33	70 - 130
Calib Check	trans-1,3-Dichloropropylene	26787	100.18	70 - 130
Calib Check	Trichloroethylene	26787	85.9	70 - 130
Calib Check	Trichlorofluoromethane	26787	121.98	70 - 130
Calib Check	Vinyl acetate	26787	105.5	70 - 130
Calib Check	Vinyl chloride	26787	109.08	70 - 130
Calib Check	Xylenes (Total)	26787	105.16	70 - 130
LCS	1,1,1,2-Tetrachloroethane	26787	115.75	70 - 130
LCS	1,1,1-Trichloroethane	26787	111.5	70 - 130
LCS	1,1,2,2-Tetrachloroethane	26787	153.5	70 - 130
LCS	1,1,2-Trichloroethane	26787	112.75	70 - 130
LCS	1,1-Dichloroethane	26787	81.25	70 - 130
LCS	1,1-Dichloroethylene	26787	107.5	70 - 130
LCS	1,2,3-Trichloropropane	26787	131.25	70 - 130
LCS	1,2-Chlorotoluene	26787	110.75	70 - 130
LCS	1,2-Dichlorobenzene	26787	108.5	70 - 130
LCS	1,2-Dichloroethane	26787	116	70 - 130
LCS	1,2-Dichloropropane	26787	120	70 - 130
LCS	1,3-Dichlorobenzene	26787	102	70 - 130
LCS	1,4-Chlorotoluene	26787	115.5	70 - 130
LCS	1,4-Dichlorobenzene	26787	107.75	70 - 130
LCS	Benzene	26787	119.5	70 - 130
LCS	Bromobenzene	26787	105	70 - 130
LCS	Bromodichloromethane	26787	115.5	70 - 130
LCS	Bromoform	26787	113.5	70 - 130
LCS	Bromomethane	26787	319.5	70 - 130
LCS	Carbon Tetrachloride	26787	122.75	70 - 130
LCS	Chlorobenzene	26787	108.25	70 - 130
LCS	Chloroethane	26787	88	70 - 130

LCS		Chloroform	26787	106.25		70 - 130
LCS		Chloromethane	26787	100.5		70 - 130
LCS		cis-1,2-Dichloroethylene	26787	101		70 - 130
LCS		cis-1,3-Dichloropropylene	26787	129		70 - 130
LCS		Dibromochloromethane	26787	103.75		70 - 130
LCS		Dibromomethane	26787	111.5		70 - 130
LCS		Dichlorodifluoromethane	26787	115		70 - 130
LCS		Ethylbenzene	26787	111		70 - 130
LCS		Methylene chloride	26787	99.5		70 - 130
LCS		Styrene	26787	107.5		70 - 130
LCS		Tetrachloroethylene	26787	118		70 - 130
LCS		Toluene	26787	111		70 - 130
LCS		trans-1,2-Dichloroethylene	26787	108		70 - 130
LCS		trans-1,3-Dichloropropylene	26787	129		70 - 130
LCS		Trichloroethylene	26787	92.25		70 - 130
LCS		Trichlorofluoromethane	26787	118.25		70 - 130
LCS		Vinyl chloride	26787	111.75		70 - 130
LCS		Xylenes (Total)	26787	110.33		70 - 130
AEL04007100S	Spike	Lead	26823	95.67		70 - 130
AEL04007122M	Spike Dup	Lead, SPLP	26823	100.63	0.14	70 - 130
AEL04007122S	Spike	Lead, SPLP	26823	100.48		70 - 130
AEL04007177M	Spike Dup	Lead	26823	101.58	0.34	70 - 130
AEL04007177S	Spike	Lead	26823	101.1		70 - 130
AEL04007376M	Spike Dup	Lead	26823	99.82	0.13	70 - 130
AEL04007376S	Spike	Lead	26823	99.69		70 - 130
AEL04007408M	Spike Dup	Lead	26823	99.3	0.75	70 - 130
AEL04007408S	Spike	Lead	26823	98.55		70 - 130
AEL04007440S	Spike	Lead	26823	92.65		70 - 130
Blank		Lead	26823	-0.000376		
Blank		Lead	26823	-0.000315		
Blank		Lead	26823	-0.00023		
Blank		Lead	26823	-0.000489		
Calib Check		Lead	26823	99.72		70 - 130
End Blank		Lead	26823	-0.000027		
End Standard		Lead	26823	103.52		70 - 130
LCS		Lead	26823	98.78		70 - 130
LCS		Lead	26823	99.3		70 - 130
LCS		Lead	26823	100.83		70 - 130
LCS		Lead	26823	102.98		70 - 130
QC Blank		Lead	26823	-0.000159		
SPLP Blank		Lead, SPLP	26823	-0.000389		
AEL04006952M	Spike Dup	Selenium	26837	112.54	0.63	70 - 130
AEL04006952S	Spike	Selenium	26837	113.22		70 - 130
AEL04007009S	Spike	Selenium	26837	96.84		70 - 130

AEL04007122M	Spike Dup	Selenium, SPLP	26837	111.61	2.34	70 - 130
AEL04007122S	Spike	Selenium, SPLP	26837	109.11		70 - 130
AEL04007408M	Spike Dup	Selenium	26837	98.59	6.97	70 - 130
AEL04007408S	Spike	Selenium	26837	92.04		70 - 130
AEL04007440S	Spike	Selenium	26837	90.3		70 - 130
Blank		Selenium	26837	-0.002362		
Blank		Selenium	26837	-0.003149		
Blank		Selenium	26837	-0.002065		
Blank		Selenium	26837	-0.000959		
Blank		Selenium, SPLP	26837	-0.001285		
LCS		Selenium	26837	103.53		70 - 130
LCS		Selenium	26837	110.18		70 - 130
LCS		Selenium	26837	104		70 - 130
LCS		Selenium	26837	104.1		70 - 130
LCS		Selenium, SPLP	26837	99.25		70 - 130
SPLP Blank		Selenium, SPLP	26837	-0.002103		
AEL04007412M	Spike Dup	Mercury	26845	82.59	0.8	70 - 130
AEL04007412S	Spike	Mercury	26845	81.93		70 - 130
AEL04007470S	Spike	Mercury	26845	100.48		70 - 130
Blank		Mercury	26845	0.000045		
LCS		Mercury	26845	100.44		70 - 130
AEL04007408M	Spike Dup	Barium	26864	96.12	1.26	70 - 130
AEL04007408M	Spike Dup	Cadmium	26864	95.6	3.22	70 - 130
AEL04007408M	Spike Dup	Chromium, Total	26864	99.7	2.32	70 - 130
AEL04007408M	Spike Dup	Copper	26864	98.9	1.34	70 - 130
AEL04007408M	Spike Dup	Nickel	26864	97.42	2.92	70 - 130
AEL04007408M	Spike Dup	Silver	26864	87.3	2.94	70 - 130
AEL04007408M	Spike Dup	Zinc	26864	99.74	1.86	70 - 130
AEL04007408S	Spike	Barium	26864	97.52		70 - 130
AEL04007408S	Spike	Cadmium	26864	98.75		70 - 130
AEL04007408S	Spike	Chromium, Total	26864	102.04		70 - 130
AEL04007408S	Spike	Copper	26864	100.22		70 - 130
AEL04007408S	Spike	Nickel	26864	100.32		70 - 130
AEL04007408S	Spike	Silver	26864	90		70 - 130
AEL04007408S	Spike	Zinc	26864	101.64		70 - 130
AEL04007440S	Spike	Barium	26864	97.74		70 - 130
AEL04007440S	Spike	Cadmium	26864	98.2		70 - 130
AEL04007440S	Spike	Chromium, Total	26864	100.74		70 - 130
AEL04007440S	Spike	Copper	26864	100.76		70 - 130
AEL04007440S	Spike	Nickel	26864	98.94		70 - 130
AEL04007440S	Spike	Silver	26864	95.5		70 - 130
AEL04007440S	Spike	Zinc	26864	100.61		70 - 130
Blank		Barium	26864	-0.0005		
Blank		Cadmium	26864	-0.0003		

Blank		Chromium, Total	26864	-0.0018		
Blank		Copper	26864	-0.0013		
Blank		Nickel	26864	0.0009		
Blank		Silver	26864	0.0012		
Blank		Zinc	26864	0.0074		
LCS		Barium	26864	100.1		70 - 130
LCS		Cadmium	26864	107.7		70 - 130
LCS		Chromium, Total	26864	107.54		70 - 130
LCS		Copper	26864	102.36		70 - 130
LCS		Nickel	26864	108.7		70 - 130
LCS		Silver	26864	102.5		70 - 130
LCS		Zinc	26864	107		70 - 130
AEL04006903M	Spike Dup	Arsenic	26880	99.73	1.52	70 - 130
AEL04006903S	Spike	Arsenic	26880	102.28		70 - 130
AEL04006952M	Spike Dup	Arsenic	26880	105.38	0.24	70 - 130
AEL04006952S	Spike	Arsenic	26880	105.63		70 - 130
AEL04007009S	Spike	Arsenic	26880	102.44		70 - 130
AEL04007122M	Spike Dup	Arsenic, SPLP	26880	104.9	1.85	70 - 130
AEL04007122S	Spike	Arsenic, SPLP	26880	102.93		70 - 130
AEL04007408M	Spike Dup	Arsenic	26880	101.75	2.4	70 - 130
AEL04007408S	Spike	Arsenic	26880	99.35		70 - 130
AEL04007440S	Spike	Arsenic	26880	107.33		70 - 130
AEL04007472S	Spike	Arsenic	26880	105.6		70 - 130
Blank		Arsenic	26880	-0.00003		
Blank		Arsenic	26880	0.00007		
Blank		Arsenic	26880	0.00011		
Blank		Arsenic	26880	-0.0002		
Blank		Arsenic	26880	-0.00022		
Blank		Arsenic, SPLP	26880	-0.00014		
Calib Check		Arsenic	26880	98.7		70 - 130
Calib Check		Arsenic	26880	101.52		70 - 130
End Blank		Arsenic	26880	0.00042		
End Standard		Arsenic	26880	100.16		70 - 130
LCS		Arsenic	26880	107.3		70 - 130
LCS		Arsenic	26880	102.78		70 - 130
LCS		Arsenic	26880	108.58		70 - 130
LCS		Arsenic	26880	104.78		70 - 130
LCS		Arsenic	26880	106.33		70 - 130
LCS		Arsenic, SPLP	26880	104.13		70 - 130
QC Blank		Arsenic	26880	-0.00013		
QC Blank		Arsenic	26880	0.00004		
SPLP Blank		Arsenic, SPLP	26880	-0.00019		

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

EXPLANATION OF QUALIFIERS

Qualifier	Definition
J	Estimated Value: %Difference of daily calibration standard outside control limits.
H	Estimated Value: Concentration above calibration range.
L	Spectral evidence confirms the presence of this compound at a concentration below the calibration limit but above the Method Detection Limit.
B	Qualified due to the presence of compound in the blank.
I	Qualified: Internal standard response outside of acceptable limits.
XC	Qualified due to coelution.

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(ags)

Averill Environmental Laboratory, Inc.

A[illegible]RILL
ENVIRON[illegible]IENTAL LABORATORY INC.
100 Northwest Drive
Plainville, Connecticut 06062
Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 38795

PROJECT NAME: MAC-DERMID-HUNTINGDON RD
PROJECT LOCATION: WATERBURY CT
PROJECT NUMBER: 91MH401

REPORT TO: BARBARA
INVOICE TO: LEA

Source Codes: W = Well, O = Outfall, RO = Run Off, R = River/Stream, B = Bottom Sediment, MW = Monitoring Well, S = Soil, SG = Sludge, LF = Landfill, L = Lake/Ocean, T = Treatment Facility, X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	1051333	MW	3	E	40ml	I,H	8260 B	7428	✓	✓		
2	1051333	MW	1	P	1/2G	I,R	CYANIDE		✓	✓		
3	1051333uf	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn TOTAL	7437	✓	✓		
4	1051333	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn (FILTERED)	HOLD	✓	✓		
5	1051334	MW	3	E	40ml	I,H	8260 B	7429	✓	✓		
6	1051334	MW	1	P	1/2G	I,R	CYANIDE		✓	✓		
7	1051334uf	MW	1	A	1/2L	I,N	RCRA 8 MET Cu, Ni, Zn TOTAL	7438	✓	✓		
8	1051334	MW	1	A	1/2L	I,N	RCRA 8 MET Cu, Ni, Zn (FILTERED)	HOLD	✓	✓		
9	1051340	MW	3	E	40ml	I,H	8260 B	7430	✓	✓		
10	1051340	MW	1	P	1/2G	I,R	CYANIDE		✓	✓		
11	1051340	MW	1	A	1/2L	I,N	RCRA 8 MET Cu, Ni, Zn TOTAL	7439	✓	✓		
12	1051340	MW	1	A	1/2L	I,N	RCRA 8 MET Cu, Ni, Zn (FILTERED)	HOLD	✓	✓		

Container Code: P = Plastic, E = EPA VIAL, C = Cube, G = Glass, A = Amber Glass, B = Bacteria Bottle
Preservative Code: I = Iced, F = Filtered, N = Nitric Acid (HNO_3), H - Hydrochloric Acid (HCl), R = Sodium Hydroxide (NaOH), T = Sodium Thiosulfate, S = Sulfuric Acid (H_2SO_4)
O = Other, Specify

Sampler's Signature	Affiliation	Date	Time
[signature]	LEA	8/13/04	

ADDITIONAL COMMENTS:
RUSH: VOC'S BY 8/17/04
CYANIDE + TOTAL METALS BY 8/20/04

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-12	[signature]	[signature]	8/13/04	1635
2	1-12	[signature]	FRIGE	8/13/04	1700
3					
4					

ILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 38794

PROJECT NAME:	PROJECT LOCATION:	PROJECT NUMBER:
MAC-DERMID - HUNTINGDON	WATERBURY CT	9/MH401

REPORT TO:

INVOICE TO: LEA

Source Codes: W = Well O = Outfall RO = Run Off R = River/Stream B = Bottom Sediment
MW = Monitoring Well S = Soil SG = Sludge LF = Landfill L = Lake/Ocean T = Treatment Facility
X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	1051345	MW	3	E	40ml	I,H	8260 B	7432	✓	✓		
2	1051345	MW	1	P	1/2L	I,R	CYANIDE		✓	✓		
3	1051345DUP	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn TOTAL	7441	✓	✓		
4	1051345	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn (FILTERED)	HOLD	✓	✓		
5	1051344	MW	3	E	40ml	I,H	8260 B	7431	✓	✓		
6	1051344	MW	1	P	1/2L	I,R	CYANIDE		✓	✓		
7	1051344DUP	MW	1	A	1/2L	I,N	RCRA 8 MET Cu, Ni, Zn TOTAL	7440	✓	✓		
8	1051344	MW	1	A	1/2L	I,N	RCRA 8 MET Cu, Ni, Zn (FILTERED)	HOLD	✓	✓		
9	1051352	MW	3	E	40ml	I,H	8260B	7433	✓	✓		
10	1051352	MW	1	P	1/2L	I,R	CYANIDE		✓	✓		
11	1051352DUP	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn TOTAL	7442	✓	✓		
12	1051352	MW	1	A	1/2L	I,N	RCRA 8 MET Cu, Ni, Zn (FILTERED)	HOLD	✓	✓		

Container Code: P = Plastic E = EPA VIAL C = Cube G = Glass A = Amber Glass B = Bacteria Bottle
Preservative Code: I = Iced F = Filtered N = Nitric Acid (HNO_3) H - Hydrochloric Acid (HCl) R = Sodium Hydroxide (NaOH) T = Sodium Thiosulfate S = Sulfuric Acid (H_2SO_4)
O = Other, Specify

Sampler's Signature	Affiliation	Date	Time
	LEA	8/13/04	

ADDITIONAL COMMENTS:
RUSH VOCS BY 8/17/04
CYANIDE + TOTAL METALS 8/20/04

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-12			8/13/04	1635
2	1-12		- FEDEX -	8/13/04	1700
3					
4					

AVERILL ENVIRONMENTAL LABORATORY INC.
100 Northwest Drive
Plainville, Connecticut 06062
Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 38793

PROJECT NAME: MAC-DERMID - HUNTINGDON

PROJECT LOCATION: WATERBURY CT

PROJECT NUMBER: 91MH401

REPORT TO:

INVOICE TO: LEA

Source Codes: W = Well, O = Outfall, RO = Run Off, R = River/Stream, B = Bottom Sediment, MW = Monitoring Well, S = Soil, SG = Sludge, LF = Landfill, L = Lake/Ocean, T = Treatment Facility, X = Other, Specify WATER

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	1051353	MW	3	E	40ml	I,H	8260B	7434	✓	✓		
2	1051353	MW	1	P	1/2G	I,R	CYANIDE		✓	✓		
3	1051353 DUP	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn TOTAL	7443	✓	✓		
4	1051353	MW	1	A	1/2L	I,N	RCRA 8 MET, Cu, Ni, Zn (FILTERED)	HOLD	✓	✓		
5	1051354	X	3	E	40ml	I,H	8260B	7435	✓	✓		
6	1051354	X	1	P	1/2G	I,R	CYANIDE		✓	✓		
7	1051354	X	1	A	1/2L	I,N	RCRA 8 MET Cu, Ni, Zn TOTAL	7444	✓	✓		
8	1051354	X	1	A	1/2L	I,N	RCRA 8 MET Cu, Ni, Zn (FILTERED)	HOLD	✓	✓		
9	1051355	X	2	E	40ml	I,N	8260B	7436	✓	✓		

Container Code: P = Plastic, E = EPA VIAL, C = Cube, G = Glass, A = Amber Glass, B = Bacteria Bottle
Preservative Code: I = Iced, F = Filtered, N = Nitric Acid (HNO_3), H - Hydrochloric Acid (HCl), R = Sodium Hydroxide (NaOH), T = Sodium Thiosulfate, S = Sulfuric Acid (H_2SO_4), O = Other, Specify

Sampler's Signature	Affiliation	Date	Time
	8/13/04	8/13/04	

ADDITIONAL COMMENTS:
RUSH VOC'S BY 8/17/04
CYANIDE + TOTAL METALS BY 8/20/04

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-9			8/13/04	1635
2	1-9		- FEDEX -	8/13/04	1700
3					
4					

AVERILL ENVIRONMENTAL LABORATORY, INC.

CT Laboratory ID No. PH-0513 | 100 Northwest Drive, Plainville, Connecticut 06062 | NH Laboratory ID No. 2506
MA Laboratory ID No. M-CT0513 | (860) 747-0676 Fax: (860) 747-9264 | CT ONLY 1-(800) 870-7904 | ME Laboratory ID No. CT029
NY Laboratory ID No. 11599 | Lawton S. Averill - Director | Alan G. Jacobs - Co-Director | EPA Laboratory ID No. CT00029

LABORATORY REPORT

Prepared for:

Barbara Heemink

Loureiro Engineering Associates

Report Date: Monday, August 23, 2004

AEL Lab No.	Client Sample ID:	Source	Client Project#:	Collect Date
AEL04007464	1051335	MacDermid, Waterbury, CT	91MH401.001	8/16/04
AEL04007465	1051341	MacDermid, Waterbury, CT	91MH401.001	8/16/04
AEL04007466	1051351	MacDermid, Waterbury, CT	91MH401.001	8/16/04
AEL04007467	1051349	MacDermid, Waterbury, CT	91MH401.001	8/16/04
AEL04007468	1051350	MacDermid, Waterbury, CT	91MH401.001	8/16/04
AEL04007469	1051339	MacDermid, Waterbury, CT	91MH401.001	8/16/04
AEL04007470	1051335 UF	MacDermid, Huntington Ave.	91MH401.001	8/16/04
AEL04007471	1051341 UF	MacDermid, Huntington Ave.	91MH401.001	8/16/04
AEL04007472	1051351 UF	MacDermid, Huntington Ave.	91MH401.001	8/16/04
AEL04007473	1051349 UF	MacDermid, Huntington Ave.	91MH401.001	8/16/04
AEL04007474	1051350 UF	MacDermid, Huntington Ave.	91MH401.001	8/16/04
AEL04007475	1051339 UF	MacDermid, Huntington Ave.	91MH401.001	8/16/04
AEL04007476	1051346	MacDermid, Waterbury, CT	91MH401.001	8/16/04

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007464 **Client Sample ID:** 1051335

Sample Matrix: Groundwater **Received Date:** Monday, August 16, 2004

Collected By: LEA **Collect Date:** Monday, August 16, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007464	Cyanide, Total	<	0.005		mg/L	RR	8/20/04	SW-846 9014	26868
AEL04007464	Acetone	<	10		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Acrolein	<	0.5	J	ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Acrylonitrile	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Benzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Bromobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Bromodichloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Bromoform	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Bromomethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Carbon disulfide	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Carbon Tetrachloride	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Chlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Chloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Chloroform		2.3		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Chloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Dibromochloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Dibromomethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	1,1-Dichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	1,2-Dichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	1,2-Dichloropropane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Ethylbenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	2-Hexanone	<	1.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Methylene chloride	L	0.8		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Methyl ethyl ketone	<	2.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813

AEL04007464	Styrene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Tetrachloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Toluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Trichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Trichlorofluoromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Vinyl acetate	<	0.5	J	ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Vinyl chloride	L	0.6		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	Xylenes (Total)	<	1.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007464	pH of EPA Vial		2			MS	8/17/04	SW-846 8260B	26813

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007465 **Client Sample ID:** 1051341

Sample Matrix: Groundwater **Received Date:** Monday, August 16, 2004

Collected By: LEA **Collect Date:** Monday, August 16, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007465	Cyanide, Total	<	0.005		mg/L	RR	8/20/04	SW-846 9014	26868
AEL04007465	Acetone	<	10		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Acrolein	<	0.5	J	ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Acrylonitrile	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Benzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Bromobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Bromodichloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Bromoform	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Bromomethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Carbon disulfide	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Carbon Tetrachloride	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Chlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Chloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Chloroform	L	0.6		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Chloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Dibromochloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Dibromomethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	1,1-Dichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	1,2-Dichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	1,2-Dichloropropane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Ethylbenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	2-Hexanone	<	1.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Methylene chloride	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Methyl ethyl ketone	<	2.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813

AEL04007465	Styrene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Tetrachloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Toluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Trichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Trichlorofluoromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Vinyl acetate	<	0.5	J	ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Vinyl chloride	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	Xylenes (Total)	<	1.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007465	pH of EPA Vial		2			MS	8/17/04	SW-846 8260B	26813

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007466 **Client Sample ID:** 1051351

Sample Matrix: Groundwater **Received Date:** Monday, August 16, 2004

Collected By: LEA **Collect Date:** Monday, August 16, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007466	Cyanide, Total	<	0.005		mg/L	RR	8/20/04	SW-846 9014	26868
AEL04007466	Acetone	<	10		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Acrolein	<	0.5	J	ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Acrylonitrile	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Benzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Bromobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Bromodichloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Bromoform	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Bromomethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Carbon disulfide	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Carbon Tetrachloride	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Chlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Chloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Chloroform	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Chloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Dibromochloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Dibromomethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	1,1-Dichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	1,2-Dichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	1,2-Dichloropropane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Ethylbenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	2-Hexanone	<	1.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Methylene chloride	L	0.8		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Methyl ethyl ketone	<	2.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813

AEL04007466	Styrene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Tetrachloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Toluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Trichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Trichlorofluoromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Vinyl acetate	<	0.5	J	ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Vinyl chloride	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	Xylenes (Total)	<	1.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007466	pH of EPA Vial		2			MS	8/17/04	SW-846 8260B	26813

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007467 **Client Sample ID:** 1051349

Sample Matrix: Groundwater **Received Date:** Monday, August 16, 2004

Collected By: LEA **Collect Date:** Monday, August 16, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007467	Cyanide, Total	<	0.005		mg/L	RR	8/20/04	SW-846 9014	26868
AEL04007467	Acetone	<	10		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Acrolein	<	0.5	J	ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Acrylonitrile	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Benzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Bromobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Bromodichloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Bromoform	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Bromomethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Carbon disulfide	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Carbon Tetrachloride	L	0.7		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Chlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Chloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Chloroform	L	0.8		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Chloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Dibromochloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Dibromomethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	1,1-Dichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	1,2-Dichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	cis-1,2-Dichloroethylene	L	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	1,2-Dichloropropane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Ethylbenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	2-Hexanone	<	1.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Methylene chloride	L	0.9		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Methyl ethyl ketone	<	2.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Methyl tert-butyl ether		2.8		ug/L	MS	8/17/04	SW-846 8260B	26813

AEL04007467	Styrene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Tetrachloroethylene		14		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Toluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Trichloroethylene		2.8		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Trichlorofluoromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Vinyl acetate	<	0.5	J	ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Vinyl chloride	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	Xylenes (Total)	<	1.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007467	pH of EPA Vial		2			MS	8/17/04	SW-846 8260B	26813

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007468 **Client Sample ID:** 1051350

Sample Matrix: Groundwater **Received Date:** Monday, August 16, 2004

Collected By: LEA **Collect Date:** Monday, August 16, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007468	Cyanide, Total	<	0.005		mg/L	RR	8/20/04	SW-846 9014	26868
AEL04007468	Acetone	<	10		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Acrolein	<	0.5	J	ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Acrylonitrile	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Benzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Bromobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Bromodichloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Bromoform	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Bromomethane		1.9		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Carbon disulfide	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Carbon Tetrachloride	L	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Chlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Chloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Chloroform	L	0.8		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Chloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Dibromochloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Dibromomethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	1,1-Dichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	1,2-Dichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	cis-1,2-Dichloroethylene	L	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	1,2-Dichloropropane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Ethylbenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	2-Hexanone	<	1.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Methylene chloride	L	0.8		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Methyl ethyl ketone	<	2.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Methyl tert-butyl ether		2.9		ug/L	MS	8/17/04	SW-846 8260B	26813

AEL04007468	Styrene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Tetrachloroethylene		15		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Toluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Trichloroethylene		3.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Trichlorofluoromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Vinyl acetate	<	0.5	J	ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Vinyl chloride	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	Xylenes (Total)	<	1.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007468	pH of EPA Vial		2			MS	8/17/04	SW-846 8260B	26813

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007469 **Client Sample ID:** 1051339

Sample Matrix: Groundwater **Received Date:** Monday, August 16, 2004

Collected By: LEA **Collect Date:** Monday, August 16, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007469	Cyanide, Total	<	0.005		mg/L	RR	8/20/04	SW-846 9014	26868
AEL04007469	Acetone	<	10		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Acrolein	<	0.5	J	ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Acrylonitrile	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Benzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Bromobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Bromodichloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Bromoform	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Bromomethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Carbon disulfide	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Carbon Tetrachloride	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Chlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Chloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Chloroform	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Chloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Dibromochloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Dibromomethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	1,1-Dichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	1,2-Dichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	1,2-Dichloropropane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Ethylbenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	2-Hexanone	<	1.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Methylene chloride	L	1.1		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Methyl ethyl ketone	<	2.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813

AEL04007469	Styrene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Tetrachloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Toluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Trichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Trichlorofluoromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Vinyl acetate	<	0.5	J	ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Vinyl chloride	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	Xylenes (Total)	<	1.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007469	pH of EPA Vial		2			MS	8/17/04	SW-846 8260B	26813

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007470 **Client Sample ID:** 1051335 UF

Sample Matrix: Groundwater **Received Date:** Monday, August 16, 2004

Collected By: LEA **Collect Date:** Monday, August 16, 2004

Source: MacDermid, Huntington Ave.

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007470	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007470	Lead	<	0.0050	mg/L	JM	8/20/04	SW-846 7421	26881
AEL04007470	Selenium	<	0.005	mg/L	JM	8/21/04	SW-846 7740	26886
AEL04007470	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007470	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007470	Barium		0.085	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007470	Cadmium	L	0.002	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007470	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007470	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007470	Nickel	L	0.022	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007470	Zinc	L	0.011	mg/L	RR	8/19/04	SW-846 6010B	26865

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007471 **Client Sample ID:** 1051341 UF

Sample Matrix: Groundwater **Received Date:** Monday, August 16, 2004

Collected By: LEA **Collect Date:** Monday, August 16, 2004

Source: MacDermid, Huntington Ave.

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007471	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007471	Lead	<	0.0050	mg/L	JM	8/20/04	SW-846 7421	26881
AEL04007471	Selenium	<	0.005	mg/L	JM	8/21/04	SW-846 7740	26886
AEL04007471	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007471	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007471	Barium		0.060	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007471	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007471	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007471	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007471	Nickel	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007471	Zinc	L	0.010	mg/L	RR	8/19/04	SW-846 6010B	26865

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007472 **Client Sample ID:** 1051351 UF

Sample Matrix: Groundwater **Received Date:** Monday, August 16, 2004

Collected By: LEA **Collect Date:** Monday, August 16, 2004

Source: MacDermid, Huntington Ave.

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007472	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007472	Lead	<	0.0050	mg/L	JM	8/20/04	SW-846 7421	26881
AEL04007472	Selenium	<	0.005	mg/L	JM	8/21/04	SW-846 7740	26886
AEL04007472	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007472	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007472	Barium	L	0.025	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007472	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007472	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007472	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007472	Nickel	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007472	Zinc	L	0.010	mg/L	RR	8/19/04	SW-846 6010B	26865

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007473 **Client Sample ID:** 1051349 UF

Sample Matrix: Groundwater **Received Date:** Monday, August 16, 2004

Collected By: LEA **Collect Date:** Monday, August 16, 2004

Source: MacDermid, Huntington Ave.

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007473	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007473	Lead	<	0.0050	mg/L	JM	8/20/04	SW-846 7421	26881
AEL04007473	Selenium	<	0.005	mg/L	JM	8/21/04	SW-846 7740	26886
AEL04007473	Mercury	<	0.0002	mg/L	JM	8/19/04	SW-846 7470A	26845
AEL04007473	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007473	Barium		0.037	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007473	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007473	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007473	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007473	Nickel	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007473	Zinc		0.037	mg/L	RR	8/19/04	SW-846 6010B	26865

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007474 **Client Sample ID:** 1051350 UF

Sample Matrix: Groundwater **Received Date:** Monday, August 16, 2004

Collected By: LEA **Collect Date:** Monday, August 16, 2004

Source: MacDermid, Huntington Ave.

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007474	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007474	Lead	<	0.0050	mg/L	JM	8/20/04	SW-846 7421	26881
AEL04007474	Selenium	<	0.005	mg/L	JM	8/21/04	SW-846 7740	26886
AEL04007474	Mercury	<	0.0002	mg/L	JM	8/21/04	SW-846 7470A	26882
AEL04007474	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007474	Barium	L	0.036	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007474	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007474	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007474	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007474	Nickel	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007474	Zinc	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26865

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007475 **Client Sample ID:** 1051339 UF

Sample Matrix: Groundwater **Received Date:** Monday, August 16, 2004

Collected By: LEA **Collect Date:** Monday, August 16, 2004

Source: MacDermid, Huntington Ave.

Sample ID: Monitoring Well Sample

	Test		Result	Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007475	Arsenic	<	0.004	mg/L	JM	8/20/04	SW-846 7060A	26880
AEL04007475	Lead	<	0.0050	mg/L	JM	8/20/04	SW-846 7421	26881
AEL04007475	Selenium	<	0.005	mg/L	JM	8/21/04	SW-846 7740	26886
AEL04007475	Mercury	<	0.0002	mg/L	JM	8/21/04	SW-846 7470A	26882
AEL04007475	Silver	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007475	Barium	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007475	Cadmium	<	0.002	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007475	Chromium, Total	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007475	Copper	<	0.005	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007475	Nickel	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26865
AEL04007475	Zinc	<	0.010	mg/L	RR	8/19/04	SW-846 6010B	26865

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL04007476 **Client Sample ID:** 1051346

Sample Matrix: Water **Received Date:** Monday, August 16, 2004

Collected By: LEA **Collect Date:** Monday, August 16, 2004

Source: MacDermid, Waterbury, CT

Sample ID: Trip Blank for Monitoring Well Samples

	Test		Result		Units	Analyst	Analysis Date	Analysis Method	Batch#
AEL04007476	Acetone	<	10		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Acrolein	<	0.5	J	ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Acrylonitrile	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Benzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Bromobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Bromodichloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Bromoform	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Bromomethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Carbon disulfide	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Carbon Tetrachloride	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Chlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Chloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	2-Chloroethyl vinyl ether	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Chloroform	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Chloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	1,2-Chlorotoluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	1,4-Chlorotoluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Dibromochloromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Dibromomethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	1,2-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	1,3-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	1,4-Dichlorobenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Dichlorodifluoromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	1,1-Dichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	1,2-Dichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	1,1-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	cis-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	trans-1,2-Dichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	1,2-Dichloropropane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	cis-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	trans-1,3-Dichloropropylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Ethylbenzene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	2-Hexanone	<	1.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Methylene chloride	L	0.8		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Methyl ethyl ketone	<	2.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Methyl iso-butyl ketone	<	2.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Methyl tert-butyl ether	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Styrene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813

AEL04007476	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Tetrachloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Toluene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	1,1,1-Trichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	1,1,2-Trichloroethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Trichloroethylene	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Trichlorofluoromethane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	1,2,3-Trichloropropane	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Vinyl acetate	<	0.5	J	ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Vinyl chloride	<	0.5		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	Xylenes (Total)	<	1.0		ug/L	MS	8/17/04	SW-846 8260B	26813
AEL04007476	pH of EPA Vial		2			MS	8/17/04	SW-846 8260B	26813

QUALITY CONTROL REPORT

QC Lab#	QC Type	Analyte	Batch#	% Recovery/ Blank Result	RPD	Low Limit	Upper Limit
AEL04007198R	Surrogate	4-Bromofluorobenzene	26813	92		73	155
AEL04007198R	Surrogate	Dibromofluoromethane	26813	106		82	119
AEL04007198R	Surrogate	Toluene-d8	26813	91.6		77	115
AEL04007199R	Surrogate	4-Bromofluorobenzene	26813	86.2		73	155
AEL04007199R	Surrogate	Dibromofluoromethane	26813	99.2		82	119
AEL04007199R	Surrogate	Toluene-d8	26813	91.2		77	115
AEL04007200R	Surrogate	4-Bromofluorobenzene	26813	87.6		73	155
AEL04007200R	Surrogate	Dibromofluoromethane	26813	97.4		82	119
AEL04007200R	Surrogate	Toluene-d8	26813	93.2		77	115
AEL04007201R	Surrogate	4-Bromofluorobenzene	26813	97.4		73	155
AEL04007201R	Surrogate	Dibromofluoromethane	26813	97.8		82	119
AEL04007201R	Surrogate	Toluene-d8	26813	92.6		77	115
AEL04007202R	Surrogate	4-Bromofluorobenzene	26813	92.4		73	155
AEL04007202R	Surrogate	Dibromofluoromethane	26813	94.8		82	119
AEL04007202R	Surrogate	Toluene-d8	26813	92.4		77	115
AEL04007203R	Surrogate	4-Bromofluorobenzene	26813	87.8		73	155
AEL04007203R	Surrogate	Dibromofluoromethane	26813	93.4		82	119
AEL04007203R	Surrogate	Toluene-d8	26813	91.2		77	115
AEL04007204R	Surrogate	4-Bromofluorobenzene	26813	87		73	155
AEL04007204R	Surrogate	Dibromofluoromethane	26813	97.4		82	119
AEL04007204R	Surrogate	Toluene-d8	26813	92		77	115
AEL04007205R	Surrogate	4-Bromofluorobenzene	26813	90.4		73	155
AEL04007205R	Surrogate	Dibromofluoromethane	26813	95.8		82	119
AEL04007205R	Surrogate	Toluene-d8	26813	91.8		77	115
AEL04007418R	Surrogate	4-Bromofluorobenzene	26813	109.6		73	155
AEL04007418R	Surrogate	Dibromofluoromethane	26813	98.8		82	119
AEL04007418R	Surrogate	Toluene-d8	26813	91.4		77	115
AEL04007464R	Surrogate	4-Bromofluorobenzene	26813	95.8		73	155
AEL04007464R	Surrogate	Dibromofluoromethane	26813	112.8		82	119
AEL04007464R	Surrogate	Toluene-d8	26813	93.4		77	115
AEL04007465R	Surrogate	4-Bromofluorobenzene	26813	91		73	155
AEL04007465R	Surrogate	Dibromofluoromethane	26813	109.8		82	119
AEL04007465R	Surrogate	Toluene-d8	26813	93		77	115
AEL04007466R	Surrogate	4-Bromofluorobenzene	26813	82.2		73	155
AEL04007466R	Surrogate	Dibromofluoromethane	26813	112.2		82	119
AEL04007466R	Surrogate	Toluene-d8	26813	92.6		77	115
AEL04007467R	Surrogate	4-Bromofluorobenzene	26813	90.2		73	155
AEL04007467R	Surrogate	Dibromofluoromethane	26813	106.4		82	119
AEL04007467R	Surrogate	Toluene-d8	26813	93		77	115
AEL04007468R	Surrogate	4-Bromofluorobenzene	26813	91.2		73	155
AEL04007468R	Surrogate	Dibromofluoromethane	26813	109.8		82	119

AEL04007468R	Surrogate	Toluene-d8	26813	93.8	77 - 115
AEL04007469R	Surrogate	4-Bromofluorobenzene	26813	90.8	73 - 155
AEL04007469R	Surrogate	Dibromofluoromethane	26813	103.6	82 - 119
AEL04007469R	Surrogate	Toluene-d8	26813	91.8	77 - 115
AEL04007476R	Surrogate	4-Bromofluorobenzene	26813	85.2	73 - 155
AEL04007476R	Surrogate	Dibromofluoromethane	26813	110	82 - 119
AEL04007476R	Surrogate	Toluene-d8	26813	94.2	77 - 115
Blank		1,1,1,2-Tetrachloroethane	26813	0	
Blank		1,1,1-Trichloroethane	26813	0	
Blank		1,1,2,2-Tetrachloroethane	26813	0	
Blank		1,1,2-Trichloroethane	26813	0	
Blank		1,1-Dichloroethane	26813	0	
Blank		1,1-Dichloroethylene	26813	0	
Blank		1,2,3-Trichloropropane	26813	0	
Blank		1,2-Chlorotoluene	26813	0	
Blank		1,2-Dichlorobenzene	26813	0	
Blank		1,2-Dichloroethane	26813	0	
Blank		1,2-Dichloropropane	26813	0	
Blank		1,3-Dichlorobenzene	26813	0	
Blank		1,4-Chlorotoluene	26813	0	
Blank		1,4-Dichlorobenzene	26813	0	
Blank		2-Chloroethyl vinyl ether	26813	0	
Blank		2-Hexanone	26813	0	
Blank		Acetone	26813	0	
Blank		Acrolein	26813	0	
Blank		Acrylonitrile	26813	0	
Blank		Benzene	26813	0	
Blank		Bromobenzene	26813	0	
Blank		Bromodichloromethane	26813	0	
Blank		Bromoform	26813	0	
Blank		Bromomethane	26813	0	
Blank		Carbon disulfide	26813	0	
Blank		Carbon Tetrachloride	26813	0	
Blank		Chlorobenzene	26813	0	
Blank		Chloroethane	26813	0	
Blank		Chloroform	26813	0	
Blank		Chloromethane	26813	0	
Blank		cis-1,2-Dichloroethylene	26813	0	
Blank		cis-1,3-Dichloropropylene	26813	0	
Blank		Dibromochloromethane	26813	0	
Blank		Dibromomethane	26813	0	
Blank		Dichlorodifluoromethane	26813	0	
Blank		Ethylbenzene	26813	0	
Blank		Methyl ethyl ketone	26813	0	

Blank	Methyl iso-butyl ketone	26813	0	
Blank	Methyl tert-butyl ether	26813	0	
Blank	Methylene chloride	26813	0.49	
Blank	Styrene	26813	0	
Blank	Tetrachloroethylene	26813	0	
Blank	Toluene	26813	0	
Blank	trans-1,2-Dichloroethylene	26813	0	
Blank	trans-1,3-Dichloropropylene	26813	0	
Blank	Trichloroethylene	26813	0	
Blank	Trichlorofluoromethane	26813	0	
Blank	Vinyl acetate	26813	0	
Blank	Vinyl chloride	26813	0	
Blank	Xylenes (Total)	26813	0	
Calib Check	1,1,1,2-Tetrachloroethane	26813	96.9	70 - 130
Calib Check	1,1,1-Trichloroethane	26813	98.95	70 - 130
Calib Check	1,1,2,2-Tetrachloroethane	26813	129.38	70 - 130
Calib Check	1,1,2-Trichloroethane	26813	100.33	70 - 130
Calib Check	1,1-Dichloroethane	26813	88.5	70 - 130
Calib Check	1,1-Dichloroethylene	26813	97.73	70 - 130
Calib Check	1,2,3-Trichloropropane	26813	102.7	70 - 130
Calib Check	1,2-Chlorotoluene	26813	94.95	70 - 130
Calib Check	1,2-Dichlorobenzene	26813	87.53	70 - 130
Calib Check	1,2-Dichloroethane	26813	98.85	70 - 130
Calib Check	1,2-Dichloropropane	26813	102.48	70 - 130
Calib Check	1,3-Dichlorobenzene	26813	83.25	70 - 130
Calib Check	1,4-Chlorotoluene	26813	94.38	70 - 130
Calib Check	1,4-Dichlorobenzene	26813	85.15	70 - 130
Calib Check	2-Chloroethyl vinyl ether	26813	78.63	70 - 130
Calib Check	2-Hexanone	26813	99.51	70 - 130
Calib Check	Acetone	26813	88.48	70 - 130
Calib Check	Acrolein	26813	150.97	70 - 130
Calib Check	Acrylonitrile	26813	99.6	70 - 130
Calib Check	Benzene	26813	100.8	70 - 130
Calib Check	Bromobenzene	26813	90.78	70 - 130
Calib Check	Bromodichloromethane	26813	98.5	70 - 130
Calib Check	Bromoform	26813	105.58	70 - 130
Calib Check	Bromomethane	26813	98.28	70 - 130
Calib Check	Carbon disulfide	26813	100.65	70 - 130
Calib Check	Carbon Tetrachloride	26813	105.83	70 - 130
Calib Check	Chlorobenzene	26813	93.45	70 - 130
Calib Check	Chloroethane	26813	83.55	70 - 130
Calib Check	Chloroform	26813	94.7	70 - 130
Calib Check	Chloromethane	26813	93.55	70 - 130
Calib Check	cis-1,2-Dichloroethylene	26813	93.45	70 - 130

Calib Check	cis-1,3-Dichloropropylene	26813	94.9	70 - 130
Calib Check	Dibromochloromethane	26813	94.8	70 - 130
Calib Check	Dibromomethane	26813	90.23	70 - 130
Calib Check	Dichlorodifluoromethane	26813	111.68	70 - 130
Calib Check	Ethylbenzene	26813	94.43	70 - 130
Calib Check	Methyl ethyl ketone	26813	100.68	70 - 130
Calib Check	Methyl iso-butyl ketone	26813	103.15	70 - 130
Calib Check	Methyl tert-butyl ether	26813	92.9	70 - 130
Calib Check	Methylene chloride	26813	87	70 - 130
Calib Check	Styrene	26813	92.65	70 - 130
Calib Check	Tetrachloroethylene	26813	101.35	70 - 130
Calib Check	Toluene	26813	92.9	70 - 130
Calib Check	trans-1,2-Dichloroethylene	26813	95.3	70 - 130
Calib Check	trans-1,3-Dichloropropylene	26813	94	70 - 130
Calib Check	Trichloroethylene	26813	80.2	70 - 130
Calib Check	Trichlorofluoromethane	26813	108.98	70 - 130
Calib Check	Vinyl chloride	26813	96.98	70 - 130
Calib Check	Xylenes (Total)	26813	93.8	70 - 130
LCS	1,1,1,2-Tetrachloroethane	26813	112.75	70 - 130
LCS	1,1,1-Trichloroethane	26813	128.25	70 - 130
LCS	1,1,2,2-Tetrachloroethane	26813	110.5	70 - 130
LCS	1,1,2-Trichloroethane	26813	103.75	70 - 130
LCS	1,1-Dichloroethane	26813	89	70 - 130
LCS	1,1-Dichloroethylene	26813	116.25	70 - 130
LCS	1,2,3-Trichloropropane	26813	125	70 - 130
LCS	1,2-Chlorotoluene	26813	107.25	70 - 130
LCS	1,2-Dichlorobenzene	26813	106	70 - 130
LCS	1,2-Dichloroethane	26813	106.5	70 - 130
LCS	1,2-Dichloropropane	26813	109.25	70 - 130
LCS	1,3-Dichlorobenzene	26813	99.5	70 - 130
LCS	1,4-Chlorotoluene	26813	113.75	70 - 130
LCS	1,4-Dichlorobenzene	26813	106	70 - 130
LCS	Benzene	26813	107	70 - 130
LCS	Bromobenzene	26813	104	70 - 130
LCS	Bromodichloromethane	26813	104.75	70 - 130
LCS	Bromoform	26813	112.5	70 - 130
LCS	Bromomethane	26813	376.5	70 - 130
LCS	Carbon Tetrachloride	26813	113.5	70 - 130
LCS	Chlorobenzene	26813	105	70 - 130
LCS	Chloroethane	26813	95.25	70 - 130
LCS	Chloroform	26813	118.5	70 - 130
LCS	Chloromethane	26813	112.5	70 - 130
LCS	cis-1,2-Dichloroethylene	26813	115.25	70 - 130
LCS	cis-1,3-Dichloropropylene	26813	124.5	70 - 130

LCS		Dibromochloromethane	26813	101.5		70 - 130
LCS		Dibromomethane	26813	100.25		70 - 130
LCS		Dichlorodifluoromethane	26813	101.5		70 - 130
LCS		Ethylbenzene	26813	105.5		70 - 130
LCS		Methylene chloride	26813	128		70 - 130
LCS		Styrene	26813	103.75		70 - 130
LCS		Tetrachloroethylene	26813	116.5		70 - 130
LCS		Toluene	26813	101		70 - 130
LCS		trans-1,2-Dichloroethylene	26813	122		70 - 130
LCS		trans-1,3-Dichloropropylene	26813	123.5		70 - 130
LCS		Trichloroethylene	26813	100.25		70 - 130
LCS		Trichlorofluoromethane	26813	123		70 - 130
LCS		Vinyl chloride	26813	130.25		70 - 130
LCS		Xylenes (Total)	26813	105.67		70 - 130
AEL04007412M	Spike Dup	Mercury	26845	82.59	0.8	70 - 130
AEL04007412S	Spike	Mercury	26845	81.93		70 - 130
AEL04007470S	Spike	Mercury	26845	100.48		70 - 130
Blank		Mercury	26845	0.000045		
LCS		Mercury	26845	100.44		70 - 130
AEL04007472S	Spike	Barium	26865	97.78		70 - 130
AEL04007472S	Spike	Cadmium	26865	95.95		70 - 130
AEL04007472S	Spike	Chromium, Total	26865	100.3		70 - 130
AEL04007472S	Spike	Copper	26865	101.22		70 - 130
AEL04007472S	Spike	Nickel	26865	96.89		70 - 130
AEL04007472S	Spike	Silver	26865	93.3		70 - 130
AEL04007472S	Spike	Zinc	26865	99.09		70 - 130
Blank		Barium	26865	0		
Blank		Cadmium	26865	0		
Blank		Chromium, Total	26865	-0.0004		
Blank		Copper	26865	0.0019		
Blank		Nickel	26865	-0.0015		
Blank		Silver	26865	-0.0015		
Blank		Zinc	26865	0.0025		
LCS		Barium	26865	99.97		70 - 130
LCS		Cadmium	26865	98.5		70 - 130
LCS		Chromium, Total	26865	102.38		70 - 130
LCS		Copper	26865	103.44		70 - 130
LCS		Nickel	26865	99.93		70 - 130
LCS		Silver	26865	92		70 - 130
LCS		Zinc	26865	102		70 - 130
AEL04006903M	Spike Dup	Arsenic	26880	99.73	1.52	70 - 130
AEL04006903S	Spike	Arsenic	26880	102.28		70 - 130
AEL04006952M	Spike Dup	Arsenic	26880	105.38	0.24	70 - 130
AEL04006952S	Spike	Arsenic	26880	105.63		70 - 130

AEL04007009S	Spike	Arsenic	26880	102.44		70 - 130
AEL04007122M	Spike Dup	Arsenic, SPLP	26880	104.9	1.85	70 - 130
AEL04007122S	Spike	Arsenic, SPLP	26880	102.93		70 - 130
AEL04007408M	Spike Dup	Arsenic	26880	101.75	2.4	70 - 130
AEL04007408S	Spike	Arsenic	26880	99.35		70 - 130
AEL04007440S	Spike	Arsenic	26880	107.33		70 - 130
AEL04007472S	Spike	Arsenic	26880	105.6		70 - 130
Blank		Arsenic	26880	-0.00003		
Blank		Arsenic	26880	0.00007		
Blank		Arsenic	26880	-0.0002		
Blank		Arsenic	26880	0.00011		
Blank		Arsenic	26880	-0.00022		
Blank		Arsenic, SPLP	26880	-0.00014		
Calib Check		Arsenic	26880	101.52		70 - 130
Calib Check		Arsenic	26880	98.7		70 - 130
End Blank		Arsenic	26880	0.00042		
End Standard		Arsenic	26880	100.16		70 - 130
LCS		Arsenic	26880	108.58		70 - 130
LCS		Arsenic	26880	107.3		70 - 130
LCS		Arsenic	26880	106.33		70 - 130
LCS		Arsenic	26880	104.78		70 - 130
LCS		Arsenic	26880	102.78		70 - 130
LCS		Arsenic, SPLP	26880	104.13		70 - 130
QC Blank		Arsenic	26880	-0.00013		
QC Blank		Arsenic	26880	0.00004		
SPLP Blank		Arsenic, SPLP	26880	-0.00019		
AEL04007359M	Spike Dup	Lead	26881	100.3	1.91	70 - 130
AEL04007359S	Spike	Lead	26881	102.45		70 - 130
AEL04007421S	Spike	Lead	26881	100.56		70 - 130
AEL04007423M	Spike Dup	Lead	26881	106.42	0.09	70 - 130
AEL04007423S	Spike	Lead	26881	106.52		70 - 130
AEL04007472S	Spike	Lead	26881	105.62		70 - 130
AEL04007574S	Spike	Lead, SPLP	26881	102.39		70 - 130
AEL04007578M	Spike Dup	Lead	26881	102.94	0.57	70 - 130
AEL04007578S	Spike	Lead	26881	102.37		70 - 130
Blank		Lead	26881	-0.000371		
Blank		Lead	26881	-0.000548		
Blank		Lead	26881	-0.000596		
Calib Check		Lead, SPLP	26881	104.48		70 - 130
End Blank		Lead, SPLP	26881	-0.00086		
End Standard		Lead, SPLP	26881	108.76		70 - 130
LCS		Lead	26881	106.83		70 - 130
LCS		Lead	26881	107.8		70 - 130
LCS		Lead	26881	100.33		70 - 130

QC Blank		Lead, SPLP	26881	-0.000445		
SPLP Blank		Lead, SPLP	26881	-0.000738		
AEL04007395S	Spike	Mercury, TCLP	26882	103.38		70 - 130
AEL04007546M	Spike Dup	Mercury	26882	102.96	1.15	70 - 130
AEL04007546S	Spike	Mercury	26882	101.78		70 - 130
Blank		Mercury	26882	-0.000003		
LCS		Mercury	26882	101.42		70 - 130
AEL04007421S	Spike	Selenium	26886	87.66		70 - 130
AEL04007472S	Spike	Selenium	26886	91.08		70 - 130
Blank		Selenium	26886	-0.000116		
Blank		Selenium	26886	0.00036		
LCS		Selenium	26886	99.6		70 - 130
LCS		Selenium	26886	108.38		70 - 130

EXPLANATION OF QUALIFIERS

Qualifier	Definition
J	Estimated Value: %Difference of daily calibration standard outside control limits.
H	Estimated Value: Concentration above calibration range.
L	Spectral evidence confirms the presence of this compound at a concentration below the calibration limit but above the Method Detection Limit.
B	Qualified due to the presence of compound in the blank.
I	Qualified: Internal standard response outside of acceptable limits.
XC	Qualified due to coelution.

N:\2004\LEA_MACD\07476.snp

Averill Environmental Laboratory, Inc.

CRILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 38796

PROJECT NAME:	PROJECT LOCATION:	PROJECT NUMBER:
MacDermid - Huntingdon Avenue	Waterbury, CT	91MH401,001

REPORT TO: Barbara Heemink

INVOICE TO:

Source Codes: W = Well O = Outfall RO = Run Off R = River/Stream B = Bottom Sediment
MW = Monitoring Well S = Soil SG = Sludge LF = Landfill L = Lake/Ocean T = Treatment Facility
X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	1051335	MW	3	E	40 mL	HI	8260B	7464				
2	1051335	MW	1	P	½ gal	NaOH I	Cyanide					
3	1051335	MW	1	A	500 mL	NI	Metals (RCRA 8 + Cu, Ni, Zn)	HOLD				
4	1051335 DF	MW	1	A	500 mL	NI	Metals (RCRA 8 + Cu, Ni, Zn)	7470				
5	1051341	MW	3	E	40 mL	HI	8260B	7465				
6	1051341	MW	1	P	½ gal	NaOH I	Cyanide					
7	1051341	MW	1	A	500 mL	NI	Metals (RCRA 8 + Cu, Ni, Zn)	HOLD				
8	1051341 DF	MW	1	A	500 mL	NI	Metals (RCRA 8 + Cu, Ni, Zn)	7471				
9	1031351	MW	3	E	40 mL	HI	8260B	7466				
10	1031351	MW	1	P	½ gal	NaOH I	Cyanide					
11	1031351	MW	1	A	500 mL	NI	Metals (RCRA 8 + Cu, Ni, Zn)	HOLD				
12	1031351 DF	MW	1	A	500 mL	NI	Metals (RCRA 8 + Cu, Ni, Zn)	7472				
13	1051346	X	~~3~~ 1 SMP	E	40 mL	HI	8260B	7476				

Container Code: P = Plastic E = EPA VIAL C = Cube G = Glass A = Amber Glass B = Bacteria Bottle
Preservative Code: I = Iced F = Filtered N = Nitric Acid (HNO_3) H - Hydrochloric Acid (HCl) R = Sodium Hydroxide (NaOH) T = Sodium Thiosulfate S = Sulfuric Acid (H_2SO_4)
O = Other, *Specify*

Sampler's Signature	Affiliation	Date	Time
	CEA	8/16/04	1530

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-13			8/16/04	1715
2	1-13			8/16/04	1730
3					
4					

AVERILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 38792

PROJECT NAME: MacDermid - Huntingdon Ave

PROJECT LOCATION: Waterbury, CT

PROJECT NUMBER: 91MH401.001

REPORT TO: Barbara Heemink

INVOICE TO:

Source Codes: W = Well, O = Outfall, RO = Run Off, R = River/Stream, B = Bottom Sediment, MW = Monitoring Well, S = Soil, SG = Sludge, LF = Landfill, L = Lake/Ocean, T = Treatment Facility, X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
14	1051349	MW	3	E	40 mL	HI	8260B	7467	✓	✓		
15	1051349	MW	1	P	1/2 gal	NaOH I	Cyanide		✓	✓		
16	1051349	MW	1	A	500 mL	NI	RCRA 8 metals + Cu, Ni, Zn	Hold	✓	✓		
17	1051349uF	MW	1	A	500 mL	NI	RCRA 8 Metals + Cu, Ni, Zn	7473	✓	✓		
18	1051350	MW	3	E	40 mL	HI	8260B	7468	✓	✓		
19	1051350	MW	1	P	1/2 gal	NaOH I	Cyanide		✓	✓		
20	1051350uF	MW	1	A	500 mL	NI	RCRA 8 Metals + Cu, Ni, Zn	7474	✓	✓		
21	1051350	MW	1	A	500 mL	NI	RCRA 8 Metals + Cu, Ni, Zn	Hold	✓	✓		
22	1051339	X	3	E	40 mL	HI	8260B	7469	✓	✓		
23	1051339	X	1	P	1/2 gal	NaOH I	Cyanide		✓	✓		
24	1051339	X	1	A	500 mL	NI	RCRA 8 Metals + Cu, Ni, Zn	HOLD	✓	✓		
25	1051339uF	X	1	A	500 mL	NI	RCRA 8 Metals + Cu, Ni, Zn	7475	✓	✓		

Container Code: P = Plastic, E = EPA VIAL, C = Cube, G = Glass, A = Amber Glass, B = Bacteria Bottle

Preservative Code: I = Iced, F = Filtered, N = Nitric Acid (HNO_3), H - Hydrochloric Acid (HCl), R = Sodium Hydroxide (NaOH), T = Sodium Thiosulfate, S = Sulfuric Acid (H_2SO_4), O = Other, *Specify*

Sampler's Signature	Affiliation	Date	Time
[signature]	LEA	8/16/04	1530

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	14-25	[signature]	[signature]	8/16/04	1715
2	14-25	[signature]	[signature]	8/16/04	1730
3					
4					

Attachment 6

Tables

Table 1
SUMMARY OF SAMPLING AND ANALYTICAL INFORMATION
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

Sample Information					Analysis Information							
Location ID	Sample ID	Sample Date	Sampled Interval (ft)	Sample Class		Volatile Organics	Semivolatile Organics	Herbicides	Pesticides/ PCBs	Fuels/Oils	Metals	Miscellaneous Analyses
EQUIPMENT	2108848	07/29/2002		BKE		x				x	x	x
EQUIPMENT	2108838	07/30/2002		BKE		x				x	x	x
EQUIPMENT	1035197	09/22/2003		BKE		x				X	X	
EQUIPMENT	1051348	08/12/2004		BKE		x					x	x
EQUIPMENT	1051354	08/13/2004		BKE		X					x	x
EQUIPMENT	1051339	08/16/2004		BKE		X					x	x
GZ-8A	2102724	02/12/2001	0.00	GW		X	X		x		X	X
MAC-1A	2102726	02/12/2001	0.00	GW		X	x		x		X	X
MW-101	2102442	03/01/1995	26.0 - 36.0	GW		x					X	X
MW-101	2102718	02/12/2001	26.0 - 36.0	GW		X	x		x		X	x
MW-101	2108842	07/30/2002	26.00 - 36.00	GW		x				x	X	x
MW-101	2108843	07/30/2002	26.00 - 36.00	GW		X				x	X	x
MW-101	1035189	09/23/2003	26.00 - 36.00	GW		x				X	X	
MW-101	1051345	08/13/2004	26.00 - 36.00	GWS		x					X	x
MW-102	2102441	03/01/1995	21.7 - 31.7	GW		x					X	X
MW-102	2102719	02/12/2001	21.7 - 31.7	GW		X	x		x		X	x
MW-102	2108841	07/30/2002	21.7 - 31.7	GW		X				X	X	x
MW-102	1035190	09/23/2003	21.70 - 31.70	GW		X				X	X	
MW-102	1051344	08/13/2004	21.70 - 31.70	GWS		x					X	x
MW-103	2102431	03/01/1995	25.0 - 35.0	GW		x					X	x
MW-103	2102720	02/12/2001	25.0 - 35.0	GW		X	x		x		X	x
MW-103	2108840	07/30/2002	25.00 - 35.00	GW		x				X	X	x
MW-103	1051351	08/16/2004		GWS		X					X	x
MW-104	2102443	03/01/1995	0.00	GW		X					X	x
MW-105	2102435	03/01/1995	27.0 - 37.0	GW		X					X	X
MW-105	2102721	02/12/2001	27.0 - 37.0	GW		X	x		x		X	x
MW-105	2108830	07/29/2002	37.00	GW		X				X	X	x
MW-105	1035177	09/22/2003	37.00	GW		X				X	X	
MW-105	1051342	08/12/2004	27.00 - 37.00	GWS		X					X	x
MW-106	2102440	03/01/1995	0.00	GW		X					X	X
MW-107	2102439	03/01/1995	0.00	GW		X					X	X
MW-108	2102437	03/01/1995	25.0 - 35.0	GW		X					X	X

Legend: x - mass, t - TCLP, s - SPLP, e - EPTOX, z - ZHE, d - Thermal Desorption, r - Charcoal Tube, a - SEM/AVS, m - Methanol, nr - not received; Capitalized - at least one analyte in class detected

Printed on 08/26/2004

Table 1
SUMMARY OF SAMPLING AND ANALYTICAL INFORMATION
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

Sample Information					Analysis Information							
Location ID	Sample ID	Sample Date	Sampled Interval (ft)	Sample Class		Volatile Organics	Semivolatile Organics	Herbicides	Pesticides/ PCBs	Fuels/Oils	Metals	Miscellaneous Analyses
MW-108	2102735	02/12/2001	25.0 - 35.0	GW					x			
MW-108	2102722	02/12/2001	35.00 - 35.0	GW		X	X		x		X	X
MW-108	2102731	02/12/2001	35.00 - 35.0	GW						X		
MW-109	2102723	02/12/2001	25.0 - 35.0	GW		X	X		x		X	X
MW-109	2108835	07/29/2002	25.00 - 35.00	GW		X				X	X	x
MW-109	1035188	09/22/2003	35.00	GW		X				X	X	
MW-109	1051334	08/13/2004		GWS		X					X	x
MW-110	2102438	03/01/1995	0.00	GW		X					X	X
MW-110	2102725	02/12/2001	0.00	GW		X	x		x		X	X
MW-110	2102730	02/12/2001	0.00	GW							X	
MW-110	2108839	07/29/2002	0.00	GW		X				X	X	x
MW-110	1035187	09/22/2003	0.00	GW		X				X	X	
MW-110	1051343	08/12/2004		GWS		X					X	x
MW-111	2102434	03/01/1995	25.0 - 35.0	GW		X					X	X
MW-111	2102727	02/12/2001	25.0 - 35.0	GW		X	x		x		X	x
MW-111	2108832	07/29/2002	25.0 - 35.0	GW		X				X	X	x
MW-111	1035180	09/22/2003	35.00	GW		X				X	X	
MW-111	1051336	08/12/2004		GWS		X					X	x
MW-112	2102432	03/01/1995	25.0 - 35.0	GW		X					X	x
MW-112	2102728	02/12/2001	25.0 - 35.0	GW		X	x		x		X	x
MW-112	2108834	07/29/2002	25.0 - 35.0	GW		X				X	X	x
MW-112	1035184	09/22/2003	35.00	GW		X				X	X	
MW-112	1051333	08/13/2004	25.00 - 35.00	GWS		X					X	x
MW-113	2102433	03/01/1995	30.00 - 40.00	GW		x					X	x
MW-113	2110584	03/01/1995	30.00 - 40.00	GW		x					X	x
MW-113	2102729	02/12/2001	30.00 - 40.00	GW		X	X		x		X	x
MW-113	2108833	07/29/2002	30.0 - 40.0	GW		x				X	X	x
MW-113	1035181	09/22/2003	40.00	GW		X				X	X	
MW-113	1051331	08/12/2004		GWS		x					X	x
MW-114	2110555	09/05/2002	28.00 - 38.00	GW		X				X	X	x
MW-114	2110556	09/05/2002	28.00 - 38.00	GW		X				X	X	x
MW-114	1035178	09/22/2003	28.00 - 38.00	GW		X				X	X	

Legend: x - mass, t - TCLP, s - SPLP, e - EPTOX, z - ZHE, d - Thermal Desorption, r - Charcoal Tube, a - SEM/AVS, m - Methanol, nr - not received; Capitalized - at least one analyte in class detected

Printed on 08/26/2004

Table 1
SUMMARY OF SAMPLING AND ANALYTICAL INFORMATION
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

Sample Information					Analysis Information						
Location ID	Sample ID	Sample Date	Sampled Interval (ft)	Sample Class	Volatile Organics	Semivolatile Organics	Herbicides	Pesticides/ PCBs	Fuels/Oils	Metals	Miscellaneous Analyses
MW-114	1035196	09/22/2003	28.00 - 38.00	GW	X				X	X	
MW-114	1051337	08/12/2004	28.00 - 38.00	GWS	X					X	x
MW-115	2110554	09/05/2002	28.00 - 38.00	GW	X				X	X	X
MW-115	1035179	09/22/2003	28.00 - 38.00	GW	X				X	X	
MW-115	1051338	08/12/2004	28.00 - 38.00	GWS	X					X	x
MW-116D	1035185	09/22/2003	60.00	GW	X				X	X	
MW-116D	1051332	08/12/2004	50.00 - 60.00	GWS	x					X	x
MW-116S	1035186	09/22/2003	38.00	GW	X				X	X	
MW-116S	1051352	08/13/2004	28.00 - 38.00	GWS	X					X	x
MW-117D	1051335	08/16/2004	45.00 - 55.00	GWS	X					X	x
MW-117S	1051341	08/16/2004	28.00 - 38.00	GWS	X					X	x
MW-118D	1051340	08/13/2004	50.00 - 60.00	GWS	X					X	x
MW-118D	1051353	08/13/2004	50.00 - 60.00	GWS	X					X	x
MW-118S	1051349	08/16/2004	28.00 - 38.00	GWS	X					X	x
MW-118S	1051350	08/16/2004	28.00 - 38.00	GWS	X					X	x
TRIP BLANK	2108847	07/29/2002		BKT	x						
TRIP BLANK	2108846	07/30/2002		BKT	X						
TRIP BLANK	2110557	09/05/2002		BKT	x						
TRIP BLANK	1035198	09/22/2003		BKT	X						
TRIP BLANK	1051347	08/12/2004		BKT	x						
TRIP BLANK	1051355	08/13/2004		BKT	X						
TRIP BLANK	1051346	08/16/2004		BKT	X						

Legend: x - mass, t - TCLP, s - SPLP, e - EPTOX, z - ZHE, d - Thermal Desorption, r - Charcoal Tube, a - SEM/AVS, m - Methanol, nr - not received; Capitalized - at least one analyte in class detected

Printed on 08/26/2004

Table 2a
EXCEEDANCES OF US FEDERAL (EPA) MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	GZ-8A	MAC-1A	MW-105	MW-105	MW-105	MW-105	MW-105
	Sample ID	2102724	2102726	2102435	2102721	2108830	1035177	1051342
	Sample Date	02/12/2001	02/12/2001	03/01/1995	02/12/2001	07/29/2002	09/22/2003	08/12/2004
	Sample Time					09:20	10:15	11:00
	Sample Depth	0.00'	0.00'	27.0' - 37.0'	27.0' - 37.0'	37.00'	37.00'	27.00' - 37.0
	Laboratory	EAS	EAS	GZA	EAS	AEL	EAS	AEL
	Lab. Number	01020133-07	01020133-10	41462-16	01020133-05	AEL02006468	AE10908	AEL04007411
Constituent	Criterion							
Depth of Well	Ft					36.70	38.10	38.10
Depth To Water	Ft					32.39	32.15	32.60
Date Metals Analyzed	-						09/25/2003	
Date Organics Analyzed	-					08/05/2002	09/24/2003	08/16/2004
Arsenic	0.05 mg/L							
Cadmium	0.005 mg/L		0.089 mg/L				0.0098 mg/L	
Chromium, Total	0.1 mg/L							
Chromium, Total (unfiltered)	0.1 mg/L							
Mercury	0.002 mg/L	0.0081 mg/L						
Nickel	0.1 mg/L	0.74 mg/L	1.6 mg/L					
Nickel (unfiltered)	0.1 mg/L							
Selenium	0.05 mg/L							
Cyanide	.2 mg/L							
Fluoride - Total	4 mg/L							
Chloroform	80 ug/l							
1,1,2-Trichloroethane	5 ug/l							
1,2-Dichloroethane	5 ug/l	6.5 ug/L						
1,1-Dichloroethylene	7 ug/l							
Vinyl Chloride	2. ug/l							
Tetrachloroethylene (PCE)	5 ug/l		94 ug/L	17 ug/L	8.2 ug/L	8.4 ug/l	6.9 ug/l	6.1 ug/l
Trichloroethylene (TCE)	5 ug/l							
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Criterion values from US Federal (EPA) Maximum Contaminant Levels for Drinking Water

Printed on 08/26/2004

Table 2a
EXCEEDANCES OF US FEDERAL (EPA) MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	MW-106	MW-106	MW-106	MW-107	MW-107	MW-108	MW-108
	Sample ID	2102440	2102440	2102440	2102439	2102439	2102437	2102722
	Sample Date	03/01/1995	03/01/1995	03/01/1995	03/01/1995	03/01/1995	03/01/1995	02/12/2001
	Sample Time							
	Sample Depth	0.00'	0.00'	0.00'	0.00'	0.00'	25.0' - 35.0'	35.00' - 35.0
	Laboratory	GZA	MATR	MATR	GZA	MATR	GZA	EAS
	Lab. Number	41462-21	50620808-003	50620809-003	41462-20	50620808-002	41462-18	01020133-08
Constituent	Criterion							
Depth of Well	Ft							
Depth To Water	Ft							
Date Metals Analyzed	-							
Date Organics Analyzed	-							
Arsenic	0.05 mg/L				0.069 mg/L			
Cadmium	0.005 mg/L				0.014 mg/L			
Chromium, Total	0.1 mg/L				0.200 mg/L			
Chromium, Total (unfiltered)	0.1 mg/L							
Mercury	0.002 mg/L							
Nickel	0.1 mg/L	0.342 mg/L			0.412 mg/L		0.408 mg/L	0.24 mg/L
Nickel (unfiltered)	0.1 mg/L							
Selenium	0.05 mg/L	0.056 mg/L			0.094 mg/L			
Cyanide	.2 mg/L			0.35 mg/L				
Fluoride - Total	4 mg/L		4.1 mg/L			10.0 mg/L		
Chloroform	80 ug/l							
1,1,2-Trichloroethane	5 ug/l							
1,2-Dichloroethane	5 ug/l							
1,1-Dichloroethylene	7 ug/l							
Vinyl Chloride	2. ug/l							2.7 ug/L
Tetrachloroethylene (PCE)	5 ug/l						9.3 ug/L	16 ug/L
Trichloroethylene (TCE)	5 ug/l							
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Criterion values from US Federal (EPA) Maximum Contaminant Levels for Drinking Water

Printed on 08/26/2004

Table 2a
EXCEEDANCES OF US FEDERAL (EPA) MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	MW-109	MW-109	MW-109	MW-109	MW-110	MW-110	MW-110
	Sample ID	2102723	2108835	1035188	1051334	2102438	2102438	2102438
	Sample Date	02/12/2001	07/29/2002	09/22/2003	08/13/2004	03/01/1995	03/01/1995	03/01/1995
	Sample Time		14:03	02:00	11:37			
	Sample Depth	25.0' - 35.0'	25.00' - 35.0	35.00'		0.00'	0.00'	0.00'
	Laboratory	EAS	AEL	EAS	AEL	GZA	MATR	MATR
	Lab. Number	01020133-06	AEL02006472	AE10913	AEL04007429	41462-19	50620808-001	50620809-001
Constituent	Criterion							
Depth of Well	Ft		34.41	35.10	35.10			
Depth To Water	Ft		31.87	32.07	32.55			
Date Metals Analyzed	-		08/14/2002	09/25/2003				
Date Organics Analyzed	-			09/25/2003	08/16/2004			
Arsenic	0.05 mg/L					0.058 mg/L		
Cadmium	0.005 mg/L			0.0095 mg/L		0.037 mg/L		
Chromium, Total	0.1 mg/L		0.155 mg/L	1.4 mg/L		0.500 mg/L		
Chromium, Total (unfiltered)	0.1 mg/L							
Mercury	0.002 mg/L	0.008 mg/L		0.007 mg/L				
Nickel	0.1 mg/L	0.85 mg/L	1.25 mg/L	0.15 mg/L		0.846 mg/L		
Nickel (unfiltered)	0.1 mg/L							
Selenium	0.05 mg/L							
Cyanide	.2 mg/L							0.60 mg/L
Fluoride - Total	4 mg/L						8.4 mg/L	
Chloroform	80 ug/l							
1,1,2-Trichloroethane	5 ug/l							
1,2-Dichloroethane	5 ug/l	5.7 ug/L						
1,1-Dichloroethylene	7 ug/l							
Vinyl Chloride	2. ug/l							
Tetrachloroethylene (PCE)	5 ug/l			8.2 ug/l	5.1 ug/l	12 ug/L		
Trichloroethylene (TCE)	5 ug/l							
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Criterion values from US Federal (EPA) Maximum Contaminant Levels for Drinking Water

Printed on 08/26/2004

Table 2a
EXCEEDANCES OF US FEDERAL (EPA) MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	MW-110	MW-110	MW-110	MW-110	MW-110	MW-111	MW-111
	Sample ID	2102725	2102730	2108839	1035187	1051343	2102434	2102727
	Sample Date	02/12/2001	02/12/2001	07/29/2002	09/22/2003	08/12/2004	03/01/1995	02/12/2001
	Sample Time			11:50	02:00	14:05		
	Sample Depth	0.00'	0.00'	0.00'	0.00'		25.0' - 35.0'	25.0' - 35.0'
	Laboratory	EAS	EAS	AEL	EAS	AEL	GZA	EAS
	Lab. Number	01020133-09	01020133-16	AEL02006473	AE10912	AEL04007413	41462-15	01020133-04
Constituent	Criterion							
Depth of Well	Ft			39.41	40.09	40.09		
Depth To Water	Ft			32.63	32.82	33.28		
Date Metals Analyzed	-			08/14/2002	09/25/2003			
Date Organics Analyzed	-			08/06/2002	09/24/2003	08/16/2004		
Arsenic	0.05 mg/L							
Cadmium	0.005 mg/L	0.083 mg/L	0.11 mg/L	0.0499 mg/L				
Chromium, Total	0.1 mg/L		1.4 mg/L	0.117 mg/L				
Chromium, Total (unfiltered)	0.1 mg/L							
Mercury	0.002 mg/L		0.006 mg/L	0.0025 mg/L	0.0065 mg/L			
Nickel	0.1 mg/L	1.5 mg/L	1.6 mg/L	1.53 mg/L	0.22 mg/L			
Nickel (unfiltered)	0.1 mg/L							
Selenium	0.05 mg/L							
Cyanide	.2 mg/L							
Fluoride - Total	4 mg/L							
Chloroform	80 ug/l							
1,1,2-Trichloroethane	5 ug/l							
1,2-Dichloroethane	5 ug/l							17 ug/L
1,1-Dichloroethylene	7 ug/l							
Vinyl Chloride	2. ug/l							
Tetrachloroethylene (PCE)	5 ug/l			95 ug/l	48 ug/l	20 H ug/l	6.0 ug/L	9.4 ug/L
Trichloroethylene (TCE)	5 ug/l							
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Criterion values from US Federal (EPA) Maximum Contaminant Levels for Drinking Water

Printed on 08/26/2004

Table 2a
EXCEEDANCES OF US FEDERAL (EPA) MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	MW-111	MW-111	MW-112	MW-112	MW-112	MW-113	MW-114
	Sample ID	2108832	1035180	2102432	2108834	1035184	1035181	2110555
	Sample Date	07/29/2002	09/22/2003	03/01/1995	07/29/2002	09/22/2003	09/22/2003	09/05/2002
	Sample Time	10:20	03:20		13:25	11:27	04:30	12:05
	Sample Depth	25.0' - 35.0'	35.00'	25.0' - 35.0'	25.0' - 35.0'	35.00'	40.00'	28.00' - 38.0
	Laboratory	AEL	EAS	GZA	AEL	EAS	EAS	AEL
	Lab. Number	AEL02006469	AE10914	41462-13	AEL02006471	AE10909	AE10918	AEL02007618
Constituent	Criterion							
Depth of Well	Ft	34.72	35.51		34.75	35.20	40.50	37.63
Depth To Water	Ft	31.71	31.48		31.78	31.69	34.03	31.91
Date Metals Analyzed	-					09/25/2003	09/25/2003	
Date Organics Analyzed	-	08/06/2002	09/25/2003		08/07/2002	09/24/2003		09/06/2002
Arsenic	0.05 mg/L							
Cadmium	0.005 mg/L					0.008 mg/L	0.019 mg/L	
Chromium, Total	0.1 mg/L							
Chromium, Total (unfiltered)	0.1 mg/L							
Mercury	0.002 mg/L							
Nickel	0.1 mg/L							
Nickel (unfiltered)	0.1 mg/L							
Selenium	0.05 mg/L							
Cyanide	.2 mg/L							
Fluoride - Total	4 mg/L							
Chloroform	80 ug/l							
1,1,2-Trichloroethane	5 ug/l							
1,2-Dichloroethane	5 ug/l	84 ug/l	9.8 ug/l					
1,1-Dichloroethylene	7 ug/l							
Vinyl Chloride	2. ug/l							
Tetrachloroethylene (PCE)	5 ug/l	20 ug/l	6.2 ug/l	12 ug/L	6.2 ug/l	9.7 ug/l		9.5 ug/l
Trichloroethylene (TCE)	5 ug/l							
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Criterion values from US Federal (EPA) Maximum Contaminant Levels for Drinking Water

Printed on 08/26/2004

Table 2a
EXCEEDANCES OF US FEDERAL (EPA) MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	MW-114	MW-114	MW-114	MW-115	MW-115	MW-115	MW-115
	Sample ID	2110556	1035178	1035196	2110554	1035179	1051338	1051338
	Sample Date	09/05/2002	09/22/2003	09/22/2003	09/05/2002	09/22/2003	08/12/2004	08/12/2004
	Sample Time	12:05	02:55		11:40	16:03	16:25	16:25
	Sample Depth	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0
	Laboratory	AEL	EAS	EAS	AEL	EAS	AEL	AEL
	Lab. Number	AEL02007619	AE10915	AE10916	AEL02007617	AE10917	AEL04007409	AEL04007410
Constituent	Criterion							
Depth of Well	Ft	37.63	38.38		37.71	38.31	38.31	38.31
Depth To Water	Ft	31.91	31.55		32.25	31.94	33.76	33.76
Date Metals Analyzed	-				07/13/2002	09/25/2003		08/19/2004
Date Organics Analyzed	-	09/06/2002	09/25/2003	09/25/2003	09/06/2002	09/25/2003	08/16/2004	
Arsenic	0.05 mg/L							
Cadmium	0.005 mg/L							
Chromium, Total	0.1 mg/L				0.238 mg/L	0.40 mg/L		
Chromium, Total (unfiltered)	0.1 mg/L							0.526 mg/L
Mercury	0.002 mg/L							
Nickel	0.1 mg/L				0.480 mg/L	0.38 mg/L		
Nickel (unfiltered)	0.1 mg/L							0.382 mg/L
Selenium	0.05 mg/L							
Cyanide	.2 mg/L							
Fluoride - Total	4 mg/L							
Chloroform	80 ug/l				180 H ug/l			
1,1,2-Trichloroethane	5 ug/l				34 H ug/l			
1,2-Dichloroethane	5 ug/l				150 H ug/l	16 ug/l	12 ug/l	
1,1-Dichloroethylene	7 ug/l				160 H ug/l	72 ug/l	60 ug/l	
Vinyl Chloride	2. ug/l							
Tetrachloroethylene (PCE)	5 ug/l	8.5 ug/l	8.3 ug/l	8.3 ug/l	350 H ug/l	380 ug/l	280 ug/l	
Trichloroethylene (TCE)	5 ug/l				150 H ug/l	27 ug/l	20 ug/l	
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Criterion values from US Federal (EPA) Maximum Contaminant Levels for Drinking Water

Printed on 08/26/2004

Table 2a
EXCEEDANCES OF US FEDERAL (EPA) MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	MW-116D	MW-116S	MW-118S	MW-118S			
	Sample ID	1035185	1035186	1051349	1051350			
	Sample Date	09/22/2003	09/22/2003	08/16/2004	08/16/2004			
	Sample Time	12:37	01:10	11:30	11:30			
	Sample Depth	60.00'	38.00'	28.00' - 38.0	28.00' - 38.0			
	Laboratory	EAS	EAS	AEL	AEL			
	Lab. Number	AE10910	AE10911	AEL04007467	AEL04007468			
Constituent	Criterion							
Depth of Well	Ft	57.92	34.50	38.00	38.00			
Depth To Water	Ft	31.69	31.39	31.78	31.78			
Date Metals Analyzed	-		09/25/2003					
Date Organics Analyzed	-	09/24/2003		08/17/2004	08/17/2004			
Arsenic	0.05 mg/L							
Cadmium	0.005 mg/L		0.018 mg/L					
Chromium, Total	0.1 mg/L		0.79 mg/L					
Chromium, Total (unfiltered)	0.1 mg/L							
Mercury	0.002 mg/L		0.0022 mg/L					
Nickel	0.1 mg/L		0.57 mg/L					
Nickel (unfiltered)	0.1 mg/L							
Selenium	0.05 mg/L							
Cyanide	.2 mg/L							
Fluoride - Total	4 mg/L							
Chloroform	80 ug/l							
1,1,2-Trichloroethane	5 ug/l							
1,2-Dichloroethane	5 ug/l							
1,1-Dichloroethylene	7 ug/l							
Vinyl Chloride	2. ug/l	5.5 ug/l						
Tetrachloroethylene (PCE)	5 ug/l			14 ug/l	15 ug/l			
Trichloroethylene (TCE)	5 ug/l							
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Criterion values from US Federal (EPA) Maximum Contaminant Levels for Drinking Water

Printed on 08/26/2004

Table 3a
EXCEEDANCES OF CT VOLATILIZATION CRITERIA - GW, RESIDENTIAL
MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	MW-108	MW-111	MW-115	MW-115	MW-115	MW-116D	
	Sample ID	2102722	2108832	2110554	1035179	1051338	1035185	
	Sample Date	02/12/2001	07/29/2002	09/05/2002	09/22/2003	08/12/2004	09/22/2003	
	Sample Time		10:20	11:40	16:03	16:25	12:37	
	Sample Depth	35.00' - 35.0	25.0' - 35.0'	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0	60.00'	
	Laboratory	EAS	AEL	AEL	EAS	AEL	EAS	
	Lab. Number	01020133-08	AEL02006469	AEL02007617	AE10917	AEL04007409	AE10910	
Constituent	Criterion							
Depth of Well	Ft		34.72	37.71	38.31	38.31	57.92	
Depth To Water	Ft		31.71	32.25	31.94	33.76	31.69	
Date Organics Analyzed	-		08/06/2002	09/06/2002	09/25/2003	08/17/2004	09/24/2003	
1,2-Dichloroethane	21 ug/l		84 ug/l	150 H ug/l				
1,1-Dichloroethylene	1 ug/l		2.0 ug/l	160 H ug/l	72 ug/l	60 ug/l		
Vinyl Chloride	2 ug/l	2.7 ug/L					5.5 ug/l	

Criterion values from CT Volatilization Criteria - GW, Residential

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Table 3b

EXCEEDANCES OF CT VOLATILIZATION CRITERIA - GW, INDUSTRIAL/COMMERCIAL

MacDermid - Huntingdon Avenue, Waterbury, Connecticut

Loureiro Engineering Associates, Inc.

	Location ID	MW-108	MW-115	MW-115	MW-115	MW-116D		
	Sample ID	2102722	2110554	1035179	1051338	1035185		
	Sample Date	02/12/2001	09/05/2002	09/22/2003	08/12/2004	09/22/2003		
	Sample Time		11:40	16:03	16:25	12:37		
	Sample Depth	35.00' - 35.0	28.00' - 38.0	28.00' - 38.0	28.00' - 38.0	60.00'		
	Laboratory	EAS	AEL	EAS	AEL	EAS		
	Lab. Number	01020133-08	AEL02007617	AE10917	AEL04007409	AE10910		
Constituent	Criterion							
Depth of Well	Ft		37.71	38.31	38.31	57.92		
Depth To Water	Ft		32.25	31.94	33.76	31.69		
Date Organics Analyzed	-		09/06/2002	09/25/2003	08/17/2004	09/24/2003		
1,2-Dichloroethane	90 ug/l		150 H ug/l					
1,1-Dichloroethylene	6 ug/l		160 H ug/l	72 ug/l	60 ug/l			
Vinyl Chloride	2 ug/l	2.7 ug/L				5.5 ug/l		

Criterion values from CT Volatilization Criteria - GW, Industrial/Commercial

Printed on 08/26/2004

NOTES

1. A "J" qualifier indicates an estimated value where the percent difference of daily laboratory calibration standard is outside the laboratory control limits.
2. A "H" qualifier indicates an estimated value where the constituent concentration is detected above the laboratory calibration range.
3. A "L" qualifier indicates that spectral evidence confirms the presence of the compound at a concentration below the laboratory calibration limit but above the laboratory method detection limit.
4. A "B" qualifier indicates that that the constituent concentration qualified due to the presence of the compound in the blank.
5. A "I" qualifier indicates that the internal standard response is outside the acceptable limits.

Proposed
Revisions

Connecticut's
Remediation Standard Regulations
Volatilization Criteria

March 2003

Permitting, Enforcement and Remediation Division
Bureau of Water Management
Connecticut Department of Environmental Protection

Comments regarding this document may be sent to:

Ruth Lepley Parks
Permitting, Enforcement and Remediation Division
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79 Elm Street
Hartford, CT 06106
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before
June 30, 2003

Table of Contents

INTRODUCTION

BASIS FOR DEVELOPMENT OF ORIGINAL VOLATILIZATION CRITERIA
- Original Transport Model
- Original Target Indoor Air Concentrations
- Ceiling Value for Groundwater Volatilization Criteria
- Quantification Limits

PROPOSED REVISIONS TO THE VOLATILIZATION CRITERIA
- Revised Transport Model
- Revised and Updated Target Indoor Air Concentrations
  - Toxicity Values
  - Exposure Assumptions
  - Increased Exposure and Susceptibility of Children to Carcinogens
  - Background Concentrations in Indoor Air
  - TAC Ceiling Value
- Current Quantification Limits
- Criteria for New Chemicals

APPLICATION OF THE VOLATILIZATION CRITIERIA

SUMMARY

REFERENCES

TABLES
Table 1 – Proposed Target Indoor Air Concentrations
Table 2 – Proposed Ground Water Volatilization Criteria
Table 3 – Proposed Soil Vapor Volatilization Criteria

APPENDICES
Appendix A -- Johnson and Ettinger Model
- Table A1 – Definition of Variables
- Table A2 – Calculated Variables
- Table A3 – Default Input Values
- Table A4 – Henry's Law Constants and Molecular Weights

Appendix B – Development of Target Indoor Air Concentrations
- Table B1 – Target Air Concentrations (TACs) for Residential Scenario
- Table B2 – Target Air Concentrations (TACs) for Industrial/Commercial Scenario

Appendix C – Comparison to 1996 Volatilization Criteria
- Table C1 -- Comparison of Target Indoor Air Concentrations
- Table C2 -- Comparison of Ground Water Volatilization Criteria
- Table C3 -- Comparison of Soil Vapor Volatilization Criteria

INTRODUCTION

The volatilization criteria were developed to identify situations where contaminants in groundwater and soil vapor volatilize, travel into an overlying building and result in the potential risk to human health from the inhalation of the contaminants by occupants of the building. Since the development and adoption of the volatilization criteria in the Remediation Standard Regulations (RSRs) in 1996, the Department of Environmental Protection (DEP), the Department of Public Health (DPH), the U.S. Environmental Protection Agency (USEPA), other state agencies and researchers across the country have collected additional laboratory and field information regarding the volatilization of contaminants. This work has resulted in a better understanding of the vapor migration pathway and the associated risk to public health posed by volatile organic compounds present in the subsurface. Consequently, DEP, with the assistance and input of DPH, is proposing revisions to the volatilization criteria. This document describes the basis for the proposed criteria, as well as the basis for the original criteria issued in 1996 for comparison.

The proposed revisions reflect new toxicological information, a revised transport model and additional information and understanding of this potential pathway of exposure that have all become available since the RSRs were formally adopted in 1996. The proposed revised target indoor air concentrations, groundwater volatilization criteria and soil vapor volatilization criteria are presented in Tables 1, 2 and 3, respectively.

The CTDEP is proposing revisions to the volatilization criteria at this time as part of the Department's application to the USEPA for authorization of the RCRA Corrective Action Program. These proposed changes make Connecticut's criteria more consistent with the EPA Draft Guidance "Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soil" that was issued in November 2002.

BASIS FOR DEVELOPMENT OF ORIGINAL VOALTLIZATION CRITERIA

The numerical volatilization criteria adopted in 1996 are listed in Appendices E and F of the RSRs and also in Tables C1, C2 and C3 in Appendix C of this document. These numerical criteria were developed using the transport model presented in ASTM ES 38-94 "Emergency Standard Guide for Risk Based Corrective Action Applied at Petroleum Release Sites" and toxicity information that was available in 1995.

Original Transport Model

The original transport model presented in the ASTM ES 38-94 was based on a model developed by Johnson and Ettinger and utilized a simplified approach for simulating the transport of volatiles from groundwater, through the soil media and building foundations, and into building structures as airborne contaminants. That model was based on the assumption that diffusion is the sole method of transport from subsurface contamination into the indoor air environment. Diffusion is the process resulting from random motion of molecules by which there is a net flow of matter from a region of high concentration to a region of low concentration. Equations used to develop the original volatilization criteria are shown in Appendix G of the RSRs and in Tables X2.1, X2.2, and X2.3 of ASTM ES 38-94.

The original transport model required the input of a variety of parameters to define the subsurface conditions, the building foundation and the interior environment of the building. Since these parameters are widely variable depending on site-specific conditions, default values were developed. Default values for the various parameters used in the model are presented in Appendix G of the RSRs and are the default values recommended in Tables X2.4 and X2.5 of ASTM ES 38-94. In general, these input parameters describe a conservative scenario in an effort to best protect human health and the environment in the generic or broad application of these criteria.

Original Target Indoor Air Concentrations

The volatilization criteria were developed by calculating a target indoor air concentration (TAC) for each chemical using risk assessment algorithms and toxicity values recommended by USEPA in 1995 and exposure assumptions recommended in ASTM ES 39-94. Background concentrations for certain chemicals were also taken into consideration when establishing the TACs. The background concentrations were described in Table 4 of ASTM ES 38-94 and in Table 3-1 of Massachusetts DEP's "Background Documentation for the Development of the MCP Numerical Standards". For some chemicals, the background concentrations were greater than the calculated risk-based concentrations. For these chemicals, the TACs were set at the background concentrations.

Ceiling Value for Groundwater Volatilization Criteria

A ceiling value of 50,000 micrograms per liter ("µg/L") was applied to all of the groundwater volatilization criteria for which the risked-based criteria were greater than 50,000 µg/L. The purpose of the ceiling value was to prevent gross contamination from being overlooked and to ensure that remediation in accordance with these criteria would address potential odor problems.

Quantification Limits

In general, if the risk-based criteria for a contaminant in soil, groundwater or soil vapor was a concentration lower than that which could be reasonably quantified, the RSR criteria was adjusted upward to a level that could be quantified by laboratories in Connecticut. In 1996, the soil vapor volatilization criteria were adjusted such that any risk-based soil vapor volatilization criteria that was determined to be less than one part per million ("ppm") was adjusted up to 1 ppm.

PROPOSED REVISIONS TO THE VOLATILIZATION CRITERIA

The proposed volatilization criteria are based on:

1) The Johnson and Ettinger (1991) model, incorporating its extensions developed in 1998 and 1999 (Johnson et al. 1998 and Johnson et al. 1999),
2) New toxicity information,
3) New exposure assumptions,
4) Ceiling values for target indoor air concentrations, and
5) Updated quantification limits.

Proposed revised target indoor air concentrations, groundwater volatilization criteria and soil vapor volatilization criteria are shown in Tables 1, 2 and 3 of this document.

Revised Transport Model

The revised Johnson and Ettinger model incorporates both diffusion and advection as the mechanisms of transport of subsurface contamination into the indoor air environment. While diffusion is a passive process, advection is an active process brought about by pressure gradients. Gases will move from areas of high pressure to areas of low pressure. Buildings, particularly under wintertime conditions, are depressurized due to warmed air constantly rising towards the roof. This allows influx of air from the soil gas, which follows the pressure gradient from soil gas into the basement. The greater the depressurization of the building, the greater the zone of influence will be. The zone of influence is the depth from which soil gas can be drawn into the building.

Since the revised model incorporates both diffusion and advection as transport mechanisms, the total amount of transport is greater than that calculated using the original model. Sampling at sites in Connecticut show that the original model under-predicted indoor air concentrations based on groundwater and soil vapor sample results. Therefore, the revised model provides a more accurate and realistic representation of volatile transport. USEPA is also currently using the revised Johnson and Ettinger model to develop their "Guidance for Evaluating the Vapor Intrusion into Indoor Air". In addition, many states including Massachusetts, Michigan, Pennsylvania, Virginia, West Virginia and California are also using this model to develop criteria for this exposure pathway. Appendix A describes the revised model in detail.

The default input values used in the revised model are the same as those used in the 1996 model with one exception, Q_{soil}/Q_B. Q_{soil}/Q_B is the ratio of soil gas intrusion rate to building ventilation rate and was not part of the original model. The default input value used for Q_{soil}/Q_B is taken from USEPA's "Guidance for Evaluating the Vapor Intrusion into Indoor Air". All variables used in the revised model are listed and defined in Tables A1 and A2. Table A3 shows the typical values or range of values for these parameters as well as the default values used to calculate the proposed volatilization criteria.

Revised and Updated Target Indoor Air Concentrations

The target indoor air concentrations (TACs) were again derived by CT DPH for each chemical using risk-based calculations recommended by USEPA, the chemical-specific reference concentrations (RfCs) and cancer unit risks currently available. Appendix B presents these risk-based equations. The following issues were addressed in the TAC revisions:

1) Updated toxicity values,
2) Revised exposure assumptions for industrial/commercial settings,
3) Increased exposure and susceptibility for children for residential settings,
4) Updated background concentrations, and
5) Ceiling value for TACs.

Toxicity Values

All of the toxicity values have been reviewed and revised to reflect up-to-date toxicity values. The most significant changes are the toxicity values for several chlorinated hydrocarbons including 1,1-dichloroethylene ("DCE"), trichloroethylene ("TCE"), and vinyl chloride. 1,1-Dichloroethylene is no longer regulated as a low dose linear carcinogen; although, there remains considerable uncertainty regarding its potential carcinogenicity, which is reflected in the new TAC. The net result of this is an increase in the 1,1-DCE TAC by 200 fold over the former value. The evidence for the carcinogenicity of trichloroethylene in humans has become strengthened with an associated increase in USEPA's estimate of its cancer potency (Cogliano, et al., 2001). This change would have led to a considerable lowering of the TCE TAC, if not for the fact that TCE is a background indoor air contaminant. Setting the TAC for TCE at its background concentration leads to a 5 fold lowering of the TAC, relative to the 1996 value. USEPA's carcinogenicity reassessment of vinyl chloride has led to a decrease in its potency estimate by 10 fold, leading to a commensurate increase in the TAC for vinyl chloride.

While USEPA's Integrated Risk Information System (IRIS) database was relied upon as the primary source of toxicity values, other federal and state risk assessment databases (USEPA's Health Effects Assessment Summary Tables – HEAST, ATSDR's Chronic Minimum Risk Levels – MRLs, California EPA's Chronic RELs) were reviewed to determine the consistency of toxicity values across agencies. These other data sources were used in derivation of TACs in cases where USEPA did not have a value listed on IRIS. Appendix B presents all of the new toxicity values and how they were used in deriving TACs for both residential and industrial/commercial scenarios.

Exposure Assumptions

Exposure assumptions for the residential scenario have not changed: 30 year residence at the affected location, daily exposure for 350 days/year, with an inhalation rate of 20 m^3/day for a 70 kg adult. The exposure assumptions for the industrial/commercial scenario are revised to better reflect likely workplace exposures. The inhalation rate per day has been reduced by one half to 10 m^3/day to reflect a shorter exposure time in the industrial/commercial exposure scenario. The other exposure assumptions for this scenario have not changed (25 years exposure, 250 days/year, 70 kg body weight).

Increased Exposure and Susceptibility of Children to Carcinogens

Increased exposure and susceptibility of children in a residential scenario to carcinogens was taken into consideration during these revisions. The residential scenario involves young children, which is a receptor group that is likely to be at elevated risk relative to adults due to several factors: 1) their greater respiratory rate per body weight and lung surface area (Child-Specific Exposure Factors Handbook, USEPA, 2000; Thurlbeck, 1982); and 2) due to the likelihood that they have increased sensitivity to carcinogens (Ginsberg, 2003; USEPA, 2003; USEPA, 2000). TACs based on adult exposure parameters and sensitivity may not be adequately protective of children.

The first factor, children's increased inhalation rate, is the basis for a 2-fold adjustment of the TAC to ensure protection of children.

The second factor, increased sensitivity to carcinogens, was the rationale for an additional 2-fold adjustment factor, but in this case it is applied only for genotoxic carcinogens. Juvenile animal studies indicate that even very brief exposures in early life can lead to substantial cancer risk (Vessinovitch, 1979; Toth, 1968). However, the standard rodent cancer bioassay upon which unit risks are derived starts dosing after this period of development. For these reasons, the development of TACs for the residential scenario incorporates a children's carcinogen sensitivity factor. This factor is applied to genotoxicants, a type of carcinogen whose effects in early life are most clearly documented at the present time. The adjustment factor is 2 fold based upon the vinyl chloride example on IRIS (USEPA, 2000). The underlying principle is that the risk from short-term early life exposure can be equal to the risk stemming from much longer exposure beginning later in life, and that risks must be additive across these age groups (Ginsberg, 2003). This approach is consistent with USEPA's IRIS file for vinyl chloride and draft Cancer Risk Assessment Guidelines (USEPA, 2000; USEPA, 2003).

Background Concentrations in Indoor Air

Since 1996, there has been an increased focus around the United States on measuring indoor air quality in impacted and non-impacted (or "background") homes, offices, schools and other environments. This had led to an enhanced database for background indoor air data (Foster, et al., 2002; Kurtz and Folkes, 2002; NYSDOH, 1997; Clayton, et al., 1999; Shields, et al., 1996; USEPA/BASE Study, 1999). These datasets, along with the pre-existing indoor air datasets (Stolwick, 1990; Vermont DOH, 1992; Brown, et al., 1994; Daisey, et al., 1994; Sheldon, et al., 1992; Shah and Singh, 1988) have been reviewed while giving particular attention to those volatile oraganic compounds (VOCs) (typically carcinogens) with risk-based TACs that approach or are below what can be considered background. VOC indoor air measurements are typically lognormally distributed; therefore, the central tendency background concentration (the median) was chosen to represent background. While higher concentrations may be found in certain background locations, the central tendency was used because of the way it would be applied: 1) to replace a risk-based TAC such that the background concentration would already be above a risk target; and 2) to back-calculate the allowable contribution from subsurface VOC contamination, such that the amount that is from background sources plus the amount allowed from subsurface sources would still be within the range of the background data distribution.

VOC background concentrations and how they are used in the derivation of TACs are shown chemical-by-chemical in Appendix B.

TAC Ceiling Value

A ceiling value of 500 ug/m^3 was applied to both the residential and industrial/commercial scenarios for those VOCs with risk-based TACs exceeding

this ceiling value. This ceiling value was derived as an upper bound concentration that signals the presence of an unusual indoor air source for an individual VOC. It is prudent to keep the concentration of individual VOCs below this level to avoid odor complaints, degraded air quality, or non-specific health complaints. VOC odor thresholds were separately considered but only in isolated cases where the odor threshold is the key factor in setting a TAC. Appendix B provides a detailed discussion of this topic.

Current Quantification Limits

Based on the use of current analytical methods, concentrations in soil vapor can be reliably quantified at a level significantly lower than 1ppm. Therefore, the soil vapor volatilization criteria were adjusted such that any risk-based soil vapor volatilization criteria that are determined to be less than 0.5 ppb, are adjusted up to 0.5 ppb. The only criteria adjusted up to 0.5 ppb, is the residential soil vapor volatilization criteria for ethylene dibromide (EDB).

Criteria for New Chemicals

Since 1996, the DEP has approved volatilization criteria for a number of compounds for which criteria had not been established in the original regulations. Based on all of the requests for additional criteria for additional chemicals submitted since 1996, the following compounds have been added to the list of volatilization criteria: trichlorofluoromethane, chloroethane, chloromethane, dichlorodiflouromethane, isopropylbenzene (cumene), cis-1,2-dichloroethene, trans-1,2-dichloroethene, bromodichloromethane, n-butylbenzene, sec-butylbenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene and 4-isopropyltoluene (4-cymene).

APPLICATION OF THE VOLATILIZATION CRITERIA

Under the current regulations, the groundwater volatilization criteria are applicable to "all ground water polluted with a volatile organic substance within 15 feet of the ground surface or a building". However, research since 1996 has demonstrated that volatiles in groundwater at depths much deeper than 15 feet have been the source of vapor intrusion into overlying structures at concentrations that pose a risk to public health. The USEPA in their "Guidance for Evaluating the Vapor Intrusion into Indoor Air" is recommending applying criteria up to buildings up to 100 feet from the contamination source. Other states including Michigan and Pennsylvania require that volatilization issues be addressed when polluted ground water is within 30 feet of the surface. After evaluating geology and hydrogeology in Connecticut, DEP is proposing that the volatilization criteria should be applied to groundwater within 30 feet of the ground surface or a building.

The RSRs adopted in 1996 provide baseline numeric criteria that can be used to demonstrate compliance or that can be used as a screening level. The regulations also provide the option of developing a site-specific criteria by calculating an attenuation factor using input parameters that are appropriate for the circumstances at a specific site. The site-specific option will also be retained in the proposed revisions to the regulations. However, the revised Johnson and Ettinger model should be used for such calculations. Further, the option to take measures that would prevent the migration of volatiles into indoor air rather than remediate the ground water

and the option to record a land use restriction that would prohibit the construction of a building over ground water polluted by VOCs will be retained in the revised regulations.

SUMMARY

DEP is proposing to revise the volatilization criteria to better protect human health and to remain consistent with federal programs. The revisions proposed in this document are in keeping with the following objectives:

- The proposed revised volatilization criteria are similar to those used by USEPA and other states.
- The revised transport model more accurately predicts indoor air concentrations.
- The toxicity information has been updated to current toxicity values.
- The exposure assumptions have been refined to be both protective and realistic.
- The depth to groundwater to which these criteria should be applied has been increased to 30 feet based on new research that demonstrates indoor exposures resulting from the migration of volatiles from a ground water source significantly deeper than 15 feet.

A comparison of 1996 TACs and volatilization criteria to proposed revised TACs and volatilization criteria is presented in the three tables in Appendix C.

DEP is seeking comments from the public on these revisions before proposing revised regulations in July 2003. Please send you comments to:

Ruth Lepley Parks
Permitting, Enforcement and Remediation Division
Connecticut Department of Environmental Protection
79 Elm Street
Hartford, Ct 06106

before
June 30, 2003

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Table 1

Proposed Target Indoor Air Concentrations

Compound	CAS Number	Residential TAC (ug/m^3)	Industrial/Commercial TAC (ug/m^3)
Acetone	67641	180	500[1]
Acrylonitrile	107131	NA	NA
Benzene	71432	3.3[2]	3.3[2]
Bromoform	75252	0.55	7.3
2-Butanone (MEK)	78933	500[1]	500[1]
Carbon tetrachloride	56235	0.5[2]	0.54
Chlorobenzene	108907	37	200
Chloroform	67663	0.5[2]	0.5[2]
Dibromochloromethane	124481	NA	NA
1,2-Dichlorobenzene	95501	73	410
1,3-Dichlorobenzene	541731	73	410
1,4-Dichlorobenzene	106467	24	24
1,1-Dichloroethane	75343	77	430
1,2-Dichloroethane	107062	0.07	0.31
1,1-Dichloroethylene	75354	10	20
cis-1,2-Dichlroethylene	156592	See **New Criteria** below	See **New Criteria** below
trans-1,2-Dichloroethylene	156605	See **New Criteria** below	See **New Criteria** below
1,2-Dichloropropane	78875	0.13	0.42
1,3-Dichloropropene	542756	0.21	2.9
Ethyl benzene	100414	53	290
Ethylene dibromide (EDB)	106934	0.0028	0.038
Methyl-tert-butyl-ether	1634044	160	190[3]
Methyl isobutyl ketone	108101	37	200
Methylene chloride	75092	3[2]	17
Styrene	100425	52	290

Table 1
(Continued)

Proposed Target Indoor Air Concentrations

Compound	CAS Number	Residential TAC (ug/m^3)	Industrial/Commercial TAC (ug/m^3)
1,1,1,2-Tetrachloroethane	630206	0.082	1.1
1,1,2,2-Tetrachloroethane	79345	0.011	0.14
Tetrachloroethylene	127184	5[2]	5[2]
Toluene	108883	210	500[1]
1,1,1 Trichloroethane	71556	500	500[1]
1,1,2-Trichloroethane	79005	2.2	12
Trichloroethylene	79016	1[2]	1[2]
Vinyl chloride	75014	0.14	1.9
Xylenes	1330207	220	500[1]
New Criteria			
Trichlorofluoromethane	75694	370	500[1]
Chloroethane	75003	500[1]	500[1]
Chloromethane	74873	14	80
Dichlorodiflouromethane	75718	91	500[1]
Isopropylbenzene (Cumene)	98828	120[3]	120[3]
cis-1,2-dichloroethene	156592	18	100
trans-1,2-dichloroethene	156605	37	200
Bromodichloromethane	75274	0.034	0.46
N-butylbenzene	104518	73	410
Sec-butylbenzene	135988	73	410
1,2,4-trimethylbenzene	95636	9.3	52
1,3,5-trimethylbenzene	108678	9.3	52
4-isopropyltoluene (4-cymene)	99876	67	370

[1] Based on a ceiling value. [2] Based on a background concentration.
[3] Based on an odor threshold concentration.

Table 2

Proposed Ground Water Volatilization Criteria

Compound	CAS Number	Residential GWVC (ug/L)	Industrial/Commercial GWVC (ug/L)
Acetone	67641	50000	50000
Acrylonitrile	107131	NA	NA
Benzene	71432	130	310
Bromoform	75252	75	2300
2-Butanone (MEK)	78933	50000	50000
Carbon tetrachloride	56235	5.3	14
Chlorobenzene	108907	1800	23000
Chloroform	67663	26	62
Dibromochloromethane	124481	NA	NA
1,2-Dichlorobenzene	95501	5100	50000
1,3-Dichlorobenzene	541731	4300	50000
1,4-Dichlorobenzene	106467	1400	3400
1,1-Dichloroethane	75343	3000	41000
1,2-Dichloroethane	107062	6.5	68
1,1-Dichloroethylene	75354	190	920
cis-1,2-Dichlroethylene	156592	See **New Criteria** below	See **New Criteria** below
trans-1,2-Dichloroethylene	156605	See **New Criteria** below	See **New Criteria** below
1,2-Dichloropropane	78875	7.4	58
1,3-Dichloropropene	542756	11	360
Ethyl benzene	100414	2700	36000
Ethylene dibromide (EDB)	106934	0.3	11
Methyl-tert-butyl-ether	1634044	21000	50000
Methyl isobutyl ketone	108101	13000	50000
Methylene chloride	75092	160	2200
Styrene	100425	3100	42000

Table 2
(Continued)

Proposed Ground Water Volatilization Criteria

Compound	CAS Number	Residential GWVC (ug/L)	Industrial/Commercial GWVC (ug/L)
1,1,1,2-Tetrachloroethane	630206	2	64
1,1,2,2-Tetrachloroethane	79345	1.8	54
Tetrachloroethylene	127184	340	810
Toluene	108883	7100	41000
1,1,1 Trichloroethane	71556	6500	16000
1,1,2-Trichloroethane	79005	220	2900
Trichloroethylene	79016	27	67
Vinyl chloride	75014	1.6	52
Xylenes	1330207	8700	48000
New Criteria			
Trichlorofluoromethane	75694	1300	4200
Chloroethane	75003	12000	29000
Chloromethane	74873	390	5500
Dichlorodiflouromethane	75718	93	1200
Isopropylbenzene (Cumene)	98828	2800	6800
Cis-1,2-dichloroethene	156592	830	11000
trans-1,2-dichloroethene	156605	1000	13000
Bromodichloromethane	75274	2.3	73
N-butylbenzene	104518	1500	21000
Sec-butylbenzene	135988	1500	20000
1,2,4-trimethylbenzene	95636	360	4800
1,3,5-trimethylbenzene	108678	280	3900
4-isopropyltoluene (4-cymene)	99876	1600	22000

Table 3

Proposed Soil Vapor Volatilization Criteria

Compound	CAS Number	Residential SVVC (ppm)	Industrial/Commercial SVVC (ppm)
Acetone	67641	57	290
Acrylonitrile	107131	NA	NA
Benzene	71432	0.78	1.4
Bromoform	75252	0.04	0.98
2-Butanone (MEK)	78933	130	230
Carbon tetrachloride	56235	0.06	0.12
Chlorobenzene	108907	6.1	60
Chloroform	67663	0.078	0.14
Dibromochloromethane	124481	NA	NA
1,2-Dichlorobenzene	95501	9.2	95
1,3-Dichlorobenzene	541731	9.2	95
1,4-Dichlorobenzene	106467	3	5.5
1,1-Dichloroethane	75343	14	150
1,2-Dichloroethane	107062	0.013	0.11
1,1-Dichloroethylene	75354	1.9	7
cis-1,2-Dichlroethylene	156592	See New Criteria below	See New Criteria below
trans-1,2-Dichloroethylene	156605	See New Criteria below	See New Criteria below
1,2-Dichloropropane	78875	0.021	0.13
1,3-Dichloropropene	542756	0.035	0.89
Ethyl benzene	100414	9.3	93
Ethylene dibromide (EDB)	106934	0.0005	0.007
Methyl-tert-butyl-ether	1634044	34	73
Methyl isobutyl ketone	108101	6.8	68
Methylene chloride	75092	0.65	6.8
Styrene	100425	9.3	95

Table 3
(Continued)

Proposed Soil Vapor Volatilization Criteria

Compound	CAS Number	Residential SVVC (ppm)	Industrial/Commercial SVVC (ppm)
1,1,1,2-Tetrachloroethane	630206	0.009	0.22
1,1,2,2-Tetrachloroethane	79345	0.0012	0.028
Tetrachloroethylene	127184	0.56	1
Toluene	108883	42	180
1,1,1 Trichloroethane	71556	70	130
1,1,2-Trichloroethane	79005	0.31	3.1
Trichloroethylene	79016	0.14	0.26
Vinyl chloride	75014	0.041	1
Xylenes	1330207	38	160
New Criteria			
Trichlorofluoromethane	75694	50	120
Chloroethane	75003	140	260
Chloromethane	74873	5.1	53
Dichlorodiflouromethane	75718	14	140
Isopropylbenzene (Cumene)	98828	19	34
Cis-1,2-dichloroethene	156592	3.4	35
trans-1,2-dichloroethene	156605	7.1	70
Bromodichloromethane	75274	0.0038	0.095
N-butylbenzene	104518	10	100
Sec-butylbenzene	135988	10	100
1,2,4-trimethylbenzene	95636	1.4	15
1,3,5-trimethylbenzene	108678	1.4	15
4-isopropyltoluene (4-cymene)	99876	9.3	94

Appendix A

Johnson and Ettinger Model

APPENDIX A

JOHNSON AND ETTINGER MODEL

The revised Johnson and Ettinger model incorporates both diffusion and advection as mechanisms of transport of subsurface contamination into indoor air environment. Diffusion is the mechanism by which vapor moves from a region of higher concentration to a region of lower concentration. Diffusion is typically the vertical component of transport in this model. Advection is the transport mechanism by which vapor moves to a region where there is a difference in pressure, temperature or other factor. This Johnson and Ettinger model is the most widely used vapor transport model across the United States.

The Johnson and Ettinger model uses the conservation of mass principle and makes the following assumptions:

- Steady state conditions exist
- An infinite source of contamination exists
- The subsurface is homogeneous
- Air mixing in the building is uniform
- Preferential pathways do not exist
- Biodegradation (or any other transformation process) does not occur
- Contaminants are homogeneously distributed
- Contaminant vapors enter a building primarily through cracks and other openings in the foundation and walls
- Ventilation rates and pressure differences are assumed to remain constant

The output of the Johnson and Ettinger model is the dimensionless attenuation factor (α) that represents the ratio of the indoor air concentration to the vapor concentration at a subsurface source. Using the attenuation factor and the recommended target indoor air concentrations, allowable soil vapor and ground water concentrations were back calculated. These concentrations are the recommended volatilization criteria. The Connecticut Department of Public Health recommended appropriate target indoor air concentrations for residential and industrial/commercial scenarios.

- For ground water volatilization criteria:

  GWVC (ug/L) = Target Indoor Air Concentration ($\mu g/m^3$) / (1000 L/m^3 x α x H)

  where H = Henry's Law Constant (unitless)

- For soil vapor volatlization criteria:

  SVVC (mg/m^3) = Target Indoor Air Concentration ($\mu g/m^3$) / (1000 $\mu g/mg$ x α)

  SVVC (ppm) = SVVC (mg/m^3) x 24.45 / Molecular Weight

  where 24.45 = molar volume in liters at 760 torr barometric pressure at 25 ° C

The Johnson and Ettinger model calculates the attenuation factor as follows:

Attenuation Factor for Diffusion and Advection –

$$\alpha = (A \times e^{B}) / [e^{B} + A + (A/C)(e^{B}-1)]$$

where:

$$A = (D^{eff}_{T} A_B) / (Q_B L_T) \quad \textit{or} \quad (D^{eff}_{T}) / (E_B(V_B/A_B)L_T)$$

$$B = (Q_{soil} L_{crack}) / (D^{eff}_{crack} \eta A_B) \quad \textit{or} \quad [(Q_{soil}/Q_b)E_B(V_B/A_B)L_{crack}] / [D^{eff}_{crack}\eta]$$

$$C = Q_{soil}/Q_B$$

where:

$$D^{eff}_{T} = L_T / [(L_{vadose}/D^{eff}_{vadose}) + (L_{cap}/D^{eff}_{cap})$$

$$D^{eff}_{crack} = D^{air}(\theta_{V\text{-}crack}{}^{3.33}/\theta_{T\text{-}crack}{}^{2}) + (D^{water}/H)(\theta_{m\text{-}crack}{}^{3.33}/\theta_{T\text{-}crack}{}^{2})$$

where:

$$D^{eff}_{vadose} = D^{air}(\theta_{V\text{-}vadose}{}^{3.33}/\theta_{T\text{-}vadose}{}^{2}) + (D^{water}/H)(\theta_{m\text{-}vadose}{}^{3.33}/\theta_{T\text{-}vadose}{}^{2})$$

$$D^{eff}_{cap} = D^{air}(\theta_{V\text{-}cap}{}^{3.33}/\theta_{T\text{-}cap}{}^{2}) + (D^{water}/H)(\theta_{m\text{-}cap}{}^{3.33}/\theta_{T\text{-}cap}{}^{2})$$

The input values for these equations are defined in Tables A1 and A2 of this Appendix. Conservative default values for each input variable were used to calculate the generic volatilization criteria listed in Tables 2 and 3. The acceptable ranges for these default values are presented in Table A3 along with the default input values used by CTDEP to calculate the generic criteria. In addition, Table A4 presents molecular weights and Henry's Law Constants (H) used by CTDEP.

Basically the input values describe the vapor transport pathway including the

- subsurface soils and stratigraphy;
- foundation of the structure;
- interior environment of the structure; and
- transport properties of the contaminants.

The subsurface soils are assumed to be sand and the stratigraphy is assumed to be homogeneous. The default input values for the moisture content (θ_m) and vapor content (θ_V) of the soils in both the vadose zone and the capillary fringe were chosen to represent sandy soils in the subsurface. The thickness of the capillary fringe (L_{cap}) is also based on an estimated thickness of capillary fringe for a typical sand. The default input values used for the total depth (L_T) to groundwater and the total depth to a soil vapor sample are 3 meters and 1 meter, respectively.

The default values used to describe the foundation of the building are the thickness of the foundation (L_{crack}) assumed at 0.15 meters and the areal fraction of cracks in foundation (η) assumed at 0.01 (worst case value). Also, the soil properties of the soil in the cracks (θ_m and θ_V) are estimated based on a sand soil type. The default values used to describe the indoor

environment are the enclosed space air exchange rate (E_B), the volume of the building divided by the area of the building (or just the height of the building) (V_B/A_B) and the ratio of soil gas intrusion rate to the building ventilation rate (Q_{soil}/Q_B). These values differ for the residential scenario and the industrial commercial scenario.

The default values used describe the transport properties of the contaminants are Henry's Law Constants (H) listed for specific chemical on Table A4, and the diffusion in water (D^{water}) and the diffusion in air (D^{air}). Though the diffusion rates can be chemical-specific, a general diffusion rates in air (8.64×10^{-5} M^2/d) and in water (7.26×10^{-1} M^2/d) were used for all of the chemicals.

All of the default input values used in this current model were also used in the original model with the exception of the ratio Q_{soil}/Q_B. This ratio was not part of the original model. The default input value used for Q_{soil}/Q_B is also the default value used in USEPA's "Guidance of revaluating the Vapor Intrusion into Indoor Air" dated November 2002. The default input values used in the original model remain unchanged. The default values are those recommended by ASTM 38-94 in Tables X2.4 and X2.5.

The article written by Johnson titled "Identification of Critical Parameters for the Johnson and Ettinger (1991) Vapor Intrusion Model" dated May 2002 provides additional information regarding the input values and the sensitivity of the final attenuation factor to various input values.

The attenuation factors used to calculate the proposed revised criteria are based on the default input values listed in Table A3 and the revised Johnson and Ettinger model. In general, the attenuation factors used to calculate the proposed revised criteria are greater than the attenuation factors used to calculate the original criteria in 1996. For the ground water scenario, the attenuation factor increased by a multiple of approximately 2.5, from about 8×10^{-5} to 2×10^{-4} for the residential scenario and from 3×10^{-5} to 7×10^{-5} for the industrial/commercial scenario. For the soil vapor scenario, the attenuation factor increased by a multiple of approximately 10, from about 1.5×10^{-4} to 1.3×10^{-3} for residential the scenario and from 6×10^{-5} to 7×10^{-4} for the industrial/commercial scenario. The revised Johnson and Ettinger model produces a more conservative attenuation factor compared to the original model.

Table A1

Definition of Variables

	Definition	Units
H	Chemical Specific Henry's Law constant	$\mu g/m^3$-vapor / $\mu g/m^3$-H_2O
$\theta_{m\text{-}vadose}$	Volumetric Moisture Content in Vadose Zone	m^3-H_2O / m^3-soil
$\theta_{T\text{-}vadose}$	Total Porosity in Vadose Zone	m^3-voids / m^3-soil
$\theta_{m\text{-}crack}$	Volumetric Moisture Content in Cracks	m^3-H_2O / m^3-soil
$\theta_{T\text{-}crack}$	Total Porosity in Cracks	m^3-voids / m^3-soil
$\theta_{m\text{-}cap}$	Volumetric Moisture Content in Cracks in Capillary Fringe	m^3-H_2O / m^3-soil
$\theta_{T\text{-}cap}$	Total Porosity in Capillary Fringe	m^3-voids / m^3-soil
D^{air}	Chemical Specific Molecular Diffusion Coefficient in Air	m^2 / d
D^{water}	Chemical Specific Molecular Diffusion Coefficient in Water	m^2 / d
K	Soil Permeability (near foundation) to Air Flow	m^2
ΔP	Indoor-Outdoor Air Pressure Difference	g / ms^2
X_{crack}	Total Length of Cracks through which Soil Gas Vapors are Flowing	m
μ	Viscosity of Air	g / ms
Z_{crack}	Crack Opening Depth Below Grade	m
η	Fraction of Enclosed Space Area Open for Vapor Intrusion	m^2 / m^2
A_B	Surface Area of the Enclosed Space in Contact with Soil	m^2
V_B	Enclosed Space Volume	m^3
E_B	Enclosed Space Air Exchange Rate	1/d
L_T	Depth from Foundation to Source	m
L_{cap}	Thickness of Capillary Fringe	m
L_{crack}	Foundation Thickness	m

Table A2

Calculated Variables

	Definition	Calculation	Units
V_B/A_B	Ratio of Enclosed Space Volume to Exposed Surface Area		m
Q_B	Enclosed Space Volumetric Air Flow Rate	$= V_B E_B$	m^3/d
R_{crack}	Effective Crack Radius or Width	$= \eta A_B / X_{crack}$	m
$\theta_{V\text{-}vadose}$	Volumetric Vapor Content in Vadose Zone	$= \theta_{T\text{-}vadose} - \theta_{m\text{-}vadose}$	m^3-vapor / m^3-soil
$\theta_{V\text{-}crack}$	Volumetric Vapor Content in Cracks	$= \theta_{T\text{-}crack} - \theta_{m\text{-}crack}$	m^3-vapor / m^3-soil
$\theta_{V\text{-}cap}$	Volumetric Vapor Content in Capillary Fringe	$= \theta_{T\text{-}cap} - \theta_{m\text{-}cap}$	m^3-vapor / m^3-soil
Q_{soil}	Pressure Driven Soil Gas Flow Rate from the subsurface into the enclosed space	$= (2\pi k \Delta P X_{crack}) / [\mu \ln(2Z_{crack}/R_{crack})]$	m^3/d
Q_{soil}/Q_B	Ratio of Soil Gas Intrusion Rate to Building Ventilation Rate		unitless
D^{water}/D^{air}	Ratio of Molecular Diffusion in water to air		unitless
L_{vadose}	Thickness of Vadose Zone	$= L_T - L_{cap}$	m

Table A3

Default Input Values

	Units	Typical Value Range [1]	Notes	Res GWVC	I/C GWVC	Res SVVC	I/C SVVC
H	$\mu g/m^3$-vapor / $\mu g/m^3$-H_2O	0.01 - 1.0	For most aromatic & chlorinated solvents	---	---	---	---
$\theta_{m\text{-}vadose}$	m^3-H_2O / m^3-soil		ASTM default value. Typical for sand.	0.12	0.12	0.12	0.12
$\theta_{T\text{-}vadose}$	m^3-voids / m^3-soil		ASTM default value. Typical for sand.	0.38	0.38	0.38	0.38
$\theta_{m\text{-}crack}$	m^3-H_2O / m^3-soil		ASTM default value. Typical for sand.	0.12	0.12	0.12	0.12
$\theta_{T\text{-}crack}$	m^3-voids / m^3-soil		ASTM default value. Typical for sand.	0.38	0.38	0.38	0.38
$\theta_{m\text{-}cap}$	m^3-H_2O / m^3-soil		ASTM default value. Typical for sand.	0.342	0.342	0.342	0.342
$\theta_{T\text{-}cap}$	m^3-voids / m^3-soil		ASTM default value. Typical for sand.	0.38	0.38	0.38	0.38
D^{air}	M^2/d	0.1 - 1	For most chemicals	7.26E-01	7.26E-01	7.26E-01	7.26E-01
D^{water}	M^2/d			8.64E-05	8.64E-05	8.64E-05	8.64E-05
k	m^2	1E-6 - 1E-12					
ΔP	g/ms^2	0 - 200	or 0 to 20 Pascals				
X_{crack}	m						
μ	g / ms						
Z_{crack}	m						
η	m^2/m^2	0.0005 - 0.005	ASTM default value. 0.01 for worst-case scenario.	0.01	0.01	0.01	0.01
A_B	m^2						
V_B	m^3	147 - 672	Range from USDOE (1995)				
E_B	1/d	4.8 - 24	ASTM default values. 12 for Residential scenario and 19.9 for Industrial/Commercial scenario.	12	19.9	12	19.9
L_T	m	0.01 - 50	ASTM default values. 3 for Groundwater criteria and 1 for Soil Vapor criteria.	3	3	1	1
L_{cap}	m		ASTM default values. 0.05 for Groundwater criteria and 0 for Soil Vapor criteria.	0.05	0.05	0	0
L_{crack}	m	0.15 - 0.5	ASTM default value.	0.15	0.15	0.15	0.15

Table A3
(continued)

Default Input Values

	Units	Typical Value Range [1]	Notes	Res GWVC	I/C GWVC	Res SVVC	I/C SVVC
V_B/A_B	m	2 - 3	ASTM default values. 2 for Residential scenario and 3 for Industrial/Commercial scenario.	2	3	2	3
Q_B	m^3/d						
R_{crack}	m						
$\theta_{V\text{-}vadose}$	m^3-vapor / m^3-soil		ASTM default value. Typical for sand.	0.26	0.26	0.26	0.26
$\theta_{V\text{-}crack}$	m^3-vapor / m^3-soil		ASTM default value. Typical for sand.	0.26	0.26	0.26	0.26
$\theta_{V\text{-}cap}$	m^3-vapor / m^3-soil		ASTM default value. Typical for sand.	0.038	0.038	0.038	0.038
Q_{soil}	m^3/d						
Q_{soil}/Q_B	unitless	0.0001 – 0.05	EPA Vapor Intrusion Guidance default value.	0.003	0.003	0.003	0.003
D^{water}/D^{air}	unitless	~ 1E-4		1.19E-04	1.19E-04	1.19E-04	1.19E-04
L_{vadose}	m		ASTM default value. 2.95 for Groundwater criteria and 1 for Soil Vapor criteria.	2.95	2.95	1	1

[1] Johnson, (2002), *Identification of Critical Parameters for the Johnson and Ettinger (1991) Vapor Intrusion Model*, API Bulletin #17, May.

Table A4

Henry's Law Constants and Molecular Weights

Compound	CAS Number	Henry's Law Constant (unitless)	Molecular Weight (g/mole)
Acetone	67641	1.75E-03	58
Acrylonitrile	107131		
Benzene	71432	2.26E-01	78
Bromoform	75252	2.18E-02	253
2-Butanone (MEK)	78933	1.12E-03	72
Carbon tetrachloride	56235	1.20E+00	154
Chlorobenzene	108907	1.61E-01	113
Chloroform	67663	1.39E-01	119
Dibromochloromethane	124481		
1,2-Dichlorobenzene	95501	7.95E-02	147
1,3-Dichlorobenzene	541731	1.08E-01	147
1,4-Dichlorobenzene	106467	1.12E-01	147
1,1-Dichloroethane	75343	2.23E-01	99
1,2-Dichloroethane	107062	4.51E-02	99
1,1-Dichloroethylene	75354	6.11E-01	97
cis-1,2-Dichlroethylene	156592	See listing below	See listing below
trans-1,2-Dichloroethylene	156605	See listing below	See listing below
1,2-Dichloropropane	78875	1.16E-01	113
1,3-Dichloropropene	542756	1.44E-01	111
Ethyl benzene	100414	1.41E-01	106
Ethylene dibromide (EDB)	106934	2.76E-02	188
Methyl-tert-butyl-ether	1634044	2.42E-02	88
Methyl isobutyl ketone	108101	5.66E-03	100
Methylene chloride	75092	1.31E-01	85
Styrene	100425	1.07E-01	104

Table A4
(Continued)

Henry's Law Constants and Molecular Weights

Compound	CAS Number	Henry's Law Constant (unitless)	Molecular Weight (g/mole)
1,1,1,2-Tetrachloroethane	630206	4.51E-01	168
1,1,2,2-Tetrachloroethane	79345	1.56E-02	168
Tetrachloroethylene	127184	8.36E-02	166
Toluene	108883	2.74E-01	92
1,1,1 Trichloroethane	71556	9.47E-01	133
1,1,2-Trichloroethane	79005	3.73E-02	133
Trichloroethylene	79016	3.74E-01	131
Vinyl chloride	75014	1.14E+00	63
Xylenes	1330207	2.16E-01	106
New Criteria			
Trichlorofluoromethane	75694	4.00E+00	137
Chloroethane	75003	4.50E-01	65
Chloromethane	74873	3.60E-01	51
Dichlorodiflouromethane	75718	1.40E+01	121
Isopropylbenzene (Cumene)	98828	4.70E-01	120
Cis-1,2-dichloroethene	156592	1.70E-01	97
trans-1,2-dichloroethene	156605	3.80E-01	97
Bromodichloromethane	75274	8.70E-02	164
N-butylbenzene	104518	5.24E-01	134
Sec-butylbenzene	135988	5.68E-01	134
1,2,4-trimethylbenzene	95636	2.30E-01	120
1,3,5-trimethylbenzene	108678	3.20E-01	120
4-isopropyltoluene (4-cymene)	99876	4.51E-01	134

Appendix B

Derivation of Target Indoor Air Concentrations

APPENDIX B

DERIVATION OF TARGET INDOOR AIR CONCENTRATIONS

This Appendix presents the derivation of target indoor air concentrations (TACs) for the volatile organic compounds (VOCs) listed in the existing Remediation Standard Regulations (RSR) volatilization criteria, together with TACs for 13 additional VOCs not previously listed. These additional VOCs though not originally listed, have appeared in groundwater and/or soil gas at sites in Connecticut. This Appendix includes two tables that list the TACs and the underlying toxicity values, modifying factors and background considerations. The following is a brief overview of the risk-based derivation methodology followed by the specific approaches used for the residential and industrial/commercial scenarios.

General TAC Methodology

TACs are air concentrations within homes or workplaces that are not expected to cause adverse health effects from chronic exposure. TACs rely upon chemical-specific toxicity values that describe the VOC's potency in terms of: 1) the reference concentration (RfC) - air concentration which will be free of risk for non-cancer health effects from chronic exposure; or 2) the unit risk factor – potency of VOC to produce carcinogenic effects per microgram per cubic meter (ug/m^3) of air chronically inhaled. These toxicity values are typically derived by USEPA from studies in which laboratory animals were exposed for chronic periods, with the toxic response based upon continuous exposure (24 hours per day (hr/d), every day of the year). Therefore, these targets need modification for exposure scenarios in which less than continuous exposure is likely (e.g., the industrial/commerical scenario). The TACs are set such that the lifetime cancer risk is at the de minimis risk level (one in a million or 1E-06) and the hazard index (TAC/RfC_m where RfC_m is the RfC modified for the time-weight averaged amount of exposure in the specific scenario) for non-carcinogens is equal to unity.

While USEPA's Integrated Risk Information System (IRIS) database is the primary source of toxicology information for TAC development, other toxicology databases are also recognized as having well documented and widely used toxicity values. These include the Agency for Toxic Substances and Disease Registry (ATSDR)'s chronic Minimum Risk Levels (MRLs), California EPA's chronic Reference Exposure Levels (RELs) and USEPA's Health Effects Assessment Summary Tables (HEAST). In cases where a toxicity value was not available on IRIS, the value was sought from these other data sources. If still no value could be found, CTDPH conducted its own chemical-specific risk assessment. In certain cases, USEPA has listed provisional toxicity values that rely upon the best available science currently available, but these values may be somewhat more uncertain and are not supported by USEPA to the same extent as those values on IRIS. CTDPH has examined the basis for these particular values closely and, in isolated cases, has made adjustments.

A number of VOCs in the TAC list are possible rather than proven animal carcinogens, or, if proven, their cancer mechanism has uncertain relevance to low dose exposures in humans. These types of carcinogens were labeled as Group C carcinogens in USEPA's former cancer guidelines and are considered as Class 3 agents by IARC. Their carcinogenicity database is either too uncertain or incomplete to allow an extrapolation of risk to low dose human exposures. Rather than applying the classical low dose linear approach on the one hand, or ignoring their carcinogenic potential on the other, this derivation lowers the RfC by an uncertainty factor to account for this potential hazard. This approach is consistent with that developed by USEPA's Office of Drinking Water to establish Maximum Contaminant Levels

(MCLs). The default cancer uncertainty factor is 10 fold, although 3.33 fold (one half log lower) was used in cases where the uncertainty already built into the RfC was large (1000 fold or greater); this reduction in the cancer uncertainty factor was used to keep the overall uncertainty factor to less than 10,000.

In several cases toxicity values were available for the oral but not inhalation dose route. A dose route extrapolation to convert from the reference dose (in mg/kg/d) to RfC (ug/m^3) was used as long as the target site was not local to the site of bodily entry, but rather was at a systemic location (i.e., internal organs or systems).

The following are the general equations for the derivation of TACs. These equations and most of the parameter value inputs have not changed since the setting of the 1996 RSRs

For carcinogenic effects:

$$TAC = \frac{TR \times BW \times AT_c \times 365\ d/yr \times 10^3 \mu g/mg}{Sf_i \times IR_{air} \times EF \times ED}$$

For non-carcinogenic effects:

$$TAC = \frac{THQ \times BW \times RfD_i \times AT_n \times 365\ d/yr \times 10^3 \mu g/mg}{IR_{air} \times EF \times ED}$$

where:

AT_c = averaging time for carcinogens, years
Use AT_c = 70 years

AT_n = averaging time for non-carcinogens, years
For residential use AT_n = 30 years
For commercial/industrial use AT_n = 25 years

BW = adult body weight, kg
Use BW = 70 kg

ED = exposure duration, years
For residential use ED = 30 years
For commercial/industrial use ED = 25 years

EF = exposure frequency, days/years
For residential use EF = 350 days/year
For commercial/industrial use EF = 250 days/year

IR_{air} = daily indoor inhalation rate, m^3/day
For residential use IR_{air} = 20 m^3/day
For commercial/industrial use IR_{air} = 10 m^3/day

TAC = target indoor air concentration, µg/m^3-air

RfD_i = inhalation chronic reference dose, mg/kg-day
Use numbers from IRIS and/or HEAST and/or other sources.

SF_i = inhalation cancer slope factor, kg-day/mg
Use numbers from IRIS and/or HEAST and/or other sources.

THQ = target hazard quotient for individual constituents, dimensionless
Use THQ = 1

TR = target excess individual lifetime cancer risk, dimensionless
Use TR = 1×10^{-6}

Modifications to the Residential Scenario

The exposure assumptions shown in the equations above pertain to adults (70 kg body weight, 20 m^3/d inhalation rate). However, young children inhale more air per body weight and respiratory surface area than do adults (Child-Specific Exposure Factors Handbook, USEPA, 2000; Thurlbeck, 1982). This is an especially important consideration with regards to VOCs that can cause respiratory irritation and thus have the potential to exacerbate asthma due to the local dose in the lung. However, it also applies to systemic toxicants. The child/adult dose differential from inhalation exposure is approximately 2 fold over the first six years of life (e.g., at 1 year of age: 4.5 m^3/d inhalation rate for 7.4 kg body weight for an inhalation rate/body weight ratio that is 2.1 fold larger than the adult assumption). Thus, the systemic and local respiratory tract dose to young children can be assumed to be approximately 2 fold larger than in adults for a significant portion of childhood. Since young children may be more generally sensitive to toxicants (many systems are immature and rapidly developing - Faustman, 2000), the potential importance of this exposure differential is accentuated. Thus, to be protective of children as potentially the most highly exposed and sensitive group, the residential TACs are adjusted by a 2 fold factor that corresponds with the greater inhalation exposure rate in children.

Children's increased vulnerability to toxicants has perhaps been best characterized in the area of carcinogenic risk. Standard cancer bioassays from which most unit risk values are derived, begin chemical administration when rodents are 4-6 weeks of age. At this age the animals are sexually mature and growth is not as rapid as in juvenile animals. Thus, this type of cancer study misses a potentially important vulnerability window. In fact, numerous cancer studies in which rodents were dosed beginning in early life demonstrate considerably greater potency in the neonatal period than at older ages (Vesselinovitch, et al., 1979; Toth, 1968; Maltoni, et al., 1981).

The reason for this greater susceptibility likely stems from the greater time period for expression of cancer when testing begins earlier in life, and because rapidly dividing tissues are more sensitive to genotoxicants (Laib, et al., 1985, Anderson, 2000). These issues have recently been summarized in a publication by CTDPH (Ginsberg, 2003) and by USEPA in their draft revisions to the cancer risk assessment guidelines (USEPA, 2003). The case of vinyl chloride sensitivity in early life stages has been evaluated closely by USEPA to support their recent revision to the vinyl chloride IRIS file (USEPA, 2000). That assessment showed that brief exposures in early life produced a cancer response later in life that was roughly equivalent to what would be seen from an adult-only (lifetime) exposure. On that basis, the IRIS file recommends that the unit risk factor for vinyl chloride derived for adults be doubled if there will be long-term exposure that will include children. Analysis of other juvenile animal bioassays indicates that this also appears to be true for a wide variety of chemicals, particularly those with a genotoxic mode of action (Ginsberg, 2003; USEPA, 2003). For this reason, the revised TACs for genotoxic carcinogens have an adjustment factor (2 fold lowering of TAC) to account for the greater sensitivity of early life stages (Ginsberg, 2003; USEPA, 2003).

In summary, the residential scenario includes a 2 fold adjustment factor for children's increased inhalation exposure rate relative to adults, and a 2 fold adjustment factor for children's increased sensitivity when exposed to genotoxic carcinogens. In this latter case, the combined children's adjustment factor is 4 fold. This approach is consistent with USEPA's IRIS file for vinyl chloride and draft Cancer Risk Assessment Guidelines. The Table B1 shows the use of these factors in deriving TACs.

Industrial/Commercial TAC Calculations

The industrial/commercial scenario is simpler than the residential scenario in that it only involves adults. The exposure parameters shown above for this scenario indicate that relative to the assumptions that go into RfCs and cancer unit risk values, workers will be exposed to less inhaled contaminant due to fewer hours/day of exposure (8 instead of 24 hr), fewer days per year of exposure (250 instead of 365), and fewer total years of exposure (25 instead of 70). The shorter hours per day of worker exposure is partially compensated for by the higher breathing rate workers may have compared to the general public. This leads to the assumption that 50% of the day's inhalation volume occurs while at work. In setting TACs for the workplace it is appropriate to increase the RfC by a factor of 2 for inhalation rate ($20m^3/d$ vs. $10\ m^3/d$) and by a factor of 1.46 for exposure days per year (365 vs. 250). This yields a combined workplace adjustment factor for RfCs of 2.92 (i.e., the workplace TAC can be 2.92 fold higher than the RfC). For carcinogens, the cumulative number of years is also part of the exposure calculation and so the 70/25 yr factor (2.8) is multiplied by 2.92 to yield a combined 8.176 adjustment factor. This factor is multiplied by the air concentration associated with de minimis risk for the general public to yield the air concentration corresponding to de minimus risk for workers. These exposure factors are in the Table B2 to show their use in deriving TACs for this scenario.

Ceiling TAC

The Tables B1 and B2 list a number of VOCs whose risk-based TAC is relatively high, a value that would allow gross contamination of indoor air. In these cases a ceiling value of 500 ug/m^3 is used. The ceiling value is based upon datasets showing that individual VOC concentrations in buildings tend to average less than 500 ug/m^3 across a broad array of building types and indoor air contaminants (Brown, et al., Indoor Air 4: 123-134, 1994). The 98th percentile value for these indoor air contaminants was highly variable but most values were between 50 and 1000 ug/m^3, indicating that a level of 500 ug/m^3 represents an upper bound concentration that stems from an unusual contamination source. Such high concentrations may contribute to decreases in air quality that are noticeable to building inhabitants (Otto, et al., 1990). Therefore, this ceiling value is a prudent default value that can be replaced when more specific information becomes available (e.g., odor threshold data), as indicated for several VOCs in this derivation.

Indoor Air Background Concentrations

Since 1996, there has been an increased focus around the United States on measuring indoor air quality in impacted and non-impacted (or "background") homes, offices, schools and other environments. This had led to an enhanced database for background indoor air data (Foster, et al., 2002; Kurtz and Folkes, 2002; NYSDOH, 1997; Clayton, et al., 1999; Shields, et al., 1996; Girman, et al. report of USEPA/BASE Study, 1999). These datasets, along with the pre-existing indoor air datasets (Stolwick, 1990; Vermont DOH, 1992; Brown, et al., 1994; Daisey, et al., 1994; Sheldon, et al., 1992; Shah and Singh, 1988) have been reviewed while giving particular attention to those VOCs (typically carcinogens) with risk-based TACs that are in the range where they may approach or are below what can be considered background. VOC indoor air measurements are typically lognormally distributed; therefore, the central tendency background concentration (the median) was chosen to represent background. While higher concentrations may be found in certain background locations, the central tendency was used because of the way it would be applied: 1) to replace a risk-based TAC such that the background concentration would already be above a risk target; and 2) to back-calculate the allowable contribution from subsurface VOC contamination, such that the amount that is from

background sources plus the amount allowed from subsurface sources would still be within the range of the background data distribution.

VOC background concentrations and how they are used in the derivation of TACs are shown chemical-by-chemical in Tables B1 and B2.

Table B1

Target Air Concentrations (TACs) for Residential Scenario (Page 1)

VOC	Toxicity Value[1]	Modifying Factors[2]	Risk-Based TAC[4]	Background	TAC
Acetone	IRIS RfD (0.1mg-kg-d) converted to RfC (350 ug/m^3)	2x CexpF	183 ug/m^3	---[7]	180 ug/m^3
Benzene	IRIS unit risk (8.3E-6/ug/m^3)	2x CexpF; 2x CsensF	0.07 ug/m^3	3.25 ug/m^3	3.3 ug/m^3
Bromoform	IRIS unit risk (1.1E-6/ug/m^3)	2x CexpF; 2x CsensF	2.2 ug/m^3	Not available	0.55 ug/m^3
2-Butanone (MEK)	IRIS RfC (1000 ug/m^3)	2x CexpF	520 ug/m^3	---[7]	500 ug/m^3 – C[3]
Carbon Tetrachloride	IRIS unit risk (1.5E-5/ug/m^3)	2x CexpF; 2x CsensF	0.04 ug/m^3	0.5 ug/m^3	0.5 ug/m^3
Chlorobenzene	IRIS RfD (0.02 mg-kg-d) converted to RfC (70 ug/m^3)	2x CexpF	37 ug/m^3	---[7]	37 ug/m^3
Chloroform	IRIS unit risk (2.3E-5/ug/m^3)	2x CexpF	0.05 ug/m^3	0.5 ug/m^3	0.5 ug/m^3
1,2-Dichlorobenzene	HEAST RfC (140 ug/m3)	2x CexpF	73 ug/m^3	---[7]	73 ug/m^3
1,3-Dichlorobenzene	Analogy with 1,2-DCB	2x CexpF	73 ug/m^3	---[7]	73 ug/m^3
1,4-Dichlorobenzene	EPA Provisional unit risk (6.3E-06/ug/m^3)	None – since provisional unit risk	0.39 ug/m^3	24 ug/m^3	24 ug/m^3
1,1-Dichloroethane	HEAST ("A") RfC (490ug/m^3)	3.33x Cancer UF; 2x CexpF	77 ug/m^3	---[7]	77 ug/m^3
1,2-Dichloroethane	IRIS unit risk (2.6E-5/ug/m^3)	2x CexpF; 2x CsensF	0.023 ug/m^3	0.07 ug/m^3	0.07 ug/m^3
1,1-Dichloroethylene	CalEPA REL (70 ug/m^3); ATSDR MRL (80 ug/m^3)	10x Cancer UF	7 ug/m^3	<5 ug/m^3	10 ug/m^3
1,2-Dichloropropane	EPA provisional oral slope → unit risk (1.9E-05/ug/m^3)	None – since provisional unit risk	0.13 ug/m^3	Not available	0.13 ug/m^3
1,3-Dichloropropene	IRIS unit risk (2.9E-6/ug/m^3)	2x CexpF; 2x CsensF	0.21 ug/m^3	Not available	0.21 ug/m^3
Ethylbenzene	IRIS RfC (1000 ug/m^3)	10x Cancer UF; 2x CexpF	53 ug/m^3	<10 ug/m^3	53 ug/m^3
Ethylene dibromide	IRIS unit risk (2.2E-04)	2x CexpF; 2x CsensF	0.003 ug/m^3	Not available	0.0028 ug/m^3

Table B1

Target Air Concentrations (TACs) for Residential Scenario (Page 2)

VOC	Toxicity Value[1]	Modifying Factors[2]	Risk-Based TAC[4]	Background	TAC
Methyl-t-butyl ether	IRIS RfC (3000 ug/m^3)	10x Cancer UF; 2x CexpF	160 ug/m^3	---[7]	160 ug/m^3
Methyl isobutyl ketone	HEAST(A") RfC (70 ug/m^3)	2x CexpF	37 ug/m^3	---[7]	37 ug/m^3
Methylene chloride	IRIS unit risk (4.7E-07/ug/m^3)	2x CexpF	2.6 ug/m^3	3 ug/m^3	3 ug/m^3
Styrene	IRIS RfC (1000 ug/m^3)	10x Cancer UF; 2x CexpF	52 ug/m^3	---[7]	52 ug/m^3
1,1,1,2-Tetrachloroethane	IRIS unit risk (7.43E-06/ug/m^3)	2x CexpF; 2x CsensF	0.082 ug/m^3	Not available	0.082 ug/m^3
1,1,2,2-Tetrachloroethane	IRIS unit risk (5.7E-05/ug-m3)	2x CexpF; 2x CsensF	0.01 ug/m^3	Not available	0.01 ug/m^3
Tetrachloroethylene (PERC)	CalEPA unit risk (5.9E-06/ug/m^3)	2x CexpF	0.21 ug/m^3	5 ug/m^3	5 ug/m^3
Toluene	IRIS RfC (400 ug/m^3)	2x CexpF	208 ug/m^3	---[7]	210 ug/m^3
1,1,1-Trichloroethane	CalEPA REL (1000 ug/m^3)	2x CexpF	520 ug/m^3	---[7]	500 ug/m^3 - C[3]
1,1,2-Trichloroethane	IRIS RfD converted to RfC (14 ug/m^3)	3.33x Cancer UF; 2x CexpF	2.2 ug/m^3	0.03 ug/m^3	2.2 ug/m^3
Trichloroethylene	IRIS provisional unit risk (1.1E-04/ug/m^3)	2x CexpF; 2x CsensF	0.006 ug/m^3	1 ug/m^3	1 ug/m^3
Vinyl chloride	IRIS unit risk for early life + adult exposure (8.6E-06/ug/m^3)	2x CexpF	0.14 ug/m^3	0.01 ug/m^3	0.14 ug/m^3
Xylenes	ATSDR MRL (430 ug/m^3)	2x CexpF	220 ug/m^3	---[7]	220 ug/m^3
Trichlorofluoromethane	HEAST ("A")RfC (700 ug/m^3)	2x CexpF	365 ug/m^3	---[7]	370 ug/m^3

Table B1

Target Air Concentrations (TACs) for Residential Scenario (Page 3)

VOC	Toxicity Value[1]	Modifying Factors[2]	Risk-Based TAC[4]	Background	TAC
Chloroethane	IRIS RfC (10,000 ug/m^3)	10x Cancer UF; 2x CexpF	520 ug/m^3	---[7]	500 ug/m^3 - C[3]
Chloromethane	IRIS RfC (90 ug/m^3)	3.33x Cancer UF; 2x CexpF	14 ug/m^3	Not available	14 ug/m^3
Dichlorodifluoromethane	HEAST ("A")RfC (175 ug/m^3)	2x CexpF	91 ug/m^3	---[7]	91 ug/m^3
Isopropylbenzene (cumene)	IRIS RfC (385 ug/m^3)	2x CexpF	200 ug/m^3	---[7]	120 ug/m^3 (odor threshold)
cis-1,2-Dichloroethene	HEAST RfD → RfC (35 ug/m^3)	2x CexpF	18 ug/m^3	Not available	18 ug/m^3
trans-1,2-Dichloroethane	IRIS RfD → RfC (70 ug/m^3)	2x CexpF	37 ug/m^3	---[7]	37 ug/m^3
Bromodichloromethane	IRIS oral slope factor → unit risk (1.8E-05/ug/m^3)	2x CexpF; 2x CsensF	0.034 ug/m^3	Not available	0.034 ug/m^3
n-Butylbenzene	EPA provisional RfD → RfC (140 ug/m^3)	2x CexpF	73 ug/m^3	---[7]	73 ug/m^3
sec-Butylbenzene	EPA provisional RfD → RfC (140 ug/m^3)	2x CexpF	73 ug/m^3	---[7]	73 ug/m^3
1,2,4-Trimethylbenzene	EPA Provisional RfC (6 ug/m^3)	RfC ↑ed 3x[5] 2x CexpF	9 ug/m^3	Not available	9.3 ug/m^3
1,3,5Trimethylbenzene	EPA Provisional RfC (6 ug/m^3)	RfC ↑ed 3x[5] 2x CexpF	9 ug/m^3	Not available	9.3 ug/m^3
4-Isopropyltoluene	DPH risk assessment[6] yields RfC of 133 ug/m^3	2x CexpF	67 ug/m^3	---[7]	67 ug/m^3

Footnotes for Residential TAC Table B1

[1] Tox Value Notes: Values from IRIS, HEAST, CalEPA chronic RELs or ATSDR chronic MRLs; EPA provisional values have been derived by the agency but not fully documented or supported; HEAST "A" refers to values from Alternative Table within HEAST. Dose route extrapolation conducted when no inhalation tox value available and oral toxicity is to systemic sites.

[2] Modifying Factors: CexpF = children's exposure factor for increased respiratory rate per body wt and respiratory surface area;
CsensF = children's sensitivity factor for genotoxic carcinogens
Cancer UF = uncertainty factor for evidence of carcinogenicity but extrapolation to low dose uncertain.

[3] "C" designation indicates ceiling value of 500 ug/m^3.

[4] TACs based upon de minimis (1 in a million) cancer risk or a hazard index of 1 for non-cancer effects.

[5] EPA provisional RfC for 1,2,4- and 1,3,5-TMB have unnecesarily large uncertainty factors which drive very low RfC.

[6] 4-Isopropyltoluene risk assessment based upon analogy with isopropylbenzene with evidence neurotoxicity as key endpoint (4-IPT 3x > potency than IPB).

[7] Background concentration not sought since risk-based TAC is relatively high and unlikely to be in range of background.

Table B2

Target Air Concentrations (TACs) for Industrial/Commercial Scenario (Page 1)

VOC	Toxicity Value[1]	Modifying Factors[2]	Risk-Based TAC[4]	Background	TAC
Acetone	IRIS RfD (0.1mg-kg-d) converted to RfC (350 ug/m^3)	2.92 less worker exp.	1022 ug/m^3	---[7]	500 ug/m^3 – C[3]
Benzene	IRIS unit risk (8.3E-6/ug/m^3)	8.176 less worker exp.	0.99 ug/m^3	3.25 ug/m^3	3.3 ug/m^3
Bromoform	IRIS unit risk (1.1E-6/ug/m^3)	8.176 less worker exp.	7.34 ug/m^3	Not available	7.3 ug/m^3
2-Butanone (MEK)	IRIS RfC (1000 ug/m^3)	2.92 less worker exp.	2900 ug/m^3	---[7]	500 ug/m^3 – C[3]
Carbon Tetrachloride	IRIS unit risk (1.5E-5/ug/m^3)	8.176 less worker exp.	0.54 ug/m^3	0.5 ug/m^3	0.54 ug/m^3
Chlorobenzene	IRIS RfD (0.02 mg-kg-d) converted to RfC (70 ug/m^3)	2.92 less worker exp.	200 ug/m^3	---[7]	200 ug/m^3
Chloroform	IRIS unit risk (2.3E-5/ug/m^3)	8.176 less worker exp.	0.36 ug/m^3	0.5 ug/m^3	0.5 ug/m^3
1,2-Dichlorobenzene	HEAST RfC (140 ug/m^3)	2.92 less worker exp.	410 ug/m^3	---[7]	410 ug/m^3
1,3-Dichlorobenzene	Analogy with 1,2-DCB	2.92 less worker exp.	410 ug/m^3	---[7]	410 ug/m^3
1,4-Dichlorobenzene	EPA Provisional unit risk (6.3E-06/ug/m^3)	8.176 less worker exp.	1.3 ug/m^3	24 ug/m^3	24 ug/m^3
1,1-Dichloroethane	HEAST ("A") RfC (490 ug/m^3)	3.33x Cancer UF; 2.92 less worker exp.	430 ug/m^3	---[7]	430 ug/m^3
1,2-Dichloroethane	IRIS unit risk (2.6E-5/ug/m^3)	8.176 less worker exp.	0.31 ug/m^3	0.07 ug/m^3	0.31 ug/m^3
1,1-Dichloroethylene	CalEPA REL (70 ug/m^3); ATSDR MRL (80 ug/m^3)	10x Cancer UF	20 ug/m^3	<5 ug/m^3	20 ug/m^3
1,2-Dichloropropane	EPA provisional oral slope → unit risk (1.9E-05/ug/m^3)	8.176 less worker exp.	0.42 ug/m^3	Not available	0.42 ug/m^3
1,3-Dichloropropene	IRIS unit risk (2.9E-6/ug/m^3)	8.176 less worker exp.	2.9 ug/m^3	Not available	2.9 ug/m^3
Ethylbenzene	IRIS RfC (1000 ug/m^3)	10x Cancer UF; 2.92 less worker exp.	290 ug/m^3	<10 ug/m^3	290 ug/m^3
Ethylene dibromide	IRIS unit risk (2.2E-04)	8.176 less worker exp.	0.038 ug/m^3	Not available	0.038 ug/m^3

Table B2

Target Air Concentrations (TACs) for Industrial/Commercial Scenario (Page 2)

VOC	Toxicity Value[1]	Modifying Factors[2]	Risk-Based TAC[4]	Background	TAC
Methyl-t-butyl ether	IRIS RfC (3000 ug/m^3)	10x Cancer UF; 2.92 less worker exp.	876 ug/m^3	---[7]	190 ug/m^3 (odor threshold)
Methyl isobutyl ketone	HEAST(A") RfC (70 ug/m^3)	2.92 less worker exp.	200 ug/m^3	---[7]	200 ug/m^3
Methylene chloride	IRIS unit risk (4.7E-07/ug/m^3)	8.176 less worker exp.	17 ug/m^3	3 ug/m^3	17 ug/m^3
Styrene	IRIS RfC (1000 ug/m^3)	10x Cancer UF; 2.92 less worker exp.	290 ug/m^3	---[7]	290 ug/m^3
1,1,1,2-Tetrachloroethane	IRIS unit risk (7.43E-06/ug-3)	8.176 less worker exp.	1.1 ug/m^3	Not available	1.1 ug/m^3
1,1,2,2-Tetrachloroethane	IRIS unit risk (5.7E-05/ug-m3)	8.176 less worker exp.	0.14 ug/m^3	Not available	0.14 ug/m^3
Tetrachloroethylene (PERC)	CalEPA unit risk (5.9E-06/ug/m^3)	8.176 less worker exp.	1.4 ug/m^3	5 ug/m^3	5 ug/m^3
Toluene	IRIS RfC (400 ug/m^3)	2.92 less worker exp.	1165 ug/m^3	---[7]	500 ug/m^3 - C[3]
1,1,1-Trichloroethane	CalEPA REL (1000 ug/m^3)	2.92 less worker exp.	2900 ug/m^3	---[7]	500 ug/m^3 - C[3]
1,1,2-Trichloroethane	IRIS RfD converted to RfC (14 ug/m^3)	3.33x Cancer UF; 2.92 less worker exp.	12.3 ug/m^3	0.03 ug/m^3	12 ug/m^3
Trichloroethylene	IRIS provisional unit risk (1.1E-04/ug/m^3)	8.176 less worker exp.	0.074 ug/m^3	1 ug/m^3	1 ug/m^3
Vinyl chloride	IRIS unit risk for adult exposure (4.3E-6/ug/m^3)	8.176 less worker exp.	1.9 ug/m^3	0.01 ug/m^3	1.9 ug/m^3
Xylenes	ATSDR MRL (430 ug/m^3)	2.92 less worker exp.	1256 ug/m^3	---[7]	500 ug/m^3 - C[3]
Trichlorofluoromethane	HEAST ("A")RfC (700 ug/m^3)	2.92 less worker exp.	2044 ug/m^3	---[7]	500 ug/m^3– C[3]

Table B2

Target Air Concentrations (TACs) for Industrial/Commercial Scenario (Page 3)

VOC	Toxicity Value[1]	Modifying Factors[2]	Risk-Based TAC[4]	Background	TAC
Chloroethane	IRIS RfC (10,000 ug/m^3)	10x Cancer UF; 2.92 less worker exp.	2920 ug/m^3	---[7]	500 ug/m^3 - C[3]
Chloromethane	IRIS RfC (90 ug/m^3)	3.33x Cancer UF; 2.92 less worker exp.	80 ug/m^3	Not available	80 ug/m^3
Dichlorodifluoromethane	HEAST ("A")RfC (175 ug/m^3)	2.92 less worker exp.	511 ug/m^3	---[7]	500 ug/m^3 - C[3]
Isopropylbenzene (cumene)	IRIS RfC (385 ug/m^3)	2.92 less worker exp.	1168 ug/m^3	---[7]	120 ug/m^3 (odor threshold)
cis-1,2-Dichloroethene	HEAST RfD → RfC (35 ug/m^3)	2.92 less worker exp.	102 ug/m^3	Not available	100 ug/m^3
trans-1,2-Dichloroethane	IRIS RfD → RfC (70 ug/m^3)	2.92 less worker exp.	204 ug/m3	---[7]	200 ug/m^3
Bromodichloromethane	IRIS oral slope factor → unit risk (1.8E-05/ug/m^3)	8.176 fold less exp.	0.46 ug/m^3	Not available	0.46 ug/m^3
n-Butylbenzene	EPA provisional RfD → RfC (140 ug/m^3)	2.92 less worker exp.	410 ug/m^3	---[7]	410 ug/m^3
sec-Butylbenzene	EPA provisional RfD → RfC (140 ug/m^3)	2.92 less worker exp.	410 ug/m^3	---[7]	410 ug/m^3
1,2,4-Trimethylbenzene	EPA Provisional RfC (6 ug/m^3)	RfC ↑ed 3x[5] 2.92 less worker exp.	52 ug/m^3	Not available	52 ug/m^3
1,3,5-Trimethylbenzene	EPA Provisional RfC (6 ug/m^3)	RfC ↑ed 3x[5] 2.92 less worker exp.	52 ug/m^3	Not available	52 ug/m^3
4-Isopropyltoluene	DPH risk assessment[6] yields RfC of 133 ug/m^3	2.92 less worker exp.	370 ug/m^3	---[7]	370 ug/m^3

Footnotes for Industrial/Commercial TAC Table

[1] Tox Value Notes: Values from IRIS, HEAST, CalEPA chronic RELs or ATSDR chronic MRLs; EPA provisional values have been derived by the agency but not fully documented or supported; HEAST "A" refers to values from Alternative Table within HEAST. Dose route extrapolation conducted when no inhalation tox value available and oral toxicity is to systemic sites.

[2] Modifying Factors: Worker exposure assumptions for non-cancer effects: 250d/year and $10m^3$ inhaled per day leads to 2.92 fold less cumulative exposure than assumed for RfC – general public. For carcinogenic effects, this factor is increased 2.8 fold because workers exposed 25 yr instead of 70 yr leading to an overall 8.176 fold lower cumulative exposure than general public.

[3] "C" designation indicates ceiling value of 500 ug/m^3.

[4] TACs based upon de minimis (1 in a million) cancer risk or a hazard index of 1 for non-cancer effects.

[5] EPA provisional RfCs for 1,2,4- and 1,3,5-TMB have unnecessarily large uncertainty factors which drive very low RfC.

[6] 4-Isopropyltoluene risk assessment based upon analogy with isopropylbenzene with neurotoxicity as key endpoint (4-IPT 3x > potency than IPB).

[7] Background concentration not sought since risk-based TAC is relatively high and unlikely to be in range of background.

Appendix C

Comparison to
1996 Volatilization Criteria

Table C1

Comparison of Target Indoor Air Concentrations

Compound	CAS Number	Residential TAC (ug/m^3)	1995 Residential TAC (ug/m^3)	Ind/Com TAC (ug/m^3)	1995 Ind/Com TAC (ug/m^3)
Acetone	67641	▼180	834	▼500[1]	1170
Acrylonitrile	107131	NA	NA	NA	NA
Benzene	71432	►3.3[2]	3.25[2]	▼3.3[2]	21.5[2]
Bromoform	75252	▼0.55	2.21	▲7.3	3.72
2-Butanone (MEK)	78933	▼500[1]	1040	▼500[1]	1460
Carbon tetrachloride	56235	▼0.5[2]	1[2]	▼0.54	1[2]
Chlorobenzene	108907	▲37	20.9	▲200	29.2
Chloroform	67663	▼0.5[2]	3[2]	▼0.5[2]	3[2]
Dibromochloromethane	124481	NA	NA	NA	NA
1,2-Dichlorobenzene	95501	▼73	209	▲410	292
1,3-Dichlorobenzene	541731	▼73	209	▲410	292
1,4-Dichlorobenzene	106467	▼24[2]	834	▼24[2]	1170
1,1-Dichloroethane	75343	▼77	521	▼430	730
1,2-Dichloroethane	107062	▼0.07	0.0936	▲0.31	0.157
1,1-Dichloroethylene	75354	▲10	0.0487	▲20	0.0818
cis-1,2-Dichlroethylene	156592	See New Criteria below	NA	See New Criteria below	NA
trans-1,2-Dichloroethylene	156605	See New Criteria below	NA	See New Criteria below	NA
1,2-Dichloropropane	78875	►0.13	0.128	▲0.42	0.215
1,3-Dichloropropene	542756	▲0.21	0.0658	▲2.9	0.11
Ethyl benzene	100414	▼53	1040	▼290	1460
Ethylene dibromide (EDB)	106934	▼0.0028	0.0111	▲0.038	0.0186
Methyl-tert-butyl-ether	1634044	▼160	521	▼190[3]	730
Methyl isobutyl ketone	108101	▼37	83.4	▲200	117
Methylene chloride	75092	▼3[2]	45[2]	▼17	45[2]
Styrene	100425	▲52	5[2]	▲290	7.17

Table C1
(Continued)

Comparison of Target Indoor Air Concentrations

Compound	CAS Number	Residential TAC (ug/m^3)	1996 Residential TAC (ug/m^3)	Ind/Com TAC (ug/m^3)	1996 Ind/Com TAC (ug/m^3)
1,1,1,2-Tetrachloroethane	630206	▼0.082	0.329	▲1.1	0.552
1,1,2,2-Tetrachloroethane	79345	▼0.011	0.042	▲0.14	0.0705
Tetrachloroethylene	127184	▼5[2]	11[2]	▼5[2]	11[2]
Toluene	108883	▼210	417	▼500[1]	584
1,1,1 Trichloroethane	71556	▼500	1040	▼500[1]	1460
1,1,2-Trichloroethane	79005	▼2.2	30[2]	▼12	30[2]
Trichloroethylene	79016	▼1[2]	5[2]	▼1[2]	5[2]
Vinyl chloride	75014	▲0.14	0.029	▲1.9	0.0487
Xylenes	1330207	▼220	313	▲500[1]	438
New Criteria					
Trichlorofluoromethane	75694	370	NA	500[1]	NA
Chloroethane	75003	500[1]	NA	500[1]	NA
Chloromethane	74873	14	NA	80	NA
Dichlorodiflouromethane	75718	91	NA	500[1]	NA
Isopropylbenzene (Cumene)	98828	120[3]	NA	120[3]	NA
cis-1,2-dichloroethene	156592	18	NA	100	NA
trans-1,2-dichloroethene	156605	37	NA	200	NA
Bromodichloromethane	75274	0.034	NA	0.46	NA
N-butylbenzene	104518	73	NA	410	NA
Sec-butylbenzene	135988	73	NA	410	NA
1,2,4-trimethylbenzene	95636	9.3	NA	52	NA
1,3,5-trimethylbenzene	108678	9.3	NA	52	NA
4-isopropyltoluene (4-cymene)	99876	67	NA	370	NA

[1] Based on a ceiling value. [2] Based on a background concentration. [3] Based on an odor threshold concentration. ▲TAC increased. ▼ TAC decreased. ► TAC stayed the same.

Table C2

Comparison of Ground Water Volatilization Criteria

Compound	CAS Number	Residential GWVC (ug/L)	1996 Residential GWVC (ug/L)	Ind/Com GWVC (ug/L)	1996 Ind/Com GWVC (ug/L)
Acetone	67641	▶50000	50000	▶50000	50000
Acrylonitrile	107131	NA	NA	NA	NA
Benzene	71432	▼130	215	▼310	3491
Bromoform	75252	▼75	920	▼2300	3800
2-Butanone (MEK)	78933	▶50000	50000	▶50000	50000
Carbon tetrachloride	56235	▼5.3	16	▼14	40
Chlorobenzene	108907	▶1800	1800	▲23000	6150
Chloroform	67663	▼26	287	▼62	710
Dibromochloromethane	124481	NA	NA	NA	NA
1,2-Dichlorobenzene	95501	▼5100	30500	▶50000	50000
1,3-Dichlorobenzene	541731	▼4300	24200	▶50000	50000
1,4-Dichlorobenzene	106467	▼1400	50000	▼3400	50000
1,1-Dichloroethane	75343	▼3000	34600	▼41000	50000
1,2-Dichloroethane	107062	▼6.5	21	▼68	90
1,1-Dichloroethylene	75354	▲190	1	▲920	6
cis-1,2-Dichloroethylene	156592	See New Criteria below	NA	See New Criteria below	NA
trans-1,2-Dichloroethylene	156605	See New Criteria below	NA	See New Criteria below	NA
1,2-Dichloropropane	78875	▼7.4	14	▶58	60
1,3-Dichloropropene	542756	▲11	6	▲360	25
Ethyl benzene	100414	▼2700	50000	▼36000	50000
Ethylene dibromide (EDB)	106934	▼0.3	4	▼11	16
Methyl-tert-butyl-ether	1634044	▼21000	50000	▶50000	50000
Methyl isobutyl ketone	108101	▼13000	50000	▶50000	50000
Methylene chloride	75092	▼160	4512	▼2200	11117
Styrene	100425	▲3100	580	▲42000	2065

Table C2
(Continued)

Comparison of Ground Water Volatilization Criteria

Compound	CAS Number	Residential GWVC (ug/L)	1996 Residential GWVC (ug/L)	Ind/Com GWVC (ug/L)	1996 Ind/Com GWVC (ug/L)
1,1,1,2-Tetrachloroethane	630206	▼2	12	▲64	50
1,1,2,2-Tetrachloroethane	79345	▼1.8	23	▼54	100
Tetrachloroethylene	127184	▼340	1500	▼810	3820
Toluene	108883	▼7100	23500	▼41000	50000
1,1,1-Trichloroethane	71556	▼6500	20400	▼16000	50000
1,1,2-Trichloroethane	79005	▼220	8000	▼2900	19600
Trichloroethylene	79016	▼27	219	▼67	540
Vinyl chloride	75014	►1.6	2	▲52	2
Xylenes	1330207	▼8700	21300	▼48000	50000
New Criteria					
Trichlorofluoromethane	75694	1300	NA	4200	NA
Chloroethane	75003	12000	NA	29000	NA
Chloromethane	74873	390	NA	5500	NA
Dichlorodiflouromethane	75718	93	NA	1200	NA
Isopropylbenzene (Cumene)	98828	2800	NA	6800	NA
Cis-1,2-dichloroethene	156592	830	NA	11000	NA
trans-1,2-dichloroethene	156605	1000	NA	13000	NA
Bromodichloromethane	75274	2.3	NA	73	NA
N-butylbenzene	104518	1500	NA	21000	NA
Sec-butylbenzene	135988	1500	NA	20000	NA
1,2,4-trimethylbenzene	95636	360	NA	4800	NA
1,3,5-trimethylbenzene	108678	280	NA	3900	NA
4-isopropyltoluene (4-cymene)	99876	1600	NA	22000	NA

▲GWVC increased. ▼ GWVC decreased. ► GWVC stayed the same.

Table C3

Comparison of Soil Vapor Volatilization Criteria

Compound	CAS Number	Residential SVVC (ppm)	1996 Residential SVVC (ppm)	Ind/Com SVVC (ppm)	1996 Ind/Com SVVC (ppm)
Acetone	67641	▼57	2400	▼290	8250
Acrylonitrile	107131	NA	NA	NA	NA
Benzene	71432	▼0.78	1	▼1.4	113
Bromoform	75252	▼0.04	1.5	▼0.98	6
2-Butanone (MEK)	78933	▼130	2400	▼230	8285
Carbon tetrachloride	56235	▼0.06	1	▼0.12	2.7
Chlorobenzene	108907	▼6.1	31	▼60	106
Chloroform	67663	▼0.078	4.5	▼0.14	10.4
Dibromochloromethane	124481	NA	NA	NA	NA
1,2-Dichlorobenzene	95501	▼9.2	240	▼95	818
1,3-Dichlorobenzene	541731	▼9.2	240	▼95	818
1,4-Dichlorobenzene	106467	▼3	950	▼5.5	3270
1,1-Dichloroethane	75343	▼14	850	▼150	3037
1,2-Dichloroethane	107062	▼0.013	1	▼0.11	1
1,1-Dichloroethylene	75354	▲1.9	1	▲7	1
cis-1,2-Dichlroethylene	156592	See New Criteria below	NA	See New Criteria below	NA
trans-1,2-Dichloroethylene	156605	See New Criteria below	NA	See New Criteria below	NA
1,2-Dichloropropane	78875	▼0.021	1	▼0.13	1
1,3-Dichloropropene	542756	▼0.035	1	▼0.89	1
Ethyl benzene	100414	▼9.3	1650	▼93	5672
Ethylene dibromide (EDB)	106934	▼0.0005	1	▼0.007	1
Methyl-tert-butyl-ether	1634044	▼34	1000	▼73	3415
Methyl isobutyl ketone	108101	▼6.8	140	▼68	480
Methylene chloride	75092	▼0.65	89	▼6.8	218
Styrene	100425	▲9.3	8	▲95	28

Table C3
(Continued)

Comparison of Soil Vapor Volatilization Criteria

Compound	CAS Number	Residential SVVC (ppm)	1996 Residential SVVC (ppm)	Ind/Com SVVC (ppm)	1996 Ind/Com SVVC (ppm)
1,1,1,2-Tetrachloroethane	630206	▼0.009	1	▼0.22	1.5
1,1,2,2-Tetrachloroethane	79345	▼0.0012	1	▼0.028	1
Tetrachloroethylene	127184	▼0.56	11	▼1	27
Toluene	108883	▼42	760	▼180	2615
1,1,1 Trichloroethane	71556	▼70	1310	▼130	4520
1,1,2-Trichloroethane	79005	▼0.31	40	▼3.1	93
Trichloroethylene	79016	▼0.14	7	▼0.26	16
Vinyl chloride	75014	▼0.041	1	►1	1
Xylenes	1330207	▼38	500	▼160	1702
New Criteria					
Trichlorofluoromethane	75694	50	NA	120	NA
Chloroethane	75003	140	NA	260	NA
Chloromethane	74873	5.1	NA	53	NA
Dichlorodiflouromethane	75718	14	NA	140	NA
Isopropylbenzene (Cumene)	98828	19	NA	34	NA
Cis-1,2-dichloroethene	156592	3.4	NA	35	NA
trans-1,2-dichloroethene	156605	7.1	NA	70	NA
Bromodichloromethane	75274	0.0038	NA	0.095	NA
N-butylbenzene	104518	10	NA	100	NA
Sec-butylbenzene	135988	10	NA	100	NA
1,2,4-trimethylbenzene	95636	1.4	NA	15	NA
1,3,5-trimethylbenzene	108678	1.4	NA	15	NA
4-isopropyltoluene (4-cymene)	99876	9.3	NA	94	NA

▲SVVC increased. ▼ SVVC decreased. ► SVVC stayed the same.

APPENDIX A

LEA STANDARD OPERATING PROCEDURES

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Installing and Developing Monitoring Wells and Piezometers

SOP ID: 10007
Date Initiated: 02/20/90
Revision No. 006: 08/12/02

Approved By: */s/ Joseph T. Trzaski* *08/12/02*
Joseph T. Trzaski **Date**
Senior Scientist

/s/ Nick D. Skoularikis *08/12/02*
Nick D. Skoularikis **Date**
Director of Quality

REVISION RECORD

Rev #	Date	Additions/Deletions/Modifications
Initial Issue	02/20/90	
001-004	-.	No record.
005	12/31/01	Formatting and minor revisions throughout.
006	08/12/02	Added section on utility clearance.

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Installing and Developing
Monitoring Wells and Piezometers

1. Purpose and Scope

This standard operating procedure (SOP) is designed to describe the methods and procedures used to install and develop monitoring wells and piezometers in a water-table aquifer. Monitoring well and piezometer installation and development shall generally follow the guidelines presented in the "*Handbook of Suggested Practices for the Design and Installation of Groundwater Monitoring Wells*" (United States Environmental Protection Agency (EPA), 1989), the "*RCRA Ground Water Monitoring Technical Enforcement Guidance Document*" (EPA, 1986), and any state or local guidance, or regulatory documents which are available.

This SOP describes general procedures and guidelines to be followed or consulted for the proper methods to be used when installing monitoring wells or piezometers in unconsolidated deposits and bedrock. Because each site is unique and the purpose of the monitoring wells may vary from installation to installation, no definitive rules can be established. Throughout this SOP reference to monitoring wells is also intended to mean piezometers unless specifically indicated otherwise. This SOP also applies to monitoring wells and piezometers installed by Geoprobe® direct push technologies.

2. Definitions

None

3. Equipment and Decontamination

3.1. Equipment Supplied by the Drilling Contractor:

- Drilling rig.
- Monitoring well casing.
- Monitoring well screen.
- Bottom caps, plugs or points.
- Centering guides (if they are to be used).
- Filter pack sand.
- Bentonite.

- Cement-bentonite grout.
- Mud-scale to measure densities.
- Protective casing or road box.
- Steam-cleaning apparatus and supplies.
- Suitable containers (e.g., Department of Transportation (DOT)-approved 55-gallon drums with liners) for soil cuttings, well development water, and water generated from steam cleaning.
- Metal stamps for permanently marking wells.
- All necessary permits and licenses.
- If the Geoprobe® is used for well installation, Geoprobe®-specific equipment for well installation.

3.2. Equipment Supplied by Loureiro Engineering Associates, Inc. (LEA)

- Field forms.
- Indelible markers.
- Lock(s) and keys.
- Well development equipment (pumps, surge block, bailers, etc.).
- Analytical instrumentation (Analytical instrumentation includes, but is not necessarily limited to turbidity meters, pH meters, specific conductivity meters, and thermometers.).
- Calibration supplies for all analytical instrumentation, as appropriate.
- Alconox®, or other non-phosphate laboratory grade detergent.
- 5-gallon buckets.
- Decontamination brushes.
- Distilled, de-ionized water.
- Decontamination fluids (<10% methanol in water, 100% n-hexane, and 10% nitric acid).

3.3. Equipment Selection and Specifications

The following specifications will be followed:

Cement-Bentonite Grout: If cement-bentonite is utilized, the cement-bentonite grout will be a mixture of 95 pounds of Type II Portland cement, 4 to 6 pounds of powdered sodium bentonite, and 5 gallons of potable water. The bentonite must be thoroughly mixed with the water before the cement is added. The cement bentonite grout shall have a density of 14 pounds/gallon.

Filter Pack Sand: All filter pack sand will be clean, well-rounded silica sand, in factory-sealed bags. The sand will conform to the most

recent version of the American Water Works Association (AWWA) Standard AWWA/ANSI A100 for water wells. In brief, the standard states that filter pack sand will have an average specific gravity of 2.5 with not more than 1% of the material having a specific gravity less than 2.25. Thin, flat or elongated particles shall not exceed 2% of the material, no more than 5% of the material shall be soluble in hydrochloric acid, and the material shall be washed and free of shale, mica, clay, dirt, loam, and organic impurities.

Bentonite: All bentonite will be pure, additive-free bentonite whether it is pellets, chips, or powder.

3.4. Equipment Decontamination

3.4.1. Equipment Decontamination for Monitoring Well Installation

All well materials and drilling equipment which are used to construct a monitoring well or piezometer must be clean and free of any potential contaminants. All well construction materials not certified by LEA personnel as decontaminated when delivered will be decontaminated by steam cleaning before being installed. Drilling equipment must also be decontaminated, prior to beginning work, by steam cleaning. Geoprobe® equipment shall be cleaned using a detergent such as Liquinox®.

All decontamination activities shall be completed at a specially constructed decontamination pad (or a portable decontamination unit). The decontamination pad shall be constructed before any drilling activity begins. The pad shall be constructed of high-density polyethylene (HDPE) liner material, of sufficient size and strength to allow the drill rig access to the pad, and bermed to contain the generated wastewaters.

3.4.2. Equipment Decontamination for Sampling Equipment and Well Development.

All materials and equipment used to sample soil or which enter a well must be clean and free of any potential contaminants. In general, the choice of decontamination procedures shall be based upon the site-specific contaminants and outlined in the site-specific work plan.

For sites at which the contaminants are unknown, but contamination is suspected, the decontamination procedures outlined below shall be followed.

3.4.2.1. Prior to commencing any field activities, the following solutions (as appropriate for the anticipated contaminants) shall be prepared and placed into 500-ml laboratory squirt bottles: <10% methanol in water; 10% nitric acid in water; 100% n-hexane; distilled, de-ionized water. Other chemicals may be used for decontamination of site-specific contaminants if needed for decontamination of those contaminants.

3.4.2.2. In the field, prepare approximately 2.5 gallons of a solution of Alconox® (or other suitable non-phosphate laboratory grade detergent) in tap water in a 5-gallon bucket.

3.4.2.3. Prepare a piece of 5-mil polyethylene sheeting to underlie the decontamination area. The sheeting shall be of sufficient size to contain any accidental discharge of decontamination solutions. The plastic shall be bermed to contain spills. The decontamination for Geoprobe® equipment shall be performed in buckets or in tubs.

3.4.2.4. The order for decontaminating equipment is as follows:

1) Detergent scrub.
2) De-ionized (DI) water rinse.
3) Hexane rinse (to be used only if separate-phase petroleum product, other than gasoline, is present).
4) DI water rinse.
5) 10% nitric acid rinse (to be used only when metals are suspected as potential contaminants).
6) DI water rinse.
7) Methanol rinse (<10% solution).
8) Air dry.

The order of decontamination may change if different chemicals are used.

3.4.2.5. Disposable materials such as cord shall not be decontaminated and shall be disposed of after use.

3.4.3. At the end of the project day, all spent decontamination fluids and materials, such as the polyethylene sheeting and personal protective equipment, shall be managed and/or disposed of in accordance with all applicable municipal, state, and federal regulations.

4. Procedures

4.1. Utilities

4.1.1. Notify the appropriate "one call" utility notification service (e.g. Call Before You Dig at 1-800-922-4455, Contractor ID: 10502) at least three working days prior to commencing operations on a site. The locations of all proposed borings must be clearly marked in the field prior to notification. The Project Engineer/Manager **must** call and confirm that each utility has been to the site and has marked their respective lines.

4.1.2. On private sites, consult with the Owner or other person knowledgeable about the site as to the locations of potential private or abandoned utilities and locate these prior to beginning work. Upon the discretion of the Project Engineer/Manager, a pipe locator can also be used to assist in locating utilities.

4.1.3. Note that OSHA may have additional requirements for location of utilities.

4.1.4. All efforts to locate underground utilities (including names of owner or designee and time) should be properly documented in the field logbook prior to onset of the work scheduled.

4.2. OSHA

4.2.1. The Senior LEA representative shall be the Competent Person required by OSHA for all work. However, this does not relieve other LEA representatives from bringing to his or her attention conditions, which may be unsafe or present a hazard to the drilling crew, the general public, or other workers on the site.

4.3. Monitoring Well and Piezometer Installation

The specific monitoring well installation methodologies are dependent upon the specific drilling method used. In general, monitoring wells will be constructed through the inside of the drill stem, once the borehole has been advanced to the desired depth. For

Geoprobe® monitoring wells, the wells will be constructed through the inside of stainless steel casing.

4.3.1. Borehole Advancement

If the borehole has been drilled to a depth greater than that at which the well is to be set, the borehole must be backfilled with bentonite pellets, bentonite chips, or a bentonite-cement slurry to a depth of approximately one foot below the intended well depth. Approximately one foot of clean sand must be placed on top of the backfill to return the borehole to the proper depth for the well installation.

For bedrock monitoring wells, the borehole shall be advanced to approximately one foot into competent bedrock and the isolation casing grouted into place. The grout is to be allowed to cure for at least 24 hours before drilling continues. After the grout has cured, the borehole is to be advanced using the appropriate technique (e.g., coring, air rotary, mud rotary) to the desired depth. If the borehole is advanced to a depth greater than that at which the well is to be set, the borehole shall be backfilled as described above.

For Geoprobe® installed wells and piezometers, the steel casing will be drilled to the specified depth of the bottom of the well using the Geoprobe® and in certain cases manually.

4.3.2. Installation of Well Screen and Casing

The appropriate lengths of well screen (with bottom cap, or plug, or well point) and casing must be joined watertight and carefully lowered inside the drill stem to the bottom of the borehole. If centering guides are used, they must be placed at intervals around the well casing, beginning no lower than 5 feet above the top of the screen.

4.3.3. Design and Installation of the Filter Pack

After the well screen and casing are installed in the borehole, the filter pack shall be installed. For monitoring wells in unconsolidated materials, the selection of the appropriate filter pack material shall be based upon a grain-size analysis of a sample collected from the intended screen interval. The selection of the appropriate filter pack material shall be based upon the methodologies presented in the "*Handbook of Suggested Practices for the Design and Installation of Groundwater Monitoring Wells*" (EPA, 1989), the "*RCRA Ground Water Monitoring Technical Enforcement Guidance Document*" (EPA, 1986), or any state or local guidance, or regulatory documents which are available. In the

absence of grain size analyses, the filter pack material shall be selected based upon an experienced geologist's best judgment as to the appropriate material.

For bedrock monitoring wells, the well screen and filter pack are emplaced primarily to stabilize the borehole and are therefore not sized in the same manner as for a monitoring well in unconsolidated sediments. For typical bedrock monitoring wells, 10-slot well screen is appropriate. The selection of the appropriate filter pack material shall be based upon the slot size selected for the well screen.

A filter pack of clean silica sand will be placed around the well screen. Place the filter pack into the borehole at a uniform rate in a manner that will allow even placement of the sand. The drill stem shall be raised slowly while the sand is being placed to avoid caving of the borehole walls; the drill stem shall never be raised above the top of the filter pack during installation. Using a stainless steel weight on the end of a fiberglass tape, continuously sound the top of the filter pack as it is being installed. The filter pack shall extend from a depth of approximately one foot below the screened interval to a minimum height of one to two feet above the top of the well screen. However, this length may be adjusted if it would create the potential for cross-contamination or in the case of shallow water tables.

A finer-grained sand cap shall be installed for a minimum of one foot above the filter pack. This height may also be adjusted in the case of shallow water tables.

4.3.4. Installation of Impermeable Seal

An impermeable seal at least two feet thick must be placed on top of the fine sand cap. The seal may be composed of either bentonite pellets or a bentonite slurry. The pellets must be placed into the borehole in a slow and continuous manner that prevents bridging. This is especially important in deeper monitoring wells where the pellets may have to be emplaced through a considerable depth of standing water in the borehole.

The bentonite slurry shall be prepared by mixing approximately 15 pounds of bentonite powder with 7 gallons of water for each one cubic foot of slurry needed. The slurry shall be emplaced in the borehole via a tremie pipe. The tremie pipe must be plugged on the bottom and have openings along the sides of the bottom one foot of pipe. This will allow the slurry to be emplaced into the borehole without disturbing the fine sand cap. This procedure is especially important for the relatively deeper wells.

Verify the position of the top of the bentonite seal using a weighted tape measure. If all or a portion of the bentonite seal must be emplaced above the water table, hydrate the bentonite with clean water. Allow 30 minutes after adding the water for the bentonite to hydrate.

The thickness of the bentonite seal may be adjusted for wells completed in aquifers with shallow water tables.

4.3.5. Installation of Grout Backfill

Place an annular seal of cement-bentonite grout above the bentonite seal. Install the cement-bentonite grout continuously from the bottom of the annular space to the ground surface through a tremie pipe. The tremie pipe must be plugged on the bottom and have openings along the sides of the bottom one-foot length of pipe. This will allow the grout to be emplaced into the borehole without disturbing the bentonite seal. Alternatively, a bentonite slurry can be used.

4.3.6. Surface Completion

All monitoring wells will be finished at the surface with a concrete pad. The concrete pad shall typically be two-feet square and at least four inches thick. The concrete shall fill the borehole to a depth below the frost line. The pad shall be constructed in one continuous pour of concrete. Note that some of the cement-bentonite grout used for the annular seal may have to be removed to install the concrete pad. A survey pin may be installed in the concrete pad before it dries, if necessary.

For monitoring wells that will be completed above-grade, a locking steel protective casing shall be installed in the concrete. The protective casing shall extend at least three feet into the ground and two feet above ground. For monitoring wells that will be completed flush, a steel roadbox, suitable for traffic loads, with a gasketed cover and drain shall be installed.

Each well will be properly labeled on the exterior of the locking cap or protective steel casing with a metal stamp indicating the permanent well identifier.

4.3.7. Well Protection Bollards

Guard posts may be installed in high-traffic areas for additional protection. One to four guard posts would be installed around the protective casing, within the edges of the concrete pad. If used, guard posts will consist of concrete-filled steel tubes, at least 3 inches in diameter, painted with multiple coats of epoxy-based paint to prevent rust. The guard posts would extend at least two feet below ground and approximately three feet above ground.

5. Well Development

Monitoring well development may be accomplished by surging and bailing (or pumping), or over pumping. Other methods, such as air jetting, backwashing, or air-lift pumping, shall be avoided because these methods introduce fluids into the formation and may have unexpected influences on groundwater quality, if only for a short period of time.

Immediately upon opening the well, the air in the wellhead will be sampled for VOCs using a portable VOC analyzer, such as a Photovac MicroTIP®. The well cap shall be opened slightly and the sampling port of the VOC analyzer shall be inserted into the well. The maximum reading shall be recorded on the appropriate field paperwork. The instrument shall be zeroed with ambient air prior to the measurement, and the initial and final readings shall be recorded for each well.

Measures shall be taken during well sampling to prevent surface soils from coming in contact with the purging equipment and lines. Typically, a polyethylene sheet is placed on the ground providing adequate coverage for the equipment being used.

In addition, the procedures described in LEA SOP ID 10004 in the sections for Field Analysis, Well Evacuation, and Sample Withdrawal shall be followed.

5.1. Surging and Bailing

In surging and bailing, a well is developed by alternately surging a short section of the screen with a tight-fitting surge block. Begin by lowering the surge block to the top of the screened interval and swab the well with a pumping action with a typical stroke of 2 to 3 feet. (Begin surging at the top of the well intake to avoid having loosened material from "sand-locking" the surge block.) Do not surge the well too violently to avoid damaging the well screen or the filter pack. Remove the surge block at regular intervals and bail (or pump) the fine material from the well. Proceed with surging throughout the length of the well screen, being careful to avoid hitting the bottom of the well. Check the quality of the bailed water at regular intervals, as described in Section 5.3.

In cases where a considerable volume of sediment may initially be drawn into the well, begin surging the well gently in the casing above the well screen. Proceed with surging and bailing to the bottom of the screened interval.

5.2. Overpumping

In overpumping, a well is developed by operating a pump in the well at a capacity which greatly exceeds the formation's ability to supply water. The flow velocity into the well during overpumping usually greatly exceeds the flow velocity

induced during normal sampling. This increased velocity causes movement of particles from the formation into the well.

Begin developing the well by installing a suitable pump at the bottom of the well. Alternatively, a surface-mounted pump with a suction hose may be used if the drawdown inside the well will not exceed the pump's available lift. The discharge from the pump shall be directed to approved containers. The pump (or intake hose) must be equipped with a backflow-prevention valve to prevent introducing aerated water into the aquifer.

Start the pump and discharge water at the highest practical rate. If the well runs dry, stop the pump and allow the well to recharge. Check the quality of the discharged water at regular intervals as described in Section 4.3.

5.3. Completing Well Development

During bailing or pumping, measure and record water quality parameters to gauge the degree and effectiveness of development. Typically, pH, temperature, specific conductivity, and turbidity shall be checked at periodic intervals (but at least every three well-volumes) until the purge water begins to appear clear. Then measurements shall be made after each well volume until the parameters stabilize. The water quality parameters may be considered stable when:

- pH, temperature, and specific conductivity of consecutive measurements have relative percent differences (RPD), as defined below, of less than 10%; and,
- The turbidity is 5 NTU or less (applicable only in aquifers with low percentages of fines. This may not be achievable in all situations, but the turbidity shall be less than 50 NTU and shall stabilize with an RPD of less than 10%).

However, in no case shall the development stop before the above criteria are met, and:

- At least 3 well volumes have been removed; or,
- The well has been surged and pumped for at least 30 minutes.

The RPD between two measurements (e.g., M1 and M2) is calculated as follows:

$$RPD = \frac{|M1 - M2|}{(M1 + M2)/2} \times 100\%$$

All well development equipment and supplies shall be thoroughly decontaminated prior to and between each monitoring well. Place all development water into properly labeled, suitable containers; leave all filled containers in an appropriate location.

6. Documentation

6.1. Well Development

Well development activities will be documented on the appropriate field forms, and specifically on the "Field Data Record Groundwater" and "Well Development Report" forms. Information provided on those forms includes: purge method, amount of water per well volume, instrument readings after purging of each well volume.

6.2. Monitoring Well Completion Log Forms

During the installation of a monitoring well, complete records must be kept of quantities and types of all well construction materials used.

A complete geologic log shall be kept during advancement of the borehole for the well. The procedures for completing geologic logs are presented in *Standard Operating Procedure for Geologic Logging of Unconsolidated Sedimentary Materials* (SOP ID 10015). However, the additional information pertinent to monitoring well installations shall be recorded on a separate form. A monitoring well completion form is provided in Attachment 1. In addition typical wellhead details – one for flush-mount well completions and one for above-grade completions - are provided as Figure 1. Whenever a monitoring well is installed, record all appropriate information concerning the quantity of materials used, the type and manufacturer of the materials, the mixtures of grouts or slurries, and any pertinent notes regarding the installation of each well.

After the project is completed, submit a copy of the attached Geologic Soil Boring/Well Completion Log Request Form along with copies of all Monitoring Well Completion forms for final typing and entry into the LEA database. The request form provides information on the types of final logs to be produced, the scale at which to plot the final forms, and notes common to all reports.

7. Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) procedures will be followed in compliance with the site-specific work plan.

8. References

8.1. EPA, *RCRA Groundwater Monitoring Technical Enforcement Guidance Document*, OSWER 9950.1, September 1986.

8.2 EPA, *Handbook of Suggested Practices for the Design and Installation of Groundwater Monitoring Wells*, EPA/600/4-89/034, 1989.

END OF DOCUMENT

ATTACHMENT 1

Monitoring Well Completion Report and Well Development Forms

WELL COMPLETION REPORT

Project: Emhart Des of Res Sy
LEA Comm. No. 3481400.
Client Emhart Industries, Inc.
Location Emhart Industries former Headquarters

Start Date | **Well ID**
End Date

Drilling Contractor _____
Drilling Method _____
Sampling Method _____
Groundwater Observation
Depth _____ **at** _____ **Hours**

Logged by
Drilling Foreman _____
Drill Rig _____
GPS Latitude _____
GPS Longitude _____

Protector
- Material _____
- Diameter _____
- Length _____ Ground
- Stickup _____
- Key # _____
- Cover Type _____

Top Seal
- Top _____
- Bottom _____
- Material _____

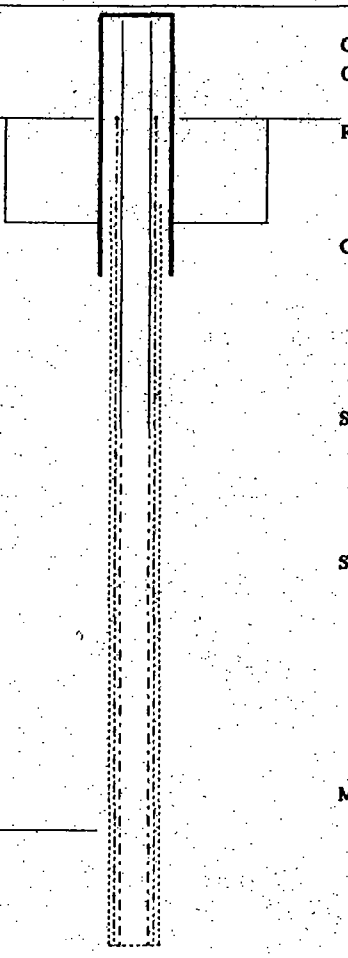
Backfill
- Top _____
- Bottom _____
- Material _____

Secondary Sand
- Top _____
- Bottom _____
- Size _____

Filter Pack
- Top _____
- Bottom _____
- Material _____

Reported depth to bottom of boring _____

Comments



Concrete Diameter _____
Concrete Thickness _____

Reference
- Stickup _____
- Description _____

Casing
- Diameter _____
- Material _____
- Length _____
- Stickup _____

Seal
- Top _____
- Bottom _____
- Material _____

Screen
- Top _____
- Bottom _____
- Material _____
- Diameter _____
- Length _____
- Slot Size _____

Miscellaneous Materials (Quantity Used/Item)
- Cement _____
- Bentonite Chips _____
- Bentonite Pellets _____
- Bentonite Powder _____
- Grout Weight _____
- Filter Pack Sand _____
- Capping Sand _____
- Well Point _____
- Well Plug _____

Signature _____

Loureiro Engineering Associates, Inc.

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
WELL DEVELOPMENT

LEA Comm. No.	3481400.	Page ____ of ____
Project	Emhart Des of Res Sy	Date __/__/__
Location	Emhart Industries former Headquarters, Farmington, CT	Time __:__
Client	Emhart Industries, Inc.	

Monitoring Well Number _____ Sample Number(s) _____ _____

Initial Field Data and Measurements

Depth of Well _____ Reference Used _____
Depth to Water _____ PID/FID Reading _____
Height of Column _____ Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter _____ Material _____
Protector Road Box / Stickup
Ground to Reference _____
Comments _____

General Condition	OK	Bad
Casing Secure		
Collar Intact		
Cover Locked		
Other (describe)		

Development Information

Purge Volume Factors
- *0.5" - 0.01*
- *1" - 0.041*
- *1.5" - 0.091*
- *2" - 0.16*
- *4" - 0.65*
- *6" - 1.5*

Initial Sample Observations
- Clear ☐
- Colored ☐
- Cloudy ☐
- Turbid ☐
- Odor ☐
- Sheen ☐

Volumes \ Parameter	Gallons	Temp (C)	pH (SU)	Spec.Con.	Turbidity	Other
Initial						

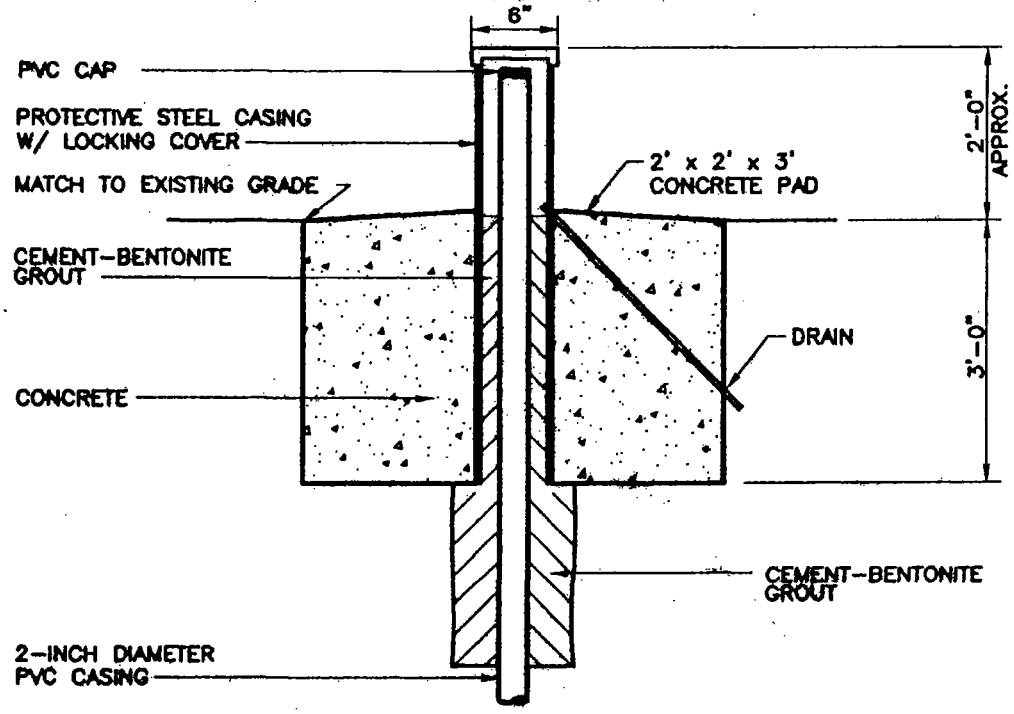
Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other _____

Field Decontamination? Yes / No If Yes, with what? _____
Waste Container ID _____

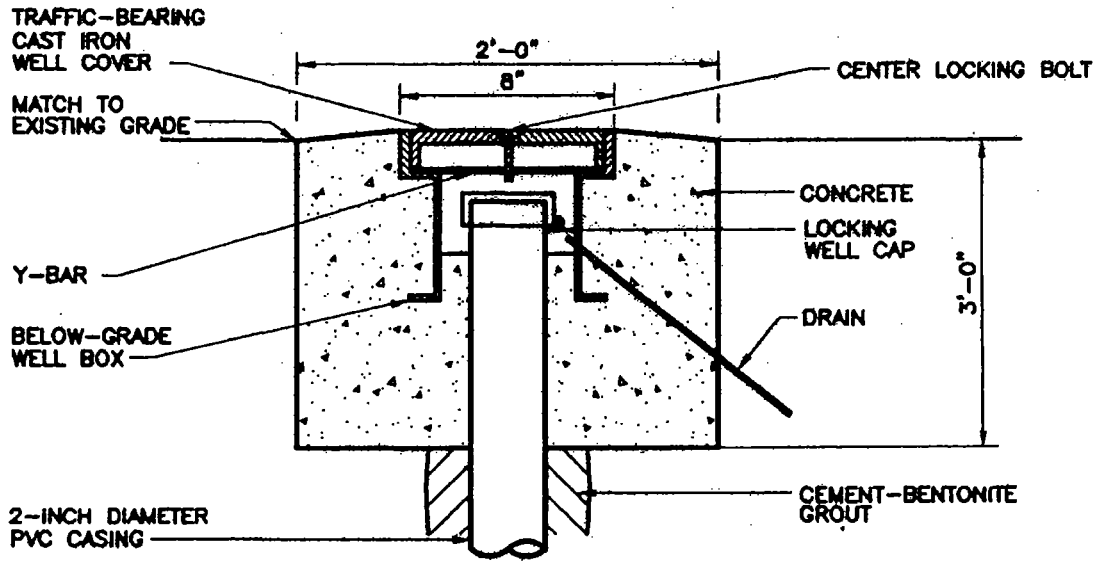
Additional Comments

Field Personnel _____ _____ *Signature*
_____ _____

FIGURES



ABOVE GRADE WELLHEAD
CONSTRUCTION DETAIL - NOT TO SCALE



FLUSH TO GRADE WELLHEAD
CONSTRUCTION DETAIL - NOT TO SCALE

TYPICAL
WELLHEAD DETAILS

Comm.No.

FIG. 1

LEA

WELL-DET (1)

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Geologic Logging of Unconsolidated Sedimentary Materials

SOP ID: 10015
Date Initiated: 12/27/94
Revision No. 002: 01/15/02

Approved By: */s/ Kimberly C. Clarke* *01/15/02*
Kimberly C. Clarke **Date**
Senior Project Scientist

/s/ Nick D. Skoularikis *01/15/02*
Nick D. Skoularikis **Date**
Director Of Quality

REVISION RECORD

Rev #	Date	Additions/Deletions/Modifications
Initial Issue	12/27/94	
001	11/20/96	No record
002	01/15/02	Formatting and minor revisions throughout

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Geologic Logging of Unconsolidated Sedimentary Materials

1. Purpose and Scope

This document presents the methods and procedures used to describe unconsolidated sedimentary materials for geological purposes in a uniform and consistent manner. It includes procedures for properly recording the observations by providing guidelines for completing boring logs and submitting those logs for computer entry. This Standard Operating Procedure (SOP) refers only to geologic logging of soils and sediments (including artificial fill and other man-made deposits) and specifically is not intended to describe logging of soils or sediments for geotechnical or other engineering purposes. Although the SOP presents a system for describing sediments, it is not intended to be a definitive reference for classifying sedimentary materials, nor is it intended to replace experience or training. Individuals using this SOP should be trained and competent in field methodologies and geologic logging prior to commencing field activities.

2. Definitions

2.1. None

3. Equipment

3.1. Equipment required for the geologic logging of soil/sediment samples shall include the following items:

- Tape measure or scale.
- Hand lens.
- Color chart.
- Grain-size comparator.
- Field forms.
- Indelible marker(s).
- Small table.
- Field Paperwork.
- Clipboard.

4. Procedures

4.1. Sample Collection

Samples of soil and unconsolidated sedimentary materials will be collected in general accordance with the SOPs for Soil Sampling (SOP ID 10006), Hand Auger Borings (SOP ID 10003), Hollow Stem Auger Soil Borings (SOP ID 10008), and Geoprobe® Probing and Sampling (SOP ID 10011). Those SOPs include procedures for decontamination of equipment required for sample collection, as well as providing the methodologies for sample collection and documentation.

4.2. Descriptions of Unconsolidated Sedimentary Materials

4.2.1. General Sediment Description Guidelines

For the purposes of geologically logging unconsolidated soils and sedimentary materials, a Modified Burmister method of description and classification should be used. The Modified Burmister Sediment Classification System (or simply, Burmister System) is intended as a rapid field method for identifying and classifying sediments. The system is based upon visual identification of the generalized grain-size distribution and description of the physical characteristics of the sample.

A Burmister System description is comprised of three parts: a color descriptor; a grain-size descriptor; and modifier(s). The color descriptor indicates the overall color or colors of the wet sample. The descriptor consists of a color name or names and (if possible) the color code from a standard color reference (for example, a Munsell[7] Color Chart). The grain-size description indicates the predominant grain size in the sample, as well as the relative percentages of other grain sizes present.

Modifiers are used to further describe the geologic character of the sample. Modifiers may include descriptions of moisture content, sorting, sphericity, angularity, sedimentary structures or other pertinent information.

4.2.2. Color Description

The color of the wet sediment should be determined with reference to a standard color comparator (for example, a Munsell[7] Color Chart) for rocks or sediment. The included color descriptor should contain both the color name and, when a color comparator is used, the appropriate hue-chroma value code, for example "Reddish brown (5YR 4/4)". The color of a sample should always be gauged when the sample is wet, or it should be noted otherwise.

4.2.3. Predominant Grain-Size Description

The first step in describing a sediment sample is visually estimating the size range and percentage of the various grain sizes in the sample. Reference should be made to standard geologic comparators for assessment of the grain size(s).

The primary grain-size descriptor indicates the predominant grain size, as judged visually, of the sample. The descriptor is always capitalized and underlined. Possible descriptors include: CLAY, SILT, SAND, and GRAVEL (GRANULES, PEBBLES, COBBLES, and BOULDERS). These correspond to the standard Wentworth size-classification scheme used for describing sediments for geologic purposes. Size classifications for CLAY through GRAVEL are presented in Table 1. The descriptor should also include an indication of the relative size range of the sample within the predominant grain size (for example, "fine-to-medium sand", "coarse sand", etc.). Although Table 1 includes divisions of the silt category, this is applicable only to sediment samples analyzed by pipette or hydrometer and cannot be distinguished in the field.

The presence of other grain sizes, in addition to the predominant material is also included in the grain-size descriptor. Appropriate grain sizes are the same as for the predominant grain size of the material (clay, silt, etc.), however only the initial letter of the word is capitalized. The description should also include an indication of the relative amount of the minor components. Appropriate indicators for the relative percentages present are provided in Table 2.

It is generally not considered possible to visually distinguish between clay and silt. Estimation of the silt/clay content of a sample should be based upon the plastic properties of the sample. The plastic properties of the sample may be estimated by taking an approximately 1 cubic centimeter ball of the sediment and attempting to roll a thread of the material between the palms of the hand. The minimum size of the thread which may be rolled may be compared to the values presented in Table 3 and the plasticity estimated. A comparison of the minimum thread diameter which may be formed with the information presented in Table 3 provides an approximate silt/clay content estimate for sand-silt-clay sediments and composite clay sediments.

4.2.4. Modifiers

Various modifiers may be added to the basic sediment description to further describe the geologic character of the sample.

For sand or coarser-sized material, the relative degree of sorting, the sphericity, and angularity should also be recorded. Sorting may be visually estimated. Sphericity and angularity, however, should be made with reference to an accepted comparator. A chart illustrating various degrees of sphericity and angularity is attached as Figure 1.

The mineralogy of the sample should also be recorded. Reference should be made to the relative percentages, grain size(s), and sphericity of the mineral particles (especially where it differs significantly from that of the predominant grain-size material).

Other information which should be recorded for each sample includes an estimate of the density and cohesiveness of the sample (made from blow counts where applicable, or other specific instrumentation where appropriate), the relative moisture content of the sample, visible sedimentary structures, and any odors or staining noticeable during logging. Tables 3 and 4 present appropriate terms for describing the plasticity, density, and cohesiveness of sediment samples.

Especially important is an indication that a specific portion of the material may represent "sluff" or material collapsed from the borehole walls.

4.3. Written Sediment Descriptions

The written sediment description may be made as either an unabbreviated or an abbreviated description. Both methods should relate the same information, however the abbreviated description is better suited for field use.

In an unabbreviated description, all of the words of the description should be written out in their entirety. The descriptor should include pertinent information regarding the sample's size gradation, consistency, color, and relative grain size, as described previously. The color descriptor should precede the primary sediment component name, while additional details such as the plasticity, mineralogy, visible sedimentary structures, etc., should follow the sediment component name.

An example of an unabbreviated description is:

Red-brown (5YR 4/4), fine to coarse SAND, little fine Gravel, little Silt, moist, moderately well sorted, low sphericity, Gravel waterworn, Sand subangular, micaceous.

Since the Burmister system is intended to provide a means for describing uniform sediments, three "special" cases should be addressed.

First, the Burmister system is intended only to describe the sediment. Where a genetic classification of the material is significant, it should be added as a separate statement at the end of the description. For example:

> **Olive gray (5Y 4/2), coarse to fine SAND, some fine Gravel, little Silt, moist, poorly sorted, sub-rounded to angular, dense. TILL.**

A genetic classification should only be used when the origin of the material is very clear and not simply a field interpretation of possible depositional environment.

Second, in the case where the sediment sample is heterogeneous (for example, a varved silt and clay), each component should be described individually, and reference should be made to the relative percentages of each component and to the interlayering. For example:

> **Soft, reddish-brown (5YR 3/4), CLAY and SILT, alternately layered, medium to high overall plasticity. Layers: CLAY layers, 3/8" to 5/8" thick, comprise 60%" of sample. SILT layers, 1/8" to 3/8" thick, comprise 40%" of sample. VARVED CLAY and SILT.**

Third, when one material grades uniformly into a distinct sediment type, the individual components should be described separately and the gradation noted. For example:

> **Soft, reddish-brown (5YR 3/4), CLAY, medium overall plasticity, grading into soft, reddish-brown (5YR 4/4), SILT, trace Clay, low overall plasticity.**

In the abbreviated sediment descriptions, the sample information is presented in a manner analogous to that for the unabbreviated description substituting standard abbreviations for specific portions of the text. Abbreviations for the identifying terms in the Burmister system are presented in Tables 2, 3, and 4. Mineralogic and geologic abbreviations may be found in standard geologic and mineralogic texts and field manuals. Except for the use of abbreviations, the abbreviated description is completely analogous to the unabbreviated description.

For the sake of consistency in describing unconsolidated sedimentary materials, the description should follow the order and general definitions presented in Table 5.

4.4. Recording Descriptions

4.4.1. Geologic Boring Logs

Attached to this SOP is a copy of LEA's standard geologic boring log form. This log should be completed for each boring that is completed. The heading information is self-explanatory. The body of the log contains space for information for each sampled interval in the boring. The following information should be recorded:

Depth Interval	The upper and lower depths from which the sample was collected.
Sample No.	The sample number, as obtained from LEA Data Management, assigned to this sample.
Recovery	The length of the recovered sample and the length of the sampler (in consistent units). The percent recovery will be calculated by the LEA Data Management program.
Blows/6"	The number of blow counts per 6" interval for the sample. Alternately, the downhole pressure or other pertinent information regarding the required drilling or sampling force.
Sample Description	The sample description using the guidelines and order presented in Section 3.0 and Table 5.
PID/FID	The headspace reading from a PID or FID in ppm.

The comments section of the form should be used to record general observations regarding drilling conditions, backfilling of the borehole, or other pertinent information regarding drilling the borehole.

4.5. Computer Data Entry

After a project is completed, copies of the Geologic Boring Log forms should be submitted for computer data entry. A completed copy of the Geologic Soil Boring/well Completion Log Request Form should be attached to the log forms.

5. Quality Assurance/Quality Control

5.1. Soil and sediment logging will be conducted in accordance with this SOP to ensure quality and consistency in field activities.

5.2. Field paperwork will be reviewed by office staff personnel and/or project manager to ensure completeness and accuracy in logging records.

6. References

6.1. None

END OF DOCUMENT

TABLE 1
Wentworth Size Classification System

US Standard Sieve Sizes	Millimeters	Microns	Phi (N)	Wentworth Size Classification	
Use Wire Squares	4096	4,096,000	-20	Boulder	GRAVEL
	1024	1,024,000	-10		
	256	256,000	-8		
				Cobble	
	64	64,000	-6		
				Pebble	
	16	16,000	-4		
5	4	4,000	-2		
				Granule	
6	3.36	3,360	-1.75		
7	2.83	2,830	-1.50		
8	2.38	2,380	-1.25		
10	2.0	2,000	-1.00		
				Very Coarse Sand	SAND
12	1.68	1,680	-0.75		
14	1.41	1,410	-0.50		
16	1.19	1,190	-0.25		
18	1.00	1,000	0.00		
				Coarse Sand	
20	0.84	840	0.25		

TABLE 1
Wentworth Size Classification System

US Standard Sieve Sizes	Millimeters	Microns	Phi (N)	Wentworth Size Classification
25	0.71	710	0.50	
30	0.59	590	0.75	
35	0.50	500	1.00	
				Medium Sand
40	0.42	420	1.25	
45	0.35	350	1.50	
50	0.30	300	1.75	
60	0.25	250	2.00	
				Fine Sand
70	0.210	210	2.25	
80	0.177	177	2.50	
100	0.149	149	2.75	
120	0.125	125	3.00	
				Very Fine Sand
140	0.105	105	3.25	
170	0.088	88	3.50	
200	0.074	74	3.75	

TABLE 1
Wentworth Size Classification System

US Standard Sieve Sizes	Millimeters	Microns	Phi (N)	Wentworth Size Classification	
230	0.0625	62.5	4.00		
				Coarse Silt	MUD
270	0.053	53	4.25		
325	0.044	44	4.50		
Analyzed by Pipette or Hydrometer	0.037	37	4.75		
	0.031	31	5.0		
				Medium Silt	
	0.0156	15.6	6.0		
				Fine Silt	
	0.0078	7.8	7.0		
				Very Fine Silt	
	0.0039	3.9	8.0		
				Clay (Note: Some use 2: (or 9N) as the clay boundary.)	
	0.0020	2.0	9.0		
	0.00098	0.98	10.0		
	0.00049	0.49	11.0		
	0.00024	0.24	12.0		
	0.00012	0.12	13.0		

TABLE 1
Wentworth Size Classification System

US Standard Sieve Sizes	Millimeters	Microns	Phi (N)	Wentworth Size Classification
	0.00006	0.06	14.0	

Table 2
Modified Burmister System Descriptors

Fractions		Proportion Descriptors		
(+)	Major Fraction	Quantity	Descriptor	Abbreviation
(-)	Minor Fraction	35% - 50%	and	a
e.g., a medium to coarse SAND which is predominantly medium grained would be written as: m(+) - c SAND		20% - 35%	some	s
		10% - 20%	little	l
		1% - 10%	trace	t
		Modifiers: (+) Upper a of the range (-) Lower a of the range		

Table 3
Plasticity of Sediment Samples

Material	Symbol	Feel	Ease of Rolling Thread	Minimum Thread Diameter	Plasticity Index	Plasticity
Clayey SILT	CyM	Rough	Difficult	1/4"	1 to 5	Slight (Sl)
SILT & CLAY	M & C	Rough	Less Difficult	1/8"	5 to 10	Low (L)
CLAY & SILT	C & M	Smooth, dull	Readily	1/16"	10 to 20	Medium (M)
Silty CLAY	MyC	"Shiny"	Easy	1/32"	20 to 40	High (H)
CLAY	C	Waxy, very shiny	Easy	1/64"	40 +	Very High (VH)

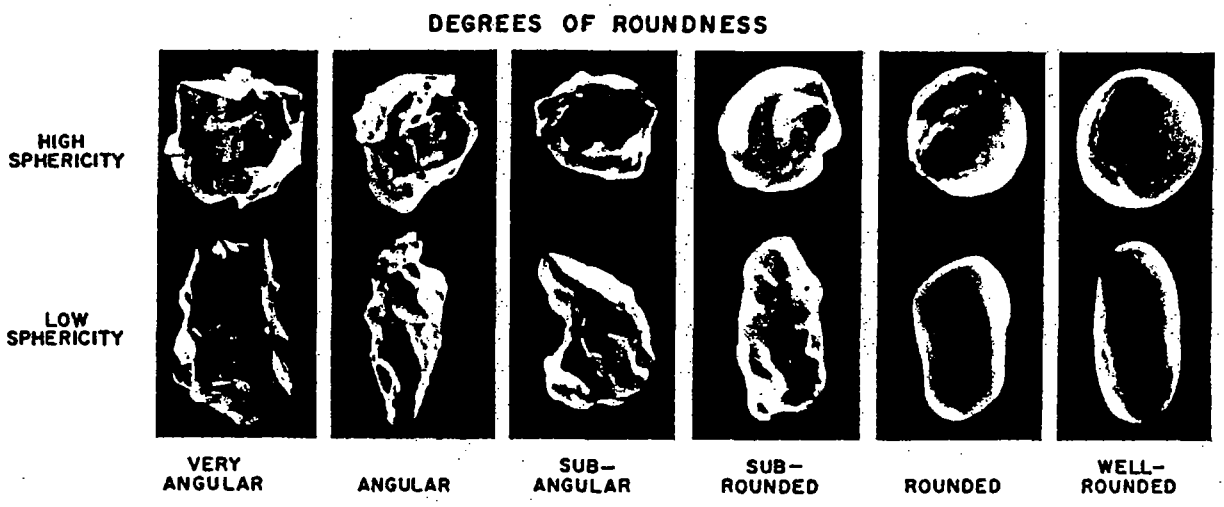
Table 4
Density and Cohesiveness of Sediment Samples

Density of Cohesionless Soils		Consistency of Cohesive Soils	
Blow Counts	Relative Density	Blow Counts	Consistency
0 to 4	Very Loose	0 to 2	Very Soft
5 to 9	Loose	2 to 4	Soft
10 to 29	Medium Dense	4 to 8	Medium
30 to 49	Dense	8 to 15	Stiff
50 to 79	Very Dense	15 to 30	Very Stiff
80 or more	Extremely Dense	30 or more	Hard

Table 5
Description of Sediment Properties

Sediment Parameter	Properties
Color	The color of the sample should be described for the wet sediments. If possible the color should be referenced to a standard color chart such as a Munsell7 Color Chart.
Primary Grain Size	Primary grain size refers to the size of the predominant sedimentary size class within the material (as judged visually). The grain size divisions should conform to the standard Wentworth Scale divisions, as shown in Table 1.
Secondary Grain Size(s)	Secondary grain size(s) refer to material which, as a grain-size group, comprises less than the majority of the sediment. Aside from stating the size classification, the relative percentage of the material must be stated. The grain size divisions should conform to the standard Wentworth Scale divisions as shown in Table 1. To describe the approximate percentage of the secondary grain size(s) present, qualifiers shown in Table 2 should be used.
Moisture Content	The moisture content of the sample should be described as dry, slightly moist, moist, or wet. Gradation from one state to another should be recorded as, for example, moist to wet, or moisty wet.
Sorting	The relative degree of sorting of the sediment should be indicated as poor, moderate, good, or very good. The degree of sorting is a function of the number of grain size classes present in the sample; the greater the number of classes present the poorer the sorting. In addition, for samples composed only of sand, the relative degree of sorting is a function of the number of sand-size subclasses present.
Sphericity	Sphericity is a measure of how well the individual grains, on average, approximate a sphere. The average sphericity of the sand and larger size fractions should be described as low, moderate or high. A chart illustrating various degrees of sphericity is presented in Figure 1.
Angularity	Angularity, or roundness, refers to the sharpness of the edges and corners of a grain (or the majority of the grains). Five degrees of angularity are shown in Figure 1: Angular (sharp edges and corners, little evidence of wear); Subangular (edges and corners rounded, faces untouched by wear); Subrounded (edges and corners rounded to smooth curves, original faces show some areas of wear); Rounded (edges and corners rounded to broad curves, original faces worn away); and, Well Rounded (no original edges, faces, or curves, no flat surfaces remain on grains).
Sedimentary Structures	Sedimentary structures are such things as varved layers, distinct bedding, or stratification.
Density -or- Cohesiveness	The density of cohesion of a sample (for the purposes of this application) refer to the sample's resistance to penetration by a sampling device. Density is used in reference to sediments primarily silt-size and coarser while cohesiveness is used in reference to primarily clay-sized sediments. Density or cohesiveness can be assessed from the number of blows from "standard" split-spoon sampling (i.e., 140# hammer, 30" fall, 2" X 2" (O.D., 1 3/8" I.D.)) split-spoon samplers according to the scale in Table 3.

FIGURE 1

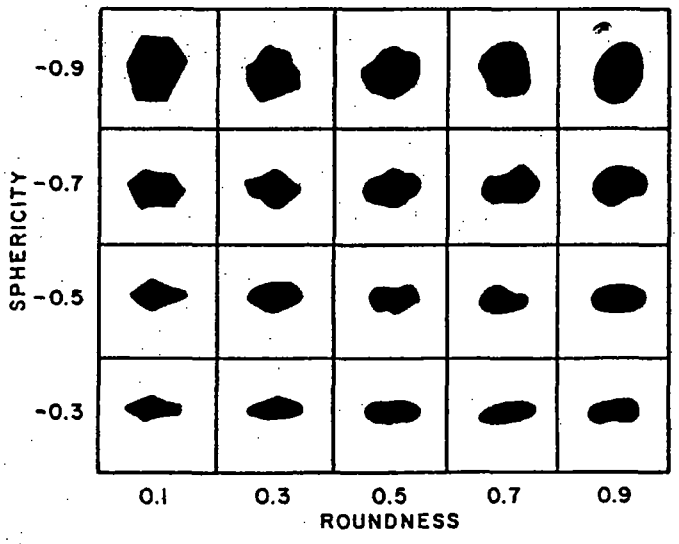


SPHERICITY

0.3	LOW
0.5 & 0.7	MODERATE
0.9	HIGH

ROUNDNESS

- 0.1 ANGULAR
- 0.3 SUBANGULAR
- 0.5 SUBROUNDED
- 0.7 ROUNDED
- 0.9 WELL ROUNDED



Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Geoprobe® Probing and Sampling

SOP ID: 10011
Date Initiated: 11/10/94
Revision No. 005: 12/31/01

Approved By: *__/s/ David C. Brisson__* *__01/03/02__*
David C. Brisson **Date**
Project Geologist

__/s/ Nick D. Skoularikis__ *__01/03/02__*
Nick D. Skoularikis **Date**
Director of Quality

REVISION RECORD

Rev #	Date	Additions/Deletions/Modifications
Initial Issue	11/10/94	
001-002	-	No record.
003	06/17/97	No record.
004	07/19/00	Revisions to template, including new logo. Revisions to Sections 3, 4, 5 and 6 in order to generalize sampling procedures and reference Geoprobe® Systems' catalog and specific soil sampling standard operating procedures.
005	12/31/01	Revisions made to reflect new SOP format. Addition of QA/QC section, minor changes throughout.

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Geoprobe® Probing and Sampling

1. Purpose and Scope

The objective of this standard operating procedure (SOP) is to collect discrete soil samples at depth using Geoprobe® probing and sampling methodologies and to recover the samples for visual inspection and/or analysis. Procedures for soil sampling for analysis are included in *Loureiro Engineering Associates (LEA) SOP for Soil Sampling*, SOP ID 10006.

2. Definitions

2.1. **Geoprobe®***: A vehicle-mounted, hydraulically-powered, soil probing machine that utilizes static force and percussion to advance small diameter sampling tools into the subsurface for collecting soil core, soil gas, or groundwater samples.

*Geoprobe is a registered trademark of Kejr Engineering, Inc., Salina, Kansas.

2.2. **Sampler**: A piston type soil sampler capable of recovering a discrete sample in the form of a core contained inside a removable liner.

2.3. **Liner**: A removable/replaceable, thin-walled tube inserted inside the sampler body for the purpose of containing and storing soil samples. Liner materials include brass, stainless steel, Teflon®, and clear plastic (either PETG or cellulose acetate butyrate).

3. Equipment

The equipment required to recover soil core samples using the Geoprobe® samplers and driving system can be found in the Geoprobe® Systems catalog for tools and equipment, as referenced in Section 6. Sample liners for the Geoprobe® samplers are available in four different materials. Liner materials should be selected based on sampling purpose, analytical parameters, and data quality objectives. A listing of the general parts and equipment from the Geoprobe® Systems catalog for tools and equipment is provided below:

Geoprobe® Tools	Part Number
Probe Rod (4 Foot)	AT104B
Probe Rod (3 Foot)	AT10B
Probe Rod (2 Foot)	AT105B
Probe Rod (1 Foot)	AT106B
Drive Cap	AT11B
Pull Cap	AT12B
Extension Rod	AT67
Extension Rod Coupler	AT68
Extension Rod Handle	AT69
MC Drive Head	AT8510
MC Cutting Shoes	AT8530,8535,8537
MC Piston Tip Assembly	AT8570
MC Spacer Ring or Core Catcher	AT8531K,8532K
MC Sample Tube	AT8522
MC PETG Liner	AT825K
MC Combination Wrench	AT8590
MC Release Rod	AT8580
MC Extension Rod	AT671
Extension Rod Coupler	AT68
Ext. Rod Quick Links	AT694K
Ext. Rod Handle	AT69
MC Vinyl End Caps	AT726K
Liner Cutter Kit	AT8000K
Nylon Brush for Macro Tubes	BU700

4. Procedure

4.1. Utilities Clearance

4.1.1. Notify the appropriate "one call" utility notification service (e.g., in Connecticut, Call Before You Dig at 1-800-922-4455) at least three working days prior to commencing operations on a site. The locations of all proposed borings must be clearly marked in the field prior to notification. The Project Engineer/Manager **must** call and confirm that each utility has been to the site and has marked their respective lines.

4.1.2. On private sites, consult with the owner or other person knowledgeable about the site as to the locations of potential private or abandoned utilities and locate these prior to beginning work. Upon the

discretion of the Project Engineer/Manager, a pipe locator can also be used to assist in locating utilities.

4.1.3. Note that the Occupational Safety and Health Administration (OSHA) may have additional requirements for location of utilities.

4.1.4. All efforts to locate underground utilities (including names of owner or designee and time) should be properly documented in the field logbook or field paperwork prior to onset of the work scheduled.

4.2. Health and Safety

The foreman or supervisor of the drilling crew shall be the competent person as required by OSHA for all of their work. However, this does not relieve any other LEA representative from bringing to his or her attention conditions which may be unsafe or present a hazard to the drilling crew, the general public, or other workers on the site. The LEA representative is responsible for ensuring that LEA activities are conducted in accordance with the site-specific Health and Safety Plan.

4.3. Site Preparation

4.3.1. A sufficient area shall be cordoned off to restrict access to the work area. This area shall be termed an "Exclusion Zone".

4.3.2. An equipment decontamination area shall be assembled as described in Section 4.14 within the exclusion zone.

4.3.3. All personal protective equipment as required in the site-specific health and safety plan shall be donned.

4.4. General Sampler Assembly

4.4.1. The sampler is connected to the leading end of a Geoprobe® probe rod and driven into the subsurface using a Geoprobe® drilling apparatus. Additional probe rods are connected in succession to advance the sampler to depth. The sampler remains sealed (closed) by a piston tip as it is being driven. The piston is held in place by a reverse threaded stop pin at the trailing end of the sampler. The first four-foot interval does not require the piston tip assembly. In addition, if the borehole remains open, the piston tip assembly may not be required for deeper intervals. If there is evidence that the borehole is collapsing, the piston tip will be utilized.

4.4.2. When the sampler tip has reached the top of the desired sampling interval, a series of extension rods, sufficient to reach depth, are coupled together and lowered down the inside diameter of the probe rods. The extension rods are then rotated clockwise (using a handle). The male threads on the leading end of the extension rods engage the female threads on the top end of the stop pin, and the pin is removed.

4.4.3. After the extension rods and stop pin have been removed, the tool string is advanced an additional 24 to 48 inches (depending on the soil sampling system in use). The piston is displaced inside the sampler body by the soil as the sample is cut. To recover the sample, the sampler is recovered from the hole and the liner containing the soil sample is removed.

4.4.4. Refer to the Geoprobe® System standard operating procedures for operation of various soil sampling systems (e.g., Macro Core Piston Rod Soil Sampling System, DT21 Dual Tube Soil Sampling System, Large Bore Soil Sampling System).

4.5. Pilot Hole

A pilot hole is appropriate when the surface to be penetrated contains gravel, asphalt, hard sand, or rubble. Preprobing can prevent unnecessary wear on the sampling tools. A specific Geoprobe® preprobe may be used for this purpose. The pilot hole should be made only to a depth above the sampling interval. Where surface pavements are present, a hole may be drilled with the Geoprobe® using a specific drill steel bit (AT-32, -33, -34, or -35, depending upon the thickness of the pavement), tipped with a 1.5 inch diameter carbide drill bit (AT-36) prior to probing. For pavements in excess of 6 inches, the use of compressed air to remove cuttings is recommended.

4.6. Concrete Coring

Should the borehole be located on concrete, the Geoprobe® can be used to core through the concrete to gain access to the underlying soil. A carbide-tipped drill bit (AT36-39) and Geoprobe® drill steel (AT3524, 3536, 3548) will be attached to the drill assembly and utilized to core the concrete. For concrete in excess of 16 inches, other methods (i.e., a core saw) should be utilized to penetrate the concrete.

4.7. Driving

4.7.1. Attach a probe rod to the assembled sampler and a drive cap to the probe rod. Position the assembly for driving into the subsurface.

Make sure the assembled sampler is relatively perpendicular to the ground surface. A level can be utilized if drilling on uneven ground.

4.7.2. Drive the assembly into the subsurface until the drive head of the sample tube is just above the ground surface.

4.7.3. Remove the drive cap and the probe rod. Secure the drive head with a 1-inch or adjustable wrench and retighten the stop pin with a 3/8-inch wrench.

4.7.4. Attach a 2-foot probe rod and a drive cap, and continue to drive the sampler into the ground. Attach 3-foot probe rods in succession until the leading end of the sampler reaches the top of the desired sampling interval.

4.8. Preparing to Sample

4.8.1. When the sampling depth has been reached, position the Geoprobe® machine away from the top of the probe rod to allow room to work.

4.8.2. Insert an extension rod down the inside diameter of the probe rods. Hold onto it and place an extension rod coupler on the top threads of the extension rod (the down hole end of the leading extension rod should remain uncovered). Attach another extension rod to the coupler and lower the jointed rods down-hole.

4.8.3. Couple additional extension rods together in the same fashion as in Step 2. Use the same number of extension rods as there are probe rods in the ground. The leading extension rod must reach the stop-pin at the top of the sampler assembly. When coupling extension rods together, you may opt to use the extension rod jig to hold the down-hole extension rods while adding additional rods.

4.8.4. When the leading extension rod has reached the stop pin down-hole, attach the extension rod handle to the top extension rod.

4.8.5. Turn the handle clockwise (right handed) until the stop pin detaches from the threads on the drive head. Pull up lightly on the extension rods during this procedure to check thread engagement.

4.8.6. Remove the extension rods and uncouple the sections as each joint is pulled from the hole. The extension rod jig may be used to hold the rod couplers in place as the top extension rods are removed.

4.8.7. The stop pin should be attached to the bottom of the last extension rod upon removal. Inspect it for damage. Once the stop pin has been removed, the sampler is ready to be redriven to collect a sample.

4.9. Sample Collection

4.9.1. Reposition the Geoprobe® machine over the probe rods, adding an additional probe rod to the tool string if necessary. Make a mark on the probe rod 24 inches above the ground surface (this is the distance the tool string will be advanced).

4.9.2. Attach a drive cap to the probe rod and drive the tool string and sampler another 24 inches. Use of the Geoprobe®'s hammer function during sample collection may increase the sample recovery in certain formations. Do not overdrive the sampler.

4.10. Retrieval

4.10.1. Remove the drive cap on the top probe rod and attach a pull cap. Lower the probe shell and close the hammer latch over the pull cap.

4.10.2. With the Geoprobe® foot firmly on the ground, pull the tool string out of the hole. Stop when the top (drive head) of the sampler is about 12 inches above the ground surface.

4.10.3. Because the piston tip and rod have been displaced inside the sample tube, the piston rod now extends into the 2-foot probe rod section. In loose soils, the 2-foot probe rod and sampler may be recovered as one piece by using the foot control to lift the sampler the remaining distance out of the hole.

4.10.4. If excessive resistance is encountered while attempting to lift the sampler and probe rod out of the hole using the foot control, unscrew the drive head from the sampler and remove it with the probe rod, the piston rod and the piston tip. Replace the drive head onto the sampler and attach a pull cap to it. Lower the probe shell and close the hammer latch over the pull cap and pull the sampler the remaining distance out of the hole with the probe machine foot firmly on the ground.

4.11. Sample Recovery

4.11.1. Detach the 2-foot probe rod if it has not been done previously.

4.11.2. Unscrew the cutting shoe using the cutting shoe wrench, if necessary. Pull the cutting shoe out with the liner attached. If the liner doesn't slide out readily with the cutting shoe, take off the drive head and push down on the sidewall of the liner. The liner and sample should slide out easily.

4.12. Core Liner Capping

4.12.1. The ends of the liners can be capped off using the vinyl end cap for further storage or transportation. A black end cap should be used at the bottom (down end) of the sample core and a red end cap at the top (up end) of the core.

4.12.2. On brass, stainless steel, and Teflon® liners, cover the end of the sample tube with Teflon® tape before placing the end caps on the liner. The tape should be smoothed out and pressed over the end of the soil core so as to minimize headspace. However, care should be taken not to stretch and, therefore, thin the Teflon® tape.

4.12.3. The soil boring identifier and depth of sample should be marked at the top of the core (on the red end cap).

4.13. Sample Removal

4.13.1. Clear plastic and Teflon® liners can be slit open easily with a utility knife for the samples to be analyzed or placed in appropriate containers.

4.13.2. Brass and stainless steel liners separate into four 6 inch sections. The manual extruder may be used to push the soil cores out of the liner sections for analysis or for transfer to other containers.

4.13.3. The procedures for collection of soil samples for chemical analysis are described in the *Standard Operating Procedure for Soil Sampling.*

4.13.4. Soil samples collected for archive purposes shall be placed into soil jars and labeled with sample numbers, date, time, and LEA commission number.

4.14. Equipment Decontamination and Cleaning

4.14.1. Prior to conducting a boring, the LEA representative will ensure that all necessary equipment is clean and decontaminated, including the rig, all augers and probing equipment, samplers, brushes, and any

other tools or equipment. Decontamination procedures may vary slightly from those presented below, dependent upon the particular types of contaminants encountered.

4.14.2. A section of 5 mil (minimum) plastic sheeting shall be cut of sufficient size to underlie the decontamination area to contain any discharge of decontamination solutions.

4.14.3. The following solutions (as appropriate for the anticipated contaminants) shall be prepared and placed in 500 ml laboratory squirt bottles:

- Methanol solution in water (less than 10 percent).
- 10 percent nitric acid solution in water (less than 10 percent).
- 100 percent hexane solution (to be used only if separate-phase petroleum product, other than gasoline, is present).
- Distilled deionized (DI) water.

4.14.4. A fifth solution of phosphate-free detergent and tap water (approximately 2.5 gallons) shall be prepared in a five-gallon bucket. Only those solutions required for site-specific conditions will be used at a given site, as specified in the site-specific work plan.

4.14.5. All loose debris shall be removed from the augers and spatulas into an empty 5-gallon bucket or plastic sheeting using a stiff bristled brush.

4.14.6. The order of decontamination solutions is as follows:

- Detergent scrub.
- Distilled water rinse.
- Hexane rinse (to be used only if separate-phase petroleum product, other than gasoline, is present).
- Distilled water rinse.
- 10 percent nitric acid rinse (to be used only when metals are suspected as potential contaminants).
- Distilled water rinse.
- Methanol rinse (less than 10 percent solution).
- Air dry.

4.14.7. All sampling equipment shall be decontaminated at the beginning of each project, in between sample collection, and at the completion of the project.

4.14.8. An alternative to the procedure described above requires that the larger equipment be cleaned using a high-pressure wash and steam cleaning in an area constructed to contain spent decontamination fluid and debris (plastic sheeting bermed with timber is usually sufficient). Alternative methods of cleaning may be more appropriate for an individual piece of equipment for site conditions based upon knowledge of site contaminants, and may be used at the discretion of the LEA representative. Section 4.19 provides additional information on management of potentially contaminated fluids and materials.

4.14.9. At the end of the project day, all used equipment shall be decontaminated. All spent decontamination solutions will be handled and disposed of in accordance with all applicable municipal, state and federal regulations.

4.15. VOC Monitoring

4.15.1. A portable volatile organic compound (VOC) analyzer equipped with a photoionization detector (PID) or flame ionization detector (FID) shall be available on site and shall be used to screen all cuttings and fluids (if any) removed from the hole.

4.15.2. Since, in general, it cannot be presumed that there is no contamination at a given site, all cuttings and/or fluids which show a reading on the VOC analyzer that is above background shall be containerized or drummed, as appropriate, on site. The soil cuttings should be containerized if the presence of other contaminants (such as metals, semivolatile organic compounds) is known or suspected. Additional information on management of potentially contaminated fluids and materials is presented in Section 4.19.

4.16. Sample Collection and Documentation

The following procedures will be followed for sample collection following removal from the borehole.

4.16.1. The sample tube shall be opened by the LEA representative and immediately scanned using the VOC analyzer using the approach described in Section 4.17.

4.16.2. The LEA representative will record on the boring log information described in Section 4.18.2.

4.16.3. Prior to reuse, the sampler shall be decontaminated using the procedures described in Section 4.14.

4.16.4. Soil samples collected for archival purposes shall be placed into soil jars and labeled with the sample number, date, time, and LEA commission number.

4.16.5. The procedures for collection of soil samples for chemical analysis are described in the *Standard Operating Procedure for Soil Sampling.*

4.17. Field Analysis

4.17.1. The following procedure shall be used to obtain readings with a portable VOC analyzer of the VOCs present in a soil sample:

- Obtain an aliquot of soil (approximately 50 grams) from the split spoon and placed into a plastic bag or equivalent and sealed.
- Agitate the sample, assuring that all soil aggregates are broken, for at least two minutes.
- Carefully break the seal of the bag enough to insert the VOC probe.
- Record the maximum reading obtained on the appropriate forms, as described in Section 4.18.

4.18. Field Documentation

4.18.1. The following general information shall be recorded in the field log book and /or appropriate field forms:

- Project and site identification.
- LEA commission number.
- Field personnel.
- Name of recorder.
- Identification of borings.
- Collection method.
- Date and time of collection.
- Types of sample containers used, sample identification numbers and QA/QC sample identification.
- Field analysis method(s).
- Field observations on sampling event.
- Name of collector.

- Climatic conditions, including air temperature.
- Chronological events of the day.
- Status of total production.
- Record of non-productive time.
- QA/QC data.
- Name of drilling firm.
- Location of boring(s) on site in sufficient detail to relocate boring at a future time (include sketch).

4.18.2. The following information shall be recorded in the boring log:

- Project name, location, and LEA commission number.
- Borehole number, borehole diameter, boring location, drilling method, contractor, groundwater observations, logger's name and date.
- Depth below grade, sample number, duplicate numbers, VOC analyzer reading, rig behavior (i.e., drilling effort, etc.).
- A complete sample description following SOP ID 10015, *Geologic Logging of Unconsolidated Sedimentary Deposits*. This will include, as a minimum: depth, material size gradation using the Burmister system, color, moisture, and density. Should a well be constructed in a borehole, a complete well schematic shall be drawn and accurately labeled.
- Use of water, including source(s) and quantity.

4.18.3. The following information shall be recorded on the QA Checklist provided in the Daily Field Report:

- Review of all necessary site activities and field forms.
- Statement of corrective actions for deficiencies.

4.18.4. Any instrument calibration information shall be recorded in the "Instrument Calibration" section provided in the Daily Field Report, and shall include the following information:

- Instrument make, model, and type.
- Calibration readings.
- Standards and backgrounds used for calibration.

4.19. Disposal of Potentially Contaminated Materials

Potentially contaminated cuttings or fluids, as indicated by knowledge of the site, discoloration, VOC analyzer readings, or other evidence, shall be containerized on-site pending sampling and determination of hazardous waste status.

4.20. Refusal

Refusal is defined as failure to penetrate the subsurface materials to any greater depth using the maximum reasonable pressure limits of the Geoprobe® machine.

4.21. Bedrock

The term "bedrock" will not be used in a boring log or other description of subsurface materials that have been collected using the Geoprobe® machine, since a confirmatory core cannot be collected.

4.22. Boring Abandonment

4.22.1. If the boring is not to be used for other purposes (i.e., monitoring well, soil vapor probe, soil vapor extraction well, etc.) it shall be abandoned.

4.22.2. The boring shall be filled and sealed with neat cement grout or high-density bentonite clay grout as soon as the tools are withdrawn from the borehole.

4.22.3. Excess cuttings shall be containerized, labeled and the analytical data of the contents reviewed/profiled before disposal.

4.22.4. In paved areas, the upper three feet of the borehole shall be filled, up to two inches below the existing grade, to allow for repairing of the pavement.

4.22.5. Pavement shall be repaired using cold patch asphalt filler or concrete.

5. Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) procedures shall comply with the procedures described in LEA SOP ID 10004. QA/QC samples, if required, (including performance evaluation samples, equipment blank samples, trip blank samples, and field duplicate samples) shall be collected according to the site-specific work plan.

6. References

6.1. Geoprobe® Systems, 1997, *1998-1999 Tools and Equipment Catalog.*

6.2. Geoprobe® Systems, *Geoprobe® Macro-Core Soil Sampler Standard Operating Procedure*, Technical Bulletin No. 95-8500, prepared 11/95, revised 09/98

6.3. Geoprobe® Systems, *Geoprobe® DT21 Dual Tube Soil Sampling System, Continuous Core Soil Sampler Standard Operating Procedure*, Technical Bulletin No. 982100, 09/98

6.4. Geoprobe® Systems, *Geoprobe® Large Bore Soil Sampler, Discrete Interval Soil Sampler Standard Operating Procedure*, Technical Bulletin No. 93-660, prepared 09/96, revised 04/98.

END OF DOCUMENT

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Liquid Sample Collection and Field Analysis

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Approved By: *__/s/ Joseph T. Trzaski__* *__12/31/01__*
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REVISION RECORD

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006	12/31/01	Updated to conform to new SOP format. Minor revisions throughout.

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Liquid Sample Collection and Field Analysis

1. Purpose and Scope

This document describes procedures to be followed for measurement of static water level elevations, detection of immiscible layers, well evacuation, sample withdrawal, and field analyses.

2. Definitions

2.1. Immiscible layers: The term is used to denote free-phase liquids that may be present in the aquifer as a result of a release. These liquids may have a density lighter than water (light non-aqueous phase liquids (LNAPL) or floaters) or heavier than water (dense non-aqueous phase liquids (DNAPL) or sinkers).

3. Equipment

3.1. Equipment required for the collection and field analysis of liquid samples includes:

- Water-level indicator (accurate to 0.01 foot). The size of the instrument depends on the size of the wells being monitored.
- Distilled water.
- Hand towels.
- Portable volatile organic compound (VOC) analyzer (Photovac MicroTIP®, Foxboro OVA® or equivalent).
- Interface probe, clear polyvinyl chloride (PVC) or fluorocarbon resin bailer (if required).
- pH and temperature meter (capable of accuracy to 0.1 pH unit).
- Specific conductivity meter.
- Bailers (clean or disposable) with disposable nylon or polyethylene rope.

- Polyethylene plastic sheeting.
- Polyethylene tubing, and appropriate pumping apparatus such as centrifugal pump, Wattera® pump with fluorocarbon resin foot valve, peristaltic pump with appropriate tubing, submersible pump or other appropriate pumping apparatus.
- Clean disposable gloves.
- Field paperwork.
- Sample collection jars.
- Indelible marker.
- Cooler(s) with ice or ice packs.
- Site-specific Health and Safety Plan (as applicable).
- Site-specific work plan, work instructions, drawings (as applicable).
- Personal protective equipment (as may be required by Site Specific Health and Safety Plan).
- Aluminum foil (if field decontamination is expected).
- Appropriate containers for collection of purge water (bucket, carboy, 55-gallon drum etc.).

4. Procedures

Immediately upon opening the well, the air in the wellhead should be sampled for VOCs using a portable VOC analyzer, such as a Photovac MicroTIP®. The well cap shall be opened slightly and the sampling port of the VOC analyzer shall be inserted into the well. The maximum reading shall be recorded on the appropriate field paperwork. The instrument shall be zeroed with ambient air prior to the measurement, and the initial and final readings shall be recorded for each well.

Measures shall be taken during well sampling to prevent surface soils from coming in contact with the purging equipment and lines. Typically, a polyethylene sheet is placed on the ground providing adequate coverage for the equipment being used.

4.1. Detection of Immiscible Layers

4.1.1. If the presence of immiscible layers is suspected or unknown, the sampling event shall include provisions for detection of immiscible phases prior to well evacuation or sample collection. Lighter and/or

denser immiscible phases may be encountered in a groundwater monitoring well.

4.1.2. An interface probe will be used to determine the existence of any immiscible layers, light or dense. Alternatively, a clear fluorocarbon resin or PVC bailer may be used to determine the existence of the phases or oil sheen in the well when no accurate determination of the immiscible layer thickness is required. For Geoprobe® wells smaller than 1" in diameter, an interface probe cannot be introduced into the well. A small diameter disposable bailer can be used to determine the existence of any immiscible layers. Alternatively the initial water purged from a well will be collected and evaluated visually for the presence of immiscible layers.

4.1.3. If immiscible layers were encountered, the levels of the immiscible liquids shall be measured to an accuracy of 0.02 feet using an electronic interface probe capable of detecting the interfaces between air, product, and water. The interface levels shall be recorded in the field notebook. Adjustments of the observed head to the theoretical hydraulic head shall be calculated based on the density conversion factor associated with the particular non-aqueous phase liquid.

4.1.4. If required, the immiscible layers and groundwater shall then be purged into 55-gallon 17H DOT drum, which shall be labeled and characterized for disposal. The immiscible layer shall be collected prior to any purging activities.

4.2. Measurement of Static Water Level

4.2.1. The static water elevations in each well shall be measured prior to each sampling event. This is performed initially to characterize the site, and in subsequent sampling rounds to determine whether horizontal or vertical flow gradients have changed. A change in hydrologic conditions may necessitate modification of the groundwater monitoring program.

4.2.2. Remove the protective cover and locking cap.

4.2.3. Each well shall have a surveyed reference point located at the top of the well casing with the locking cap removed. The reference point shall be easily recognizable, since the personnel conducting the sampling may differ from one sampling event to the next. If no distinguishable reference point is present, the measurements shall be

taken from the highest point on the well casing. The absence of a reference point and subsequent reference point used for the measurements shall be recorded on the field paperwork.

4.2.4. The following parameters shall be measured with an accuracy of 0.01 ft:

- Depth to standing water.
- Depth to bottom of well.

4.2.5. A water-level indicator will be used for measurement. Due to possible pressure differences between the well atmosphere and the ambient atmosphere, the water level will be allowed to equilibrate for 15 minutes following removal of the well cap. The results shall be recorded in the appropriate location(s) on the appropriate field forms.

4.2.6. Total depth measurements will be compared to original depths to determine the degree of siltation that may have occurred. This information shall be noted on the field form. Should significant siltation occur in any well, the well may need to be redeveloped by an approved method. This information will also be used to confirm that the proper well is being sampled (in case of cluster wells).

4.2.7. The portion of the tape immersed in the well shall be decontaminated during retrieval using a distilled water rinse followed by drying with a clean wipe, prior to use in another well. This decontamination procedure shall be amended, as needed, to accommodate the specific type of contamination anticipated.

4.3. Field Analysis

4.3.1. Parameters that are physically or chemically unstable shall be measured immediately after collection using a field test meter or other equipment. Parameters such as pH, temperature, specific conductivity, and turbidity will be measured in the field, at the temperature of the well sample. The measurement of additional parameters may be required dependent upon sampling methods or other site-specific conditions.

4.3.2. A combination of pH/temperature/specific conductivity meters shall be used. The meter shall be calibrated prior to use and at the end of the day using calibration solutions, in accordance with the instructions provided in the instrument's operating manual. Whenever a

questionable reading ("spike") is observed the calibration shall be checked. The calibration shall be checked prior to sampling each well or well cluster. Calibration information to be recorded in the field paperwork shall include the temperature, pH, and conductivity readings in each calibration solution before and after each calibration.

The pH/temperature/conductivity meters shall be placed into a sample and allowed to stabilize for a minimum of twenty seconds. The accuracy of measurement shall be 0.1 standard units for pH, and 0.1° Celsius for temperature. For conductivity, the accuracy shall be as stipulated by the range of the instrument. The sample shall be discarded in an appropriate manner upon completion of the analysis.

4.3.3. The pH/temperature/specific conductivity meters shall be decontaminated using a distilled/deionized water rinse between each sample. To the extent possible, the same probe and meter shall be used for all measurements at a given site for the duration of monitoring at the site.

4.3.4. Turbidity of the sample will be measured using a DRT turbidimeter, Model 15C or equivalent, that has been calibrated in accordance with the instructions provided in the instrument's manual. The accuracy of the measurement shall be to 1 NTU (nephelometric turbidity unit).

4.4. Well Evacuation

4.4.1. Calculate standing water in the well based on the following schedule and record on the appropriate field form:

Well Diameter (inches)	Conversion Factor (gal/feet)
½	0.01
1	0.041
1 ¼	0.064
1 ½	0.091
2	0.163
4	0.654
6	1.47

4.4.2. Generally, a centrifugal, submersible, air-lift, bladder, inertial, or peristaltic pump equipped with a fluorocarbon resin or PVC foot valve on the end of dedicated tubing, as appropriate, may be used to evacuate the monitoring wells. Alternatively, evacuation of the wells may be accomplished using a bailer.

4.4.3. A new sheet of polyethylene plastic shall be placed on the ground adjacent to the well. Sampling and purging equipment, such as pump, tubing, bailers and bailer twine, containers, etc., shall be placed on the polyethylene sheet, never on the ground.

4.4.4. Don disposable gloves, prepare pump and tubing for insertion into the well, ensuring that any tubing or pump apparatus is of sufficient length to reach the appropriate depth for pumping. Pumping shall occur within the well screened interval as indicated on the well construction diagram. If the well construction information is not available, the bottom of the tubing or pump shall be placed 1' - 2' above the bottom of the well.

4.4.5. Lower the pump and/or tubing gently into the water column to the appropriate depth and begin pumping.

4.4.6. Measure pH, temperature, specific conductivity, turbidity and other specific parameters in the well from the first water extracted during the purging process.

4.4.7. Remove a volume of water equal to 3 to 5 times the standing water from the well measured into an appropriate container. Purging of the well shall occur at a slow rate to minimize agitation of the water recharging the well.

4.4.8. If it is not possible to remove three volumes as described above, due to slow recovery of the well, the well shall be emptied and allowed to recover. In slow-yielding wells, whenever full recovery exceeds two hours, the sample shall be extracted as soon as a sufficient volume is available for a sample for each parameter.

4.4.9. Measure pH, temperature, specific conductivity, turbidity and other specific parameters **prior** to sampling.

4.4.10. Well evacuation is deemed to be complete when the following criteria have been met:

- pH measurements vary no more than ± 0.5 standard units.
- Specific conductivity measurements vary no more than ± 10%.
- Temperature measurements vary no more than ± 1 °C.
- Turbidity measurements (if used) are below 5 NTU, if practicable.

Alternatively well purging shall be deemed complete if a maximum of five well volumes have been removed from the well and/or other site-specific or method-specific parameters have stabilized.

4.4.11. Measure pH, temperature, specific conductivity and turbidity (and other specific parameters) again **after** sampling to determine the effectiveness of purging and sample stability.

4.4.12. Do **not** re-use purging equipment (bailers, rope, tubing, sampling vials, etc.). Any non-disposable bailers shall be returned to the office for decontamination. Pumps shall be decontaminated between monitoring wells, in accordance with procedures noted in Section 4.7.

4.4.13. Bailer twine and other consumables, such as filter apparatus, shall be disposed of appropriately.

4.4.14. Record sampler's name, sampling time, volume of water purged, parameters measured, weather conditions, sample number, analyses required and all other pertinent information on appropriate field forms, and complete the chain of custody form. The field paperwork shall also provide an indication of other field conditions that could potentially impact water levels (such as a pond being drained, or presence of a beaver dam in nearby surface water).

4.4.15. As dictated by project-specific requirements and/or groundwater quality considerations, any water purged from the monitoring wells shall be stored in properly labeled containers for disposal.

4.4.16. Storage shall be in properly labeled containers approved for storage of hazardous materials, and in an appropriate designated location at the site.

4.5. Sample Withdrawal

4.5.1. In order to ensure that the groundwater sample is representative of the formation, it is important to minimize physical alteration (i.e. agitation during purging and/or sample collection) or chemical contamination of the sample during the withdrawal process. The sample set shall include enough dedicated bailers and sample jars to obtain samples from each well, and additional quality assurance/quality control (QA/QC) samples such as duplicates, trip blanks and equipment blanks. In addition, it is recommended to increase the supply of

sampling equipment and sample jars by about 10% to account for missing or broken glassware.

4.5.2. Use either an appropriate pump or bailer to purge each well (the same pump used for purging may be used for sample withdrawal, with the exception that samples intended for VOC analysis must be collected using either a bailer or a bladder pump.). Do not reuse a bailer in the field; used non-disposable bailers shall be returned to the office for decontamination.

4.5.3. To minimize agitation of the water column, samples shall be collected from the pump tubing in the following order into pre-labeled sample containers:

- Extractable organics (semi-volatile).
- Total petroleum hydrocarbons (TPH).
- Poly chlorinated biphenyls (PCBs).
- Metals.
- Phenols.
- Cyanide.
- Chloride and sulfate.
- Nitrate and ammonia.
- Turbidity.
- Radionuclides.

Samples to be analyzed for the following constituents shall be collected using a bailer, after any pump and tubing have been removed from the well. Removal of any down hole equipment shall be done carefully and in a manner that minimizes disturbance of the water column.

- Volatile organic compounds (VOCs).
- Purgeable organic carbon (POCs).
- Purgeable organic halogens (POX).
- Total organic halogens (TOX).
- Total organic carbon (TOC).

4.5.4. Samples shall be obtained from the monitoring wells as soon as possible after purging. This may require waiting an extended period for low-yielding wells.

4.5.5. Samples collected for VOC analysis shall be free of any air bubbles and inverted upon filling. Bacterial samples shall be collected using dedicated gloves; taking care not to allow anything to touch the inside of the sampling container.

4.5.6. Samples collected for dissolved metals analysis, which are to be filtered in the field, shall be passed through a 0.45 micron (maximum) filter (either in-line or under negative pressure) prior to placement in the sample bottle.

4.5.7. In situations where replicate samples shall be required, care shall be taken to ensure that each sample collected is independent.

4.5.8. In some situations, inorganic parameters may be sampled directly from a pump after completion of well evacuation procedures.

4.6. Post Sampling Procedures

4.6.1. As required, upon completion of all sampling procedures for a particular site, secure the lid of the cooler using packaging tape with the chain of custody inside.

4.6.2. If the laboratory is local, transport the samples directly to the laboratory and present them to the sample manager. The representative of LEA should witness the verification of the chain of custody and obtain a carbon copy for filing in the project notebook.

4.6.3. If the laboratory is distant, arrange for transport with a reputable carrier service. Typically, the laboratory specifies the carrier to be used and provides the shipping papers. The cooler and samples shall be secured for transport, and all mailing documentation secured onto the top of the cooler. Unless otherwise specified, delivery shall be overnight. Friday shipments should be mailed for Saturday delivery, once confirmed that the laboratory can accept them on Saturday. The laboratory shall provide confirmation of acceptance noting the temperature of the temperature blank and any deviations from the chain of custody.

4.7. Field Documentation

4.7.1. Field documentation shall include at a minimum: a chain-of-custody form, Field Data Record Groundwater Form, Sample Collection Form, Daily Field Report, Field Quality Review Checklist. Sample labels shall be used for proper sample identification.

4.7.1.1. The labels shall be sufficiently durable to withstand immersion for 48 hours without detaching and to withstand normal handling. The information provided shall be legible at all times.

4.7.1.2. The following information shall be provided on the sample label using an indelible-ink pen:

- Sample identification number.
- LEA Commission Number.
- Date and time of collection.
- Place of collection.
- Parameter(s) requested (if space permits).

4.7.1.3. A field logbook and/or appropriate field forms will be used to log all pertinent information with an indelible-ink pen. The following information shall be provided:

- Project and site identification.
- LEA commission number.
- Identification of well.
- Static water level measurement technique.
- Presence of immiscible layers and detection method.
- Time well purged.
- Collection method for immiscible layers and sample identification numbers.
- Well evacuation procedure/equipment.
- Sample withdrawal procedure/equipment.
- Date and time of collection.

- Types of sample containers used and sample identification numbers.
- Preservative(s) used.
- Parameters requested for analysis.
- Field analysis method(s).
- Whether or not field filtration was performed and the filter size, if appropriate.
- Field observations on day of sampling event.
- Record of site activities.
- Field personnel.
- Climatic conditions, including air temperature.
- Status of total production.
- Record of non-productive time.
- Name of all visitors to the site related to the project.

4.7.1.4. The chain-of-custody record shall include the following information:

- Company's name and location.
- Date and time of collection.
- Sample number.
- Container type, number, size.
- Preservative used.
- Signature of collector.
- Signatures of persons involved in the chain of possession.
- Analyses to be performed.
- Type and number of samples.

A separate entry shall be made for each sample, and within each sample each case that a different preservative is used.

4.7.1.5. The Field Data Record Groundwater Form shall be updated during the sampling of each well and include the following information:

- Identification of well.
- Well depth, diameter, depth to water.
- Static water level depth and measurement technique.
- Purge volume and pumping rate.
- Time well purged.
- LEA commission number.
- Date.

4.8. Equipment Decontamination

All materials and equipment, which enter a well, must be clean and free of any potential contaminants. In general, the equipment and materials entering the well shall be unused and preferably disposable. Any items not considered disposable should be decontaminated prior to commencing field activities. If field decontamination is required, the choice of decontamination procedures shall be based upon knowledge of the site-specific contaminants and as outlined in the site-specific work plan.

For sites at which the contaminants are unknown, but contamination is suspected, the decontamination procedures outlined below shall be followed.

4.8.1. Prior to commencing any field activities, the following solutions (as appropriate for the appropriate contaminants) shall be prepared and placed into 500-ml laboratory squirt bottles: 10% methanol in water; 10% nitric acid in water; 100% n-hexane; distilled, de-ionized water.

4.8.2. In the field, prepare approximately 2.5 gallons of a solution of Alconox® (or other suitable non-phosphate laboratory grade detergent) in tap water in a 5-gallon bucket.

4.8.3. Prepare a piece of 5-mil polyethylene sheeting to underlie the decontamination area. The sheeting shall be of sufficient size to contain any accidental discharge of decontamination solutions. The plastic shall be bermed to contain spills.

4.8.4. The order for decontaminating equipment is as follows:

1) Detergent scrub.
2) DI water rinse.
3) Hexane rinse (to be used only if separate-phase petroleum product, other than gasoline, is present).
4) DI water rinse.
5) 10% nitric acid rinse (to be used only when metals are suspected as potential contaminants).
6) DI water rinse.
7) Methanol rinse (<10% solution).
8) Air dry.

4.8.5. Materials considered disposable such as the bailer cord, pump tubing, filters, etc. shall not be decontaminated and shall be disposed of in accordance with all applicable municipal, state, and federal regulations.

4.8.6. Wrap each piece of decontaminated equipment in aluminum foil, as appropriate, to maintain cleanliness.

4.8.7. At the end of the project day, dispose of all spent decontamination fluids and materials such as the polyethylene sheeting and personal protective equipment in accordance with all applicable municipal, state, and federal regulations.

5. Quality Assurance/Quality Control

Typically samples taken for Quality Assurance/Quality Control for liquid sample collection include duplicate samples, equipment blanks and trip blanks. The necessity for these samples will be outlined in the site-specific work plan. In general, all QA/QC measures taken during liquid sample collection shall be in conformance with LEA's standard operating procedure (SOP) ID 10005. Standard QA/QC measure shall include the recording of pertinent information as follows:

5.1. The Field Instrument & Quality Assurance Record, which is a portion of the Daily Field Report, shall include the following information:

- Instrument make, model, and type.
- Calibration readings.
- Calibration/filtration lot numbers.
- Field personnel and signature.

5.2. The Field Quality Review Checklist, which is a portion of the Daily Field Report, shall assure the completeness of the sampling round and include the following information:

- Reviewer's name and date.
- Review of all necessary site activities and field forms.
- Statement of corrective actions for deficiencies.

6. References

6.1. EPA, *RCRA Groundwater Monitoring Technical Enforcement Guidance Document*, OSWER 9950.1, September 1986.

6.2. EPA, *Practical Guide for Groundwater Sampling*, EPA/600/2-85/104, September 1985.

6.3. DEP, Site Characterization Guidance Document, Draft, June 12, 2000.

END OF DOCUMENT

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Low Flow (Low Stress)
Liquid Sample Collection and Field Analysis

SOP ID: 10039
Date Initiated: 06/11/01
Revision No. 002: 12/02/02

Approved By: *__/s/ David C. Brisson__* *__12/03/02__*
David C. Brisson **Date**
Project Geologist

__/s/ Nick D. Skoularikis__ *__12/02/02__*
Nick D. Skoularikis **Date**
Director of Quality

REVISION RECORD

Rev #	Date	Additions/Deletions/Modifications
Initial Issue	06/11/01	
001	04/01/02	Updated to reflect new SOP format.
002	12/02/02	Updated to reflect stabilization procedures.

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
For
Low Flow (Low Stress)
Liquid Sample Collection and Field Analysis

1. Purpose and Scope

This standard operating procedure (SOP) describes the procedures to be followed for measurement of static water level elevations, detection of immiscible layers, well evacuation, sample withdrawal, and field analyses utilizing low flow sampling techniques.

2. Definitions

2.1. Immiscible layers: The term is used to denote free-phase liquids that may be present in the aquifer as a result of a release. These liquids may have a density lighter than water (light non-aqueous phase liquids (LNAPL) or floaters) or heavier than water (dense non-aqueous phase liquids (DNAPL) or sinkers).

3. Equipment

3.1. Equipment required for the collection and field analysis of liquid samples shall include:

- Water-level indicator (accurate to 0.01 foot).
- Distilled water.
- Hand towels.
- Portable volatile organic compound (VOC) analyzer (Photovac MicroTIP®, Foxboro OVA® or equivalent).
- Interface probe/ clear view bailer.
- Flow-through-cell capable of monitoring pH, temperature, specific-conductance, Eh, dissolved oxygen, and turbidity.
- Polyethylene plastic sheeting.
- Adjustable rate submersible pump (preferred), adjustable rate centrifugal pump or bladder pump (constructed of stainless steel or Teflon®),

adjustable rate peristaltic pump and polyethylene tubing (1/4 to 3/8 inch inner diameter (I.D.)), or other appropriate pumping apparatus.

- Clean disposable gloves.
- Alconox®, or other non-phosphate laboratory grade detergent.
- Three 5-gallon buckets.
- Decontamination brushes.
- Distilled, de-ionized (DI) water.
- Decontamination fluids (less than 10 percent methanol in water, 100 percent n-hexane, and 10 percent nitric acid).

4. Procedure

4.1. Equipment Decontamination

All materials and equipment, which enter a well, must be clean and free of any potential contaminants. In general, the choice of decontamination procedures should be based upon knowledge of the site-specific contaminants and outlined in the site-specific work plan.

For sites at which the contaminants are unknown, but contamination is suspected, the decontamination procedures outlined below should be followed.

4.1.1. Prior to commencing any field activities, the following solutions (as appropriate for the appropriate contaminants) should be prepared and placed into 500-ml laboratory squirt bottles: less than 10 percent methanol in water; 10 percent nitric acid in water; 100 percent n-hexane; distilled, de-ionized water.

4.1.2. In the field, prepare approximately 2.5 gallons of a solution of Alconox® (or other suitable non-phosphate laboratory grade detergent) in tap water in a 5-gallon bucket.

4.1.3. Prepare a piece of 5-mil polyethylene sheeting to underlie the decontamination area. The sheeting should be of sufficient size to contain any accidental discharge of decontamination solutions. The plastic should be bermed to contain spills.

4.1.4. The order for decontaminating equipment is as follows:

1) Detergent scrub.

2) DI water rinse.
3) Hexane rinse (to be used only if separate-phase petroleum product, other than gasoline, is present).
4) DI water rinse.
5) 10 percent nitric acid rinse (to be used only when metals are suspected as potential contaminants).
6) DI water rinse.
7) Methanol rinse (less than 10 percent solution).
8) Air dry.

4.1.5. Materials such as the bailer cord should not be decontaminated and should just be disposed of after each test.

4.1.6. Wrap each piece of decontaminated equipment in aluminum foil, as appropriate, to maintain cleanliness.

4.1.7. At the end of the project day, dispose of all spent decontamination fluids and materials such as the polyethylene sheeting and personal protective equipment in accordance with all applicable municipal, state, and federal regulations.

4.2. Sample Collection

4.2.1. Immediately upon opening the well, the air in the well head will be sampled for VOCs using a portable VOC analyzer, such as a Photovac MicroTIP® or equivalent. The instrument shall be zeroed with ambient air prior to the measurement, and the initial and final readings shall be recorded for each well.

4.3. Detection of Immiscible Layers

4.3.1. Should evidence warrant, a sampling event shall include provisions for detection of immiscible phases prior to well evacuation or sample collection. LNAPLs are relatively insoluble liquid organic compounds with densities less than that of water (1 g/ml), while DNAPLs are organic compounds with densities greater than that of water. Lighter and/or denser immiscible phases may be encountered in a groundwater monitoring well.

4.3.2. An interface probe will be used to determine the existence of any immiscible layers, light or dense. Alternatively, a clear fluorocarbon resin or PVC bailer may be used to determine the existence of the

phases or oil sheen in the well when no accurate determination of the immiscible layer thickness is required.

4.3.3. Should elevations of the immiscible layers be required, levels of the fluids shall be measured to an accuracy of 0.02 feet using an electronic interface probe capable of detecting the interfaces between air, product, and water. The interface levels shall be recorded in the field form. Adjustments of the observed head to the theoretical hydraulic head shall be calculated based on the density conversion factor associated with the particular non-aqueous phase liquid.

4.3.4. If immiscible layers are detected low-flow sampling is not recommended.

4.4. Measurement of Static Water Level

4.4.1. The static water elevations in each well shall be measured prior to each sampling event. This is performed initially to characterize the site, and in subsequent sampling rounds to determine whether horizontal or vertical flow gradients have changed. A change in hydrologic conditions may necessitate modification of the groundwater monitoring program.

4.4.2. Remove the protective cover and locking cap from the well.

4.4.3. Each well shall have a surveyed reference point located at the top of the well casing with the locking cap removed. The reference point shall be easily recognizable, since the personnel conducting the sampling may differ from one sampling event to the next.

4.4.4. The following parameters shall be measured with an accuracy of 0.01 ft:

- Depth to standing water.
- Depth to bottom of well.

4.4.5. A water-level indicator with a fiberglass tape will be used for measurement. Due to possible pressure differences between the well atmosphere and the ambient atmosphere, the water level will be allowed fifteen minutes to equilibrate upon removal of the well cap. If excess pressure is encountered the water level will be allowed greater

than fifteen minutes to equilibrate upon removal of the well cap. The results shall be recorded on the appropriate field form(s).

4.4.6. Total depth measurements will be compared to original depths to determine the degree of siltation that may have occurred. This information shall be noted on the field forms. Should significant siltation occur in any well, the well shall be redeveloped by an approved method.

4.4.7. The portion of the tape immersed in the well shall be decontaminated during retrieval using a distilled water rinse followed by drying with a clean wipe, prior to use in another well. This decontamination procedure shall be amended, as needed, to accommodate the specific type of contamination anticipated.

4.4.8. The static water level should be monitored and recorded throughout the purging and sampling of each well.

4.5. Field Analysis

4.5.1. Parameters that are physically or chemically unstable shall be tested utilizing a flow-through-cell. Such parameters as pH, temperature, specific conductance, dissolved oxygen (DO), oxidation reduction potential (Eh), and turbidity will be measured in the field, at the temperature of the well sample.

4.5.2. Parameters such as pH, temperature, specific conductance, DO, Eh, and turbidity shall be measured using a flow-through-cell (YSI model 6820 or equivalent). The meter shall be calibrated prior to use and at the end of the day using supplied solutions, in accordance with the instructions provided by the manufacturer. Calibration information will be recorded in the field before and after each calibration.

4.6. Well Evacuation

4.6.1. Calculate standing water in the well based on the following schedule and record on the appropriate field form:

Well Diameter (inches)	Conversion Factor (gal/feet)
2	0.163
4	0.654
6	1.47

4.6.2. Generally, a submersible, air-lift, bladder, inertial, or peristaltic pump equipped with a fluorocarbon resin or PVC foot valve on the end of dedicated tubing, as appropriate, may be used to evacuate the monitoring wells.

4.6.3. A new piece of polyethylene plastic shall be placed on the ground adjacent to the well. Sampling and purging equipment, such as pump, tubing, containers, etc., shall be placed on the polyethylene sheet, never on the ground.

4.6.4. Don disposable gloves, prepare pump and tubing for insertion into the well, ensuring that any tubing or pump apparatus is of sufficient length to reach the appropriate depth for pumping.

4.6.5. Lower the pump and/or tubing gently into the water column to the midpoint of the zone to be sampled. A site-specific sampling plan should specify the sampling depth, or provide specific criteria for the selection of intake depth for each well. If possible keep the pump intake two feet above the bottom of the well. Start the pump at the lowest speed setting and slowly increase the speed until discharge occurs. Check the water level. Adjust the pump rate until little or no draw down occurs. Draw down should not exceed 0.3 feet, if the draw down exceeds 0.3 feet shut the pump down and allow to recharge. Alternate pumping and recharging until parameters stabilize. It should be noted that stable drawdowns of 0.3 feet while desirable are not mandatory.

4.6.6. Monitor and record water level and pumping rate every three to five minutes during purging. Calculate the volume of the discharge tubing, bladder pump, and the flow-through-cell. Once this volume has been purged from the well monitor and record indicator field parameters (turbidity, pH, Eh, DO, temperature and specific conductance) in the well from the first water extracted during the purging process and three consecutive samples taken every three to five minutes. Stabilization is considered to be achieved when three consecutive readings are within the following limits:

- Turbidity (10% for values less than 5 and greater than 1 NTU). It should be noted that achievements of turbidity levels less than 5 NTUs are not mandatory but efforts should be made to collect a groundwater samples with the lowest turbidity achievable.
- DO (10%).
- Specific Conductance and Temperature (3%).
- pH (+/- 0.1 unit).
- ORP/Eh (+/- millivolts).

4.6.7. If it is not possible to obtain stabilization as described above, due to slow recovery of the well, the well shall be emptied and allowed to recover, or if after 4 hours of purging the field parameters have not stabilized, discontinue purging and collect samples. Make special note on the appropriate sampling forms that sample collection occurred without stabilization. Samples obtained from slow-yielding wells shall be extracted as soon as a sufficient volume is available for a sample for each parameter.

4.6.8. Measure indicator parameters again **after** sampling to determine effectiveness of purging and sample stability.

4.6.9. Do **not** re-use purging equipment (bailers, rope, tubing, sampling vials, etc.). Pumps shall be decontaminated between monitoring wells, in accordance with procedures noted in Section 4.1.

4.6.10. Record sampler's name, sampling time, volume of water purged, parameters measured, weather conditions, sample number, analyses required and all other pertinent information in the field notebook and/or appropriate field forms, and complete the chain of custody form.

4.6.11. Any water purged from the monitoring wells shall be stored in appropriate containers until the laboratory analyses are available. Then it should be disposed of in accordance with all applicable local, state and federal requirements.

4.6.12. Storage shall be in containers approved for storage of hazardous materials, and in an appropriate designated location at the facility.

4.7. Sample Withdrawal

4.7.1. In order to ensure that the groundwater sample is representative of the formation, it is important to minimize physical alteration (i.e. agitation during purging and/or sample collection) or chemical contamination of the sample during the withdrawal process.

4.7.2. Use an appropriate pump to purge each well (the same pump used for purging may be used for sample withdrawal, with the exception that samples intended for VOC analysis must be collected using a bladder pump).

4.7.3. The samples shall be collected at a location before entering the flow-through-cell. To minimize agitation of the water column, samples shall be collected from the pump tubing in the following order into pre-labeled sample containers:

- Extractable organics (semi-volatile).
- VOCs.
- Total petroleum hydrocarbons.
- PCBs.
- Metals.
- Phenols.
- Cyanide.
- Chloride and sulfate.
- Nitrate and ammonia.
- Turbidity.
- Radionuclides.
- Purgeable organic carbon (POCs).
- Purgeable organic halogens (POX).
- Total organic halogens (TOX).
- Total organic carbon (TOC).

4.7.4. Samples shall be obtained from the monitoring wells as soon as possible after purging. This may require waiting an extended period for low-yielding wells.

4.7.5. Samples collected for VOC analysis shall be free of any air bubbles and inverted upon filling. Bacterial samples shall be collected using dedicated gloves; taking care not to allow anything to touch the inside of the sampling container.

4.7.6. Samples collected for dissolved metals analysis, which are to be filtered in the field, shall be passed through a 0.45 micron (maximum) filter (either in-line or under negative pressure) prior to placement in the sample bottle.

4.7.7. In situations where replicate samples are required, care shall be taken to ensure that each sample collected is independent.

4.7.8. In some situations, inorganic parameters may be sampled directly from a pump after completion of well evacuation procedures.

4.8. Field Documentation

4.8.1. Field documentation shall include at a minimum: a chain-of-custody form, Field Data Record Groundwater Form, Sample Collection Form, Daily Field Report. Sample labels and sample seals shall be used for proper sample identification.

4.8.1.1. The labels shall be sufficiently durable to withstand immersion for 48 hours without detaching and to withstand normal handling. The information provided shall be legible at all times.

4.8.1.2. The following information shall be provided on the sample label using an indelible pen:

- Sample identification number.
- Date and time of collection.
- Place of collection.
- Parameter(s) requested (if space permits).

4.8.1.3. Appropriate field forms will be used to log all pertinent information with an indelible pen. The following information shall be provided:

- Project and site identification.
- LEA commission number.

- Identification of well.
- Static water level measurement technique.
- Presence of immiscible layers and detection method.
- Time well purged.
- Collection method for immiscible layers and sample identification numbers.
- Well evacuation procedure/equipment.
- Sample withdrawal procedure/equipment.
- Date and time of collection.
- Types of sample containers used and sample identification numbers.
- Preservative(s) used.
- Parameters requested for analysis.
- Field analysis method(s).
- Whether or not field filtration was performed and the filter size, if appropriate.
- Field observations on day of sampling event.
- Record of site activities.
- Field personnel.
- Climatic conditions, including air temperature.
- Status of total production.
- Record of non-productive time.

4.8.1.4. The Field Sampling Record shall include at a minimum the following information:

- Identification of well.
- Date and time of collection.
- Name of collector.
- Sample number.

4.8.1.5. The chain-of-custody record shall include the following information:

- Company's name and location.
- Date and time of collection.
- Sample number.
- Container type, number, size.
- Preservative used.
- Signature of collector.
- Signatures of persons involved in the chain of possession.
- Analyses to be performed.
- Type and number of samples.

4.8.1.6. The Field Data Record Groundwater Form shall be updated during the sampling of each well and include the following information:

- Identification of well.
- Well depth, diameter, depth to water.
- Static water level depth and measurement technique.
- Purge volume and pumping rate.
- Time well is purged.
- LEA commission number.
- Date.

4.8.1.7. The Daily Field Record shall include the following information:

- Client's name, location, LEA commission number, date.
- Instrument make, model, and type.
- Calibration readings.
- Calibration/filtration lot numbers.

- Field personnel and signature.

4.8.1.8. The Daily Field Record shall assure the completeness of the sampling round and include the following information:

- Reviewer's name, date, and LEA commission number.
- Review of all necessary site activities and field forms.
- Statement of corrective actions for deficiencies.

5. References

5.1. United States Environmental Protection Agency (EPA), Region I. *Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells,* July 30, 1996, Revision 2.

5.2. Robert W. Puls and Michael Barcelona, EPA. *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures,* in Groundwater Issue, (EPA/540/S-95/504), April 1996.

5.3. Connecticut Department of Environmental Protection, Bureau of Water Management, Permitting Enforcement and Remediation Division. *Site Characterization Guidance Document,* Draft, June 12, 2000.

END OF DOCUMENT

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Quality Assurance/Quality Control Measures
for
Field Activities

SOP ID: 10005
Date Initiated: 02/20/90
Revision No. 004: 12/31/01

Approved By: *__/s/ Jeffrey J. Loureiro__* *__12/19/01__*
Jeffrey J. Loureiro **Date**
President

__/s/ Nick D. Skoularikis__ *__12/19/01__*
Nick D. Skoularikis **Date**
Director of Quality

REVISION RECORD

Rev #	Date	Additions/Deletions/Modifications
Initial Issue	02/20/90	
001-003	-	No record.
004	12/31/01	Updated to reflect new SOP format. Added section 4.3, Results Evaluation. Minor revisions throughout.

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Quality Assurance/Quality Control Measures
for
Field Activities

1. Statement of Purpose

This document describes procedures to be followed for proper Quality Assurance Quality Control (QA/QC) practices which shall incorporate all activities associated with sampling tool and instrument preparation, field measurements and sampling, proper documentation of field and post-field activities, QC sample preparation, chain-of-custody protocol and laboratory analytical procedures. The use of specific QA/QC measures is project-specific as defined in the project work plan. This standard operating procedure (SOP) was adopted in accordance with the Environmental Protection Agency (EPA) document *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846).

2. Definitions

2.1. Trip Blank: An aliquot of organic-free water or equivalent neutral reference material carried into the field but not exposed.

2.2. Equipment Blank: An aliquot of analyte-free deionized water processed through all sample collection equipment.

2.3. Replicate Samples: Samples that have been divided into two or more portions in the field.

2.4. Collocated Samples: Independent samples collected under identical circumstances in a way that they are equally representative of the parameter of interest.

2.5. Performance Evaluation (PE) Sample: A sample that mimics actual samples in all possible aspects, except that its composition is known to the auditor and unknown to the analyst.

3. Equipment

None

4. Procedure

4.1. General

4.1.1. All QA/QC sample preparation procedures shall be properly documented including:

- Name of person(s) or laboratory involved in sample preparation.
- Reagents used.
- Sample number.
- Analyses required.
- Concentration calculations.
- Accuracy of measurements.
- Number, type, size of containers used.
- Preservation method.
- Date and time of sample preparation.

4.1.2. All information shall be included in the field logbook and/or appropriate field forms, but not necessarily in the chain-of-custody record except as needed for proper sample identification and analysis. Blind sample numbers are being used in order not to disclose the nature of the sample to the laboratory. No information that would identify the sample as a QA/QC sample shall be included in the chain-of-custody record.

4.1.3. At the conclusion of each sampling day, a quality control review shall be conducted using the Field Quality Review Checklist and the Daily Field Report.

4.2. QC Sample Preparation

4.2.1. Trip Blank

4.2.1.1. Contaminated trip blanks may indicate contamination of the samples during the field trip or shipment to the lab, cross-contamination between the samples, contaminated sample vials, or improper handling.

4.2.1.2. Trip blanks shall be used only with samples that are to be analyzed for volatile organic compounds.

4.2.1.3. One trip blank shall be included per shipping container (cooler) carrying sample soil and/or groundwater samples that are to be analyzed for volatile organic compounds

4.2.1.4. Trip blanks are prepared using analyte-free deionized organic-free water prior to field activities associated with the sampling event, usually by the laboratory providing the sampling containers. Each trip blank is placed in a 40-ml glass VOA vial and is carried in the same shipping container as the sample(s). Trip blanks should not be opened at any time during transport.

4.2.2. Equipment Blank

4.2.2.1. The purpose of an equipment/rinsate blank is to determine if decontamination procedures were adequate or if any of the equipment might contribute contaminants to the sample.

4.2.2.2. An equipment blank is prepared by running analyte-free deionized water through all sample collection equipment (bailers, pumps, filters, split-spoon) and placing it in the appropriate sample containers for analysis. If equipment has been decontaminated in the field, the equipment blank shall be collected after decontamination procedures have been performed.

4.2.2.3. Equipment blanks shall be used when sampling surface water, groundwater, soil, and sediment.

4.2.2.4. One equipment blank shall be collected for each sample bottle/preservation technique/analysis procedure per matrix per sampling event, or as otherwise specified in project-specific documents.

4.2.3. Replicate Samples

4.2.3.1. Replicate samples provide precision information on handling, shipping, storage, preparation and laboratory analysis.

4.2.3.2. Replicate samples are samples that have been divided into two or more portions in the field. An example of a replicate sample is two identical sample bottles filled with water from the same bailer retrieval. To ensure homogeneity, the bailer should be emptied into a clean, decontaminated beaker used exclusively

for the purpose and containing sufficient volume for both sample containers, and from that into the sample containers.

4.2.3.3. Replicate samples cannot be used when sampling for volatile organic compounds.

4.2.3.4. One replicate sample shall be obtained for each sample bottle/preservation technique/analysis procedure per sampling event or one out of every 20 samples, unless collocated samples are used (see below), or as otherwise specified in project-specific documents.

4.2.4. Collocated Samples

4.2.4.1. Collocated samples provide precision information on sample acquisition, homogeneity, handling, shipping, storage, preparation and laboratory analysis.

4.2.4.2. Collocated samples are independent samples collected in such a way so that presumably they are equally representative of the parameter of interest. Examples of collocated samples are groundwater samples collected sequentially, soil core samples collected side-by-side, or air samples collected essentially at the same time from the same manifold.

4.2.4.3. Collocated samples are especially useful when sampling for volatile organic compounds, for which replicate samples cannot be used.

4.2.4.4. Collocated samples shall be obtained for each sample bottle/preservation technique/analysis procedure per sampling event or one out of every 20 samples, unless replicate samples are used (see above), or as otherwise specified in project-specific documents.

4.2.5. Split Samples

4.2.5.1. The purpose of split samples is to provide an assessment of the laboratory analytical procedure.

4.2.5.2. Split samples are collocated or replicate samples sent to two (or more) different laboratories.

4.2.5.3. Split samples can be used with any sample media. Split samples can be used in conjunction with spiked samples (see

below). In case contradictory results are obtained from the samples split between different laboratories, the spiked samples can be used to verify the analytical data (provided that the spiked samples were properly prepared and the appropriate documentation is available).

4.2.5.4. When used, one split/spiked sample per sample bottle/preservation technique/analysis procedure per sampling event or every 20 samples shall be included, or as specified in project-specific documents.

4.2.6. Spiked Samples

4.2.6.1. The purpose of spiked samples is to provide information on the precision of the laboratory analytical procedure. However, besides a wrong preparation, several other sources of error exist such as analyte stability, holding time and interactions with the sample matrix.

4.2.6.2. Spiked samples are samples spiked with the contaminants of interest. The compounds used for spiking should be of the same chemical group as the contaminants being investigated, but they do not have to be the exact chemical compounds. Spiking should be carefully designed and performed prior to the field investigations. Field matrix spikes are not generally recommended because of the high level of technical expertise required for proper preparation and documentation.

4.2.6.3. Can be used with any sample media, however, liquid matrices are preferred due to uniformity of mixing.

4.2.6.4. When used, one split/spiked sample per sample bottle/preservation technique/analysis procedure per sampling event or every 20 samples shall be included, or as otherwise specified in project-specific documents. In order to ensure defensible data, performance evaluation (PE) samples, prepared by an independent vendor, are typically being used. The ordering and handling procedures and record keeping requirements are discussed in Loureiro Engineering Associates, Inc. (LEA's) *SOP for Preparation of PE Samples* (SOP 10030).

4.3. Result Evaluation

4.3.1. The analytical results on QA/QC samples should be evaluated along with the remaining analytical data as follows:

4.3.1.1. No constituents should be detected in the trip blank or equipment blank.

4.3.1.2. The relative percent differences (RPDs) shall be computed for all constituents detected in both duplicate samples used.

The RPD between two measurements (e.g., M1 and M2) is calculated as follows:

$$RPD = \frac{|M1 - M2|}{(M1 + M2)/2} \times 100\%$$

4.3.1.3. Any deviations in the performance evaluation samples shall be brought to the attention of the laboratory. An investigation shall then be performed by the laboratory of the method used, laboratory QA/QC procedures followed, and computations performed. The laboratory shall report the results of their investigation and any corrective actions taken.

5. References

5.1. EPA, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846).

END OF DOCUMENT

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Documentation and Integrity
of
Field Sampling Activities

SOP ID: 10038
Date Initiated: 04/30/99
Revision No. 002: 08/09/02

Approved By: /s/ David C. Brisson 08/09/02
David C. Brisson Date
Project Geologist

/s/ Nick Skoularikis 08/09/02
Nick D. Skoularikis Date
Directory of Quality

REVISION RECORD

Rev #	Date	Additions/Deletions/Modifications
Initial Issue	4/30/99	
001	12/31/01	Formatting and minor revisions throughout
002	08/09/02	Added requirement for briefing or written work instructions prior to sampling; Added section on field equipment request and vehicle request; Added section on chain-of-custody form; Added section on cooler integrity and shipment.

Loureiro Engineering Associates, Inc.
Standard Operating Procedure
for
Documentation
of
Field Sampling Activities

1. Purpose and Scope

1.1. This document describes procedures to be followed for proper documentation of all activities associated with sampling of environmental media, including tool and instrument preparation, field measurements and sampling, quality assurance/quality control (QA/QC) sample preparation, and chain-of-custody protocols. The use of specific documentation procedures depends on the goals of a particular project and should be dictated by the project-specific work plan. This Standard Operating Procedure (SOP) is to be used in conjunction with other Loureiro Engineering Associates, Inc. (LEA) SOPs and guidance for the performance of the associated field sampling activities. This guidance can be provided verbally through a briefing prior to the field activities or through a document such as written work instructions or a project-specific work plan.

2. Definitions

None

3. Equipment

None

4. Procedure

4.1. General

4.1.1. Field procedures for which documentation covered under this SOP is required include sampling of soil, groundwater, air, surface water, and sediment, and any other media from which samples are collected, as well as associated activities.

Documentation to be provided will include:

- Summary of daily field activities.
- Sample descriptions.
- Equipment used.
- Analyses required.
- Instrument calibration.
- Waste disposal.

4.1.2. All relevant information shall be included on the appropriate field report forms. However, the chain-of-custody record will include only that information necessary for proper sample identification and analysis.

4.2. Paperwork Preparation and Completion

4.2.1. Obtaining field paperwork

4.2.1.1. Prior to the initial start up of field activities, the Project Manager, or a designee, shall submit the proper site information to the Database Manager. This information shall include: project name, client name, commission and task number, site name, site location, directions to site, personnel requirements, type of activities planned for the site, approximate duration of field activities, sample information, and the project start date.

4.2.1.2. Once the correct information is entered into the database, paperwork may be obtained directly by the field personnel through the database or by requesting preparation of the paperwork from the database manager. This task should be completed 24 to 48 hours prior to the initiation of field activities.

4.2.2. Field Equipment and Vehicle Request

4.2.2.1. A field equipment request form should be prepared and submitted to the field services manager. The field services manager will in turn ensure that all equipment are available and in proper condition for the specific project. A field vehicle should also be requested. The vehicle will be assigned to the field team based on availability.

4.2.3. Field Activities Documentation

4.2.3.1. The purpose of field paperwork is to adequately document all field activities. It is important to document field conditions that may have an impact on the field activities, such as weather conditions, physical constraints, nearby construction or dewatering activities (to the extent known).

4.2.3.2. All field paperwork must be filled out accurately and be completed in the field before the end of the workday. The only exception is the preparation of performance evaluation (PE) samples, which should be completed in the office after the PE samples have been properly labeled (LEA SOP 10030). Information on equipment and expendable item usage shall be completed during the day, but checked for omissions at the end of the day.

4.2.3.3. At the conclusion of each sampling day, the field personnel shall conduct a quality control review before leaving the field, using the Quality Assurance Checklist section of the Daily Field Report.

4.2.4. Chain-of-Custody Form

4.2.4.1. Although the chain-of-custody forms vary between laboratories and the analyses requested vary on a project-specific basis, the following information should be provided on the chain-of-custody forms:

- Specify the LEA seven-digit sample number, date and time of collection, sample matrix, the type of analyses requested, and the preservatives used. For aqueous samples, the information provided should clearly indicate which preservative is used for which analyses. The analytical method requested should be specified.

- The cooler containing the samples should be labeled with the appropriate identification information. If the sample cooler does not already have an ID assign and attach a new preprinted seven-digit LEA sample label to the cooler.

- Specify whether an electronic disk deliverable (EDD) or data validation package is required.

- Specify the purchase order number, or for United Technologies Corporation (UTC) projects specify the United Analytical Request Procedure (UARP) number.

- Use the suffix "uf" after the seven-digit LEA sample number to denote unfiltered metal samples, as applicable.

4.2.5. Cooler Integrity and Shipment

4.2.5.1. An iced cooler should be available with laboratory-supplied glassware and preservatives. The cooler should contain ice prior to and during sample collection.

4.2.5.2. A cooler containing samples should never be left unattended during the sampling day. If the field personnel need to leave the site at any time, they can lock the cooler in the trailer, staging area, or field vehicle. A temporary chain-of custody seal shall be used at that time to ensure the integrity of the samples.

4.2.5.3. For projects where an offsite laboratory is being used, the office should be contacted to arrange for cooler shipment. In such cases, the laboratory will provide preprinted air bills for shipment through their preferred carrier or will arrange for direct pickup from the office or from the site.

4.2.5.4. When the sampling is completed and the cooler is being prepared for shipment, fresh ice should be placed in the cooler along with a temperature blank. It is important that the cooler has been assigned a cooler ID so that the laboratory can associate the temperature measured with a specific cooler.

4.2.5.5. The sample jars should be placed in a plastic bag to avoid direct contact with the water, which may cause the labels to peel off.

4.2.5.6. A signed custody seal should be used when sealing the cooler. The date and time should also be recorded on the seal.

4.2.6. Post Field Activities

4.2.6.1. Ensure that the paperwork is complete and that the pages are numbered sequentially.

4.2.6.2. Verify that all waste container information has been recorded.

4.2.6.3. Appropriate entries should be made for all visitors to the site related to the field activities performed.

4.2.6.4. Document on the field forms, whether any photos of the site were taken.

4.2.6.5. Upon completion of the daily field activities and after review of the completed paperwork, a copy of the field paperwork shall be submitted to the database manager. The originals shall be retained for filing in the project notebook.

4.2.6.6. All required information from the field is entered into the database by the database manager or a designee. A data review checklist is printed out upon completion. Included with the data review checklist may be a comment sheet indicating inconsistencies in the data entered that were readily apparent based on electronic comparison of the data or noted by personnel entering the data.

4.3. Data Verification

4.3.1. The data review checklist and the comment sheet shall be obtained from the database manager by the project manager or a designee for review. The data review checklist shall be maintained in the project notebook under the QA/QC section and will be periodically reviewed by the Director of Quality.

4.3.2. Once the project manager or designee completes the review process, any mistakes shall be brought to the attention of the database manager in a timely manner, generally in less than two business days from the day on which the database manager prepared the review sheets.

4.3.3. After the corrected information has been entered into the database, a revised data review checklist (and any necessary additional comment sheets) will be provided to the project manager or designee.

4.3.4. The above process will be repeated as necessary until it has been determined that the information that has been entered into the database is accurate and complete.

5. References

None

END OF DOCUMENT

APPENDIX B

DATA MANAGEMENT DOCUMENTATION

LEA Procedure for Entering and Verifying Electronic Analytical Data

1) Load data into LEA IMS (either with disk or electronic file)

2) The LEA IMS database will create 5 tables as follows:
   a. Sample Summary
   b. Possible exceedances of CT reporting criteria for significant environmental hazards (conservative comparison)
   c. Analytical Results
   d. Analytes Over Detection Limits (conservative comparison)
   e. Performance Evaluation Check (if PE samples are applicable)

3) Each of the tables must be printed and verified for accuracy or evaluated, as follows:
   a. Sample Summary – verify field sample location, sample ID, sample interval (if applicable), and sample date are correct based on field paperwork
   b. Possible exceedances – provide information to PM/key office staff person for evaluation against applicable criteria and reporting requirements
   c. Analytical Results – 1) verify agreement with chain-of-custody (i.e. check that parameters and constituents were analyzed and reported as requested); 2) verify hardcopy analytical data reports versus electronic deliverable and field paperwork
   d. Analytes Over Detection Limits – provide information to PM/key office staff person for evaluation against applicable standards
   e. Performance Evaluation Check – verify information from database (PE check sheet against vendor certified ranges and laboratory hardcopy data).

4) The attached checklist must be used to document that each of the applicable components of the data verification are complete. Any errors or non-conformances that are noted during the review must be corrected before the corresponding item it noted as completed on the checklist.

5) Once complete (i.e. data verification performed and corrections made), the completed checklist must be placed in the project file as the record documenting the data was verified.

Date: June 2001

Documentation for
Verifying Electronic Analytical Data

Commission No.:	
Date Electronic Data Recv'd:	
Verification Date:	
Verification Completed by:	
LEA Sample Ids Verified:	
Sample Date:	

LEA IMS Table	Required Verification	Check if Completed
Sample Summary	Verify field sample locations	
	Verify sample IDs	
	Verify Sample Dates	
Possible exceedances	Provide information to PM/key office staff person for evaluation against reporting requirements	
Analytical Results	Verify agreement with COC (i.e. check that parameters and constituents were analyzed and reported as requested)	
	Verify hardcopy analytical data reports versus electronic deliverable, including: • Data • Units • Qualifiers • Sample Media/Description (verify hardcopy) • Commission # (verify hardcopy) • Site/Client Source (verify hardcopy)	
Analytes Over Detection Limits	Provide information to PM/key office staff person for evaluation against applicable standards	
Performance Evaluation Check (if applicable)	Verify information from database (PE check sheet against vendor certified ranges and laboratory hardcopy data).	

Notes/Comments: _____

_____

_____

_____

copy: Project File
Project Manager

LOUREIRO ENGINEERING ASSOCIATES, INC.
DATA MANAGEMENT PLAN

January 1991
Revised November 1996
Revised February 2003

Prepared by

LOUREIRO ENGINEERING ASSOCIATES, INC.
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Plainville, Connecticut

An Employee Owned Company

Comm. No. 100

Table of Contents

		Page
1.	**DATA MANAGEMENT PLAN**	**1**
1.1	Introduction	1
1.2	Data Management System	1
1.2.1	Types of Data	1
1.2.2	Data Storage	2
1.2.3	Data Management Process	2
1.3	Data Management Activities	3
1.3.1	Data Management Team	3
1.3.2	Data Management Tasks	3
1.3.2.1	Data Inputs	4
1.3.2.2	Field Sample Tracking	5
1.3.2.3	Data Entry and Storage	6
1.3.2.4	Data Presentation	7

1. DATA MANAGEMENT PLAN

1.1 Introduction

Since a large volume of data is generated during each project at Loureiro Engineering Associates, Inc. (LEA), it is necessary to develop a company-wide Standard Operating Procedure (SOP for data management to ensure the completeness and integrity of all data associated with the program. Information provided in this data management plan addresses the documentation, tracking, and manipulation of data collected during each project. This data management plan identifies the data documentation materials and procedures, and project filing requirements. Given the number and variety of data being collected during our site investigations/remediation projects, it is imperative that the procedures for handling data from the collection to the reporting phase be clearly outlined and documented.

This data management plan identifies the categories of personnel involved in the data management process, the types of activities associated with data management and how those activities are performed, the chronology and flow of data management activities, and the methods and locations for data storage and reporting.

1.2 Data Management System

1.2.1 *Types of Data*

Many types of data are being generated and managed during our site investigation/remediation projects. Included in the data management process are analytical data collected during field activities (such as measurements of pH, specific conductance, and temperature of groundwater during groundwater sampling events); information related to sample collection (such as location I.D., sample number, sample depth, date and time of sample collection, analyses to be performed); analytical results from screening or field laboratory; analytical results from the fixed laboratory(ies), survey data of sampling locations; and geologic and hydrogeologic data (such as boring logs, well construction diagrams, and water level elevations). These data shall be included in the appropriate electronic data tables for the type of information generated, and will be managed in accordance with the protocols identified in the appropriate subsections of this Data Management Plan. Management procedures for hard copies of the information generated during each project are also identified in relevant subsections of this plan.

1.2.2 Data Storage

Data are maintained in an electronic database. All sampling and analytical information, as well as survey data, boring logs, and miscellaneous data are maintained in LEA's database, a fully relational database management system. Data maintained in this system include but are not necessarily limited to, sampling location information, including name and spatial/survey information, boring logs, well construction diagrams; sample information including depth of sample, sample collection date, responsible field person, sample identification number, results of field measurements; initial laboratory information including chain-of-custody information and analytical requests; and analytical information, including analyte, analysis dates, and results. This system also contains historical information to the extent it is available.

Paper copies of the various field forms and laboratory reports are organized and maintained in a separate filing system, as appropriate for each type of data. Incoming data are logged in both the project analytical database and on hardcopy. The hardcopy is then placed in the appropriate project file. Analytical results from the laboratories are associated with the sample identification numbers assigned during sample collection. Field log books are also kept as part of the project file and considered to be original documents.

Original field notebooks, log sheets, and other information are transferred from the project file to a designated archive location upon the completion of the project. Chemical and physical data generated during the site investigation are stored in paper document form. In addition, computerized data are stored in electronic back-up formats.

1.2.3 Data Management Process

The actual management of data collected during each project is only part of the larger process of sampling design; sample collection; acquisition of analytical data; data retrieval, storage, and presentation; and data evaluation. A schematic diagram illustrating the data management process and how it fits into the overall investigation process is presented in Figure 1. This figure outlines the flow of data from planning stages through collection and analysis to final output and storage. The data management process itself essentially consists of those activities associated with recording, processing, linking, distributing, and reporting of data.

The protocols outlined within this Data Management Plan have been prepared to ensure the accurate capture and retrieval of data needed to achieve the objectives of the project. These protocols ensure that, for each data collection activity, data can be readily incorporated into the appropriate database, correlated with information from other databases and other aspects of the project, and subsequently reported and presented in a variety of formats.

The earliest steps (1-6) in the Data Flow Diagram identify naming conventions to enable database retrieval consistency. These conventions are identified during preparation of the sampling and analysis plans for each project. The Data Management Plan maintains sample integrity through the sample tracking activities highlighted as steps 5, 6, 8, 10, 12, 15, 16, and 17. Field sampling is represented by steps 10 and 11. Data management protocols addressing submittals to and from analytical laboratories are shown in steps 7, 9, 12, and 13. The database manager processes data from field teams in steps 16, 19, 20, and 22. Data verification activities for analytical results incorporated into the analytical database are shown in steps 16 and 17. The spatial and field data will be processed in the independent streams depicted in the data flow diagram by steps 19, 22, and 24. The analytical data is processed in steps 15, 16, 17, and 21. Various data evaluation activities are identified in steps 23, 25, 26, and 27. Archiving is represented in steps 18 and 28.

1.3 Data Management Activities

1.3.1 Data Management Team

The data management team typically consists of the data manager(s), project managers, technical task leaders, field team leaders, field investigation teams, and laboratory contact personnel. The project manager provides guidance and oversight for data management activities.

1.3.2 Data Management Tasks

The data management team will perform the tasks identified in the following paragraphs. The individuals involved with each task will be project specific and will depend on the size and scope of each project.

Data coordination tasks associated with sampling, analysis and field activities include:

- Logging of incoming data and reports into the project file both on the electronic tracking system and hard copy, as appropriate.
- Entering and verifying field data and generating reports.
- Coordination of analytical and field data.
- Tracking chains-of-custody and field screening results.
- Tracking shipment of samples to the off-site laboratory.
- Tracking samples and electronic deliverables from the off-site laboratories.
- Verifying analytical data from off-site laboratories using appropriate protocols.

Tasks associated with database management specifically include:

- Coordinating data preparation, data loading, and data verification for the database;
- Working with project staff to develop schedules for delivery of analytical results;
- Entering and verifying data in the database; and,
- Coordinating with technical task leaders to ensure efficient delivery and presentation of data.

Specific activities associated with various data management tasks are summarized in the following sub-sections.

1.3.2.1 Data Inputs

Field Measurements

Field measurements include physical data (e.g. pH, temperature, specific conductance, turbidity) collected during investigation activities. Measurements will be recorded in the field and transferred manually from the field data sheets to the electronic analytical database. Data from the database will then be verified against the hardcopy field data sheets.

Onsite Analytical Measurements

Analytical measurements determined using a portable gas chromatograph either at the site or at the screening laboratory are reported in both hard-copy and electronic formats. The electronic data is transferred to the analytical database, and the results from that database are verified against the paper copy laboratory reports.

Off-site Analytical Measurements

Off-site analytical measurements are generated by an off-site (fixed) analytical laboratory. These analytical results are typically delivered in both paper copy and electronic formats and are sent to the database manager for incorporation into the analytical database.

Soil Boring and Well Construction Data

Soil boring and well construction data are included in the geologic/hydrogeologic database for the program. Boring logs include such information as lithology, results of standard penetration tests (if appropriate), sample collection information, and VOC screening results. A monitoring well construction diagram is provided for each monitoring well installed during the project.

Survey Data

Surveying of well and boring locations and selected site features may be performed as part of the site characterization process. Tape measurements may be using for locating boring logs. All

survey information is included in the AutoCAD® base drawing for each project site. This information is also used to locate sampling points and other pertinent features on the AutoCAD®-generated drawings that are produced as the base maps for each facility. Survey/spatial data is also stored in the LEA database.

1.3.2.2 Field Sample Tracking

Field sample tracking activities focus on the timely tracking of information regarding field samples collected for each investigation. Other information tracked includes sample identifiers, chain-of-custody information, and sample characteristics. The information is transmitted from field to office personnel through the use of daily field summary sheets and other project information tracking forms.

Samples collected during the project are designated as described below. In general, sample identification information includes the following:

- Site location.
- Date and time.
- Sample class.
- Sample type.
- Sample location identifier.
- Sequential sample number.
- Sample depth interval (where applicable).

Specifically, field sample tracking includes the following tasks:

- Assignment of sample identification numbers and other sample identifiers to new samples to be taken, and entry to a tracking system.
- Production of sample bottle labels from the tracking system.
- Completion of chain-of-custody forms, and entry of this information to the tracking system.
- Entry of additional tracking dates to the tracking system.
- Quality Assurance (QA) checking of the sample tracking information, and processing of change requests.
- Production of tracking reports and summary sheets, with distribution to appropriate project staff.

Daily field forms are completed by each field team leader. The daily field forms detail the daily activities conducted by the staff and contractors, hours logged by staff and contractors, problems

encountered, general field observations, and samples submitted for analyses. Field forms are submitted to the Field Activities Coordinator at the end of each working day or as soon thereafter as possible. The field forms are subsequently placed in the project file.

The field activities coordinator for each project works closely with the specific project manager to ensure that the sample tracking system is functioning at all times.

1.3.2.3 Data Entry and Storage

The electronic analytical database is maintained in a format that is capable of performing the requisite management functions that are described in the following paragraphs.

Database Administration

Database administration includes coordination of data entry and verification and review of data for completeness and correctness. The database manager interfaces with the project manager, task leaders, and field personnel to ensure that the database meets the project objectives.

Electronic Data Entry

Data received from off-site analytical laboratories in electronic format is checked for completeness by comparing data received with data analyses requested in the chain-of-custody forms. Electronic files are logged in, checked to see that the files received match the transmittal paperwork, copied, and archived in the project files.

The electronic data files are downloaded into the LEA database; this downloading process is typically being conducted by the database manager. The data from the download is printed for review during the data verification process. In addition, standard queries are being generated automatically to allow the investigator: (1) to assess that the detection limits have been adequate to allow comparisons to regulatory criteria; (2) to confirm that the holding times have not been exceeded; and (3) to confirm that the Connecticut notification requirements[1] have not been triggered.

During data verification, printouts of the data received in electronic format are compared with paper copies of the original laboratory reports. In addition, the sample identification number, location, constituent, and qualifier codes are verified.

[1] Reporting of certain Environmental Hazards (Public Act 98-134)

Manual Data Entry

Manual data entry will be performed for any analytical data and physical data that is not received in electronic format. The unverified data is manually entered into the analytical database with results marked as "not verified". Following data verification, the electronic data will be flagged as "verified."

Verification of manually entered data will be performed using the following procedures:

- A listing will be produced of data entered to serve as a checkprint.
- Each record entered into the database will be compared to original coded sheets; correct values will be highlighted, and incorrect values will be marked with revisions in red. The first page of each data listing will be signed and dated by the person completing the comparison.
- Corrections will be made to the database.
- Listings will be produced of data corrected, and the comparison will be repeated (only to corrected values). This procedure will be repeated until corrections are completed.

Archiving of Data

Back up of the electronic database files is being routinely accomplished. Data is backed up on a weekly basis. Data is archived at the conclusion of the project, and the files are maintained in designated locations.

1.3.2.4 Data Presentation

The objective of data presentation is to illustrate the analytical and geologic/hydrogeologic data for each site in formats that facilitate data interpretation. These formats may include tables, figures and drawings, as appropriate.

Analytical Data Presentation

Two types of analytical data presentation are provided: final tables that are generated in a format designed for inclusion in a report, and working tables that are generated for specific uses by the various project personnel. Most queries are being performed by the individual investigators. However, more complex queries can be submitted to the data manager in a written format, with clear instructions as to the type of output requested.

Examples of tables to be created include:

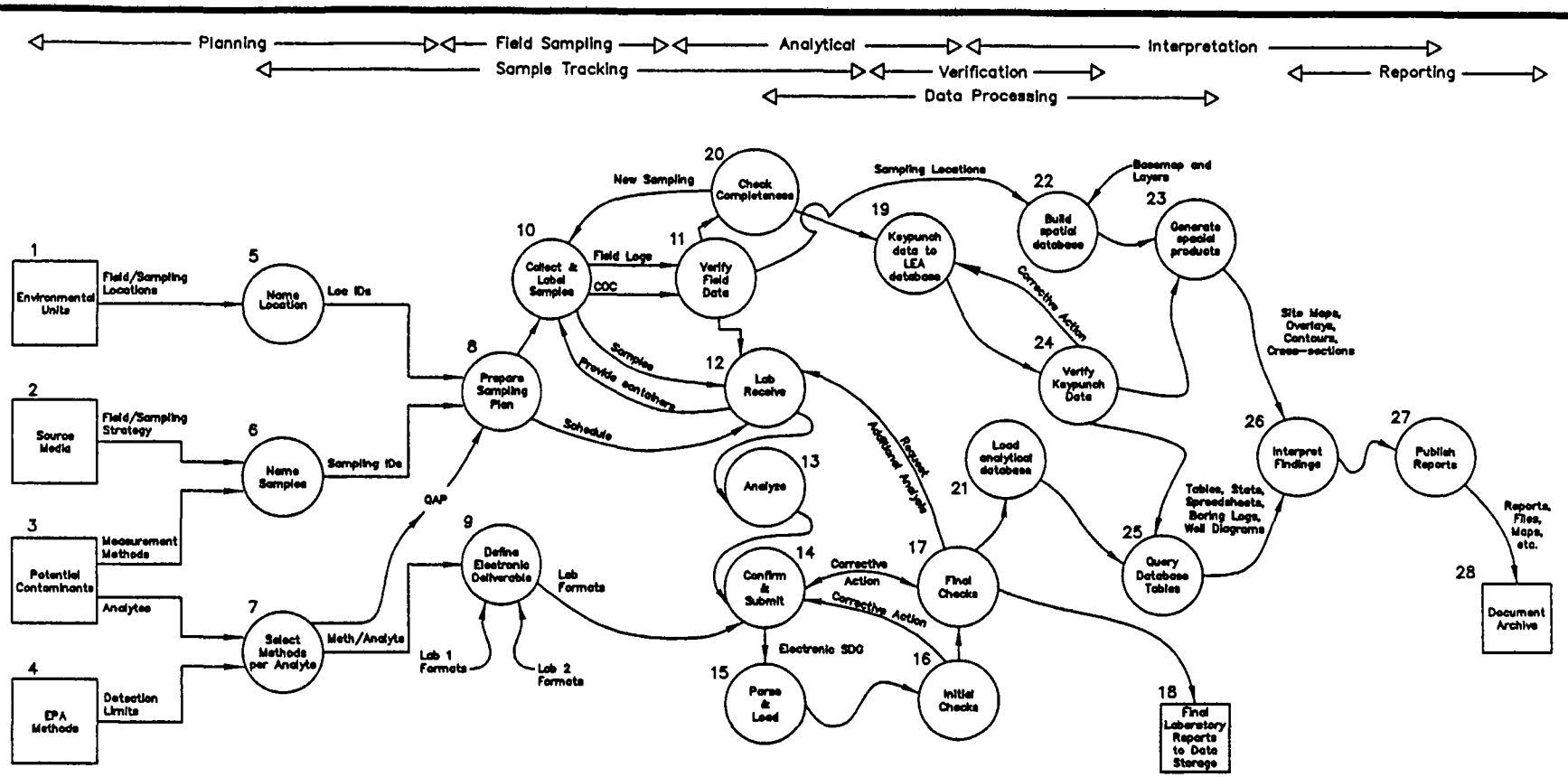
- Appendix-style (tabular listings sorted by location and sample ID).
- Summary of detected values to be included in the final characterization report.
- Site information including measurements of water-table elevation and sample/station location coordinates.
- Analytical data including constituents of concern, analyte concentrations, and qualifiers.
- Exceedances of state and/or federal regulatory criteria.
- Statistical analysis of results.

Graphical Data Presentation

Facility base maps can be created using information stored in AutoCAD®. That base map, which is generated from information derived from a variety of sources, is used as the base for all computer-generated drawings of the facilities. Types of maps and drawings that are used to present data or facility information include:

- Soil and groundwater sampling locations. The analytical data can be entered into the drawings as data blocks which can also point out the exceedances over applicable regulatory criteria. The transfer of the data block information from the LEA database to the AutoCAD® system is being done electronically and is independently verified.
- Locations of pertinent environmental units and facility features.
- Water-table and piezometric surface contour maps.
- Maps showing the distribution of contaminant concentrations.

Information from the AutoCAD® database, including surveyed elevation data, coupled with information from the geologic boring logs and well completion information, will be used to generate geologic cross-sections for each of the sites.



ELEMENTS:

1. Site characteristics defining project purpose
2. Various media to be sampled
3. Array of potential contaminants to be investigated
4. EPA–defined methods and procedures
5. Convention for naming site locations
6. Convention for uniquely referencing each sample
7. Protocols to generate results for target analytes
8. Specification of samples to be collected
9. Specification of chemical results for electronic formats
10. Collection of samples or measurements in the field
11. Verification of field measurements
12. Receipt of samples at chemistry labs
13. Chemical analyses underway with data entering Laboratory Information Management System (LIMS)
14. Laboratory preparations of Sample Delivery Groups (SDG)
15. Database group loads electronic SDG into electronic analytical database
16. Database used to check SDG completeness, dates, etc.
17. Verification of chemical results
18. Store laboratory reports in LEA archive
19. Enter field logs into geotechnical software
20. Check of field information for completeness of sampling
21. Match lab results with verification flags in final analytical database
22. Link base map elements with database location IDs
23. Use AutoCAD to portray site conditions
24. Verify keypunch data
25. Query the database for tabular listings
26. Synthesize various results
27. Merge data products with text into final reports
28. Store all products in LEA archive

LEGEND:

INPUT/OUTPUT

FLOW ELEMENT

COC – Constituent Of Concern
LIMS –Laboratory Information Management System
QAP – Quality Assurance Plan
SDG – Sample Delivery Groups

LOUREIRO ENGINEERING ASSOCIATES, INC.
100 NORTHWEST DRIVE, PLAINVILLE, CONN.

DATA FLOW DIAGRAM OF DATA MANAGEMENT PROCESSES

Comm.No. 0000500

FIGURE 1

LEA

Data Flow Mgmt-2003.dwg

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APPENDIX C

FIELD FORMS

INSPECTION LOG

Check appropriate column for each inspection item:
S = Satisfactory - no further action required
U = Unsatisfactory - described deficiency in space below

INSPECTION	FREQUENCY	S.	U.
FACILITY WIDE	MONTHLY		
1. Interior Facility: Check to ensure facility is clean and orderly, materials stored properly. Check process tanks for leaks and damage.	MONTHLY		
2. Exterior Facility: Check to ensure all material is stored properly and dumpsters are covered. Truck loading/unloading areas and delivery routes should be clean and orderly.	MONTHLY		
STORMWATER DISCHARGES	MONTHLY		
1. Check for oil sheen, sediment buildup, signs of erosion			
Deficiencies Noted and Corrective Action Taken:			
Inspector:	Date:		
Received and reviewed by Pollution Prevention Team Leader			
Signature:			

INSPECTION LOG

Check appropriate column for each inspection item:
S = Satisfactory - no further action required
U = Unsatisfactory - described deficiency in space below

INSPECTION	FREQUENCY	S.	U.
FACILITY WIDE	MONTHLY		
1. Interior Facility: Check to ensure facility is clean and orderly, materials stored properly. Check process tanks for leaks and damage.	MONTHLY		
2. Exterior Facility: Check to ensure all material is stored properly and dumpsters are covered. Truck loading/unloading areas and delivery routes should be clean and orderly.	MONTHLY		
STORMWATER DISCHARGES	MONTHLY		
1. Check for oil sheen, sediment buildup, signs of erosion			
Deficiencies Noted and Corrective Action Taken:			
Inspector:	Date:		
Received and reviewed by Pollution Prevention Team Leader			
Signature:			

INSPECTION LOG

Check appropriate column for each inspection item:

S = Satisfactory - no further action required

U = Unsatisfactory - described deficiency in space below

INSPECTION	FREQUENCY	S.	U.
FACILITY WIDE	MONTHLY		
1. Interior Facility: Check to ensure facility is clean and orderly, materials stored properly. Check process tanks for leaks and damage.	MONTHLY		
2. Exterior Facility: Check to ensure all material is stored properly and dumpsters are covered. Truck loading/unloading areas and delivery routes should be clean and orderly.	MONTHLY		
STORMWATER DISCHARGES	MONTHLY		
1. Check for oil sheen, sediment buildup, signs of erosion			
Deficiencies Noted and Corrective Action Taken:			
Inspector:	Date:		
Received and reviewed by Pollution Prevention Team Leader			
Signature:			

DAILY FIELD REPORT

Loureiro Engineering Associates, Inc.

	0000100.001	Page ____ of ____
Project	Farrel Ansonia	Date ___/___/____
Location	LEA, Plainville, CT	
Client	William Jayson	

Arrived at Site _____ Departed from Site _____ Vehicle _____

Odometer (Start) _____ Return _____

Site Activities

- ☐ Soil Sampling
- ☐ Groundwater Sampling
- ☐ Surface Water Sampling
- ☐ Surface Water Sampling
- ☐ Vapor/Air Sampling
- ☐ Concrete Sampling
- ☐ Other Sampling
- ☐ Well Installation
- ☐ Well Development
- ☐ Geoprobe Work
- ☐ Concrete Coring
- ☐ Construction
- ☐ Inspection
- ☐ Waste Management
- ☐ Waste Management
- ☐ Site Walk Over
- ☐ Surveying
- ☐ Other (Describe)

Current Project Information

- Last Sample Number Used _____
- Last Location ID Used _____
- Current Location (if not complete) _____
- Sampling for _____
- Laboratories used _____
- Paperwork & Equipment left at/in _____
- Site Contact _____
- Contractors on Site _____
- Time and place to meet contractors _____

Non-productive Time

- ☐ None
- ☐ Equipment Breakdown
- ☐ Late
- ☐ Weather
- ☐ Missing Equipment
- ☐ Other (Describe)

Quality Assurance Checks

Yes	N/A	No	
☐	☐	☐	Sample labels complete
☐	☐	☐	Sample/cooler seals OK
☐	☐	☐	All samples obtained
☐	☐	☐	Chains of custody
☐	☐	☐	All forms/logs complete
☐	☐	☐	Site walkover
☐	☐	☐	Site H&S Plan on site
☐	☐	☐	Instruments calibrated

Residuals Disposition

Item	Approx. Amount	Container ID
Soil/Solid		
Groundwater		
Decon Fluid		
PPE		
Other		

Instrument Calibrations

pH/Conductivity

Std.	Standard	Meter
☐	pH 4	
☐	pH 7	
☐	pH 10	
___	Cond.	

PID/FID Meter

Std.	Standard	Meter
___		

☐ Zero w/Background

☐ Zero w/Clean Air

Balance

Std.	Standard	Reading
___	Std. Mass	

Expendable Items Used

Qty	Item	LEA Number
	Bailer, Disposable (spec. size)	090
	Cap, PVC, 1", (Threaded or FJT)	147
	Cap, PVC,1', Slip (S447010)	146
	Coliwasa Disposable Sample Tubes	204
	Concrete, 60 lb. Bag	085
	Decontamination Supplies	081
	Drum, Closed Top 55 gallon	086
	Drum, Open Top 55 Gallon	086
	Filter, In Line	024
	Filter, Zap Cap	024
	Grout mix, bag	237
	Hub, 1' Wood	999
	Locks, Monitoring Well	155
	Marker Paint	999
	Miscellaneous Health & Safety Items	060
	Plug, Locking, 2"	233

Equipment Used

Qty	Item	LEA Number
	Automatic Level, Sokkisha	999
	Balance, Ohaus	031
	Balance, Pocket Pro	061
	Bucket w/ Lid, 5 gallon	999
	Digital Camera	999
	Drill, Core Saw, w/ Attachment	009
	Drill, Hilti, incl. Concrete Anchors	010
	Dump Hopper	193
	Generator 3500 Watt	153
	Hand Auger, w/ attachments	013
	Locator, Metrotech Pipe	053
	Locator, Schonstedt Magnetic	999
	Meter, Conductivity	022
	Meter, pH/Temp	021
	Miscellaneous Small Tools & Equipment	152
	Pallet, Spill	161

Field Personnel _____ _____ ***Signature***

_____ _____ _____

Loureiro Engineering Associates, Inc.

DAILY FIELD REPORT

Supplemental Sheet

	0000100.001	Page _____ of _____
Project	Farrel Ansonia	Date ___/___/____
Location	LEA, Plainville, CT	
Client	William Jayson	

Description of Site Activities

Field Personnel _____ _____ ***Signature***

_____ _____ _____

Loureiro Engineering Associates, Inc.

FIELD WORK ASSESSMENT
PROJECT MANAGER'S REPORT

LEA Comm. No.	**0000100.001**		Date ___/___/____
Project	Farrel Ansonia	Field Personnel	
Location	LEA, Plainville, CT		
Client	William Jayson		
Project Manager	Jeffrey Loureiro		

Activites Performed	% Complete	Difficulties

Evaluate Performance

Paperwork Complete and Accurate	Yes / No	If "No", Describe:
IDW Properly Managed	Yes / No / NA	If "No", Describe:
Client/Site Contact Satisfied	Yes / No	If "No", Describe:

SOP's used:

Field Audit Performed	Yes / No	
Auditor	***Signature***	

DAILY GEOPROBE REPORT

Loureiro Engineering Associates, Inc.

	0000100.001	Page ____ of ____
Project	Farrel Ansonia	Date ___/___/____
Location	LEA, Plainville, CT	
Client	William Jayson	

Arrived at Site _____ Departed from Site _____ Geoprobe _____

Vehicle Checklist/Condition

Odometer (Start) _____ Return _____

Probe Hours (Start) _____ Finish _____

OK	Geoprobe	OK	Trailer (if used)
☐	Engine Fluids	☐	Brakes (Incl. battery)
☐	Transmission	☐	Hitch
☐	Brakes (Incl. parking)	☐	Safety Chains
☐	Lights	☐	Lights
☐	Signals	☐	Signals
☐	Tires	☐	Tires
☐	General	☐	General
☐	Other (describe)	☐	Other (Describe)

Equipment Broken/Needing Repair

All checks above must be OK and signed off before leaving in the morning

Signature _____

Expendable Items Used			**Equipment Used**		
Qty	Item	LEA Number	Qty	Item	LEA Number
	Bentonite Chips, Bag	089		Exhaust Hose	033
	Bentonite Pellets, Buckets			Miscellaneous Small Tools & Equipment	152
	Cap, End, Vinyl (AT-641K or AT-726K)	150		Probe Rod Jack	119
	Cap, Slip, 0.5" Vinyl (AT-441)	044		Pump, Grout	200
	Cap, Slip, 1" PVC (S447010)	146		Thermo-Anemometer	248
	Cap, Threaded, 1" PVC	147			
	Concrete, 60 lb. Bag	085			
	Connectors, Snap Lock (GW-2030)	210			
	Core Catchers, MC (AT-8531K)	999			
	Decontamination Supplies	081			
	Ear Plugs				
	Filter, In Line	024			
	Liners, LB PETG (AT-825k)	128			
	Liners, MC Acetate	173			
	Liners, MC PETG	173			
	Locks, Monitoring Well	155			
	Miscellaneous Health & Safety Items	060			
	Point, Drive, Exp., SP15 (GW-15)	003			
	Point, Exp. (spec. GW-2040 or GW-445)	002			
	Sand, Filter Pack, Bags	220			
	Tubing, 1/2", NOS	007			
	Water, Distilled	025			
	Well Point, 1" Sch.80 PVC	216			
	Well Protector, Road Box (10581)	014			
	Well Protector, Roadbox, 7"	014			
	Well Protector, Stickup, 4" (10127)	014			
	Well Riser, 0.5" PVC, 5' (GW2050)	228			
	Well Riser, 1" Sch. 80 PVC, 5' (1058CATB	131			
	Well Screen, 1" Sch. 80 PVC, 5' (105810	130			
	Well Screen, Pre-Packed, 3' (GW-2010)	224			

Field Personnel _____ _____ ***Signature***

_____ _____ _____

LEA

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
MISCELLANEOUS SAMPLES

	0000100.001	Page _____ of _____
Project	Farrel Ansonia	Date ___/___/_____
Location	LEA, Plainville, CT	
Client	William Jayson	

Sample ID	Location ID	Time	Sample Type	Depth (ft)	PID/FID Reading	Comments	Waste Container ID

Field Personnel ____________________ ____________________ ***Signature***

____________________ ____________________ ____________________

Loureiro Engineering Associates, Inc.

FIELD DATA RECORD
MONITORING WELL SAMPLE

	0000100.001	Page ____ of ____
Project	Farrel Ansonia	Date ___/___/____
Location	LEA, Plainville, CT	Time ___:___
Client	William Jayson	

Monitoring Well Number _____ Sample Number(s) _____ _____

Field Data and Measurements

Depth of Well _____ Reference Used _____ Longitude

Depth to Water _____ PID/FID Reading _____ Latitude

Height of Column _____ Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter _____ Material _____

Protector Road Box / Stickup

Ground to Reference _____

Comments _____

_____

General Condition	OK	Bad
Casing Secure		
Collar Intact		
Cover Locked		
Other (describe)		

Purging Information

Purge Volume Factors

0.5" - 0.01
1" - 0.041
1.5" - 0.091
2" - 0.16
4" - 0.65
6" - 1.5

Parameter \ Volumes	Initial					Sample
Gallons						
Temp (C)						
pH (SU)						
Spec. Cond. (umhos)						
Turbidity (NTU)						
Other _____						

Purge Method Peristaltic Pump / Bailer / Inertial Pump / Other (Describe) _____

Waste Container ID _____

Sampling Information

Sampling Method Peristaltic Pump / Bailer / Inertial Pump / Other (Describe) _____

Sample Quality ☐ Clear ☐ Turbid

☐ Colored _____ ☐ Odor _____

☐ Cloudy ☐ Sheen _____

Sample Filtered Yes / No If Yes, with what filter? _____

If No, be sure to use the sample labels with a 'uf' suffix, or add the suffix to the sample number, and record the complete number on the Chain of Custody

Field Decontamination? Yes / No If Yes, with what? _____

Cooler ID(s) _____

Additional Comments

Field Personnel _____ _____ ***Signature***

_____ _____ _____

Loureiro Engineering Associates, Inc.

FIELD DATA RECORD
MONITORING WELL SAMPLE

	0000100.001	Page _____ of _____
Project	Farrel Ansonia	Date ___/___/_____
Location	LEA, Plainville, CT	Time ___:___
Client	William Jayson	

Field Personnel _____ _____ ***Signature***

_____ _____ _____

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
LOW FLOW WELL SAMPLE

LEA Comm. No.	**0000100.001**	Page ____ of ____
Project	Farrel Ansonia	Date __/__/____
Location	LEA, Plainville, CT	Time __:__
Client	William Jayson	

Monitoring Well Number _____ Sample Number(s) _____ _____

Initial Field Data and Measurements

Depth of Well _____ Reference Used _____

Depth to Water _____ PID/FID Reading _____

Height of Column _____ Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter _____ Material _____

Protector Road Box / Stickup

Ground to Reference _____

Comments _____

General Condition	OK	Bad
Casing Secure		
Collar Intact		
Cover Locked		
Other (describe)		

Development Information

Parameter / Time	Depth to Water	Pump Setting	Purge Rate	Cum. Liters Purged	Temp (C)	Spec. Cond.	pH	ORP (Eh)	DO	Turbidity	Comment

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other _____

Field Decontamination? Yes / No If Yes, with what? _____

Waste Container ID _____

Additional Comments

Field Personnel _____ _____ ***Signature***

_____ _____ _____

WELL COMPLETION REPORT

Project: Farrel Ansonia
0000100.001
Client William Jayson
Location LEA

Start Date | **Well ID**
End Date

Drilling Contractor _____
Drilling Method _____
Sampling Method _____
Groundwater Observation
Depth ____ **at** ____ **Hours**

Logged by
Drilling Foreman _____
Drill Rig _____
GPS Latitude _____
GPS Longitude _____

Protector
- Material _____
- Diameter _____
- Length _____ Ground
- Stickup _____
- Key # _____
- Cover Type _____

Top Seal
- Top _____
- Bottom _____
- Material _____

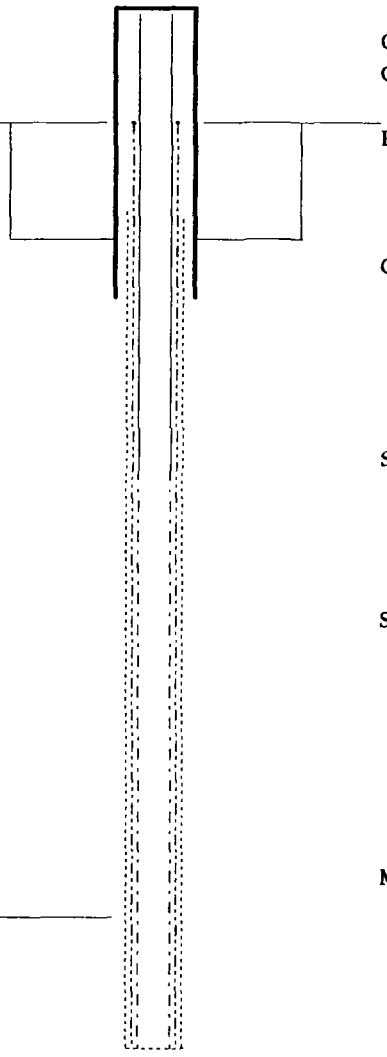
Backfill
- Top _____
- Bottom _____
- Material _____

Secondary Sand
- Top _____
- Bottom _____
- Size _____

Filter Pack
- Top _____
- Bottom _____
- Material _____

Reported depth to bottom of boring _____

Comments



Concrete Diameter _____
Concrete Thickness _____

Reference
- Stickup _____
- Description _____

Casing
- Diameter _____
- Material _____
- Length _____
- Stickup _____

Seal
- Top _____
- Bottom _____
- Material _____

Screen
- Top _____
- Bottom _____
- Material _____
- Diameter _____
- Length _____
- Slot Size _____

Miscellaneous Materials (Quantity Used/Item)
- Cement _____
- Bentonite Chips _____
- Bentonite Pellets _____
- Bentonite Powder _____
- Grout Weight _____
- Filter Pack Sand _____
- Capping Sand _____
- Well Point _____
- Well Plug _____

Signature _____

LEA

Loureiro Engineering Associates, Inc.

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
WELL DEVELOPMENT

	0000100.001	Page ____ of ____
Project	Farrel Ansonia	Date ___/___/____
Location	LEA, Plainville, CT	Time ___:___
Client	William Jayson	

Monitoring Well Number _____ Sample Number(s) _____ _____

Initial Field Data and Measurements

Depth of Well _____ Reference Used _____
Depth to Water _____ PID/FID Reading _____
Height of Column _____ Interface Yes / No If yes, Depth _____ Lighter / Heavier

Well Casing Diameter _____ Material _____
Protector Road Box / Stickup
Ground to Reference _____
Comments _____

General Condition	OK	Bad
Casing Secure		
Collar Intact		
Cover Locked		
Other (describe)		

Development Information

Purge Volume Factors
0.5" - 0.01
1" - 0.041
1.5" - 0.091
2" - 0.16
4" - 0.65
6" - 1.5

Initial Sample Observations
Clear ☐
Colored ☐
Cloudy ☐
Turbid ☐
Odor ☐
Sheen ☐

Volumes \ Parameter	Gallons	Temp (C)	pH (SU)	Spec.Con.	Turbidity	Other
Initial						

Developement Method Peristaltic Pump / Bailer / Inertial Pump / Other _____

Field Decontamination? Yes / No If Yes, with what? _____
Waste Container ID _____

Additional Comments

Field Personnel _____ _____ *Signature*
_____ _____ _____

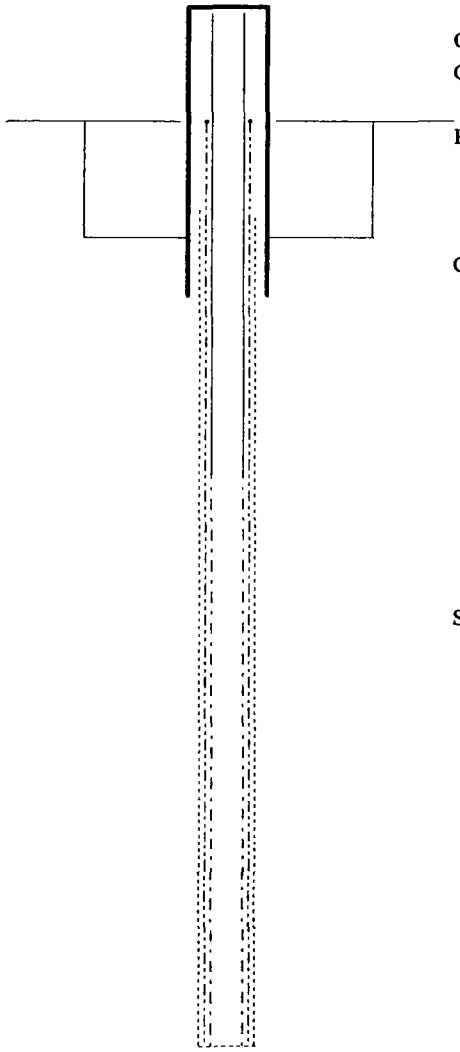
WELL INSPECTION REPORT

Project: Farrel Ansonia 0000100.001 **Client** William Jayson **Location** LEA	**Start Date** **End Date**	**Well ID**

LEA Sample Identification _____
Measured depth to bottom of _____
Measured depth to water/liquid _____
Measured depth to Interface _____
Interface checked by bailer? Yes / No
Separate Phase Lighter / Heavier

Logged by _____
Date ___/___/_____
Time ___:___

Protector
- Material _____
- Diameter _____
- Length _____ Ground
- Stickup _____
- Key # _____
- Cover Type _____
- Condition _____
- Capped? _____
- Locked? _____



Concrete Diameter _____
Concrete Condition _____

Reference
- Stickup _____
- Description _____

Casing
- Diameter _____
- Material _____
- Condition _____
- Stickup _____
- Capped? _____
- Locked? _____

Screen
- Top _____
- Bottom _____
- Material _____
- Diameter _____
- Length _____
- Slot Size _____

Comments

Signature _____

Loureiro Engineering Associates, Inc.

FIELD BORING LOG

Loureiro Engineering Associates, Inc.

BORING ID: _____

	0000100.001		Page ____ of ____
Project	Farrel Ansonia		Date ___/___/____
Location	LEA	GPS Latitude	_____
Client	William Jayson	GPS Longitude	_____
Drilling Method	_____	Drilling Contractor	_____
Sampling Method	_____	Drill Foreman	_____
Groundwater Depth	_____ at _____	Drill Rig	_____

Elevation/ Depth	Sample Information						Description of Recovered Material
	Sample Number(s)	Recovery (% or n/n)	Blows/6" / Downforce	Time	PID/FID (ppm)	Mass	(Color, primary grain size and amount, other grain size(s) and amounts, density, moisture, coherence, structure, sorting, other characteristics)

Comments

Waste Container Trip Blank ID(s)

Field Personnel _____ _____ ***Signature***

_____ _____ _____

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
WASTE CONTAINER INSPECTION

	0000100.001	Page ____ of ____
Project	Farrel Ansonia	Date __/__/____
Location	LEA	
Client	William Jayson	

Waste Container Number _____ Container Size _____
Client's Number _____ Container Opening _____
Container Label _____ Container Material _____

	Container		Contents	
	Primary	Secondary	Primary	Secondary
Cream				
Clear				
Black				
White				
Red				
Green				
Blue				
Brown				
Pink				
Orange				
Yellow				
Grey				
Purple				
Amber				
Green-Blue				

Container Condition	
Good	
Fair	
Poor	

Contents State	
Solid	
Liquid	
Sludge	
Gas	
Trash	
Dirt	
Gel	
Other	

Full	Partial	Empty

Empty Weight _____ Started Filling on _____
Full Weight _____ Filled on _____

Screening Information

Radioactive	☐	Water Reactive	☐	Halide	☐	Cyanide	☐
Acidic	☐	Water Soluble	☐	Inorganic	☐	Flammable	☐
Caustic	☐	PID/FID Reading	☐	Organic	☐	Oxidizer	☐
Air Reactive	☐	Combustible	☐	Alcohol/Aldehyd	☐	Inert/Other	☐

Where is/was this container stored? _____
Shipped to _____ on _____
Shipped by _____
Manifest _____
Comments

Field Personnel _____ _____ ***Signature***
_____ _____ _____

Loureiro Engineering Associates, Inc.

CHAIN OF CUSTODY

001

Case Number

LEA Comm. No.	**0000100.001**
Project	Farrel Ansonia
Location	LEA
Project Manager	Jeffrey Loureiro

Page _____ of _____
Date ___/___/____

Sampling Method _____
Matrix Soil Vapor Water Other _____
Container Type _____

	No. of Cont.		Time	Mass (gm)	PID/FID Reading	Sample Matrix	Analysis(es) Requested
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Comments

Cooler ID(s)

Transfer Number	Item No.	Transfer: Relinquished By	Transfer: Accepted By	Date	Time
1					
2					
3					
4					

Field Personnel _____ _____ ***Signature***

100 Northwest Drive, Plainville, CT 06062 Tel: 860.747.6181 Fax: 860.747.8822 e-mail: tmclemmey@loureiro.com

Loureiro Engineering Associates, Inc.

FIELD SAMPLING RECORD
PERFORMANCE SAMPLE

LEA Comm. No.	**0000100.001**	Page _____ of _____
Project	Farrel Ansonia	Date ___/___/____
Location	LEA, Plainville, CT	
Client	William Jayson	

LEA Sample ID _____

LEA Sample ID _____

LEA Sample ID _____

LEA Sample ID _____

LEA Sample ID _____

LEA Sample ID _____

Field Personnel	_____	_____	***Signature***
	_____	_____	_____

Attachment 7

2002 and 2003 Analytical Laboratory Reports

eas
LABORATORIES

October 15, 2003

Loureiro Engineering Associates
100 Northwest Drive
Plainville, CT 06062

Attention: Ms. Kimberly Clarke

EAS Project Number: 03090359
Location Collected: MacDermid, Waterbury, CT

Copies of this report and the supporting computer stored data are retained in our files in the event they are required for future reference.

Any sample submitted to our laboratory will be retained for a maximum of thirty (30) days from receipt of the report.

All analytical data, unless otherwise specified, is reported on a wet weight (as received) basis.

Our laboratory is a multi-state Certified Public Health Laboratory, offering a full range of analytical services that include:

Water and Wastewater Analysis
Hazardous Waste Analysis (RCRA)
Full Priority Pollutant Analysis
Drinking Water Analysis

Gregory C. Lawrence
Laboratory Director

encl.

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035177
EAS Sample Number: 03090359-01
LIMS ID Number: AE10908
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Arsenic-Low Level, Water	BDL	0.010	mg/L	09/25/03
Barium, Water	0.28	0.005	mg/L	09/25/03
Cadmium, Water	0.0098	0.005	mg/L	09/25/03
Chromium, Water	0.038	0.02	mg/L	09/25/03
Copper, Water	0.051	0.01	mg/L	09/25/03
Lead-Low Level, Water	0.021	0.002	mg/L	09/25/03
Mercury, Water	BDL	0.002	mg/L	09/25/03
Nickel, Water	0.044	0.02	mg/L	09/25/03
Selenium-Low Level, Water	BDL	0.010	mg/L	09/25/03
Silver, Water	BDL	0.01	mg/L	09/25/03
Zinc, Water	0.10	0.005	mg/L	09/25/03
ETPH by GC/FID, Water	0.14	0.10	mg/L	09/25/03
TPH Extraction, Water	Completed			09/23/03
Volatile Organic Compounds, Water				
Dichlorodifluoromethane	BDL	0.50	ug/L	09/24/03
Chloromethane	BDL	0.50	ug/L	09/24/03
Vinyl Chloride	BDL	0.50	ug/L	09/24/03
Bromomethane	BDL	0.50	ug/L	09/24/03
Chloroethane	BDL	0.50	ug/L	09/24/03
Trichlorofluoromethane	5.9	0.50	ug/L	09/24/03
Acetone	BDL	5.0	ug/L	09/24/03
1,1-Dichloroethene	BDL	0.50	ug/L	09/24/03
Methylene Chloride	BDL	0.50	ug/L	09/24/03
trans-1,2-Dichloroethene	BDL	0.50	ug/L	09/24/03
Methyl-tert-butyl-ether	BDL	0.50	ug/L	09/24/03
1,1-Dichloroethane	BDL	0.50	ug/L	09/24/03
2-Butanone	BDL	5.0	ug/L	09/24/03
cis-1,2-Dichloroethene	BDL	0.50	ug/L	09/24/03
2,2-Dichloropropane	BDL	0.50	ug/L	09/24/03
Chloroform	BDL	0.50	ug/L	09/24/03
Bromochloromethane	BDL	0.50	ug/L	09/24/03
1,1,1-Trichloroethane	BDL	0.50	ug/L	09/24/03
1,1-Dichloropropene	BDL	0.50	ug/L	09/24/03
1,2-Dichloroethane	BDL	0.50	ug/L	09/24/03
Carbon Tetrachloride	BDL	0.50	ug/L	09/24/03
Benzene	BDL	0.50	ug/L	09/24/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035177
EAS Sample Number: 03090359-01
LIMS ID Number: AE10908
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Trichloroethene	BDL	0.50	ug/L	09/24/03
1,2-Dichloropropane	BDL	0.50	ug/L	09/24/03
Dibromomethane	BDL	0.50	ug/L	09/24/03
Bromodichloromethane	BDL	0.50	ug/L	09/24/03
4-Methyl-2-Pentanone	BDL	5.0	ug/L	09/24/03
cis-1,3-Dichloropropene	BDL	0.50	ug/L	09/24/03
Toluene	BDL	0.50	ug/L	09/24/03
trans-1,3-Dichloropropene	BDL	0.50	ug/L	09/24/03
1,1,2-Trichloroethane	BDL	0.50	ug/L	09/24/03
2-Hexanone	BDL	5.0	ug/L	09/24/03
1,3-Dichloropropane	BDL	0.50	ug/L	09/24/03
Dibromochloromethane	BDL	0.50	ug/L	09/24/03
Tetrachloroethylene	6.9	0.50	ug/L	09/24/03
1,2-Dibromoethane	BDL	0.50	ug/L	09/24/03
Chlorobenzene	BDL	0.50	ug/L	09/24/03
1,1,1,2-Tetrachloroethane	BDL	0.50	ug/L	09/24/03
Ethylbenzene	BDL	0.50	ug/L	09/24/03
m/p-Xylene	BDL	0.50	ug/L	09/24/03
Styrene	BDL	0.50	ug/L	09/24/03
o-Xylene	BDL	0.50	ug/L	09/24/03
Bromoform	BDL	0.50	ug/L	09/24/03
1,1,2,2-Tetrachloroethane	BDL	0.50	ug/L	09/24/03
Isopropylbenzene	BDL	0.50	ug/L	09/24/03
1,2,3-Trichloropropane	BDL	0.50	ug/L	09/24/03
Bromobenzene	BDL	0.50	ug/L	09/24/03
n-Propylbenzene	BDL	0.50	ug/L	09/24/03
2-Chlorotoluene	BDL	0.50	ug/L	09/24/03
4-Chlorotoluene	BDL	0.50	ug/L	09/24/03
1,3,5-Trimethylbenzene	BDL	0.50	ug/L	09/24/03
tert-Butylbenzene	BDL	0.50	ug/L	09/24/03
1,2,4-Trimethylbenzene	BDL	0.50	ug/L	09/24/03
sec-Butylbenzene	BDL	0.50	ug/L	09/24/03
1,3-Dichlorobenzene	BDL	0.50	ug/L	09/24/03
1,4-Dichlorobenzene	BDL	0.50	ug/L	09/24/03
p-Isopropyltoluene	BDL	0.50	ug/L	09/24/03
1,2-Dichlorobenzene	BDL	0.50	ug/L	09/24/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035177
EAS Sample Number: 03090359-01
LIMS ID Number: AE10908
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
n-Butylbenzene	BDL	0.50	ug/L	09/24/03
1,2-Dibromo-3-Chloropropane	BDL	1.0	ug/L	09/24/03
1,2,4-Trichlorobenzene	BDL	0.50	ug/L	09/24/03
Naphthalene	BDL	0.50	ug/L	09/24/03
Hexachlorobutadiene	BDL	0.50	ug/L	09/24/03
1,2,3-Trichlorobenzene	BDL	0.50	ug/L	09/24/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035184
EAS Sample Number: 03090359-02
LIMS ID Number: AE10909
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Arsenic-Low Level, Water	BDL	0.010	mg/L	09/25/03
Barium, Water	0.15	0.005	mg/L	09/25/03
Cadmium, Water	0.008	0.005	mg/L	09/25/03
Chromium, Water	0.064	0.02	mg/L	09/25/03
Copper, Water	0.075	0.01	mg/L	09/25/03
Lead-Low Level, Water	0.031	0.002	mg/L	09/25/03
Mercury, Water	BDL	0.002	mg/L	09/25/03
Nickel, Water	0.074	0.02	mg/L	09/25/03
Selenium-Low Level, Water	BDL	0.010	mg/L	09/25/03
Silver, Water	BDL	0.01	mg/L	09/25/03
Zinc, Water	0.17	0.005	mg/L	09/25/03
ETPH by GC/FID, Water	0.19	0.10	mg/L	09/25/03
TPH Extraction, Water	Completed			09/23/03
Volatile Organic Compounds, Water				
Dichlorodifluoromethane	BDL	0.50	ug/L	09/24/03
Chloromethane	BDL	0.50	ug/L	09/24/03
Vinyl Chloride	BDL	0.50	ug/L	09/24/03
Bromomethane	BDL	0.50	ug/L	09/24/03
Chloroethane	BDL	0.50	ug/L	09/24/03
Trichlorofluoromethane	BDL	0.50	ug/L	09/24/03
Acetone	BDL	5.0	ug/L	09/24/03
1,1-Dichloroethene	BDL	0.50	ug/L	09/24/03
Methylene Chloride	BDL	0.50	ug/L	09/24/03
trans-1,2-Dichloroethene	BDL	0.50	ug/L	09/24/03
Methyl-tert-butyl-ether	BDL	0.50	ug/L	09/24/03
1,1-Dichloroethane	BDL	0.50	ug/L	09/24/03
2-Butanone	BDL	5.0	ug/L	09/24/03
cis-1,2-Dichloroethene	BDL	0.50	ug/L	09/24/03
2,2-Dichloropropane	BDL	0.50	ug/L	09/24/03
Chloroform	BDL	0.50	ug/L	09/24/03
Bromochloromethane	BDL	0.50	ug/L	09/24/03
1,1,1-Trichloroethane	BDL	0.50	ug/L	09/24/03
1,1-Dichloropropene	BDL	0.50	ug/L	09/24/03
1,2-Dichloroethane	BDL	0.50	ug/L	09/24/03
Carbon Tetrachloride	BDL	0.50	ug/L	09/24/03
Benzene	BDL	0.50	ug/L	09/24/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035184
EAS Sample Number: 03090359-02
LIMS ID Number: AE10909
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Trichloroethene	1.7	0.50	ug/L	09/24/03
1,2-Dichloropropane	BDL	0.50	ug/L	09/24/03
Dibromomethane	BDL	0.50	ug/L	09/24/03
Bromodichloromethane	BDL	0.50	ug/L	09/24/03
4-Methyl-2-Pentanone	BDL	5.0	ug/L	09/24/03
cis-1,3-Dichloropropene	BDL	0.50	ug/L	09/24/03
Toluene	BDL	0.50	ug/L	09/24/03
trans-1,3-Dichloropropene	BDL	0.50	ug/L	09/24/03
1,1,2-Trichloroethane	BDL	0.50	ug/L	09/24/03
2-Hexanone	BDL	5.0	ug/L	09/24/03
1,3-Dichloropropane	BDL	0.50	ug/L	09/24/03
Dibromochloromethane	BDL	0.50	ug/L	09/24/03
Tetrachloroethylene	9.7	0.50	ug/L	09/24/03
1,2-Dibromoethane	BDL	0.50	ug/L	09/24/03
Chlorobenzene	BDL	0.50	ug/L	09/24/03
1,1,1,2-Tetrachloroethane	BDL	0.50	ug/L	09/24/03
Ethylbenzene	BDL	0.50	ug/L	09/24/03
m/p-Xylene	BDL	0.50	ug/L	09/24/03
Styrene	BDL	0.50	ug/L	09/24/03
o-Xylene	BDL	0.50	ug/L	09/24/03
Bromoform	BDL	0.50	ug/L	09/24/03
1,1,2,2-Tetrachloroethane	BDL	0.50	ug/L	09/24/03
Isopropylbenzene	BDL	0.50	ug/L	09/24/03
1,2,3-Trichloropropane	BDL	0.50	ug/L	09/24/03
Bromobenzene	BDL	0.50	ug/L	09/24/03
n-Propylbenzene	BDL	0.50	ug/L	09/24/03
2-Chlorotoluene	BDL	0.50	ug/L	09/24/03
4-Chlorotoluene	BDL	0.50	ug/L	09/24/03
1,3,5-Trimethylbenzene	BDL	0.50	ug/L	09/24/03
tert-Butylbenzene	BDL	0.50	ug/L	09/24/03
1,2,4-Trimethylbenzene	BDL	0.50	ug/L	09/24/03
sec-Butylbenzene	BDL	0.50	ug/L	09/24/03
1,3-Dichlorobenzene	BDL	0.50	ug/L	09/24/03
1,4-Dichlorobenzene	BDL	0.50	ug/L	09/24/03
p-Isopropyltoluene	BDL	0.50	ug/L	09/24/03
1,2-Dichlorobenzene	BDL	0.50	ug/L	09/24/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035184
EAS Sample Number: 03090359-02
LIMS ID Number: AE10909
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
n-Butylbenzene	BDL	0.50	ug/L	09/24/03
1,2-Dibromo-3-Chloropropane	BDL	1.0	ug/L	09/24/03
1,2,4-Trichlorobenzene	BDL	0.50	ug/L	09/24/03
Naphthalene	BDL	0.50	ug/L	09/24/03
Hexachlorobutadiene	BDL	0.50	ug/L	09/24/03
1,2,3-Trichlorobenzene	BDL	0.50	ug/L	09/24/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035185
EAS Sample Number: 03090359-03
LIMS ID Number: AE10910
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Arsenic-Low Level, Water	BDL	0.010	mg/L	09/25/03
Barium, Water	0.091	0.005	mg/L	09/25/03
Cadmium, Water	BDL	0.005	mg/L	09/25/03
Chromium, Water	BDL	0.02	mg/L	09/25/03
Copper, Water	0.015	0.01	mg/L	09/25/03
Lead-Low Level, Water	0.008	0.002	mg/L	09/25/03
Mercury, Water	BDL	0.002	mg/L	09/25/03
Nickel, Water	BDL	0.02	mg/L	09/25/03
Selenium-Low Level, Water	BDL	0.010	mg/L	09/25/03
Silver, Water	BDL	0.01	mg/L	09/25/03
Zinc, Water	0.021	0.005	mg/L	09/25/03
ETPH by GC/FID, Water	0.13	0.10	mg/L	09/25/03
TPH Extraction, Water	Completed			09/23/03
Volatile Organic Compounds, Water				
Dichlorodifluoromethane	BDL	0.50	ug/L	09/24/03
Chloromethane	BDL	0.50	ug/L	09/24/03
Vinyl Chloride	5.5	0.50	ug/L	09/24/03
Bromomethane	BDL	0.50	ug/L	09/24/03
Chloroethane	BDL	0.50	ug/L	09/24/03
Trichlorofluoromethane	BDL	0.50	ug/L	09/24/03
Acetone	BDL	5.0	ug/L	09/24/03
1,1-Dichloroethene	BDL	0.50	ug/L	09/24/03
Methylene Chloride	BDL	0.50	ug/L	09/24/03
trans-1,2-Dichloroethene	BDL	0.50	ug/L	09/24/03
Methyl-tert-butyl-ether	BDL	0.50	ug/L	09/24/03
1,1-Dichloroethane	BDL	0.50	ug/L	09/24/03
2-Butanone	BDL	5.0	ug/L	09/24/03
cis-1,2-Dichloroethene	7.7	0.50	ug/L	09/24/03
2,2-Dichloropropane	BDL	0.50	ug/L	09/24/03
Chloroform	3.3	0.50	ug/L	09/24/03
Bromochloromethane	BDL	0.50	ug/L	09/24/03
1,1,1-Trichloroethane	BDL	0.50	ug/L	09/24/03
1,1-Dichloropropene	BDL	0.50	ug/L	09/24/03
1,2-Dichloroethane	BDL	0.50	ug/L	09/24/03
Carbon Tetrachloride	BDL	0.50	ug/L	09/24/03
Benzene	BDL	0.50	ug/L	09/24/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035185
EAS Sample Number: 03090359-03
LIMS ID Number: AE10910
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Trichloroethene	1.2	0.50	ug/L	09/24/03
1,2-Dichloropropane	BDL	0.50	ug/L	09/24/03
Dibromomethane	BDL	0.50	ug/L	09/24/03
Bromodichloromethane	BDL	0.50	ug/L	09/24/03
4-Methyl-2-Pentanone	BDL	5.0	ug/L	09/24/03
cis-1,3-Dichloropropene	BDL	0.50	ug/L	09/24/03
Toluene	BDL	0.50	ug/L	09/24/03
trans-1,3-Dichloropropene	BDL	0.50	ug/L	09/24/03
1,1,2-Trichloroethane	BDL	0.50	ug/L	09/24/03
2-Hexanone	BDL	5.0	ug/L	09/24/03
1,3-Dichloropropane	BDL	0.50	ug/L	09/24/03
Dibromochloromethane	BDL	0.50	ug/L	09/24/03
Tetrachloroethylene	BDL	0.50	ug/L	09/24/03
1,2-Dibromoethane	BDL	0.50	ug/L	09/24/03
Chlorobenzene	BDL	0.50	ug/L	09/24/03
1,1,1,2-Tetrachloroethane	BDL	0.50	ug/L	09/24/03
Ethylbenzene	BDL	0.50	ug/L	09/24/03
m/p-Xylene	BDL	0.50	ug/L	09/24/03
Styrene	BDL	0.50	ug/L	09/24/03
o-Xylene	BDL	0.50	ug/L	09/24/03
Bromoform	BDL	0.50	ug/L	09/24/03
1,1,2,2-Tetrachloroethane	BDL	0.50	ug/L	09/24/03
Isopropylbenzene	BDL	0.50	ug/L	09/24/03
1,2,3-Trichloropropane	BDL	0.50	ug/L	09/24/03
Bromobenzene	BDL	0.50	ug/L	09/24/03
n-Propylbenzene	BDL	0.50	ug/L	09/24/03
2-Chlorotoluene	BDL	0.50	ug/L	09/24/03
4-Chlorotoluene	BDL	0.50	ug/L	09/24/03
1,3,5-Trimethylbenzene	BDL	0.50	ug/L	09/24/03
tert-Butylbenzene	BDL	0.50	ug/L	09/24/03
1,2,4-Trimethylbenzene	BDL	0.50	ug/L	09/24/03
sec-Butylbenzene	BDL	0.50	ug/L	09/24/03
1,3-Dichlorobenzene	BDL	0.50	ug/L	09/24/03
1,4-Dichlorobenzene	BDL	0.50	ug/L	09/24/03
p-Isopropyltoluene	BDL	0.50	ug/L	09/24/03
1,2-Dichlorobenzene	BDL	0.50	ug/L	09/24/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035185
EAS Sample Number: 03090359-03
LIMS ID Number: AE10910
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
n-Butylbenzene	BDL	0.50	ug/L	09/24/03
1,2-Dibromo-3-Chloropropane	BDL	1.0	ug/L	09/24/03
1,2,4-Trichlorobenzene	BDL	0.50	ug/L	09/24/03
Naphthalene	BDL	0.50	ug/L	09/24/03
Hexachlorobutadiene	BDL	0.50	ug/L	09/24/03
1,2,3-Trichlorobenzene	BDL	0.50	ug/L	09/24/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035186
EAS Sample Number: 03090359-04
LIMS ID Number: AE10911
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Arsenic-Low Level, Water	BDL	0.010	mg/L	09/25/03
Barium, Water	0.36	0.005	mg/L	09/25/03
Cadmium, Water	0.018	0.005	mg/L	09/25/03
Chromium, Water	0.79	0.02	mg/L	09/25/03
Copper, Water	0.11	0.01	mg/L	09/25/03
Lead-Low Level, Water	0.038	0.002	mg/L	09/25/03
Mercury, Water	0.0022	0.002	mg/L	09/25/03
Nickel, Water	0.57	0.02	mg/L	09/25/03
Selenium-Low Level, Water	BDL	0.010	mg/L	09/25/03
Silver, Water	BDL	0.01	mg/L	09/25/03
Zinc, Water	0.15	0.005	mg/L	09/25/03
ETPH by GC/FID, Water	BDL	0.10	mg/L	09/25/03
TPH Extraction, Water	Completed			09/23/03
Volatile Organic Compounds, Water				
Dichlorodifluoromethane	BDL	0.50	ug/L	09/24/03
Chloromethane	BDL	0.50	ug/L	09/24/03
Vinyl Chloride	0.56	0.50	ug/L	09/24/03
Bromomethane	BDL	0.50	ug/L	09/24/03
Chloroethane	BDL	0.50	ug/L	09/24/03
Trichlorofluoromethane	BDL	0.50	ug/L	09/24/03
Acetone	BDL	5.0	ug/L	09/24/03
1,1-Dichloroethene	BDL	0.50	ug/L	09/24/03
Methylene Chloride	BDL	0.50	ug/L	09/24/03
trans-1,2-Dichloroethene	BDL	0.50	ug/L	09/24/03
Methyl-tert-butyl-ether	0.56	0.50	ug/L	09/24/03
1,1-Dichloroethane	BDL	0.50	ug/L	09/24/03
2-Butanone	BDL	5.0	ug/L	09/24/03
cis-1,2-Dichloroethene	1.0	0.50	ug/L	09/24/03
2,2-Dichloropropane	BDL	0.50	ug/L	09/24/03
Chloroform	BDL	0.50	ug/L	09/24/03
Bromochloromethane	BDL	0.50	ug/L	09/24/03
1,1,1-Trichloroethane	BDL	0.50	ug/L	09/24/03
1,1-Dichloropropene	BDL	0.50	ug/L	09/24/03
1,2-Dichloroethane	BDL	0.50	ug/L	09/24/03
Carbon Tetrachloride	BDL	0.50	ug/L	09/24/03
Benzene	BDL	0.50	ug/L	09/24/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035186
EAS Sample Number: 03090359-04
LIMS ID Number: AE10911
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Trichloroethene	BDL	0.50	ug/L	09/24/03
1,2-Dichloropropane	BDL	0.50	ug/L	09/24/03
Dibromomethane	BDL	0.50	ug/L	09/24/03
Bromodichloromethane	BDL	0.50	ug/L	09/24/03
4-Methyl-2-Pentanone	BDL	5.0	ug/L	09/24/03
cis-1,3-Dichloropropene	BDL	0.50	ug/L	09/24/03
Toluene	BDL	0.50	ug/L	09/24/03
trans-1,3-Dichloropropene	BDL	0.50	ug/L	09/24/03
1,1,2-Trichloroethane	BDL	0.50	ug/L	09/24/03
2-Hexanone	BDL	5.0	ug/L	09/24/03
1,3-Dichloropropane	BDL	0.50	ug/L	09/24/03
Dibromochloromethane	BDL	0.50	ug/L	09/24/03
Tetrachloroethylene	2.1	0.50	ug/L	09/24/03
1,2-Dibromoethane	BDL	0.50	ug/L	09/24/03
Chlorobenzene	BDL	0.50	ug/L	09/24/03
1,1,1,2-Tetrachloroethane	BDL	0.50	ug/L	09/24/03
Ethylbenzene	BDL	0.50	ug/L	09/24/03
m/p-Xylene	BDL	0.50	ug/L	09/24/03
Styrene	BDL	0.50	ug/L	09/24/03
o-Xylene	BDL	0.50	ug/L	09/24/03
Bromoform	BDL	0.50	ug/L	09/24/03
1,1,2,2-Tetrachloroethane	BDL	0.50	ug/L	09/24/03
Isopropylbenzene	BDL	0.50	ug/L	09/24/03
1,2,3-Trichloropropane	BDL	0.50	ug/L	09/24/03
Bromobenzene	BDL	0.50	ug/L	09/24/03
n-Propylbenzene	BDL	0.50	ug/L	09/24/03
2-Chlorotoluene	BDL	0.50	ug/L	09/24/03
4-Chlorotoluene	BDL	0.50	ug/L	09/24/03
1,3,5-Trimethylbenzene	BDL	0.50	ug/L	09/24/03
tert-Butylbenzene	BDL	0.50	ug/L	09/24/03
1,2,4-Trimethylbenzene	BDL	0.50	ug/L	09/24/03
sec-Butylbenzene	BDL	0.50	ug/L	09/24/03
1,3-Dichlorobenzene	BDL	0.50	ug/L	09/24/03
1,4-Dichlorobenzene	BDL	0.50	ug/L	09/24/03
p-Isopropyltoluene	BDL	0.50	ug/L	09/24/03
1,2-Dichlorobenzene	BDL	0.50	ug/L	09/24/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035186
EAS Sample Number: 03090359-04
LIMS ID Number: AE10911
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
n-Butylbenzene	BDL	0.50	ug/L	09/24/03
1,2-Dibromo-3-Chloropropane	BDL	1.0	ug/L	09/24/03
1,2,4-Trichlorobenzene	BDL	0.50	ug/L	09/24/03
Naphthalene	BDL	0.50	ug/L	09/24/03
Hexachlorobutadiene	BDL	0.50	ug/L	09/24/03
1,2,3-Trichlorobenzene	BDL	0.50	ug/L	09/24/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035187
EAS Sample Number: 03090359-05
LIMS ID Number: AE10912
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Arsenic-Low Level, Water	BDL	0.010	mg/L	09/25/03
Barium, Water	0.019	0.005	mg/L	09/25/03
Cadmium, Water	BDL	0.005	mg/L	09/25/03
Chromium, Water	0.053	0.02	mg/L	09/25/03
Copper, Water	6.2	0.01	mg/L	09/25/03
Lead-Low Level, Water	0.006	0.002	mg/L	09/25/03
Mercury, Water	0.0065	0.002	mg/L	09/25/03
Nickel, Water	0.22	0.02	mg/L	09/25/03
Selenium-Low Level, Water	BDL	0.010	mg/L	09/25/03
Silver, Water	0.015	0.01	mg/L	09/25/03
Zinc, Water	0.37	0.005	mg/L	09/25/03
ETPH by GC/FID, Water	BDL	0.10	mg/L	09/25/03
TPH Extraction, Water	Completed			09/23/03
Volatile Organic Compounds, Water				
Dichlorodifluoromethane	0.84	0.50	ug/L	09/24/03
Chloromethane	BDL	0.50	ug/L	09/24/03
Vinyl Chloride	BDL	0.50	ug/L	09/24/03
Bromomethane	BDL	0.50	ug/L	09/24/03
Chloroethane	BDL	0.50	ug/L	09/24/03
Trichlorofluoromethane	0.61	0.50	ug/L	09/24/03
Acetone	BDL	5.0	ug/L	09/24/03
1,1-Dichloroethene	BDL	0.50	ug/L	09/24/03
Methylene Chloride	BDL	0.50	ug/L	09/24/03
trans-1,2-Dichloroethene	BDL	0.50	ug/L	09/24/03
Methyl-tert-butyl-ether	BDL	0.50	ug/L	09/24/03
1,1-Dichloroethane	BDL	0.50	ug/L	09/24/03
2-Butanone	BDL	5.0	ug/L	09/24/03
cis-1,2-Dichloroethene	BDL	0.50	ug/L	09/24/03
2,2-Dichloropropane	BDL	0.50	ug/L	09/24/03
Chloroform	BDL	0.50	ug/L	09/24/03
Bromochloromethane	BDL	0.50	ug/L	09/24/03
1,1,1-Trichloroethane	0.94	0.50	ug/L	09/24/03
1,1-Dichloropropene	BDL	0.50	ug/L	09/24/03
1,2-Dichloroethane	BDL	0.50	ug/L	09/24/03
Carbon Tetrachloride	BDL	0.50	ug/L	09/24/03
Benzene	BDL	0.50	ug/L	09/24/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035187
EAS Sample Number: 03090359-05
LIMS ID Number: AE10912
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Trichloroethene	BDL	0.50	ug/L	09/24/03
1,2-Dichloropropane	BDL	0.50	ug/L	09/24/03
Dibromomethane	BDL	0.50	ug/L	09/24/03
Bromodichloromethane	BDL	0.50	ug/L	09/24/03
4-Methyl-2-Pentanone	BDL	5.0	ug/L	09/24/03
cis-1,3-Dichloropropene	BDL	0.50	ug/L	09/24/03
Toluene	BDL	0.50	ug/L	09/24/03
trans-1,3-Dichloropropene	BDL	0.50	ug/L	09/24/03
1,1,2-Trichloroethane	BDL	0.50	ug/L	09/24/03
2-Hexanone	BDL	5.0	ug/L	09/24/03
1,3-Dichloropropane	BDL	0.50	ug/L	09/24/03
Dibromochloromethane	BDL	0.50	ug/L	09/24/03
Tetrachloroethylene	48	0.50	ug/L	09/24/03
1,2-Dibromoethane	BDL	0.50	ug/L	09/24/03
Chlorobenzene	BDL	0.50	ug/L	09/24/03
1,1,1,2-Tetrachloroethane	BDL	0.50	ug/L	09/24/03
Ethylbenzene	BDL	0.50	ug/L	09/24/03
m/p-Xylene	BDL	0.50	ug/L	09/24/03
Styrene	BDL	0.50	ug/L	09/24/03
o-Xylene	BDL	0.50	ug/L	09/24/03
Bromoform	BDL	0.50	ug/L	09/24/03
1,1,2,2-Tetrachloroethane	BDL	0.50	ug/L	09/24/03
Isopropylbenzene	BDL	0.50	ug/L	09/24/03
1,2,3-Trichloropropane	BDL	0.50	ug/L	09/24/03
Bromobenzene	BDL	0.50	ug/L	09/24/03
n-Propylbenzene	BDL	0.50	ug/L	09/24/03
2-Chlorotoluene	BDL	0.50	ug/L	09/24/03
4-Chlorotoluene	BDL	0.50	ug/L	09/24/03
1,3,5-Trimethylbenzene	BDL	0.50	ug/L	09/24/03
tert-Butylbenzene	BDL	0.50	ug/L	09/24/03
1,2,4-Trimethylbenzene	BDL	0.50	ug/L	09/24/03
sec-Butylbenzene	BDL	0.50	ug/L	09/24/03
1,3-Dichlorobenzene	BDL	0.50	ug/L	09/24/03
1,4-Dichlorobenzene	0.55	0.50	ug/L	09/24/03
p-Isopropyltoluene	BDL	0.50	ug/L	09/24/03
1,2-Dichlorobenzene	0.93	0.50	ug/L	09/24/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035187
EAS Sample Number: 03090359-05
LIMS ID Number: AE10912
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
n-Butylbenzene	BDL	0.50	ug/L	09/24/03
1,2-Dibromo-3-Chloropropane	BDL	1.0	ug/L	09/24/03
1,2,4-Trichlorobenzene	3.5	0.50	ug/L	09/24/03
Naphthalene	BDL	0.50	ug/L	09/24/03
Hexachlorobutadiene	BDL	0.50	ug/L	09/24/03
1,2,3-Trichlorobenzene	BDL	0.50	ug/L	09/24/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035188
EAS Sample Number: 03090359-06
LIMS ID Number: AE10913
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Arsenic-Low Level, Water	BDL	0.010	mg/L	09/25/03
Barium, Water	0.14	0.005	mg/L	09/25/03
Cadmium, Water	0.0095	0.005	mg/L	09/25/03
Chromium, Water	1.4	0.02	mg/L	09/25/03
Copper, Water	2.4	0.01	mg/L	09/25/03
Lead-Low Level, Water	0.022	0.002	mg/L	09/25/03
Mercury, Water	0.007	0.002	mg/L	09/25/03
Nickel, Water	0.15	0.02	mg/L	09/25/03
Selenium-Low Level, Water	BDL	0.010	mg/L	09/25/03
Silver, Water	BDL	0.01	mg/L	09/25/03
Zinc, Water	0.14	0.005	mg/L	09/25/03
ETPH by GC/FID, Water	0.46	0.10	mg/L	09/25/03
TPH Extraction, Water	Completed			09/23/03
Volatile Organic Compounds, Water				
Dichlorodifluoromethane	BDL	0.50	ug/L	09/25/03
Chloromethane	BDL	0.50	ug/L	09/25/03
Vinyl Chloride	BDL	0.50	ug/L	09/25/03
Bromomethane	BDL	0.50	ug/L	09/25/03
Chloroethane	BDL	0.50	ug/L	09/25/03
Trichlorofluoromethane	BDL	0.50	ug/L	09/25/03
Acetone	BDL	5.0	ug/L	09/25/03
1,1-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methylene Chloride	BDL	0.50	ug/L	09/25/03
trans-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methyl-tert-butyl-ether	BDL	0.50	ug/L	09/25/03
1,1-Dichloroethane	BDL	0.50	ug/L	09/25/03
2-Butanone	BDL	5.0	ug/L	09/25/03
cis-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
2,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Chloroform	BDL	0.50	ug/L	09/25/03
Bromochloromethane	BDL	0.50	ug/L	09/25/03
1,1,1-Trichloroethane	0.98	0.50	ug/L	09/25/03
1,1-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,2-Dichloroethane	1.1	0.50	ug/L	09/25/03
Carbon Tetrachloride	BDL	0.50	ug/L	09/25/03
Benzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035188
EAS Sample Number: 03090359-06
LIMS ID Number: AE10913
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Trichloroethene	BDL	0.50	ug/L	09/25/03
1,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromomethane	BDL	0.50	ug/L	09/25/03
Bromodichloromethane	BDL	0.50	ug/L	09/25/03
4-Methyl-2-Pentanone	BDL	5.0	ug/L	09/25/03
cis-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
Toluene	BDL	0.50	ug/L	09/25/03
trans-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,1,2-Trichloroethane	BDL	0.50	ug/L	09/25/03
2-Hexanone	BDL	5.0	ug/L	09/25/03
1,3-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromochloromethane	BDL	0.50	ug/L	09/25/03
Tetrachloroethylene	8.2	0.50	ug/L	09/25/03
1,2-Dibromoethane	BDL	0.50	ug/L	09/25/03
Chlorobenzene	BDL	0.50	ug/L	09/25/03
1,1,1,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Ethylbenzene	BDL	0.50	ug/L	09/25/03
m/p-Xylene	BDL	0.50	ug/L	09/25/03
Styrene	BDL	0.50	ug/L	09/25/03
o-Xylene	BDL	0.50	ug/L	09/25/03
Bromoform	BDL	0.50	ug/L	09/25/03
1,1,2,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Isopropylbenzene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichloropropane	BDL	0.50	ug/L	09/25/03
Bromobenzene	BDL	0.50	ug/L	09/25/03
n-Propylbenzene	BDL	0.50	ug/L	09/25/03
2-Chlorotoluene	BDL	0.50	ug/L	09/25/03
4-Chlorotoluene	BDL	0.50	ug/L	09/25/03
1,3,5-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
tert-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2,4-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
sec-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,3-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
1,4-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
p-Isopropyltoluene	BDL	0.50	ug/L	09/25/03
1,2-Dichlorobenzene	0.71	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035188
EAS Sample Number: 03090359-06
LIMS ID Number: AE10913
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
n-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2-Dibromo-3-Chloropropane	BDL	1.0	ug/L	09/25/03
1,2,4-Trichlorobenzene	25	0.50	ug/L	09/25/03
Naphthalene	BDL	0.50	ug/L	09/25/03
Hexachlorobutadiene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichlorobenzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035180
EAS Sample Number: 03090359-07
LIMS ID Number: AE10914
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Arsenic-Low Level, Water	BDL	0.010	mg/L	09/25/03
Barium, Water	0.14	0.005	mg/L	09/25/03
Cadmium, Water	BDL	0.005	mg/L	09/25/03
Chromium, Water	0.026	0.02	mg/L	09/25/03
Copper, Water	0.033	0.01	mg/L	09/25/03
Lead-Low Level, Water	0.005	0.002	mg/L	09/25/03
Mercury, Water	BDL	0.002	mg/L	09/25/03
Nickel, Water	0.028	0.02	mg/L	09/25/03
Selenium-Low Level, Water	BDL	0.010	mg/L	09/25/03
Silver, Water	BDL	0.01	mg/L	09/25/03
Zinc, Water	0.052	0.005	mg/L	09/25/03
ETPH by GC/FID, Water	0.28	0.10	mg/L	09/25/03
TPH Extraction, Water	Completed			09/24/03
Volatile Organic Compounds, Water				
Dichlorodifluoromethane	1.7	0.50	ug/L	09/25/03
Chloromethane	BDL	0.50	ug/L	09/25/03
Vinyl Chloride	BDL	0.50	ug/L	09/25/03
Bromomethane	BDL	0.50	ug/L	09/25/03
Chloroethane	BDL	0.50	ug/L	09/25/03
Trichlorofluoromethane	BDL	0.50	ug/L	09/25/03
Acetone	BDL	5.0	ug/L	09/25/03
1,1-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methylene Chloride	BDL	0.50	ug/L	09/25/03
trans-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methyl-tert-butyl-ether	BDL	0.50	ug/L	09/25/03
1,1-Dichloroethane	4.6	0.50	ug/L	09/25/03
2-Butanone	BDL	5.0	ug/L	09/25/03
cis-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
2,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Chloroform	BDL	0.50	ug/L	09/25/03
Bromochloromethane	BDL	0.50	ug/L	09/25/03
1,1,1-Trichloroethane	BDL	0.50	ug/L	09/25/03
1,1-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,2-Dichloroethane	9.8	0.50	ug/L	09/25/03
Carbon Tetrachloride	BDL	0.50	ug/L	09/25/03
Benzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035180
EAS Sample Number: 03090359-07
LIMS ID Number: AE10914
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Trichloroethene	BDL	0.50	ug/L	09/25/03
1,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromomethane	BDL	0.50	ug/L	09/25/03
Bromodichloromethane	BDL	0.50	ug/L	09/25/03
4-Methyl-2-Pentanone	BDL	5.0	ug/L	09/25/03
cis-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
Toluene	BDL	0.50	ug/L	09/25/03
trans-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,1,2-Trichloroethane	BDL	0.50	ug/L	09/25/03
2-Hexanone	BDL	5.0	ug/L	09/25/03
1,3-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromochloromethane	BDL	0.50	ug/L	09/25/03
Tetrachloroethylene	6.2	0.50	ug/L	09/25/03
1,2-Dibromoethane	BDL	0.50	ug/L	09/25/03
Chlorobenzene	BDL	0.50	ug/L	09/25/03
1,1,1,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Ethylbenzene	BDL	0.50	ug/L	09/25/03
m/p-Xylene	BDL	0.50	ug/L	09/25/03
Styrene	BDL	0.50	ug/L	09/25/03
o-Xylene	BDL	0.50	ug/L	09/25/03
Bromoform	BDL	0.50	ug/L	09/25/03
1,1,2,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Isopropylbenzene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichloropropane	BDL	0.50	ug/L	09/25/03
Bromobenzene	BDL	0.50	ug/L	09/25/03
n-Propylbenzene	BDL	0.50	ug/L	09/25/03
2-Chlorotoluene	BDL	0.50	ug/L	09/25/03
4-Chlorotoluene	BDL	0.50	ug/L	09/25/03
1,3,5-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
tert-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2,4-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
sec-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,3-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
1,4-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
p-Isopropyltoluene	BDL	0.50	ug/L	09/25/03
1,2-Dichlorobenzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035180
EAS Sample Number: 03090359-07
LIMS ID Number: AE10914
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
n-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2-Dibromo-3-Chloropropane	BDL	1.0	ug/L	09/25/03
1,2,4-Trichlorobenzene	2.7	0.50	ug/L	09/25/03
Naphthalene	BDL	0.50	ug/L	09/25/03
Hexachlorobutadiene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichlorobenzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035178
EAS Sample Number: 03090359-08
LIMS ID Number: AE10915
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Arsenic-Low Level, Water	BDL	0.010	mg/L	09/25/03
Barium, Water	0.18	0.005	mg/L	09/25/03
Cadmium, Water	BDL	0.005	mg/L	09/25/03
Chromium, Water	BDL	0.02	mg/L	09/25/03
Copper, Water	0.013	0.01	mg/L	09/25/03
Lead-Low Level, Water	0.006	0.002	mg/L	09/25/03
Mercury, Water	BDL	0.002	mg/L	09/25/03
Nickel, Water	BDL	0.02	mg/L	09/25/03
Selenium-Low Level, Water	BDL	0.010	mg/L	09/25/03
Silver, Water	BDL	0.01	mg/L	09/25/03
Zinc, Water	0.01	0.005	mg/L	09/25/03
ETPH by GC/FID, Water	0.31	0.10	mg/L	09/25/03
ETPH Extraction, Water	Completed			09/24/03
Volatile Organic Compounds, Water				
Dichlorodifluoromethane	1.7	0.50	ug/L	09/25/03
Chloromethane	BDL	0.50	ug/L	09/25/03
Vinyl Chloride	BDL	0.50	ug/L	09/25/03
Bromomethane	BDL	0.50	ug/L	09/25/03
Chloroethane	BDL	0.50	ug/L	09/25/03
Trichlorofluoromethane	BDL	0.50	ug/L	09/25/03
Acetone	BDL	5.0	ug/L	09/25/03
1,1-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methylene Chloride	BDL	0.50	ug/L	09/25/03
trans-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methyl-tert-butyl-ether	BDL	0.50	ug/L	09/25/03
1,1-Dichloroethane	0.73	0.50	ug/L	09/25/03
2-Butanone	BDL	5.0	ug/L	09/25/03
cis-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
2,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Chloroform	BDL	0.50	ug/L	09/25/03
Bromochloromethane	BDL	0.50	ug/L	09/25/03
1,1,1-Trichloroethane	BDL	0.50	ug/L	09/25/03
1,1-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,2-Dichloroethane	0.56	0.50	ug/L	09/25/03
Carbon Tetrachloride	BDL	0.50	ug/L	09/25/03
Benzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035178
EAS Sample Number: 03090359-08
LIMS ID Number: AE10915
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Trichloroethene	BDL	0.50	ug/L	09/25/03
1,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromomethane	BDL	0.50	ug/L	09/25/03
Bromodichloromethane	BDL	0.50	ug/L	09/25/03
4-Methyl-2-Pentanone	BDL	5.0	ug/L	09/25/03
cis-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
Toluene	BDL	0.50	ug/L	09/25/03
trans-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,1,2-Trichloroethane	BDL	0.50	ug/L	09/25/03
2-Hexanone	BDL	5.0	ug/L	09/25/03
1,3-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromochloromethane	BDL	0.50	ug/L	09/25/03
Tetrachloroethylene	8.3	0.50	ug/L	09/25/03
1,2-Dibromoethane	BDL	0.50	ug/L	09/25/03
Chlorobenzene	BDL	0.50	ug/L	09/25/03
1,1,1,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Ethylbenzene	BDL	0.50	ug/L	09/25/03
m/p-Xylene	BDL	0.50	ug/L	09/25/03
Styrene	BDL	0.50	ug/L	09/25/03
o-Xylene	BDL	0.50	ug/L	09/25/03
Bromoform	BDL	0.50	ug/L	09/25/03
1,1,2,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Isopropylbenzene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichloropropane	BDL	0.50	ug/L	09/25/03
Bromobenzene	BDL	0.50	ug/L	09/25/03
n-Propylbenzene	BDL	0.50	ug/L	09/25/03
2-Chlorotoluene	BDL	0.50	ug/L	09/25/03
4-Chlorotoluene	BDL	0.50	ug/L	09/25/03
1,3,5-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
tert-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2,4-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
sec-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,3-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
1,4-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
p-Isopropyltoluene	BDL	0.50	ug/L	09/25/03
1,2-Dichlorobenzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035178
EAS Sample Number: 03090359-08
LIMS ID Number: AE10915
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
n-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2-Dibromo-3-Chloropropane	BDL	1.0	ug/L	09/25/03
1,2,4-Trichlorobenzene	BDL	0.50	ug/L	09/25/03
Naphthalene	BDL	0.50	ug/L	09/25/03
Hexachlorobutadiene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichlorobenzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035196
EAS Sample Number: 03090359-09
LIMS ID Number: AE10916
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Arsenic-Low Level, Water	BDL	0.010	mg/L	09/25/03
Barium, Water	0.19	0.005	mg/L	09/25/03
Cadmium, Water	BDL	0.005	mg/L	09/25/03
Chromium, Water	BDL	0.02	mg/L	09/25/03
Copper, Water	0.011	0.01	mg/L	09/25/03
Lead-Low Level, Water	0.007	0.002	mg/L	09/25/03
Mercury, Water	BDL	0.002	mg/L	09/25/03
Nickel, Water	BDL	0.02	mg/L	09/25/03
Selenium-Low Level, Water	BDL	0.010	mg/L	09/25/03
Silver, Water	BDL	0.01	mg/L	09/25/03
Zinc, Water	0.0084	0.005	mg/L	09/25/03
ETPH by GC/FID, Water	0.41	0.20	mg/L	09/25/03
ETPH Extraction, Water	Completed			09/24/03
Volatile Organic Compounds, Water				
Dichlorodifluoromethane	1.7	0.50	ug/L	09/25/03
Chloromethane	BDL	0.50	ug/L	09/25/03
Vinyl Chloride	BDL	0.50	ug/L	09/25/03
Bromomethane	BDL	0.50	ug/L	09/25/03
Chloroethane	BDL	0.50	ug/L	09/25/03
Trichlorofluoromethane	BDL	0.50	ug/L	09/25/03
Acetone	BDL	5.0	ug/L	09/25/03
1,1-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methylene Chloride	BDL	0.50	ug/L	09/25/03
trans-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methyl-tert-butyl-ether	BDL	0.50	ug/L	09/25/03
1,1-Dichloroethane	0.90	0.50	ug/L	09/25/03
2-Butanone	BDL	5.0	ug/L	09/25/03
cis-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
2,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Chloroform	BDL	0.50	ug/L	09/25/03
Bromochloromethane	BDL	0.50	ug/L	09/25/03
1,1,1-Trichloroethane	BDL	0.50	ug/L	09/25/03
1,1-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,2-Dichloroethane	BDL	0.50	ug/L	09/25/03
Carbon Tetrachloride	BDL	0.50	ug/L	09/25/03
Benzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035196
EAS Sample Number: 03090359-09
LIMS ID Number: AE10916
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Trichloroethene	BDL	0.50	ug/L	09/25/03
1,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromomethane	BDL	0.50	ug/L	09/25/03
Bromodichloromethane	BDL	0.50	ug/L	09/25/03
4-Methyl-2-Pentanone	BDL	5.0	ug/L	09/25/03
cis-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
Toluene	BDL	0.50	ug/L	09/25/03
trans-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,1,2-Trichloroethane	BDL	0.50	ug/L	09/25/03
2-Hexanone	BDL	5.0	ug/L	09/25/03
1,3-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromochloromethane	BDL	0.50	ug/L	09/25/03
Tetrachloroethylene	8.3	0.50	ug/L	09/25/03
1,2-Dibromoethane	BDL	0.50	ug/L	09/25/03
Chlorobenzene	BDL	0.50	ug/L	09/25/03
1,1,1,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Ethylbenzene	BDL	0.50	ug/L	09/25/03
m/p-Xylene	BDL	0.50	ug/L	09/25/03
Styrene	BDL	0.50	ug/L	09/25/03
o-Xylene	BDL	0.50	ug/L	09/25/03
Bromoform	BDL	0.50	ug/L	09/25/03
1,1,2,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Isopropylbenzene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichloropropane	BDL	0.50	ug/L	09/25/03
Bromobenzene	BDL	0.50	ug/L	09/25/03
n-Propylbenzene	BDL	0.50	ug/L	09/25/03
2-Chlorotoluene	BDL	0.50	ug/L	09/25/03
4-Chlorotoluene	BDL	0.50	ug/L	09/25/03
1,3,5-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
tert-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2,4-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
sec-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,3-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
1,4-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
p-Isopropyltoluene	BDL	0.50	ug/L	09/25/03
1,2-Dichlorobenzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035196
EAS Sample Number: 03090359-09
LIMS ID Number: AE10916
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
n-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2-Dibromo-3-Chloropropane	BDL	1.0	ug/L	09/25/03
1,2,4-Trichlorobenzene	BDL	0.50	ug/L	09/25/03
Naphthalene	BDL	0.50	ug/L	09/25/03
Hexachlorobutadiene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichlorobenzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035179
EAS Sample Number: 03090359-10
LIMS ID Number: AE10917
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Arsenic-Low Level, Water	BDL	0.010	mg/L	09/25/03
Barium, Water	0.057	0.005	mg/L	09/25/03
Cadmium, Water	BDL	0.005	mg/L	09/25/03
Chromium, Water	0.40	0.02	mg/L	09/25/03
Copper, Water	0.014	0.01	mg/L	09/25/03
Lead-Low Level, Water	0.025	0.002	mg/L	09/25/03
Mercury, Water	BDL	0.002	mg/L	09/25/03
Nickel, Water	0.38	0.02	mg/L	09/25/03
Selenium-Low Level, Water	BDL	0.010	mg/L	09/25/03
Silver, Water	BDL	0.01	mg/L	09/25/03
Zinc, Water	0.0067	0.005	mg/L	09/25/03
ETPH by GC/FID, Water	BDL	0.10	mg/L	09/25/03
TPH Extraction, Water	Completed			09/24/03
Volatile Organic Compounds, Water				
Dichlorodifluoromethane	BDL	0.50	ug/L	09/25/03
Chloromethane	BDL	0.50	ug/L	09/25/03
Vinyl Chloride	BDL	0.50	ug/L	09/25/03
Bromomethane	BDL	0.50	ug/L	09/25/03
Chloroethane	BDL	0.50	ug/L	09/25/03
Trichlorofluoromethane	BDL	0.50	ug/L	09/25/03
Acetone	BDL	5.0	ug/L	09/25/03
1,1-Dichloroethene	72	0.50	ug/L	09/25/03
Methylene Chloride	51	0.50	ug/L	09/25/03
trans-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methyl-tert-butyl-ether	BDL	0.50	ug/L	09/25/03
1,1-Dichloroethane	2.4	0.50	ug/L	09/25/03
2-Butanone	BDL	5.0	ug/L	09/25/03
cis-1,2-Dichloroethene	1.5	0.50	ug/L	09/25/03
2,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Chloroform	27	0.50	ug/L	09/25/03
Bromochloromethane	BDL	0.50	ug/L	09/25/03
1,1,1-Trichloroethane	27	0.50	ug/L	09/25/03
1,1-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,2-Dichloroethane	16	0.50	ug/L	09/25/03
Carbon Tetrachloride	BDL	0.50	ug/L	09/25/03
Benzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035179
EAS Sample Number: 03090359-10
LIMS ID Number: AE10917
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Trichloroethene	27	0.50	ug/L	09/25/03
1,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromomethane	BDL	0.50	ug/L	09/25/03
Bromodichloromethane	BDL	0.50	ug/L	09/25/03
4-Methyl-2-Pentanone	BDL	5.0	ug/L	09/25/03
cis-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
Toluene	BDL	0.50	ug/L	09/25/03
trans-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,1,2-Trichloroethane	BDL	0.50	ug/L	09/25/03
2-Hexanone	BDL	5.0	ug/L	09/25/03
1,3-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromochloromethane	BDL	0.50	ug/L	09/25/03
Tetrachloroethylene	380	0.50	ug/L	09/25/03
1,2-Dibromoethane	BDL	0.50	ug/L	09/25/03
Chlorobenzene	BDL	0.50	ug/L	09/25/03
1,1,1,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Ethylbenzene	BDL	0.50	ug/L	09/25/03
m/p-Xylene	0.68	0.50	ug/L	09/25/03
Styrene	BDL	0.50	ug/L	09/25/03
o-Xylene	1.8	0.50	ug/L	09/25/03
Bromoform	BDL	0.50	ug/L	09/25/03
1,1,2,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Isopropylbenzene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichloropropane	BDL	0.50	ug/L	09/25/03
Bromobenzene	BDL	0.50	ug/L	09/25/03
n-Propylbenzene	BDL	0.50	ug/L	09/25/03
2-Chlorotoluene	BDL	0.50	ug/L	09/25/03
4-Chlorotoluene	BDL	0.50	ug/L	09/25/03
1,3,5-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
tert-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2,4-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
sec-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,3-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
1,4-Dichlorobenzene	0.86	0.50	ug/L	09/25/03
p-Isopropyltoluene	BDL	0.50	ug/L	09/25/03
1,2-Dichlorobenzene	4.4	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035179
EAS Sample Number: 03090359-10
LIMS ID Number: AE10917
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
n-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2-Dibromo-3-Chloropropane	BDL	1.0	ug/L	09/25/03
1,2,4-Trichlorobenzene	BDL	0.50	ug/L	09/25/03
Naphthalene	BDL	0.50	ug/L	09/25/03
Hexachlorobutadiene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichlorobenzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035181
EAS Sample Number: 03090359-11
LIMS ID Number: AE10918
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Arsenic-Low Level, Water	BDL	0.010	mg/L	09/25/03
Barium, Water	0.27	0.005	mg/L	09/25/03
Cadmium, Water	0.019	0.005	mg/L	09/25/03
Chromium, Water	0.06	0.02	mg/L	09/25/03
Copper, Water	0.073	0.01	mg/L	09/25/03
Lead-Low Level, Water	0.008	0.002	mg/L	09/25/03
Mercury, Water	BDL	0.002	mg/L	09/25/03
Nickel, Water	0.057	0.02	mg/L	09/25/03
Selenium-Low Level, Water	BDL	0.010	mg/L	09/25/03
Silver, Water	BDL	0.01	mg/L	09/25/03
Zinc, Water	0.15	0.005	mg/L	09/25/03
ETPH by GC/FID, Water	0.78	0.10	mg/L	09/25/03
TPH Extraction, Water	Completed			09/24/03
Volatile Organic Compounds, Water				
Dichlorodifluoromethane	BDL	0.50	ug/L	09/25/03
Chloromethane	BDL	0.50	ug/L	09/25/03
Vinyl Chloride	BDL	0.50	ug/L	09/25/03
Bromomethane	BDL	0.50	ug/L	09/25/03
Chloroethane	BDL	0.50	ug/L	09/25/03
Trichlorofluoromethane	BDL	0.50	ug/L	09/25/03
Acetone	BDL	5.0	ug/L	09/25/03
1,1-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methylene Chloride	BDL	0.50	ug/L	09/25/03
trans-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methyl-tert-butyl-ether	BDL	0.50	ug/L	09/25/03
1,1-Dichloroethane	BDL	0.50	ug/L	09/25/03
2-Butanone	BDL	5.0	ug/L	09/25/03
cis-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
2,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Chloroform	BDL	0.50	ug/L	09/25/03
Bromochloromethane	BDL	0.50	ug/L	09/25/03
1,1,1-Trichloroethane	BDL	0.50	ug/L	09/25/03
1,1-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,2-Dichloroethane	BDL	0.50	ug/L	09/25/03
Carbon Tetrachloride	BDL	0.50	ug/L	09/25/03
Benzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035181
EAS Sample Number: 03090359-11
LIMS ID Number: AE10918
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Trichloroethene	BDL	0.50	ug/L	09/25/03
1,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromomethane	BDL	0.50	ug/L	09/25/03
Bromodichloromethane	BDL	0.50	ug/L	09/25/03
4-Methyl-2-Pentanone	BDL	5.0	ug/L	09/25/03
cis-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
Toluene	BDL	0.50	ug/L	09/25/03
trans-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,1,2-Trichloroethane	BDL	0.50	ug/L	09/25/03
2-Hexanone	BDL	5.0	ug/L	09/25/03
1,3-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromochloromethane	BDL	0.50	ug/L	09/25/03
Tetrachloroethylene	BDL	0.50	ug/L	09/25/03
1,2-Dibromoethane	BDL	0.50	ug/L	09/25/03
Chlorobenzene	BDL	0.50	ug/L	09/25/03
1,1,1,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Ethylbenzene	BDL	0.50	ug/L	09/25/03
m/p-Xylene	BDL	0.50	ug/L	09/25/03
Styrene	BDL	0.50	ug/L	09/25/03
o-Xylene	BDL	0.50	ug/L	09/25/03
Bromoform	BDL	0.50	ug/L	09/25/03
1,1,2,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Isopropylbenzene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichloropropane	BDL	0.50	ug/L	09/25/03
Bromobenzene	BDL	0.50	ug/L	09/25/03
n-Propylbenzene	BDL	0.50	ug/L	09/25/03
2-Chlorotoluene	BDL	0.50	ug/L	09/25/03
4-Chlorotoluene	BDL	0.50	ug/L	09/25/03
1,3,5-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
tert-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2,4-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
sec-Butylbenzene	0.72	0.50	ug/L	09/25/03
1,3-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
1,4-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
p-Isopropyltoluene	BDL	0.50	ug/L	09/25/03
1,2-Dichlorobenzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035181
EAS Sample Number: 03090359-11
LIMS ID Number: AE10918
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
n-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2-Dibromo-3-Chloropropane	BDL	1.0	ug/L	09/25/03
1,2,4-Trichlorobenzene	BDL	0.50	ug/L	09/25/03
Naphthalene	0.61	0.50	ug/L	09/25/03
Hexachlorobutadiene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichlorobenzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035197
EAS Sample Number: 03090359-12
LIMS ID Number: AE10919
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Arsenic-Low Level, Water	BDL	0.010	mg/L	09/25/03
Barium, Water	BDL	0.005	mg/L	09/25/03
Cadmium, Water	BDL	0.005	mg/L	09/25/03
Chromium, Water	BDL	0.02	mg/L	09/25/03
Copper, Water	BDL	0.01	mg/L	09/25/03
Lead-Low Level, Water	0.006	0.002	mg/L	09/25/03
Mercury, Water	BDL	0.002	mg/L	09/25/03
Nickel, Water	BDL	0.02	mg/L	09/25/03
Selenium-Low Level, Water	BDL	0.010	mg/L	09/25/03
Silver, Water	BDL	0.01	mg/L	09/25/03
Zinc, Water	BDL	0.005	mg/L	09/25/03
ETPH by GC/FID, Water	BDL	0.10	mg/L	09/25/03
TPH Extraction, Water	Completed			09/24/03
Volatile Organic Compounds, Water				
Dichlorodifluoromethane	BDL	0.50	ug/L	09/25/03
Chloromethane	BDL	0.50	ug/L	09/25/03
Vinyl Chloride	BDL	0.50	ug/L	09/25/03
Bromomethane	BDL	0.50	ug/L	09/25/03
Chloroethane	BDL	0.50	ug/L	09/25/03
Trichlorofluoromethane	BDL	0.50	ug/L	09/25/03
Acetone	BDL	5.0	ug/L	09/25/03
1,1-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methylene Chloride	BDL	0.50	ug/L	09/25/03
trans-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methyl-tert-butyl-ether	BDL	0.50	ug/L	09/25/03
1,1-Dichloroethane	BDL	0.50	ug/L	09/25/03
2-Butanone	BDL	5.0	ug/L	09/25/03
cis-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
2,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Chloroform	BDL	0.50	ug/L	09/25/03
Bromochloromethane	BDL	0.50	ug/L	09/25/03
1,1,1-Trichloroethane	BDL	0.50	ug/L	09/25/03
1,1-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,2-Dichloroethane	BDL	0.50	ug/L	09/25/03
Carbon Tetrachloride	BDL	0.50	ug/L	09/25/03
Benzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035197
EAS Sample Number: 03090359-12
LIMS ID Number: AE10919
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Trichloroethene	BDL	0.50	ug/L	09/25/03
1,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromomethane	BDL	0.50	ug/L	09/25/03
Bromodichloromethane	BDL	0.50	ug/L	09/25/03
4-Methyl-2-Pentanone	BDL	5.0	ug/L	09/25/03
cis-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
Toluene	BDL	0.50	ug/L	09/25/03
trans-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,1,2-Trichloroethane	BDL	0.50	ug/L	09/25/03
2-Hexanone	BDL	5.0	ug/L	09/25/03
1,3-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromochloromethane	BDL	0.50	ug/L	09/25/03
Tetrachloroethylene	BDL	0.50	ug/L	09/25/03
1,2-Dibromoethane	BDL	0.50	ug/L	09/25/03
Chlorobenzene	BDL	0.50	ug/L	09/25/03
1,1,1,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Ethylbenzene	BDL	0.50	ug/L	09/25/03
m/p-Xylene	BDL	0.50	ug/L	09/25/03
Styrene	BDL	0.50	ug/L	09/25/03
o-Xylene	BDL	0.50	ug/L	09/25/03
Bromoform	BDL	0.50	ug/L	09/25/03
1,1,2,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Isopropylbenzene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichloropropane	BDL	0.50	ug/L	09/25/03
Bromobenzene	BDL	0.50	ug/L	09/25/03
n-Propylbenzene	BDL	0.50	ug/L	09/25/03
2-Chlorotoluene	BDL	0.50	ug/L	09/25/03
4-Chlorotoluene	BDL	0.50	ug/L	09/25/03
1,3,5-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
tert-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2,4-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
sec-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,3-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
1,4-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
p-Isopropyltoluene	BDL	0.50	ug/L	09/25/03
1,2-Dichlorobenzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035197
EAS Sample Number: 03090359-12
LIMS ID Number: AE10919
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
n-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2-Dibromo-3-Chloropropane	BDL	1.0	ug/L	09/25/03
1,2,4-Trichlorobenzene	BDL	0.50	ug/L	09/25/03
Naphthalene	BDL	0.50	ug/L	09/25/03
Hexachlorobutadiene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichlorobenzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035198
EAS Sample Number: 03090359-13
LIMS ID Number: AE10920
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Volatile Organic Compounds, Water				
Dichlorodifluoromethane	BDL	0.50	ug/L	09/25/03
Chloromethane	BDL	0.50	ug/L	09/25/03
Vinyl Chloride	BDL	0.50	ug/L	09/25/03
Bromomethane	BDL	0.50	ug/L	09/25/03
Chloroethane	BDL	0.50	ug/L	09/25/03
Trichlorofluoromethane	BDL	0.50	ug/L	09/25/03
Acetone	BDL	5.0	ug/L	09/25/03
1,1-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methylene Chloride	0.54	0.50	ug/L	09/25/03
trans-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methyl-tert-butyl-ether	BDL	0.50	ug/L	09/25/03
1,1-Dichloroethane	BDL	0.50	ug/L	09/25/03
2-Butanone	BDL	5.0	ug/L	09/25/03
cis-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
2,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Chloroform	BDL	0.50	ug/L	09/25/03
Bromochloromethane	BDL	0.50	ug/L	09/25/03
1,1,1-Trichloroethane	BDL	0.50	ug/L	09/25/03
1,1-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,2-Dichloroethane	BDL	0.50	ug/L	09/25/03
Carbon Tetrachloride	BDL	0.50	ug/L	09/25/03
Benzene	BDL	0.50	ug/L	09/25/03
Trichloroethene	BDL	0.50	ug/L	09/25/03
1,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromomethane	BDL	0.50	ug/L	09/25/03
Bromodichloromethane	BDL	0.50	ug/L	09/25/03
4-Methyl-2-Pentanone	BDL	5.0	ug/L	09/25/03
cis-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
Toluene	BDL	0.50	ug/L	09/25/03
trans-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,1,2-Trichloroethane	BDL	0.50	ug/L	09/25/03
2-Hexanone	BDL	5.0	ug/L	09/25/03
1,3-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromochloromethane	BDL	0.50	ug/L	09/25/03
Tetrachloroethylene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/22/03
Sample Description: 1035198
EAS Sample Number: 03090359-13
LIMS ID Number: AE10920
Date Sample Received: 09/22/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
1,2-Dibromoethane	BDL	0.50	ug/L	09/25/03
Chlorobenzene	BDL	0.50	ug/L	09/25/03
1,1,1,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Ethylbenzene	BDL	0.50	ug/L	09/25/03
m/p-Xylene	BDL	0.50	ug/L	09/25/03
Styrene	BDL	0.50	ug/L	09/25/03
o-Xylene	BDL	0.50	ug/L	09/25/03
Bromoform	BDL	0.50	ug/L	09/25/03
1,1,2,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Isopropylbenzene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichloropropane	BDL	0.50	ug/L	09/25/03
Bromobenzene	BDL	0.50	ug/L	09/25/03
n-Propylbenzene	BDL	0.50	ug/L	09/25/03
2-Chlorotoluene	BDL	0.50	ug/L	09/25/03
4-Chlorotoluene	BDL	0.50	ug/L	09/25/03
1,3,5-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
tert-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2,4-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
sec-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,3-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
1,4-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
p-Isopropyltoluene	BDL	0.50	ug/L	09/25/03
1,2-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
n-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2-Dibromo-3-Chloropropane	BDL	1.0	ug/L	09/25/03
1,2,4-Trichlorobenzene	BDL	0.50	ug/L	09/25/03
Naphthalene	BDL	0.50	ug/L	09/25/03
Hexachlorobutadiene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichlorobenzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/24/03
Sample Description: 1035189
EAS Sample Number: 03090359-14
LIMS ID Number: AE10974
Date Sample Received: 09/23/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Arsenic-Low Level, Water	BDL	0.010	mg/L	09/25/03
Barium, Water	BDL	0.005	mg/L	09/25/03
Cadmium, Water	BDL	0.005	mg/L	09/25/03
Chromium, Water	BDL	0.02	mg/L	09/25/03
Copper, Water	BDL	0.01	mg/L	09/25/03
Lead-Low Level, Water	0.006	0.002	mg/L	09/25/03
Mercury, Water	BDL	0.002	mg/L	09/25/03
Nickel, Water	BDL	0.02	mg/L	09/25/03
Selenium-Low Level, Water	BDL	0.010	mg/L	09/25/03
Silver, Water	BDL	0.01	mg/L	09/25/03
Zinc, Water	0.075	0.005	mg/L	09/25/03
ETPH by GC/FID, Water	BDL	0.10	mg/L	09/26/03
TPH Extraction, Water	Completed			09/25/03
Volatile Organic Compounds, Water				
Dichlorodifluoromethane	BDL	0.50	ug/L	09/25/03
Chloromethane	BDL	0.50	ug/L	09/25/03
Vinyl Chloride	BDL	0.50	ug/L	09/25/03
Bromomethane	BDL	0.50	ug/L	09/25/03
Chloroethane	BDL	0.50	ug/L	09/25/03
Trichlorofluoromethane	BDL	0.50	ug/L	09/25/03
Acetone	BDL	5.0	ug/L	09/25/03
1,1-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methylene Chloride	BDL	0.50	ug/L	09/25/03
trans-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methyl-tert-butyl-ether	BDL	0.50	ug/L	09/25/03
1,1-Dichloroethane	BDL	0.50	ug/L	09/25/03
2-Butanone	BDL	5.0	ug/L	09/25/03
cis-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
2,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Chloroform	BDL	0.50	ug/L	09/25/03
Bromochloromethane	BDL	0.50	ug/L	09/25/03
1,1,1-Trichloroethane	BDL	0.50	ug/L	09/25/03
1,1-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,2-Dichloroethane	BDL	0.50	ug/L	09/25/03
Carbon Tetrachloride	BDL	0.50	ug/L	09/25/03
Benzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/24/03
Sample Description: 1035189
EAS Sample Number: 03090359-14
LIMS ID Number: AE10974
Date Sample Received: 09/23/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Trichloroethene	BDL	0.50	ug/L	09/25/03
1,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromomethane	BDL	0.50	ug/L	09/25/03
Bromodichloromethane	BDL	0.50	ug/L	09/25/03
4-Methyl-2-Pentanone	BDL	5.0	ug/L	09/25/03
cis-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
Toluene	BDL	0.50	ug/L	09/25/03
trans-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,1,2-Trichloroethane	BDL	0.50	ug/L	09/25/03
2-Hexanone	BDL	5.0	ug/L	09/25/03
1,3-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromochloromethane	BDL	0.50	ug/L	09/25/03
Tetrachloroethylene	BDL	0.50	ug/L	09/25/03
1,2-Dibromoethane	BDL	0.50	ug/L	09/25/03
Chlorobenzene	BDL	0.50	ug/L	09/25/03
1,1,1,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Ethylbenzene	BDL	0.50	ug/L	09/25/03
m/p-Xylene	BDL	0.50	ug/L	09/25/03
Styrene	BDL	0.50	ug/L	09/25/03
o-Xylene	BDL	0.50	ug/L	09/25/03
Bromoform	BDL	0.50	ug/L	09/25/03
1,1,2,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Isopropylbenzene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichloropropane	BDL	0.50	ug/L	09/25/03
Bromobenzene	BDL	0.50	ug/L	09/25/03
n-Propylbenzene	BDL	0.50	ug/L	09/25/03
2-Chlorotoluene	BDL	0.50	ug/L	09/25/03
4-Chlorotoluene	BDL	0.50	ug/L	09/25/03
1,3,5-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
tert-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2,4-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
sec-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,3-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
1,4-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
p-Isopropyltoluene	BDL	0.50	ug/L	09/25/03
1,2-Dichlorobenzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/24/03
Sample Description: 1035189
EAS Sample Number: 03090359-14
LIMS ID Number: AE10974
Date Sample Received: 09/23/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
n-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2-Dibromo-3-Chloropropane	BDL	1.0	ug/L	09/25/03
1,2,4-Trichlorobenzene	BDL	0.50	ug/L	09/25/03
Naphthalene	BDL	0.50	ug/L	09/25/03
Hexachlorobutadiene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichlorobenzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/24/03
Sample Description: 1035190
EAS Sample Number: 03090359-15
LIMS ID Number: AE10975
Date Sample Received: 09/23/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Arsenic-Low Level, Water	BDL	0.010	mg/L	09/25/03
Barium, Water	0.051	0.005	mg/L	09/25/03
Cadmium, Water	BDL	0.005	mg/L	09/25/03
Chromium, Water	0.043	0.02	mg/L	09/25/03
Copper, Water	0.11	0.01	mg/L	09/25/03
Lead-Low Level, Water	0.018	0.002	mg/L	09/25/03
Mercury, Water	BDL	0.002	mg/L	09/25/03
Nickel, Water	0.047	0.02	mg/L	09/25/03
Selenium-Low Level, Water	BDL	0.010	mg/L	09/25/03
Silver, Water	BDL	0.01	mg/L	09/25/03
Zinc, Water	0.074	0.005	mg/L	09/25/03
ETPH by GC/FID, Water	BDL	0.10	mg/L	09/26/03
ETPH Extraction, Water	Completed			09/25/03
Volatile Organic Compounds, Water				
Dichlorodifluoromethane	BDL	0.50	ug/L	09/25/03
Chloromethane	BDL	0.50	ug/L	09/25/03
Vinyl Chloride	BDL	0.50	ug/L	09/25/03
Bromomethane	BDL	0.50	ug/L	09/25/03
Chloroethane	BDL	0.50	ug/L	09/25/03
Trichlorofluoromethane	BDL	0.50	ug/L	09/25/03
Acetone	BDL	5.0	ug/L	09/25/03
1,1-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methylene Chloride	BDL	0.50	ug/L	09/25/03
trans-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
Methyl-tert-butyl-ether	BDL	0.50	ug/L	09/25/03
1,1-Dichloroethane	BDL	0.50	ug/L	09/25/03
2-Butanone	BDL	5.0	ug/L	09/25/03
cis-1,2-Dichloroethene	BDL	0.50	ug/L	09/25/03
2,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Chloroform	BDL	0.50	ug/L	09/25/03
Bromochloromethane	BDL	0.50	ug/L	09/25/03
1,1,1-Trichloroethane	BDL	0.50	ug/L	09/25/03
1,1-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,2-Dichloroethane	BDL	0.50	ug/L	09/25/03
Carbon Tetrachloride	BDL	0.50	ug/L	09/25/03
Benzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/24/03
Sample Description: 1035190
EAS Sample Number: 03090359-15
LIMS ID Number: AE10975
Date Sample Received: 09/23/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
Trichloroethene	BDL	0.50	ug/L	09/25/03
1,2-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromomethane	BDL	0.50	ug/L	09/25/03
Bromodichloromethane	BDL	0.50	ug/L	09/25/03
4-Methyl-2-Pentanone	BDL	5.0	ug/L	09/25/03
cis-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
Toluene	BDL	0.50	ug/L	09/25/03
trans-1,3-Dichloropropene	BDL	0.50	ug/L	09/25/03
1,1,2-Trichloroethane	BDL	0.50	ug/L	09/25/03
2-Hexanone	BDL	5.0	ug/L	09/25/03
1,3-Dichloropropane	BDL	0.50	ug/L	09/25/03
Dibromochloromethane	BDL	0.50	ug/L	09/25/03
Tetrachloroethylene	0.56	0.50	ug/L	09/25/03
1,2-Dibromoethane	BDL	0.50	ug/L	09/25/03
Chlorobenzene	BDL	0.50	ug/L	09/25/03
1,1,1,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Ethylbenzene	BDL	0.50	ug/L	09/25/03
m/p-Xylene	BDL	0.50	ug/L	09/25/03
Styrene	BDL	0.50	ug/L	09/25/03
o-Xylene	BDL	0.50	ug/L	09/25/03
Bromoform	BDL	0.50	ug/L	09/25/03
1,1,2,2-Tetrachloroethane	BDL	0.50	ug/L	09/25/03
Isopropylbenzene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichloropropane	BDL	0.50	ug/L	09/25/03
Bromobenzene	BDL	0.50	ug/L	09/25/03
n-Propylbenzene	BDL	0.50	ug/L	09/25/03
2-Chlorotoluene	BDL	0.50	ug/L	09/25/03
4-Chlorotoluene	BDL	0.50	ug/L	09/25/03
1,3,5-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
tert-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2,4-Trimethylbenzene	BDL	0.50	ug/L	09/25/03
sec-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,3-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
1,4-Dichlorobenzene	BDL	0.50	ug/L	09/25/03
p-Isopropyltoluene	BDL	0.50	ug/L	09/25/03
1,2-Dichlorobenzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

Loureiro Engineering Associates

Location Collected: MacDermid, Waterbury, CT
Date Sample Collected: 09/24/03
Sample Description: 1035190
EAS Sample Number: 03090359-15
LIMS ID Number: AE10975
Date Sample Received: 09/23/03
Client Project Number: 91MH204

Parameter	Data	Detection Limit	Units	Analysis Date
n-Butylbenzene	BDL	0.50	ug/L	09/25/03
1,2-Dibromo-3-Chloropropane	BDL	1.0	ug/L	09/25/03
1,2,4-Trichlorobenzene	BDL	0.50	ug/L	09/25/03
Naphthalene	BDL	0.50	ug/L	09/25/03
Hexachlorobutadiene	BDL	0.50	ug/L	09/25/03
1,2,3-Trichlorobenzene	BDL	0.50	ug/L	09/25/03

BDL = Below Detection Limit

EAS Project Number: 03090359
Location Collected: MacDermid, Waterbury, CT

EAS Certifications:

Connecticut Certified Laboratory Number: PH 0558

Massachusetts Certified Laboratory Number: M-CT020

Maine Certified Laboratory Number: CT 020

New York Certified Laboratory Number: 10916

Rhode Island Certified Number: 139

The enclosed analyses were conducted in accordance with:

1. APHA Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992
2. Clean Water Act, List of Approved Test Procedures, 40 CFR
3. EPA Test Methods for the Evaluation of solid Waste, SW-846, 3rd Edition, January 1998

EAS Laboratories, 105 Commercial Street, Watertown, CT 06795 Phone (860) 274-5461 Fax (860) 945-0449

Company Name: LEA

Project Manager: K. CLARKE | Invoice To: KIM CLARKE

Reports To: K. CLARKE | P.O. Number:

Project Location: MALDGRMID, WATERBURY, CT

Project Number: 91MH204 | Samplers Signature:

Date/Time Sample Collected	Comp.	Grab	Sample Description	No. of Containers	(S) Solid, (L) Liquid, (O) Oil	VOC 8260	CT ETPH	TOTAL RCRA 8 METALS + Cu Ni Zn	EAS ID Number
9/28/03		X	1035177	4	L	X	X		0300359-01
		X	1035177 vf	1	L			X	
		X	1035184	4	L	X	X		-02
		X	1035184 vf	1	L			X	
		X	1035185	4	L	X	X		-03
		X	1035185 vf	1	L			X	
		X	1035186	4	L	X	X		-04
		X	1035186 vf	1	L			X	
		X	1035187	4	L	X	X		-05
		X	1035187 vf	1	L			X	
		X	1035188	4	L	X	X		-06
		X	1035188 vf	1	L			X	
		X	1035180	4	L	X	X		-07
		X	1035180 vf	1	L			X	

RUSH

Analyses Requested

Sample Preservation

Cooler Temp (C°)

Received Ice

Received Ambient

Preserved (Yes) (No)

Relinquished By: (Signature)	Date/Time	Received By: (Signature)
	9/28/03	
Relinquished By: (Signature)	Date/Time	Received By: (Signature)
	5:00	
Relinquished By: (Signature)	Date/Time	Received By: (Signature)
	9-29-03/10AM	Peter J. Malloy

Comments/Remarks

Turnaround Time Requested: STD. | Project Complete:

EAS Laboratories, 105 Commercial Street, Watertown, CT 06795 Phone (860) 274-5461 Fax (860) 945-0449

Company Name: LEA

Project Manager: Kim Clarke | Invoice To: Kim Clarke

Reports To: Kim Clarke | P.O. Number:

Project Location: MacDermid, Waterbury, CT

Project Number: 91MH204 | Samplers Signature: [signature]

Analyses Requested

Date/Time Sample Collected	Comp.	Grab	Sample Description	No. of Containers	(S) Solid, (L) Liquid, (O) Oil	VOC 8260	CT ETPH	Total RCRA 8 metals + Cu Ni Zn								EAS ID Number
9/22/03		X	1035178	4	L	X	X									-08
			1035178 uf	1	L			X								
			1035196	4	L	X	X									-09
			1035196 uf	1	L			X								
			1035179	4	L	X	X									-10
			1035179 uf	1	L			X								
			~~1035180~~	~~4~~	~~L~~	~~X~~	~~X~~									
			~~1035180 uf~~	~~1~~	~~L~~			~~X~~								
			1035181	4	L	X	X									-11
			1035181 uf	1	L			X								
			1035197	4	L	X	X									-12
			1035197 uf	1	L			X								
			1035198	2	L	X										-13

RUSH

Sample Preservation

Cooler Temp (C°)	
Received Ice	
Received Ambient	
Preserved (Yes) (No)	

Relinquished By: (Signature)	Date/Time	Received By: (Signature)
[signature]	9/22/03	[signature]
~~Relinquished By: (Signature)~~	Date/Time 5:00	Received By: (Signature)
Relinquished By: (Signature)	Date/Time 9-23-03 / 1047	Received By: (Signature) Peter J. Malloy

Comments/Remarks
Sample 1035196 has limitted volume ~250 ml. Sample leaked because cap was not on tight.

Turnaround Time Requested: Std. Project Complete:

White Lab Copy File Pink Copy

EAS Laboratories, 105 Commercial Street, Watertown, CT 06795 Phone (860) 274-5461 Fax (860) 945-0449

Company Name: LEA	
Project Manager: KIMCLARKE	Invoice To: KIM CLARKE
Reports To: KIM CLARKE	P.O. Number:
Project Location: MACDERMID WATERBURY CT	
Project Number: 91 MH 3-04	Samplers Signature:

Analyses Requested

Date/Time Sample Collected	Comp.	Grab	Sample Description	No. of Containers	(S) Solid, (L) Liquid, (O) Oil	8260	TOTAL RCRA 8+ Cu Ni Zn	ETPH	Sample Preservation / EAS ID Number
9/23/03		X	1035189	4	L	X		X	0308359-14
9/23/03		X	1035189 DF	1	L		X		
9/23/03		X	1035190	4	L	X		X	-15
9/23/03		X	1035190 DF	1	L		X		

RUSH

Relinquished By: (Signature)	Date/Time	Received By: (Signature)
	9/24/03 1535	
Relinquished By: (Signature)	Date/Time	Received By: (Signature)
Relinquished By: (Signature)	Date/Time	Received By: (Signature)
	9-24-03/1044	

Comments/Remarks

Turnaround Time Requested: Project Complete:

AVERILL ENVIRONMENTAL LABORATORY, INC.

CT Laboratory ID No. PH-0513 | 100 Northwest Drive, Plainville, Connecticut 06062 | NH Laboratory ID No. 2506
MA Laboratory ID No. M-CT0513 | (860) 747-0676 Fax: (860) 747-9264 | CT ONLY 1-(800) 870-7904 | ME Laboratory ID No. CT029
NY Laboratory ID No. 11599 | Lawton S. Averill - Director | Alan G. Jacobs - Co-Director | EPA Laboratory ID No. CT00029

LABORATORY REPORT

Prepared for:

Margaret Averill

Loureiro Engineering Associates

Date: Wednesday, September 18, 2002

AEL Lab No.	Client Sample ID:	Source	Client Project#:	Collect Date
AEL02007617	2110554	MacDermid, Huntington Ave.	91MW206.004	9/5/02
AEL02007618	2110555	MacDermid, Huntington Ave.	91MW206.004	9/5/02
AEL02007619	2110556	MacDermid, Huntington Ave.	91MW206.004	9/5/02
AEL02007620	2110557	MacDermid, Huntington Ave.	91MW206.004	9/5/02

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02007617 **Client Sample ID:** 2110554

Sample Matrix: Groundwater **Received Date:** Thursday, September 05, 2002
Collected By: LEA **Collect Date:** Thursday, September 05, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02007617	Cyanide, Total		0.013		mg/L	KM	9/10/02	SW-846 9014
AEL02007617	Chromium, Hexavalent		0.059		mg/L	JM	9/5/02	SW 846 7196A
AEL02007617	Arsenic		0.029		mg/L	JM	9/11/02	SW-846 7060A
AEL02007617	Lead		0.0390		mg/L	JM	9/11/02	SW-846 7421
AEL02007617	Selenium	<	0.005		mg/L	JM	9/10/02	SW-846 7740
AEL02007617	Mercury	L	0.0004		mg/L	JM	9/11/02	SW-846 7470A
AEL02007617	Barium		0.430		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007617	Cadmium	<	0.002		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007617	Chromium, Total		0.238		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007617	Copper		0.170		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007617	Nickel		0.480		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007617	Silver	<	0.005		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007617	Tin	<	0.1		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007617	Zinc		0.148		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007617	eTPH		510		ug/L	KAO	9/12/02	CT eTPH
AEL02007617	Acetone	H	440	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Acrolein	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Acrylonitrile	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Benzene		1.3		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Bromobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Bromodichloromethane		2.1		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Bromoform	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Bromomethane	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Carbon disulfide	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Carbon Tetrachloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Chlorobenzene		7.1		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Chloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Chloroform	H	180		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Chloromethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,2-Chlorotoluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,4-Chlorotoluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Dibromochloromethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Dibromomethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,2-Dichlorobenzene	H	21		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,3-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,4-Dichlorobenzene		4.0		ug/L	LO	9/6/02	SW-846 8260B

AEL02007617	Dichlorodifluoromethane	L	0.6		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,1-Dichloroethane		9.3		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,2-Dichloroethane	H	150		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,1-Dichloroethylene	H	160		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	cis-1,2-Dichloroethylene		7.7		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	trans-1,2-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,2-Dichloropropane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	cis-1,3-Dichloropropylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	trans-1,3-Dichloropropylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Ethylbenzene		13		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	2-Hexanone	<	1.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Methylene chloride	H	210		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Methyl ethyl ketone	H	36	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Methyl iso-butyl ketone	<	2.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Methyl tert-butyl ether	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Styrene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,1,1,2-Tetrachloroethane	L	1.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Tetrachloroethylene	H	350		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Toluene	H	18		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,1,1-Trichloroethane	H	97		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,1,2-Trichloroethane	H	34		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Trichloroethylene	H	150		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Trichlorofluoromethane	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,2,3-Trichloropropane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Vinyl acetate	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Vinyl chloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Xylenes (Total)	H	78		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	pH of EPA Vial		2			LO	9/6/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02007618 **Client Sample ID:** 2110555

Sample Matrix: Groundwater **Received Date:** Thursday, September 05, 2002
Collected By: LEA **Collect Date:** Thursday, September 05, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02007618	Cyanide, Total	<	0.003		mg/L	KM	9/10/02	SW-846 9014
AEL02007618	Chromium, Hexavalent	<	0.003		mg/L	JM	9/5/02	SW 846 7196A
AEL02007618	Arsenic	<	0.004		mg/L	JM	9/11/02	SW-846 7060A
AEL02007618	Lead	<	0.0050		mg/L	JM	9/11/02	SW-846 7421
AEL02007618	Selenium	<	0.005		mg/L	JM	9/10/02	SW-846 7740
AEL02007618	Mercury	<	0.0002		mg/L	JM	9/11/02	SW-846 7470A
AEL02007618	Barium		0.180		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007618	Cadmium	<	0.002		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007618	Chromium, Total	<	0.005		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007618	Copper	<	0.005		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007618	Nickel	<	0.010		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007618	Silver	<	0.005		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007618	Tin	<	0.1		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007618	Zinc	<	0.010		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007618	eTPH		530		ug/L	KAO	9/12/02	CT eTPH
AEL02007618	Acetone	<	10	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Acrolein	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Acrylonitrile	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Benzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Bromobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Bromodichloromethane		2.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Bromoform	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Bromomethane	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Carbon disulfide	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Carbon Tetrachloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Chlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Chloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Chloroform		3.6		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Chloromethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,2-Chlorotoluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,4-Chlorotoluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Dibromochloromethane		1.1		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Dibromomethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,2-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,3-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,4-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B

AEL02007618	Dichlorodifluoromethane		2.2		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,1-Dichloroethane	L	0.6		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,2-Dichloroethane	L	0.6		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,1-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	cis-1,2-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	trans-1,2-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,2-Dichloropropane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	cis-1,3-Dichloropropylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	trans-1,3-Dichloropropylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Ethylbenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	2-Hexanone	<	1.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Methylene chloride	L	0.6		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Methyl ethyl ketone	<	2.0	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Methyl iso-butyl ketone	<	2.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Methyl tert-butyl ether	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Styrene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Tetrachloroethylene		9.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Toluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,1,1-Trichloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,1,2-Trichloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Trichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Trichlorofluoromethane	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,2,3-Trichloropropane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Vinyl acetate	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Vinyl chloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Xylenes (Total)	<	1.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	pH of EPA Vial		1			LO	9/6/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02007619 **Client Sample ID:** 2110556

Sample Matrix: Groundwater **Received Date:** Thursday, September 05, 2002
Collected By: LEA **Collect Date:** Thursday, September 05, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02007619	Cyanide, Total	<	0.003		mg/L	KM	9/10/02	SW-846 9014
AEL02007619	Chromium, Hexavalent	<	0.003		mg/L	JM	9/5/02	SW 846 7196A
AEL02007619	Arsenic	<	0.004		mg/L	JM	9/11/02	SW-846 7060A
AEL02007619	Lead	<	0.0050		mg/L	JM	9/11/02	SW-846 7421
AEL02007619	Selenium	<	0.005		mg/L	JM	9/10/02	SW-846 7740
AEL02007619	Mercury	<	0.0002		mg/L	JM	9/11/02	SW-846 7470A
AEL02007619	Barium		0.174		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007619	Cadmium	<	0.002		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007619	Chromium, Total	<	0.005		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007619	Copper	<	0.005		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007619	Nickel	<	0.010		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007619	Silver	<	0.005		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007619	Tin	<	0.1		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007619	Zinc	<	0.010		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007619	eTPH		540		ug/L	KAO	9/12/02	CT eTPH
AEL02007619	Acetone	<	10	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Acrolein	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Acrylonitrile	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Benzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Bromobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Bromodichloromethane		2.1		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Bromoform	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Bromomethane	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Carbon disulfide	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Carbon Tetrachloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Chlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Chloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Chloroform		3.9		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Chloromethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,2-Chlorotoluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,4-Chlorotoluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Dibromochloromethane		1.1		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Dibromomethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,2-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,3-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,4-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B

AEL02007619	Dichlorodifluoromethane		2.2		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,1-Dichloroethane	L	0.6		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,2-Dichloroethane	L	0.6		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,1-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	cis-1,2-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	trans-1,2-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,2-Dichloropropane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	cis-1,3-Dichloropropylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	trans-1,3-Dichloropropylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Ethylbenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	2-Hexanone	<	1.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Methylene chloride	L	0.7		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Methyl ethyl ketone	<	16	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Methyl iso-butyl ketone	<	2.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Methyl tert-butyl ether	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Styrene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Tetrachloroethylene		8.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Toluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,1,1-Trichloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,1,2-Trichloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Trichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Trichlorofluoromethane	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,2,3-Trichloropropane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Vinyl acetate	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Vinyl chloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Xylenes (Total)	<	1.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	pH of EPA Vial		1			LO	9/6/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02007620 **Client Sample ID:** 2110557

Sample Matrix: Water **Received Date:** Thursday, September 05, 2002
Collected By: LEA **Collect Date:** Thursday, September 05, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Trip Blank for Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02007620	Acetone	<	10	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Acrolein	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Acrylonitrile	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Benzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Bromobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Bromodichloromethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Bromoform	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Bromomethane	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Carbon disulfide	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Carbon Tetrachloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Chlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Chloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Chloroform	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Chloromethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,2-Chlorotoluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,4-Chlorotoluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Dibromochloromethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Dibromomethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,2-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,3-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,4-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Dichlorodifluoromethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,1-Dichloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,2-Dichloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,1-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	cis-1,2-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	trans-1,2-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,2-Dichloropropane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	cis-1,3-Dichloropropylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	trans-1,3-Dichloropropylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Ethylbenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	2-Hexanone	<	1.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Methylene chloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Methyl ethyl ketone	<	16	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Methyl iso-butyl ketone	<	2.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Methyl tert-butyl ether	<	0.5		ug/L	LO	9/6/02	SW-846 8260B

AEL02007620	Styrene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Tetrachloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Toluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,1,1-Trichloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,1,2-Trichloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Trichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Trichlorofluoromethane	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,2,3-Trichloropropane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Vinyl acetate	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Vinyl chloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Xylenes (Total)	<	1.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	pH of EPA Vial		1			LO	9/6/02	SW-846 8260B

QUALITY CONTROL REPORT

QC Lab#	QC Type	Analyte	% Recovery	RPD	Low Limit	Upper Limit
AEL02007617R	R	4-Bromofluorobenzene	105		73 -	155
AEL02007617R	R	Dibromofluoromethane	114.4		82 -	119
AEL02007617R	R	Toluene-d8	104.8		77 -	115
AEL02007618M	M	Arsenic	122.83	3.75	75 -	125
AEL02007618M	M	Barium	99.29	0.59	75 -	125
AEL02007618M	M	Cadmium	96.5	1.13	75 -	125
AEL02007618M	M	Chromium, Total	98.02	0.45	75 -	125
AEL02007618M	M	Copper	101.62	0.55	75 -	125
AEL02007618M	M	Lead	97.4	5.31	75 -	125
AEL02007618M	M	Nickel	97.62	0.37	75 -	125
AEL02007618M	M	Selenium	91.63	3.1	75 -	125
AEL02007618M	M	Silver	93.3	1.18	75 -	125
AEL02007618M	M	Tin	98.72	1.24	75 -	125
AEL02007618M	M	Zinc	96.73	1.08	75 -	125
AEL02007618R	R	4-Bromofluorobenzene	91		73 -	155
AEL02007618R	R	Dibromofluoromethane	109.4		82 -	119
AEL02007618R	R	Toluene-d8	103.4		77 -	115
AEL02007618S	S	Arsenic	127.63		75 -	125
AEL02007618S	S	Barium	99.99		75 -	125
AEL02007618S	S	Cadmium	97.6		75 -	125
AEL02007618S	S	Chromium, Hexavalent	88.06		75 -	125
AEL02007618S	S	Chromium, Total	98.46		75 -	125
AEL02007618S	S	Copper	102.18		75 -	125
AEL02007618S	S	Lead	102.65		75 -	125
AEL02007618S	S	Nickel	97.98		75 -	125
AEL02007618S	S	Selenium	88.75		75 -	125
AEL02007618S	S	Silver	94.4		75 -	125
AEL02007618S	S	Tin	99.92		75 -	125
AEL02007618S	S	Zinc	97.79		75 -	125
AEL02007619R	R	4-Bromofluorobenzene	94		73 -	155
AEL02007619R	R	Dibromofluoromethane	116		82 -	119
AEL02007619R	R	Toluene-d8	102.8		77 -	115
AEL02007620R	R	4-Bromofluorobenzene	94.8		73 -	155
AEL02007620R	R	Dibromofluoromethane	118		82 -	119
AEL02007620R	R	Toluene-d8	104.2		77 -	115
Blank	B	eTPH	0			

AVERILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

№ 33987

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: MACDERMID

PROJECT LOCATION: HUNTINGTON RD, WATERBURY

PROJECT NUMBER: 91MW206.004

REPORT TO: KIM CLARKE

INVOICE TO: KIM CLARKE

Source Codes: W = Well, O = Outfall, RO = Run Off, R = River/Stream, B = Bottom Sediment, MW = Monitoring Well, S = Soil, SG = Sludge, LF = Landfill, L = Lake/Ocean, T = Treatment Facility, X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	2110554	MW	3	E	40 mL	H/I	8260		✓	/		
2	2110554	MW	1	A	1L	I	ETPH	7617	✓	/		
3	2110554	MW	1	P	2L	R/I	CYANIDE		✓	/		
4	2110554	MW	1	P	250 mL	I	HEX. CHROMIUM		✓	/		
5	2110554vf	MW	1	A	500 mL	N/I	RCRA 8 METALS + Cu, Ni, Zn, Sn (TOTAL)		✓	/		
6	2110555	MW	3	E	40 mL	H/I	8260		✓	/		
7	2110555	MW	1	A	1L	I	ETPH	7618	✓	/		
8	2110555	MW	1	P	2L	R/I	CYANIDE		✓	/		
9	2110555	MW	1	P	250 mL	I	Cr^{+6}		✓	/		
10	2110555vf	MW	1	A	500 mL	N/I	RCRA 8 METALS + Cu, Ni, Zn, Sn (TOTAL)		✓	/		
11	2110556	MW	3	E	40 mL	H/I	8260		✓	/		
12	2110556	MW	1	A	1L	I	ETPH	7619	✓	/		
13	2110556	MW	1	P	2L	R/I	CYANIDE		✓	/		

Container Code: P = Plastic, E = EPA VIAL, C = Cube, G = Glass, A = Amber Glass, B = Bacteria Bottle
Preservative Code: I = Iced, F = Filtered, N = Nitric Acid (HNO_3), H - Hydrochloric Acid (HCl), R = Sodium Hydroxide (NaOH), T = Sodium Thiosulfate, S = Sulfuric Acid (H_2SO_4)
O = Other, *Specify*

Sampler's Signature	Affiliation	Date	Time
[signature]	LEA	9/5/02	1426

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-13	[signature]	[signature]	9/5/02	1635
2	1-13		-FRIGE-	9/5/02	
3					
4					

ADDITIONAL COMMENTS:

* RESULTS BY 9/12 PER BILL AVERILL

AVERILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 33988

PROJECT NAME:	PROJECT LOCATION:	PROJECT NUMBER:
MACDERMID	HUNTINGTON RD, WATERBURY	91mw206.004

REPORT TO: KIM CLARKE
INVOICE TO: KIM CLARKE

Source Codes: W = Well O = Outfall RO = Run Off R = River/Stream B = Bottom Sediment
MW = Monitoring Well S = Soil SG = Sludge LF = Landfill L = Lake/Ocean T = Treatment Facility
X = Other, Specify TRIP BLANK

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
14	2110556	mw	1	P	250 mL	II	Cr^{+6}	7619	✓	✓		
15	2110556VA	mw	1	A	500 mL	N/A	RCRA 8 METALS + Cu, Ni, Zn, Sn (TOTAL)		✓	✓		
16	2110557	X	3	E	40 mL	H/A	8260	7620	✓	✓		

PCL

Container Code: P = Plastic E = EPA VIAL C = Cube G = Glass A = Amber Glass B = Bacteria Bottle
Preservative Code: I = Iced F = Filtered N = Nitric Acid (HNO_3) H - Hydrochloric Acid (HCl) R = Sodium Hydroxide (NaOH) T = Sodium Thiosulfate S = Sulfuric Acid (H_2SO_4)
O = Other, *Specify*

Sampler's Signature	Affiliation	Date	Time
[signature]	LEA	9/5/02	1430

ADDITIONAL COMMENTS:
* RESULTS BY 9/12 PER BILL
AVERILL

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	14-16	[signature]	[signature]	9/5/02	1635
2	14-16		-FRIDGE-	9/5/02	
3					
4					

AVERILL ENVIRONMENTAL LABORATORY, INC.

CT Laboratory ID No. PH-0513
MA Laboratory ID No. M-CT0513
NY Laboratory ID No. 11599

100 Northwest Drive, Plainville, Connecticut 06062
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EPA Laboratory ID No. CT00029

LABORATORY REPORT

Prepared for:

Margaret Averill

Loureiro Engineering Associates

Date: Wednesday, September 18, 2002

AEL Lab No.	Client Sample ID:	Source	Client Project#:	Collect Date
AEL02007617	2110554	MacDermid, Huntington Ave.	91MW206.004	9/5/02
AEL02007618	2110555	MacDermid, Huntington Ave.	91MW206.004	9/5/02
AEL02007619	2110556	MacDermid, Huntington Ave.	91MW206.004	9/5/02
AEL02007620	2110557	MacDermid, Huntington Ave.	91MW206.004	9/5/02

AVERILL
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LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02007617 **Client Sample ID:** 2110554

Sample Matrix: Groundwater **Received Date:** Thursday, September 05, 2002
Collected By: LEA **Collect Date:** Thursday, September 05, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02007617	Cyanide, Total		0.013		mg/L	KM	9/10/02	SW-846 9014
AEL02007617	Chromium, Hexavalent		0.059		mg/L	JM	9/5/02	SW 846 7196A
AEL02007617	Arsenic		0.029		mg/L	JM	9/11/02	SW-846 7060A
AEL02007617	Lead		0.0390		mg/L	JM	9/11/02	SW-846 7421
AEL02007617	Selenium	<	0.005		mg/L	JM	9/10/02	SW-846 7740
AEL02007617	Mercury	L	0.0004		mg/L	JM	9/11/02	SW-846 7470A
AEL02007617	Barium		0.430		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007617	Cadmium	<	0.002		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007617	Chromium, Total		0.238		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007617	Copper		0.170		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007617	Nickel		0.480		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007617	Silver	<	0.005		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007617	Tin	<	0.1		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007617	Zinc		0.148		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007617	eTPH		510		ug/L	KAO	9/12/02	CT eTPH
AEL02007617	Acetone	H	440	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Acrolein	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Acrylonitrile	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Benzene		1.3		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Bromobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Bromodichloromethane		2.1		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Bromoform	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Bromomethane	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Carbon disulfide	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Carbon Tetrachloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Chlorobenzene		7.1		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Chloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Chloroform	H	180		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Chloromethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,2-Chlorotoluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,4-Chlorotoluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Dibromochloromethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Dibromomethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,2-Dichlorobenzene	H	21		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,3-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,4-Dichlorobenzene		4.0		ug/L	LO	9/6/02	SW-846 8260B

AEL02007617	Dichlorodifluoromethane	L	0.6		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,1-Dichloroethane		9.3		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,2-Dichloroethane	H	150		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,1-Dichloroethylene	H	160		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	cis-1,2-Dichloroethylene		7.7		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	trans-1,2-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,2-Dichloropropane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	cis-1,3-Dichloropropylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	trans-1,3-Dichloropropylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Ethylbenzene		13		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	2-Hexanone	<	1.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Methylene chloride	H	210		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Methyl ethyl ketone	H	36	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Methyl iso-butyl ketone	<	2.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Methyl tert-butyl ether	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Styrene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,1,1,2-Tetrachloroethane	L	1.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Tetrachloroethylene	H	350		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Toluene	H	18		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,1,1-Trichloroethane	H	97		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,1,2-Trichloroethane	H	34		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Trichloroethylene	H	150		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Trichlorofluoromethane	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	1,2,3-Trichloropropane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Vinyl acetate	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Vinyl chloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	Xylenes (Total)	H	78		ug/L	LO	9/6/02	SW-846 8260B
AEL02007617	pH of EPA Vial		2			LO	9/6/02	SW-846 8260B

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REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02007618 **Client Sample ID:** 2110555

Sample Matrix: Groundwater **Received Date:** Thursday, September 05, 2002
Collected By: LEA **Collect Date:** Thursday, September 05, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02007618	Cyanide, Total	<	0.003		mg/L	KM	9/10/02	SW-846 9014
AEL02007618	Chromium, Hexavalent	<	0.003		mg/L	JM	9/5/02	SW 846 7196A
AEL02007618	Arsenic	<	0.004		mg/L	JM	9/11/02	SW-846 7060A
AEL02007618	Lead	<	0.0050		mg/L	JM	9/11/02	SW-846 7421
AEL02007618	Selenium	<	0.005		mg/L	JM	9/10/02	SW-846 7740
AEL02007618	Mercury	<	0.0002		mg/L	JM	9/11/02	SW-846 7470A
AEL02007618	Barium		0.180		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007618	Cadmium	<	0.002		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007618	Chromium, Total	<	0.005		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007618	Copper	<	0.005		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007618	Nickel	<	0.010		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007618	Silver	<	0.005		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007618	Tin	<	0.1		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007618	Zinc	<	0.010		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007618	eTPH		530		ug/L	KAO	9/12/02	CT eTPH
AEL02007618	Acetone	<	10	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Acrolein	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Acrylonitrile	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Benzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Bromobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Bromodichloromethane		2.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Bromoform	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Bromomethane	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Carbon disulfide	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Carbon Tetrachloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Chlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Chloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Chloroform		3.6		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Chloromethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,2-Chlorotoluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,4-Chlorotoluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Dibromochloromethane		1.1		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Dibromomethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,2-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,3-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,4-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B

AEL02007618	Dichlorodifluoromethane		2.2		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,1-Dichloroethane	L	0.6		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,2-Dichloroethane	L	0.6		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,1-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	cis-1,2-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	trans-1,2-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,2-Dichloropropane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	cis-1,3-Dichloropropylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	trans-1,3-Dichloropropylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Ethylbenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	2-Hexanone	<	1.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Methylene chloride	L	0.6		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Methyl ethyl ketone	<	2.0	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Methyl iso-butyl ketone	<	2.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Methyl tert-butyl ether	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Styrene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Tetrachloroethylene		9.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Toluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,1,1-Trichloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,1,2-Trichloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Trichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Trichlorofluoromethane	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	1,2,3-Trichloropropane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Vinyl acetate	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Vinyl chloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	Xylenes (Total)	<	1.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007618	pH of EPA Vial		1			LO	9/6/02	SW-846 8260B

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REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02007619 **Client Sample ID:** 2110556

Sample Matrix: Groundwater **Received Date:** Thursday, September 05, 2002
Collected By: LEA **Collect Date:** Thursday, September 05, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02007619	Cyanide, Total	<	0.003		mg/L	KM	9/10/02	SW-846 9014
AEL02007619	Chromium, Hexavalent	<	0.003		mg/L	JM	9/5/02	SW 846 7196A
AEL02007619	Arsenic	<	0.004		mg/L	JM	9/11/02	SW-846 7060A
AEL02007619	Lead	<	0.0050		mg/L	JM	9/11/02	SW-846 7421
AEL02007619	Selenium	<	0.005		mg/L	JM	9/10/02	SW-846 7740
AEL02007619	Mercury	<	0.0002		mg/L	JM	9/11/02	SW-846 7470A
AEL02007619	Barium		0.174		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007619	Cadmium	<	0.002		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007619	Chromium, Total	<	0.005		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007619	Copper	<	0.005		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007619	Nickel	<	0.010		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007619	Silver	<	0.005		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007619	Tin	<	0.1		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007619	Zinc	<	0.010		mg/L	LWA	7/13/02	SW-846 6010B
AEL02007619	eTPH		540		ug/L	KAO	9/12/02	CT eTPH
AEL02007619	Acetone	<	10	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Acrolein	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Acrylonitrile	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Benzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Bromobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Bromodichloromethane		2.1		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Bromoform	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Bromomethane	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Carbon disulfide	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Carbon Tetrachloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Chlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Chloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Chloroform		3.9		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Chloromethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,2-Chlorotoluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,4-Chlorotoluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Dibromochloromethane		1.1		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Dibromomethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,2-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,3-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,4-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B

AEL02007619	Dichlorodifluoromethane		2.2		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,1-Dichloroethane	L	0.6		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,2-Dichloroethane	L	0.6		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,1-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	cis-1,2-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	trans-1,2-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,2-Dichloropropane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	cis-1,3-Dichloropropylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	trans-1,3-Dichloropropylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Ethylbenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	2-Hexanone	<	1.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Methylene chloride	L	0.7		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Methyl ethyl ketone	<	16	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Methyl iso-butyl ketone	<	2.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Methyl tert-butyl ether	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Styrene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Tetrachloroethylene		8.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Toluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,1,1-Trichloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,1,2-Trichloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Trichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Trichlorofluoromethane	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	1,2,3-Trichloropropane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Vinyl acetate	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Vinyl chloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	Xylenes (Total)	<	1.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007619	pH of EPA Vial		1			LO	9/6/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02007620 **Client Sample ID:** 2110557

Sample Matrix: Water **Received Date:** Thursday, September 05, 2002
Collected By: LEA **Collect Date:** Thursday, September 05, 2002

Source: MacDermid, Huntington Ave.

Sample ID: Trip Blank for Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02007620	Acetone	<	10	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Acrolein	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Acrylonitrile	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Benzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Bromobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Bromodichloromethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Bromoform	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Bromomethane	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Carbon disulfide	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Carbon Tetrachloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Chlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Chloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Chloroform	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Chloromethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,2-Chlorotoluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,4-Chlorotoluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Dibromochloromethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Dibromomethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,2-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,3-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,4-Dichlorobenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Dichlorodifluoromethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,1-Dichloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,2-Dichloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,1-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	cis-1,2-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	trans-1,2-Dichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,2-Dichloropropane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	cis-1,3-Dichloropropylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	trans-1,3-Dichloropropylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Ethylbenzene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	2-Hexanone	<	1.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Methylene chloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Methyl ethyl ketone	<	16	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Methyl iso-butyl ketone	<	2.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Methyl tert-butyl ether	<	0.5		ug/L	LO	9/6/02	SW-846 8260B

AEL02007620	Styrene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Tetrachloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Toluene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,1,1-Trichloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,1,2-Trichloroethane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Trichloroethylene	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Trichlorofluoromethane	<	0.5	J	ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	1,2,3-Trichloropropane	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Vinyl acetate	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Vinyl chloride	<	0.5		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	Xylenes (Total)	<	1.0		ug/L	LO	9/6/02	SW-846 8260B
AEL02007620	pH of EPA Vial		1			LO	9/6/02	SW-846 8260B

QUALITY CONTROL REPORT

QC Lab#	QC Type	Analyte	% Recovery	RPD	Low Limit	Upper Limit
AEL02007617R	R	4-Bromofluorobenzene	105		73	155
AEL02007617R	R	Dibromofluoromethane	114.4		82	119
AEL02007617R	R	Toluene-d8	104.8		77	115
AEL02007618M	M	Arsenic	122.83	3.75	75	125
AEL02007618M	M	Barium	99.29	0.59	75	125
AEL02007618M	M	Cadmium	96.5	1.13	75	125
AEL02007618M	M	Chromium, Total	98.02	0.45	75	125
AEL02007618M	M	Copper	101.62	0.55	75	125
AEL02007618M	M	Lead	97.4	5.31	75	125
AEL02007618M	M	Nickel	97.62	0.37	75	125
AEL02007618M	M	Selenium	91.63	3.1	75	125
AEL02007618M	M	Silver	93.3	1.18	75	125
AEL02007618M	M	Tin	98.72	1.24	75	125
AEL02007618M	M	Zinc	96.73	1.08	75	125
AEL02007618R	R	4-Bromofluorobenzene	91		73	155
AEL02007618R	R	Dibromofluoromethane	109.4		82	119
AEL02007618R	R	Toluene-d8	103.4		77	115
AEL02007618S	S	Arsenic	127.63		75	125
AEL02007618S	S	Barium	99.99		75	125
AEL02007618S	S	Cadmium	97.6		75	125
AEL02007618S	S	Chromium, Hexavalent	88.06		75	125
AEL02007618S	S	Chromium, Total	98.46		75	125
AEL02007618S	S	Copper	102.18		75	125
AEL02007618S	S	Lead	102.65		75	125
AEL02007618S	S	Nickel	97.98		75	125
AEL02007618S	S	Selenium	88.75		75	125
AEL02007618S	S	Silver	94.4		75	125
AEL02007618S	S	Tin	99.92		75	125
AEL02007618S	S	Zinc	97.79		75	125
AEL02007619R	R	4-Bromofluorobenzene	94		73	155
AEL02007619R	R	Dibromofluoromethane	116		82	119
AEL02007619R	R	Toluene-d8	102.8		77	115
AEL02007620R	R	4-Bromofluorobenzene	94.8		73	155
AEL02007620R	R	Dibromofluoromethane	118		82	119
AEL02007620R	R	Toluene-d8	104.2		77	115
Blank	B	eTPH	0			

Control	C	eTPH	76.93	75 - 125

EXPLANATION OF QUALIFIERS

Qualifier	Definition
J	Estimated Value: %Difference of daily calibration standard outside control limits.
H	Estimated Value: Concentration above calibration range.
L	Spectral evidence confirms the presence of this compound at a concentration below the calibration limit but above the Method Detection Limit.
B	Qualified due to the presence of compound in the blank.
I	Qualified: Internal standard response outside of acceptable limits.
XC	Qualified due to coelution.

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(LWA)

Averill Environmental Laboratory, Inc.

AVERILL ENVIRONMENTAL LABORATORY, INC.

CT Laboratory ID No. PH-0513
MA Laboratory ID No. M-CT0513
NY Laboratory ID No. 11599

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NH Laboratory ID No. 2506
ME Laboratory ID No. CT029
EPA Laboratory ID No. CT00029

LABORATORY REPORT

Prepared for:

Margaret Averill

Loureiro Engineering Associates

Date: Friday, August 16, 2002

AEL Lab No.	Client Sample ID:	Source	Client Project#:	Collect Date
AEL02006546	2108823 ✓	MacDermid, Huntington Ave.	91MW206.004	7/30/02
AEL02006547	2108824 ✓	MacDermid, Huntington Ave.	91MW206.004	7/30/02
AEL02006548	2108825 ✓	MacDermid, Huntington Ave.	91MW206.004	7/30/02
AEL02006549	2108826 ✓	MacDermid, Huntington Ave.	91MW206.004	7/30/02
AEL02006550	2108827 ✓	MacDermid, Huntington Ave.	91MW206.004	7/30/02

8/21/02

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006546 **Client Sample ID:** 2108823

Sample Matrix: Solid **Received Date:** Tuesday, July 30, 2002
Collected By: LEA **Collect Date:** Tuesday, July 30, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Soil Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006546	Cyanide, Total	<	0.264		mg/kg Dry Wt	KM	8/7/02	SW-846 9014
AEL02006546	Total Solids, %		94.3		%	MJP	8/9/02	SM 2540G
AEL02006546	Chromium, Hexavalent	<	0.029		mg/kg Dry Wt	JM	8/16/02	SW 846 7196A
AEL02006546	Arsenic		1.88		mg/kg Dry Wt	MTK	8/6/02	SW-846 7060A
AEL02006546	Selenium	<	1.05		mg/kg Dry Wt	MTK	8/7/02	SW-846 7740
AEL02006546	Mercury	<	0.0707		mg/kg Dry Wt	JM	8/6/02	SW-846 7471A
AEL02006546	Silver	<	2.11		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006546	Barium		44.5		mg/kg Dry Wt	RR	8/15/02	SW-846 6010B
AEL02006546	Cadmium	<	2.32		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006546	Chromium, Total	L	10.4		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006546	Copper		30.7		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006546	Nickel		45.9		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006546	Lead	<	21.5		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006546	Tin	<	21.1		mg/kg Dry Wt	RR	8/15/02	SW-846 6010B
AEL02006546	Zinc	<	105		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006546	eTPH	<	23		mg/kg Dry Wt	KAO	8/5/02	CT eTPH
AEL02006546	Acetone	<	48	J	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Acrolein	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Acrylonitrile	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Benzene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Bromobenzene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Bromodichloromethane	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Bromoform	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Bromomethane	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Carbon disulfide	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Carbon Tetrachloride	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Chlorobenzene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Chloroethane	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	2-Chloroethyl vinyl ether	<	2.4	J	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Chloroform	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Chloromethane	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	1,2-Chlorotoluene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	1,4-Chlorotoluene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Dibromochloromethane	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Dibromomethane	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	1,2-Dichlorobenzene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	1,3-Dichlorobenzene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B

AEL02006546	1,4-Dichlorobenzene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Dichlorodifluoromethane	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	1,1-Dichloroethane	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	1,2-Dichloroethane	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	1,1-Dichloroethylene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	cis-1,2-Dichloroethylene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	trans-1,2-Dichloroethylene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	1,2-Dichloropropane	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	cis-1,3-Dichloropropylene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	trans-1,3-Dichloropropylene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Ethylbenzene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	2-Hexanone	<	4.8		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Methylene chloride	<	14		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Methyl ethyl ketone	<	9.6	J	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Methyl iso-butyl ketone	<	9.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Methyl tert-butyl ether	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Styrene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	1,1,1,2-Tetrachloroethane	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	1,1,2,2-Tetrachloroethane	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Tetrachloroethylene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Toluene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	1,1,1-Trichloroethane	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	1,1,2-Trichloroethane	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Trichloroethylene	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Trichlorofluoromethane	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	1,2,3-Trichloropropane	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Vinyl acetate	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Vinyl chloride	<	2.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006546	Xylenes (Total)	<	4.8		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006547 **Client Sample ID:** 2108824

Sample Matrix: Solid **Received Date:** Tuesday, July 30, 2002
Collected By: LEA **Collect Date:** Tuesday, July 30, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Soil Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006547	Cyanide, Total	<	0.273		mg/kg Dry Wt	KM	8/7/02	SW-846 9014
AEL02006547	Total Solids, %		90.5		%	MJP	8/9/02	SM 2540G
AEL02006547	Chromium, Hexavalent	<	0.030		mg/kg Dry Wt	JM	8/16/02	SW 846 7196A
AEL02006547	Arsenic		3.49		mg/kg Dry Wt	MTK	8/6/02	SW-846 7060A
AEL02006547	Selenium	<	1.03		mg/kg Dry Wt	MTK	8/7/02	SW-846 7740
AEL02006547	Mercury	<	0.0749		mg/kg Dry Wt	JM	8/6/02	SW-846 7471A
AEL02006547	Silver	<	2.07		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006547	Barium		37.5		mg/kg Dry Wt	RR	8/15/02	SW-846 6010B
AEL02006547	Cadmium		3.39		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006547	Chromium, Total		28.6		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006547	Copper		68.1		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006547	Nickel		11.0		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006547	Lead		60.2		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006547	Tin	<	20.7		mg/kg Dry Wt	RR	8/15/02	SW-846 6010B
AEL02006547	Zinc	<	103		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006547	eTPH	L	34		mg/kg Dry Wt	KAO	8/5/02	CT eTPH
AEL02006547	Acetone	<	52	J	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Acrolein	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Acrylonitrile	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Benzene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Bromobenzene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Bromodichloromethane	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Bromoform	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Bromomethane	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Carbon disulfide	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Carbon Tetrachloride	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Chlorobenzene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Chloroethane	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	2-Chloroethyl vinyl ether	<	2.6	J	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Chloroform	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Chloromethane	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	1,2-Chlorotoluene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	1,4-Chlorotoluene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Dibromochloromethane	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Dibromomethane	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	1,2-Dichlorobenzene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	1,3-Dichlorobenzene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B

AEL02006547	1,4-Dichlorobenzene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Dichlorodifluoromethane	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	1,1-Dichloroethane	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	1,2-Dichloroethane	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	1,1-Dichloroethylene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	cis-1,2-Dichloroethylene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	trans-1,2-Dichloroethylene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	1,2-Dichloropropane	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	cis-1,3-Dichloropropylene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	trans-1,3-Dichloropropylene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Ethylbenzene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	2-Hexanone	<	5.2		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Methylene chloride	<	16		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Methyl ethyl ketone	<	10	J	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Methyl iso-butyl ketone	<	10		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Methyl tert-butyl ether	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Styrene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	1,1,1,2-Tetrachloroethane	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	1,1,2,2-Tetrachloroethane	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Tetrachloroethylene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Toluene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	1,1,1-Trichloroethane	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	1,1,2-Trichloroethane	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Trichloroethylene	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Trichlorofluoromethane	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	1,2,3-Trichloropropane	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Vinyl acetate	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Vinyl chloride	<	2.6		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006547	Xylenes (Total)	<	5.2		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006548 **Client Sample ID:** 2108825

Sample Matrix: Solid **Received Date:** Tuesday, July 30, 2002
Collected By: LEA **Collect Date:** Tuesday, July 30, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Soil Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006548	Cyanide, Total	<	0.268		mg/kg Dry Wt	KM	8/7/02	SW-846 9014
AEL02006548	Total Solids, %		92.4		%	MJP	8/9/02	SM 2540G
AEL02006548	Chromium, Hexavalent	<	0.030		mg/kg Dry Wt	JM	8/16/02	SW 846 7196A
AEL02006548	Arsenic		2.31		mg/kg Dry Wt	MTK	8/6/02	SW-846 7060A
AEL02006548	Selenium	<	1.08		mg/kg Dry Wt	MTK	8/7/02	SW-846 7740
AEL02006548	Mercury	<	0.0676		mg/kg Dry Wt	JM	8/6/02	SW-846 7471A
AEL02006548	Silver	<	2.15		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006548	Barium		45.3		mg/kg Dry Wt	RR	8/15/02	SW-846 6010B
AEL02006548	Cadmium	L	3.00		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006548	Chromium, Total		19.4		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006548	Copper		60.0		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006548	Nickel		16.0		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006548	Lead	L	30.9		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006548	Tin	<	21.5		mg/kg Dry Wt	RR	8/15/02	SW-846 6010B
AEL02006548	Zinc		113		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006548	eTPH	L	25		mg/kg Dry Wt	KAO	8/5/02	CT eTPH
AEL02006548	Acetone	<	47	I J	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Acrolein	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Acrylonitrile	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Benzene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Bromobenzene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Bromodichloromethane	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Bromoform	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Bromomethane	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Carbon disulfide	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Carbon Tetrachloride	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Chlorobenzene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Chloroethane	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	2-Chloroethyl vinyl ether	<	2.3	I J	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Chloroform	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Chloromethane	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	1,2-Chlorotoluene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	1,4-Chlorotoluene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Dibromochloromethane	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Dibromomethane	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	1,2-Dichlorobenzene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	1,3-Dichlorobenzene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B

AEL02006548	1,4-Dichlorobenzene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Dichlorodifluoromethane	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	1,1-Dichloroethane	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	1,2-Dichloroethane	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	1,1-Dichloroethylene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	cis-1,2-Dichloroethylene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	trans-1,2-Dichloroethylene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	1,2-Dichloropropane	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	cis-1,3-Dichloropropylene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	trans-1,3-Dichloropropylene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Ethylbenzene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	2-Hexanone	<	4.7	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Methylene chloride	<	14	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Methyl ethyl ketone	<	9.4	I J	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Methyl iso-butyl ketone	<	9.4	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Methyl tert-butyl ether	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Styrene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	1,1,1,2-Tetrachloroethane	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	1,1,2,2-Tetrachloroethane	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Tetrachloroethylene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Toluene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	1,1,1-Trichloroethane	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	1,1,2-Trichloroethane	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Trichloroethylene	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Trichlorofluoromethane	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	1,2,3-Trichloropropane	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Vinyl acetate	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Vinyl chloride	<	2.3	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006548	Xylenes (Total)	<	4.7	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006549 **Client Sample ID:** 2108826

Sample Matrix: Solid **Received Date:** Tuesday, July 30, 2002
Collected By: LEA **Collect Date:** Tuesday, July 30, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Soil Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006549	Cyanide, Total	<	0.266		mg/kg Dry Wt	KM	8/7/02	SW-846 9014
AEL02006549	Total Solids, %		92.3		%	MJP	8/9/02	SM 2540G
AEL02006549	Chromium, Hexavalent	<	0.030		mg/kg Dry Wt	JM	8/16/02	SW 846 7196A
AEL02006549	Arsenic		3.34		mg/kg Dry Wt	MTK	8/6/02	SW-846 7060A
AEL02006549	Selenium	<	1.07		mg/kg Dry Wt	MTK	8/7/02	SW-846 7740
AEL02006549	Mercury	<	0.0722		mg/kg Dry Wt	JM	8/6/02	SW-846 7471A
AEL02006549	Silver	<	2.14		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006549	Barium		43.1		mg/kg Dry Wt	RR	8/15/02	SW-846 6010B
AEL02006549	Cadmium	L	2.96		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006549	Chromium, Total		19.6		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006549	Copper		61.7		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006549	Nickel		17.0		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006549	Lead	L	35.1		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006549	Tin	<	32.2		mg/kg Dry Wt	RR	8/15/02	SW-846 6010B
AEL02006549	Zinc	<	107		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006549	eTPH	L	27		mg/kg Dry Wt	KAO	8/5/02	CT eTPH
AEL02006549	Acetone	<	51	I J	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Acrolein	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Acrylonitrile	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Benzene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Bromobenzene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Bromodichloromethane	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Bromoform	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Bromomethane	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Carbon disulfide	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Carbon Tetrachloride	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Chlorobenzene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Chloroethane	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	2-Chloroethyl vinyl ether	<	2.5	I J	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Chloroform	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Chloromethane	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	1,2-Chlorotoluene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	1,4-Chlorotoluene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Dibromochloromethane	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Dibromomethane	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	1,2-Dichlorobenzene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	1,3-Dichlorobenzene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B

AEL02006549	1,4-Dichlorobenzene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Dichlorodifluoromethane	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	1,1-Dichloroethane	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	1,2-Dichloroethane	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	1,1-Dichloroethylene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	cis-1,2-Dichloroethylene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	trans-1,2-Dichloroethylene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	1,2-Dichloropropane	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	cis-1,3-Dichloropropylene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	trans-1,3-Dichloropropylene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Ethylbenzene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	2-Hexanone	<	5.1	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Methylene chloride	<	15	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Methyl ethyl ketone	<	10	I J	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Methyl iso-butyl ketone	<	10	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Methyl tert-butyl ether	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Styrene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	1,1,1,2-Tetrachloroethane	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	1,1,2,2-Tetrachloroethane	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Tetrachloroethylene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Toluene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	1,1,1-Trichloroethane	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	1,1,2-Trichloroethane	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Trichloroethylene	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Trichlorofluoromethane	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	1,2,3-Trichloropropane	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Vinyl acetate	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Vinyl chloride	<	2.5	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006549	Xylenes (Total)	<	5.1	I	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006550 **Client Sample ID:** 2108827 ✓

Sample Matrix: Solid **Received Date:** Tuesday, July 30, 2002

Collected By: LEA **Collect Date:** Tuesday, July 30, 2002

Source: MacDermid, Huntington Ave.

Sample ID: Soil Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006550	Cyanide, Total	<	0.268		mg/kg Dry Wt	KM	8/7/02	SW-846 9014
AEL02006550	Total Solids, %		92.1		%	MJP	8/9/02	SM 2540G
AEL02006550	Chromium, Hexavalent	<	0.030		mg/kg Dry Wt	JM	8/16/02	SW 846 7196A
AEL02006550	Arsenic		2.65		mg/kg Dry Wt	MTK	8/6/02	SW-846 7060A
AEL02006550	Selenium	<	1.09		mg/kg Dry Wt	MTK	8/7/02	SW-846 7740
AEL02006550	Mercury	<	0.0723		mg/kg Dry Wt	JM	8/6/02	SW-846 7471A
AEL02006550	Silver	<	2.18		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006550	Barium		41.5		mg/kg Dry Wt	RR	8/15/02	SW-846 6010B
AEL02006550	Cadmium	L	3.14		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006550	Chromium, Total		23.9		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006550	Copper		48.1		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006550	Nickel		18.7		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006550	Lead	L	41.6		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006550	Tin	<	21.8		mg/kg Dry Wt	RR	8/15/02	SW-846 6010B
AEL02006550	Zinc	<	109		mg/kg Dry Wt	RR	8/7/02	SW-846 6010B
AEL02006550	eTPH	<	24		mg/kg Dry Wt	KAO	8/5/02	CT eTPH
AEL02006550	Acetone	<	54	J	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Acrolein	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Acrylonitrile	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Benzene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Bromobenzene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Bromodichloromethane	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Bromoform	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Bromomethane	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Carbon disulfide	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Carbon Tetrachloride	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Chlorobenzene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Chloroethane	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	2-Chloroethyl vinyl ether	<	2.7	J	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Chloroform	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Chloromethane	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	1,2-Chlorotoluene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	1,4-Chlorotoluene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Dibromochloromethane	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Dibromomethane	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	1,2-Dichlorobenzene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	1,3-Dichlorobenzene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B

AEL02006550	1,4-Dichlorobenzene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Dichlorodifluoromethane	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	1,1-Dichloroethane	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	1,2-Dichloroethane	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	1,1-Dichloroethylene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	cis-1,2-Dichloroethylene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	trans-1,2-Dichloroethylene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	1,2-Dichloropropane	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	cis-1,3-Dichloropropylene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	trans-1,3-Dichloropropylene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Ethylbenzene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	2-Hexanone	<	5.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Methylene chloride	<	16		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Methyl ethyl ketone	<	11	J	ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Methyl iso-butyl ketone	<	11		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Methyl tert-butyl ether	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Styrene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	1,1,1,2-Tetrachloroethane	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	1,1,2,2-Tetrachloroethane	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Tetrachloroethylene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Toluene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	1,1,1-Trichloroethane	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	1,1,2-Trichloroethane	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Trichloroethylene	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Trichlorofluoromethane	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	1,2,3-Trichloropropane	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Vinyl acetate	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Vinyl chloride	<	2.7		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B
AEL02006550	Xylenes (Total)	<	5.4		ug/kg Dry Wt	LO	8/9/02	SW-846 8260B

QUALITY CONTROL REPORT

QC Lab#	QC Type	Analyte	% Recovery	RPD	Low Limit	Upper Limit
AEL02006546R	R	4-Bromofluorobenzene	99		73	155
AEL02006546R	R	Dibromofluoromethane	102.4		82	119
AEL02006546R	R	Toluene-d8	93.6		77	115
AEL02006546S	S	Chromium, Hexavalent	103.04		75	125
AEL02006547R	R	4-Bromofluorobenzene	88		73	155
AEL02006547R	R	Dibromofluoromethane	101.4		82	119
AEL02006547R	R	Toluene-d8	88.4		77	115
AEL02006548R	R	4-Bromofluorobenzene	95.4		73	155
AEL02006548R	R	Dibromofluoromethane	97.6		82	119
AEL02006548R	R	Toluene-d8	90.2		77	115
AEL02006549M	M	Arsenic	78.07	3.21	75	125
AEL02006549M	M	Mercury	94.6	1.53	75	125
AEL02006549M	M	Selenium	100.27	1.51	75	125
AEL02006549R	R	4-Bromofluorobenzene	87		73	155
AEL02006549R	R	Dibromofluoromethane	120		82	119
AEL02006549R	R	Toluene-d8	89.2		77	115
AEL02006549S	S	Arsenic	74.86		75	125
AEL02006549S	S	Barium	96.46		75	125
AEL02006549S	S	Cadmium	87.3		75	125
AEL02006549S	S	Chromium, Total	92.38		75	125
AEL02006549S	S	Copper	82.11		75	125
AEL02006549S	S	Lead	86.92		75	125
AEL02006549S	S	Mercury	93.18		75	125
AEL02006549S	S	Nickel	89.07		75	125
AEL02006549S	S	Selenium	101.94		75	125
AEL02006549S	S	Silver	84.88		75	125
AEL02006549S	S	Tin	90.52		75	125
AEL02006549S	S	Zinc	79.8		75	125
AEL02006550R	R	4-Bromofluorobenzene	94.2		73	155
AEL02006550R	R	Dibromofluoromethane	99.2		82	119
AEL02006550R	R	Toluene-d8	89.2		77	115
Blank	B	eTPH	0			
Blank	B	Mercury	0			
Control	C	eTPH	88.22		75	125
LCS	C	Mercury	100.28		75	125

EXPLANATION OF QUALIFIERS

Qualifier	Definition
J	Estimated Value: %Difference of daily calibration standard outside control limits.
H	Estimated Value: Concentration above calibration range.
L	Spectral evidence confirms the presence of this compound at a concentration below the calibration limit but above the Method Detection Limit.
B	Qualified due to the presence of compound in the blank.
I	Qualified: Internal standard response outside of acceptable limits.
XC	Qualified due to coelution.

N:\2002\LEA_MACD\06550.sup

(LWA)

Averill Environmental Laboratory, Inc.

AVERILL
ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 33857

PROJECT NAME: MacDermid Inc Tcham

PROJECT LOCATION: Huntington Ave CT

PROJECT NUMBER: 11MW206.004

REPORT TO: Kimberly Clarke

INVOICE TO: K Clarke

Source Codes: W = Well, O = Outfall, RO = Run Off, R = River/Stream, B = Bottom Sediment, MW = Monitoring Well, S = Soil, SG = Sludge, LF = Landfill, L = Lake/Ocean, T = Treatment Facility, X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	2108823	S	2	A	4 oz	I	VOCs, ETPH, RCRA8+ Cr VI, Cu, Ni, Sn, Zn, CN	6546	✓	✓		
2	2108824	↓	↓	↓	↓	↓	↓	6547	✓	✓		
3	2108825	↓	↓	↓	↓	↓	↓	6548	✓	✓		
4	2108826	↓	↓	↓	↓	↓	↓	6549	✓	✓		
5	2108827	↓	↓	↓	↓	↓	↓	6550	✓	✓		
6	2108837	MW	3	A	40 ml	H	VOCs		✓	✓		
7	2108837		1	A	1 l	I	ETPH		✓	✓		
8	2108837u		1	A	500 ml	N	RCRA8+ Cu, Ni, Sn, Zn	6529	✓	✓		
9	2108837		1	P	250 ml	I	Cr VI		✓	✓		
10	2108837		1	P	1/2 gal	R	Cn		✓	✓		
11	2108838		3	A	40 ml	H	VOCs		✓	✓		
12	2108838		1	A	1 l	I	ETPH		✓	✓		
13	2108838u	✓	1	A	500 ml	N	RCRA8+ Cu, Ni, Sn, Zn	6530	✓	✓		

Container Code: P = Plastic, E = EPA VIAL, C = Cube, G = Glass, A = Amber Glass, B = Bacteria Bottle
Preservative Code: I = Iced, F = Filtered, N = Nitric Acid (HNO_3), H - Hydrochloric Acid (HCl), R = Sodium Hydroxide (NaOH), T = Sodium Thiosulfate, S = Sulfuric Acid (H_2SO_4)
O = Other, *Specify*

Sampler's Signature	Affiliation	Date	Time
[signature]	LEA	7/30/12	14:30

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-13	[signature]	[signature]	7/30/12	14:40
2	1-13	[signature]	[signature]	7/30/12	15:10
3					
4					

AVERILL ENVIRONMENTAL LABORATORY, INC.

CT Laboratory ID No. PH-0513
MA Laboratory ID No. M-CT0513
NY Laboratory ID No. 11599

100 Northwest Drive, Plainville, Connecticut 06062
(860) 747-0676 Fax: (860) 747-9264
Lawton S. Averill - Director

CT ONLY 1-(800) 870-7904
Alan G. Jacobs - Co-Director

NH Laboratory ID No. 2506
ME Laboratory ID No. CT029
EPA Laboratory ID No. CT00029

LABORATORY REPORT

Prepared for:

Margaret Averill

Loureiro Engineering Associates

Date: Thursday, August 15, 2002

AEL Lab No.	Client Sample ID:	Source	Client Project#:	Collect Date
AEL02006468	2108830	MacDermid, Huntington Ave.	91MW206.004	7/29/02
AEL02006469	2108832	MacDermid, Huntington Ave.	91MW206.004	7/29/02
AEL02006470	2108833	MacDermid, Huntington Ave.	91MW206.004	7/29/02
AEL02006471	2108834	MacDermid, Huntington Ave.	91MW206.004	7/29/02
AEL02006472	2108835	MacDermid, Huntington Ave.	91MW206.004	7/29/02
AEL02006473	2108839	MacDermid, Huntington Ave.	91MW206.004	7/29/02
AEL02006474	2108848	MacDermid, Huntington Ave.	91MW206.004	7/29/02
AEL02006475	2108847	MacDermid, Huntington Ave.	91MW206.004	7/29/02
AEL02006529	2108837	MacDermid, Huntington Ave.	91MW206.004	7/30/02
AEL02006530	2108838	MacDermid, Huntington Ave.	91MW206.004	7/30/02
AEL02006531	2108840	MacDermid, Huntington Ave.	91MW206.004	7/30/02
AEL02006532	2108841	MacDermid, Huntington Ave.	91MW206.004	7/30/02
AEL02006533	2108842	MacDermid, Huntington Ave.	91MW206.004	7/30/02
AEL02006534	2108843	MacDermid, Huntington Ave.	91MW206.004	7/30/02
AEL02006535	2108846	MacDermid, Huntington Ave.	91MW206.004	7/30/02

Verified 8/21/02

AVERILL ENVIRONMENTAL LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006468 **Client Sample ID:** 2108830

Sample Matrix: Groundwater **Received Date:** Monday, July 29, 2002
Collected By: LEA **Collect Date:** Monday, July 29, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006468	Cyanide, Total	<	0.003		mg/L	KM	8/6/02	SW-846 9014
AEL02006468	Chromium, Hexavalent	<	0.003		mg/L	RB	7/29/02	SW 846 7196A
AEL02006468	Arsenic	<	0.004		mg/L	MTK	8/5/02	SW-846 7060A
AEL02006468	Cadmium	<	0.0005		mg/L	MTK	8/7/02	SW-846 7131A
AEL02006468	Lead	<	0.0050		mg/L	MTK	8/5/02	SW-846 7421
AEL02006468	Selenium	<	0.005		mg/L	MTK	8/5/02	SW-846 7740
AEL02006468	Mercury	<	0.0002		mg/L	JM	8/5/02	SW-846 7470A
AEL02006468	Silver	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006468	Barium		0.128		mg/L	RR	8/14/02	SW-846 6010B
AEL02006468	Chromium, Total	L	0.012		mg/L	RR	8/14/02	SW-846 6010B
AEL02006468	Copper	L	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006468	Nickel	L	0.016		mg/L	RR	8/14/02	SW-846 6010B
AEL02006468	Tin	<	0.1		mg/L	RR	8/14/02	SW-846 6010B
AEL02006468	Zinc	<	0.010		mg/L	RR	8/14/02	SW-846 6010B
AEL02006468	eTPH	L	71		ug/L	KAO	8/12/02	CT eTPH
AEL02006468	Acetone	<	10	J	ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Acrolein	<	0.5	J	ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Acrylonitrile	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Benzene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Bromobenzene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Bromodichloromethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Bromoform	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Bromomethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Carbon disulfide	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Carbon Tetrachloride	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Chlorobenzene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Chloroethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Chloroform	L	0.8		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Chloromethane	<	0.5	J	ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	1,2-Chlorotoluene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	1,4-Chlorotoluene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Dibromochloromethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Dibromomethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	1,2-Dichlorobenzene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	1,3-Dichlorobenzene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	1,4-Dichlorobenzene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B

AEL02006468	Dichlorodifluoromethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	1,1-Dichloroethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	1,2-Dichloroethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	1,1-Dichloroethylene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	cis-1,2-Dichloroethylene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	trans-1,2-Dichloroethylene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	1,2-Dichloropropane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	cis-1,3-Dichloropropylene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	trans-1,3-Dichloropropylene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Ethylbenzene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	2-Hexanone	<	1.0	J	ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Methylene chloride	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Methyl ethyl ketone	<	2.0	J	ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Methyl iso-butyl ketone	<	2.0	J	ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Methyl tert-butyl ether	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Styrene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Tetrachloroethylene		8.4		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Toluene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	1,1,1-Trichloroethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	1,1,2-Trichloroethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Trichloroethylene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Trichlorofluoromethane		5.8		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	1,2,3-Trichloropropane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Vinyl acetate	<	0.5	J	ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Vinyl chloride	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	Xylenes (Total)	<	1.0		ug/L	LO	8/5/02	SW-846 8260B
AEL02006468	pH of EPA Vial		1			LO	8/5/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006469 **Client Sample ID:** 2108832

Sample Matrix: Groundwater **Received Date:** Monday, July 29, 2002
Collected By: LEA **Collect Date:** Monday, July 29, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006469	Cyanide, Total	<	0.003		mg/L	KM	8/6/02	SW-846 9014
AEL02006469	Chromium, Hexavalent	<	0.003		mg/L	RB	7/29/02	SW 846 7196A
AEL02006469	Arsenic	<	0.004		mg/L	MTK	8/5/02	SW-846 7060A
AEL02006469	Cadmium		0.0013		mg/L	MTK	8/7/02	SW-846 7131A
AEL02006469	Lead		0.0099		mg/L	MTK	8/5/02	SW-846 7421
AEL02006469	Selenium	<	0.050		mg/L	MTK	8/5/02	SW-846 7740
AEL02006469	Mercury	<	0.0002		mg/L	JM	8/5/02	SW-846 7470A
AEL02006469	Silver	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006469	Barium		0.209		mg/L	RR	8/14/02	SW-846 6010B
AEL02006469	Chromium, Total	L	0.047		mg/L	RR	8/14/02	SW-846 6010B
AEL02006469	Copper	L	0.009		mg/L	RR	8/14/02	SW-846 6010B
AEL02006469	Nickel		0.075		mg/L	RR	8/14/02	SW-846 6010B
AEL02006469	Tin	<	0.1		mg/L	RR	8/14/02	SW-846 6010B
AEL02006469	Zinc		0.054		mg/L	RR	8/14/02	SW-846 6010B
AEL02006469	eTPH	H	1100		ug/L	KAO	8/12/02	CT eTPH
AEL02006469	Acetone	<	10		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Acrolein	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Acrylonitrile	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Benzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Bromobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Bromodichloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Bromoform	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Bromomethane	<	0.5	J	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Carbon disulfide	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Carbon Tetrachloride	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Chlorobenzene	L	0.9		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Chloroethane		2.1		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Chloroform		1.8		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Chloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	1,2-Chlorotoluene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	1,4-Chlorotoluene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Dibromochloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Dibromomethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	1,2-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	1,3-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	1,4-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B

AEL02006469	Dichlorodifluoromethane		2.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	1,1-Dichloroethane		43	ug/L	LO	8/6/02	SW-846 8260B
AEL02006469	1,2-Dichloroethane		84	ug/L	LO	8/6/02	SW-846 8260B
AEL02006469	1,1-Dichloroethylene		2.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	cis-1,2-Dichloroethylene		1.7	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	trans-1,2-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	1,2-Dichloropropane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	cis-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	trans-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Ethylbenzene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	2-Hexanone	<	1.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Methylene chloride	L	0.7	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Methyl ethyl ketone	<	2.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Methyl iso-butyl ketone	<	2.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Methyl tert-butyl ether	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Styrene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	1,1,1,2-Tetrachloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	1,1,2,2-Tetrachloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Tetrachloroethylene		20	ug/L	LO	8/6/02	SW-846 8260B
AEL02006469	Toluene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	1,1,1-Trichloroethane		2.6	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	1,1,2-Trichloroethane	L	0.7	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Trichloroethylene		1.3	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Trichlorofluoromethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	1,2,3-Trichloropropane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Vinyl acetate	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Vinyl chloride	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	Xylenes (Total)	<	1.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006469	pH of EPA Vial		1		LO	8/7/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006470 **Client Sample ID:** 2108833

Sample Matrix: Groundwater **Received Date:** Monday, July 29, 2002
Collected By: LEA **Collect Date:** Monday, July 29, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006470	Cyanide, Total	<	0.003		mg/L	KM	8/6/02	SW-846 9014
AEL02006470	Chromium, Hexavalent	<	0.003		mg/L	RB	7/29/02	SW 846 7196A
AEL02006470	Arsenic	<	0.004		mg/L	MTK	8/5/02	SW-846 7060A
AEL02006470	Cadmium		0.0012		mg/L	MTK	8/7/02	SW-846 7131A
AEL02006470	Lead	<	0.0050		mg/L	MTK	8/5/02	SW-846 7421
AEL02006470	Selenium	<	0.050		mg/L	MTK	8/5/02	SW-846 7740
AEL02006470	Mercury	<	0.0002		mg/L	JM	8/5/02	SW-846 7470A
AEL02006470	Silver	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006470	Barium		0.065		mg/L	RR	8/14/02	SW-846 6010B
AEL02006470	Chromium, Total	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006470	Copper	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006470	Nickel	L	0.012		mg/L	RR	8/14/02	SW-846 6010B
AEL02006470	Tin	<	0.1		mg/L	RR	8/14/02	SW-846 6010B
AEL02006470	Zinc		0.029		mg/L	RR	8/14/02	SW-846 6010B
AEL02006470	eTPH		1900		ug/L	KAO	8/12/02	CT eTPH
AEL02006470	Acetone	<	10		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Acrolein	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Acrylonitrile	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Benzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Bromobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Bromodichloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Bromoform	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Bromomethane	<	0.5	J	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Carbon disulfide	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Carbon Tetrachloride	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Chlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Chloroethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Chloroform	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Chloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	1,2-Chlorotoluene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	1,4-Chlorotoluene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Dibromochloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Dibromomethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	1,2-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	1,3-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	1,4-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B

AEL02006470	Dichlorodifluoromethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	1,1-Dichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	1,2-Dichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	1,1-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	cis-1,2-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	trans-1,2-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	1,2-Dichloropropane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	cis-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	trans-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Ethylbenzene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	2-Hexanone	<	1.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Methylene chloride	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Methyl ethyl ketone	<	2.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Methyl iso-butyl ketone	<	2.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Methyl tert-butyl ether	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Styrene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	1,1,1,2-Tetrachloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	1,1,2,2-Tetrachloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Tetrachloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Toluene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	1,1,1-Trichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	1,1,2-Trichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Trichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Trichlorofluoromethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	1,2,3-Trichloropropane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Vinyl acetate	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Vinyl chloride	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	Xylenes (Total)	<	1.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006470	pH of EPA Vial		1		LO	8/7/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006471 **Client Sample ID:** 2108834

Sample Matrix: Groundwater **Received Date:** Monday, July 29, 2002
Collected By: LEA **Collect Date:** Monday, July 29, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006471	Cyanide, Total	<	0.003		mg/L	KM	8/6/02	SW-846 9014
AEL02006471	Chromium, Hexavalent	<	0.003		mg/L	RB	7/29/02	SW 846 7196A
AEL02006471	Arsenic	<	0.004		mg/L	MTK	8/5/02	SW-846 7060A
AEL02006471	Cadmium	<	0.0005		mg/L	MTK	8/7/02	SW-846 7131A
AEL02006471	Lead	<	0.0050		mg/L	MTK	8/5/02	SW-846 7421
AEL02006471	Selenium	<	0.050		mg/L	MTK	8/5/02	SW-846 7740
AEL02006471	Mercury	<	0.0002		mg/L	JM	8/5/02	SW-846 7470A
AEL02006471	Silver	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006471	Barium	L	0.037		mg/L	RR	8/14/02	SW-846 6010B
AEL02006471	Chromium, Total	L	0.041		mg/L	RR	8/14/02	SW-846 6010B
AEL02006471	Copper	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006471	Nickel	L	0.026		mg/L	RR	8/14/02	SW-846 6010B
AEL02006471	Tin	<	0.1		mg/L	RR	8/14/02	SW-846 6010B
AEL02006471	Zinc		0.017		mg/L	RR	8/14/02	SW-846 6010B
AEL02006471	eTPH		310		ug/L	KAO	8/12/02	CT eTPH
AEL02006471	Acetone	<	10		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Acrolein	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Acrylonitrile	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Benzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Bromobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Bromodichloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Bromoform	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Bromomethane	<	0.5	J	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Carbon disulfide	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Carbon Tetrachloride	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Chlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Chloroethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Chloroform	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Chloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	1,2-Chlorotoluene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	1,4-Chlorotoluene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Dibromochloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Dibromomethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	1,2-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	1,3-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	1,4-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B

AEL02006471	Dichlorodifluoromethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	1,1-Dichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	1,2-Dichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	1,1-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	cis-1,2-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	trans-1,2-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	1,2-Dichloropropane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	cis-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	trans-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Ethylbenzene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	2-Hexanone	<	1.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Methylene chloride	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Methyl ethyl ketone	<	2.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Methyl iso-butyl ketone	<	2.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Methyl tert-butyl ether	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Styrene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	1,1,1,2-Tetrachloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	1,1,2,2-Tetrachloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Tetrachloroethylene		6.2	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Toluene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	1,1,1-Trichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	1,1,2-Trichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Trichloroethylene		1.9	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Trichlorofluoromethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	1,2,3-Trichloropropane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Vinyl acetate	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Vinyl chloride	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	Xylenes (Total)	<	1.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006471	pH of EPA Vial		1		LO	8/7/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006472 **Client Sample ID:** 2108835

Sample Matrix: Groundwater **Received Date:** Monday, July 29, 2002
Collected By: LEA **Collect Date:** Monday, July 29, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006472	Cyanide, Total	<	0.003		mg/L	KM	8/6/02	SW-846 9014
AEL02006472	Chromium, Hexavalent	<	0.003		mg/L	RB	7/29/02	SW 846 7196A
AEL02006472	Arsenic		0.009		mg/L	MTK	8/5/02	SW-846 7060A
AEL02006472	Cadmium	<	0.0010		mg/L	MTK	8/8/02	SW-846 7131A
AEL02006472	Lead	<	0.0100		mg/L	MTK	8/5/02	SW-846 7421
AEL02006472	Selenium	<	0.050		mg/L	MTK	8/5/02	SW-846 7740
AEL02006472	Mercury		0.0005		mg/L	JM	8/5/02	SW-846 7470A
AEL02006472	Silver	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006472	Barium		0.077		mg/L	RR	8/14/02	SW-846 6010B
AEL02006472	Chromium, Total		0.155		mg/L	RR	8/14/02	SW-846 6010B
AEL02006472	Copper		1.06		mg/L	RR	8/14/02	SW-846 6010B
AEL02006472	Nickel		1.25		mg/L	RR	8/14/02	SW-846 6010B
AEL02006472	Tin	<	0.1		mg/L	RR	8/14/02	SW-846 6010B
AEL02006472	Zinc		0.041		mg/L	RR	8/14/02	SW-846 6010B
AEL02006472	eTPH		770		ug/L	KAO	8/9/02	CT eTPH
AEL02006472	Acetone	<	10	J	ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Acrolein	<	0.5	J	ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Acrylonitrile	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Benzene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Bromobenzene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Bromodichloromethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Bromoform	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Bromomethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Carbon disulfide	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Carbon Tetrachloride	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Chlorobenzene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Chloroethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Chloroform	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Chloromethane	<	0.5	J	ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	1,2-Chlorotoluene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	1,4-Chlorotoluene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Dibromochloromethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Dibromomethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	1,2-Dichlorobenzene		2.8		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	1,3-Dichlorobenzene	L	0.7		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	1,4-Dichlorobenzene	L	0.9		ug/L	LO	8/5/02	SW-846 8260B

AEL02006472	Dichlorodifluoromethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	1,1-Dichloroethane	L	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	1,2-Dichloroethane		4.4		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	1,1-Dichloroethylene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	cis-1,2-Dichloroethylene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	trans-1,2-Dichloroethylene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	1,2-Dichloropropane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	cis-1,3-Dichloropropylene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	trans-1,3-Dichloropropylene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Ethylbenzene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	2-Hexanone	<	1.0	J	ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Methylene chloride	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Methyl ethyl ketone	<	2.0	J	ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Methyl iso-butyl ketone	<	2.0	J	ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Methyl tert-butyl ether	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Styrene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Tetrachloroethylene		3.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Toluene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	1,1,1-Trichloroethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	1,1,2-Trichloroethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Trichloroethylene	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Trichlorofluoromethane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	1,2,3-Trichloropropane	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Vinyl acetate	<	0.5	J	ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Vinyl chloride	<	0.5		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	Xylenes (Total)	<	1.0		ug/L	LO	8/5/02	SW-846 8260B
AEL02006472	pH of EPA Vial		1			LO	8/5/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006473 **Client Sample ID:** 2108839

Sample Matrix: Groundwater **Received Date:** Monday, July 29, 2002
Collected By: LEA **Collect Date:** Monday, July 29, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006473	Cyanide, Total	<	0.003		mg/L	KM	8/6/02	SW-846 9014
AEL02006473	Chromium, Hexavalent	<	0.003		mg/L	RB	7/29/02	SW 846 7196A
AEL02006473	Arsenic	<	0.004		mg/L	MTK	8/5/02	SW-846 7060A
AEL02006473	Cadmium		0.0499		mg/L	MTK	8/12/02	SW-846 7131A
AEL02006473	Lead	<	0.0100		mg/L	MTK	8/5/02	SW-846 7421
AEL02006473	Selenium	<	0.050		mg/L	MTK	8/5/02	SW-846 7740
AEL02006473	Mercury		0.0025		mg/L	JM	8/5/02	SW-846 7470A
AEL02006473	Silver		0.036		mg/L	RR	8/14/02	SW-846 6010B
AEL02006473	Barium	L	0.040		mg/L	RR	8/14/02	SW-846 6010B
AEL02006473	Chromium, Total		0.117		mg/L	RR	8/14/02	SW-846 6010B
AEL02006473	Copper		18.3		mg/L	RR	8/14/02	SW-846 6010B
AEL02006473	Nickel		1.53		mg/L	RR	8/14/02	SW-846 6010B
AEL02006473	Tin	<	0.1		mg/L	RR	8/14/02	SW-846 6010B
AEL02006473	Zinc		2.90		mg/L	RR	8/14/02	SW-846 6010B
AEL02006473	eTPH		380		ug/L	KAO	8/12/02	CT eTPH
AEL02006473	Acetone	<	10		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Acrolein	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Acrylonitrile	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Benzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Bromobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Bromodichloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Bromoform	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Bromomethane	<	0.5	J	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Carbon disulfide	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Carbon Tetrachloride	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Chlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Chloroethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Chloroform		1.8		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Chloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	1,2-Chlorotoluene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	1,4-Chlorotoluene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Dibromochloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Dibromomethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	1,2-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	1,3-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	1,4-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B

AEL02006473	Dichlorodifluoromethane	L	0.7	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	1,1-Dichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	1,2-Dichloroethane	L	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	1,1-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	cis-1,2-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	trans-1,2-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	1,2-Dichloropropane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	cis-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	trans-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Ethylbenzene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	2-Hexanone	<	1.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Methylene chloride	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Methyl ethyl ketone	<	2.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Methyl iso-butyl ketone	<	2.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Methyl tert-butyl ether	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Styrene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	1,1,1,2-Tetrachloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	1,1,2,2-Tetrachloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Tetrachloroethylene		95	ug/L	LO	8/6/02	SW-846 8260B
AEL02006473	Toluene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	1,1,1-Trichloroethane	L	0.8	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	1,1,2-Trichloroethane		3.2	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Trichloroethylene	L	0.7	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Trichlorofluoromethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	1,2,3-Trichloropropane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Vinyl acetate	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Vinyl chloride	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	Xylenes (Total)	<	1.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006473	pH of EPA Vial		1		LO	8/7/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006474 **Client Sample ID:** 2108848 ✓

Sample Matrix: Groundwater **Received Date:** Monday, July 29, 2002
Collected By: LEA **Collect Date:** Monday, July 29, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006474	Cyanide, Total	<	0.003		mg/L	KM	8/6/02	SW-846 9014
AEL02006474	Chromium, Hexavalent	<	0.003		mg/L	RB	7/29/02	SW 846 7196A
AEL02006474	Arsenic	<	0.004		mg/L	MTK	8/5/02	SW-846 7060A
AEL02006474	Cadmium	<	0.0005		mg/L	MTK	8/7/02	SW-846 7131A
AEL02006474	Lead	<	0.0050		mg/L	MTK	8/5/02	SW-846 7421
AEL02006474	Selenium	<	0.050		mg/L	MTK	8/5/02	SW-846 7740
AEL02006474	Mercury	<	0.0002		mg/L	JM	8/5/02	SW-846 7470A
AEL02006474	Silver	<	0.005		mg/L	RR	8/20/02	SW-846 6010B
AEL02006474	Barium	<	0.010		mg/L	RR	8/20/02	SW-846 6010B
AEL02006474	Chromium, Total	<	0.005		mg/L	RR	8/20/02	SW-846 6010B
AEL02006474	Copper	<	0.005		mg/L	RR	8/20/02	SW-846 6010B
AEL02006474	Nickel	<	0.010		mg/L	RR	8/20/02	SW-846 6010B
AEL02006474	Tin	<	0.1		mg/L	RR	8/20/02	SW-846 6010B
AEL02006474	Zinc	<	0.010		mg/L	RR	8/20/02	SW-846 6010B
AEL02006474	eTPH	<	52		ug/L	KAO	8/9/02	CT eTPH
AEL02006474	Acetone	<	10	J	ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Acrolein	<	0.5	J	ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Acrylonitrile	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Benzene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Bromobenzene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Bromodichloromethane	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Bromoform	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Bromomethane	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Carbon disulfide	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Carbon Tetrachloride	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Chlorobenzene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Chloroethane	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Chloroform	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Chloromethane	<	0.5	J	ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	1,2-Chlorotoluene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	1,4-Chlorotoluene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Dibromochloromethane	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Dibromomethane	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	1,2-Dichlorobenzene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	1,3-Dichlorobenzene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	1,4-Dichlorobenzene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B

AEL02006474	Dichlorodifluoromethane	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	1,1-Dichloroethane	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	1,2-Dichloroethane	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	1,1-Dichloroethylene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	cis-1,2-Dichloroethylene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	trans-1,2-Dichloroethylene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	1,2-Dichloropropane	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	cis-1,3-Dichloropropylene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	trans-1,3-Dichloropropylene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Ethylbenzene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	2-Hexanone	<	1.0	J	ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Methylene chloride	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Methyl ethyl ketone	<	2.0	J	ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Methyl iso-butyl ketone	<	2.0	J	ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Methyl tert-butyl ether	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Styrene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Tetrachloroethylene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Toluene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	1,1,1-Trichloroethane	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	1,1,2-Trichloroethane	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Trichloroethylene	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Trichlorofluoromethane	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	1,2,3-Trichloropropane	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Vinyl acetate	<	0.5	J	ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Vinyl chloride	<	0.5		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	Xylenes (Total)	<	1.0		ug/L	LO	8/6/02	SW-846 8260B
AEL02006474	pH of EPA Vial		1			LO	8/6/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006475 **Client Sample ID:** 2108847

Sample Matrix: Water **Received Date:** Monday, July 29, 2002
Collected By: LEA **Collect Date:** Monday, July 29, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Trip Bank for Monitoring Well Samples

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006475	Acetone	<	10		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Acrolein	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Acrylonitrile	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Benzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Bromobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Bromodichloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Bromoform	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Bromomethane	<	0.5	J	ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Carbon disulfide	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Carbon Tetrachloride	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Chlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Chloroethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Chloroform	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Chloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	1,2-Chlorotoluene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	1,4-Chlorotoluene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Dibromochloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Dibromomethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	1,2-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	1,3-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	1,4-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Dichlorodifluoromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	1,1-Dichloroethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	1,2-Dichloroethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	1,1-Dichloroethylene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	cis-1,2-Dichloroethylene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	trans-1,2-Dichloroethylene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	1,2-Dichloropropane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	cis-1,3-Dichloropropylene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	trans-1,3-Dichloropropylene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Ethylbenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	2-Hexanone	<	1.0		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Methylene chloride	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Methyl ethyl ketone	<	2.0		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Methyl iso-butyl ketone	<	2.0		ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Methyl tert-butyl ether	<	0.5		ug/L	LO	8/7/02	SW-846 8260B

AEL02006475	Styrene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	1,1,1,2-Tetrachloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	1,1,2,2-Tetrachloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Tetrachloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Toluene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	1,1,1-Trichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	1,1,2-Trichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Trichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Trichlorofluoromethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	1,2,3-Trichloropropane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Vinyl acetate	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Vinyl chloride	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	Xylenes (Total)	<	1.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006475	pH of EPA Vial		1		LO	8/7/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006529 **Client Sample ID:** 2108837

Sample Matrix: Groundwater **Received Date:** Tuesday, July 30, 2002
Collected By: LEA **Collect Date:** Tuesday, July 30, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006529	Cyanide, Total	<	0.003		mg/L	KM	8/6/02	SW-846 9014
AEL02006529	Chromium, Hexavalent	<	0.003		mg/L	LWA	7/30/02	SW 846 7196A
AEL02006529	Arsenic	<	0.004		mg/L	MTK	8/5/02	SW-846 7060A
AEL02006529	Cadmium	<	0.0005		mg/L	MTK	8/7/02	SW-846 7131A
AEL02006529	Lead	<	0.0050		mg/L	MTK	8/5/02	SW-846 7421
AEL02006529	Selenium	<	0.005		mg/L	MTK	8/5/02	SW-846 7740
AEL02006529	Mercury	<	0.0002		mg/L	JM	8/5/02	SW-846 7470A
AEL02006529	Silver	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006529	Barium	<	0.010		mg/L	RR	8/14/02	SW-846 6010B
AEL02006529	Chromium, Total	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006529	Copper	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006529	Nickel	<	0.010		mg/L	RR	8/14/02	SW-846 6010B
AEL02006529	Tin	<	0.1		mg/L	RR	8/14/02	SW-846 6010B
AEL02006529	Zinc	<	0.010		mg/L	RR	8/14/02	SW-846 6010B
AEL02006529	eTPH	<	50		ug/L	KAO	8/12/02	CT eTPH
AEL02006529	Acetone	<	10		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Acrolein	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Acrylonitrile	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Benzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Bromobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Bromodichloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Bromoform	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Bromomethane	<	0.5	J	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Carbon disulfide	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Carbon Tetrachloride	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Chlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Chloroethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Chloroform	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Chloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	1,2-Chlorotoluene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	1,4-Chlorotoluene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Dibromochloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Dibromomethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	1,2-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	1,3-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	1,4-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B

AEL02006529	Dichlorodifluoromethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	1,1-Dichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	1,2-Dichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	1,1-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	cis-1,2-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	trans-1,2-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	1,2-Dichloropropane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	cis-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	trans-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Ethylbenzene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	2-Hexanone	<	1.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Methylene chloride	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Methyl ethyl ketone	<	2.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Methyl iso-butyl ketone	<	2.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Methyl tert-butyl ether	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Styrene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	1,1,1,2-Tetrachloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	1,1,2,2-Tetrachloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Tetrachloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Toluene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	1,1,1-Trichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	1,1,2-Trichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Trichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Trichlorofluoromethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	1,2,3-Trichloropropane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Vinyl acetate	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Vinyl chloride	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	Xylenes (Total)	<	1.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006529	pH of EPA Vial		1		LO	8/7/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006530 **Client Sample ID:** 2108838

Sample Matrix: Groundwater **Received Date:** Tuesday, July 30, 2002
Collected By: LEA **Collect Date:** Tuesday, July 30, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006530	Cyanide, Total	<	0.003		mg/L	KM	8/6/02	SW-846 9014
AEL02006530	Chromium, Hexavalent	<	0.003		mg/L	LWA	7/30/02	SW 846 7196A
AEL02006530	Arsenic	<	0.004		mg/L	MTK	8/5/02	SW-846 7060A
AEL02006530	Cadmium	<	0.0005		mg/L	MTK	8/7/02	SW-846 7131A
AEL02006530	Lead	<	0.0050		mg/L	MTK	8/5/02	SW-846 7421
AEL02006530	Selenium	<	0.005		mg/L	MTK	8/5/02	SW-846 7740
AEL02006530	Mercury	<	0.0002		mg/L	JM	8/5/02	SW-846 7470A
AEL02006530	Silver	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006530	Barium	<	0.010		mg/L	RR	8/14/02	SW-846 6010B
AEL02006530	Chromium, Total	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006530	Copper	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006530	Nickel	<	0.010		mg/L	RR	8/14/02	SW-846 6010B
AEL02006530	Tin	<	0.1		mg/L	RR	8/14/02	SW-846 6010B
AEL02006530	Zinc	<	0.010		mg/L	RR	8/14/02	SW-846 6010B
AEL02006530	eTPH	<	52		ug/L	KAO	8/9/02	CT eTPH
AEL02006530	Acetone	<	10		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Acrolein	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Acrylonitrile	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Benzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Bromobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Bromodichloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Bromoform	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Bromomethane	<	0.5	J	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Carbon disulfide	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Carbon Tetrachloride	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Chlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Chloroethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Chloroform	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Chloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	1,2-Chlorotoluene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	1,4-Chlorotoluene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Dibromochloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Dibromomethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	1,2-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	1,3-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	1,4-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B

AEL02006530	Dichlorodifluoromethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	1,1-Dichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	1,2-Dichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	1,1-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	cis-1,2-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	trans-1,2-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	1,2-Dichloropropane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	cis-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	trans-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Ethylbenzene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	2-Hexanone	<	1.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Methylene chloride	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Methyl ethyl ketone	<	2.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Methyl iso-butyl ketone	<	2.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Methyl tert-butyl ether	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Styrene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	1,1,1,2-Tetrachloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	1,1,2,2-Tetrachloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Tetrachloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Toluene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	1,1,1-Trichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	1,1,2-Trichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Trichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Trichlorofluoromethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	1,2,3-Trichloropropane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Vinyl acetate	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Vinyl chloride	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	Xylenes (Total)	<	1.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006530	pH of EPA Vial		1		LO	8/7/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006531 **Client Sample ID:** 2108840

Sample Matrix: Groundwater **Received Date:** Tuesday, July 30, 2002
Collected By: LEA **Collect Date:** Tuesday, July 30, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006531	Cyanide, Total	<	0.003		mg/L	KM	8/6/02	SW-846 9014
AEL02006531	Chromium, Hexavalent	<	0.003		mg/L	LWA	7/30/02	SW 846 7196A
AEL02006531	Arsenic	<	0.004		mg/L	MTK	8/5/02	SW-846 7060A
AEL02006531	Cadmium	<	0.0005		mg/L	MTK	8/7/02	SW-846 7131A
AEL02006531	Lead		0.0106		mg/L	MTK	8/5/02	SW-846 7421
AEL02006531	Selenium	<	0.005		mg/L	MTK	8/5/02	SW-846 7740
AEL02006531	Mercury	<	0.0002		mg/L	JM	8/5/02	SW-846 7470A
AEL02006531	Silver	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006531	Barium		0.066		mg/L	RR	8/14/02	SW-846 6010B
AEL02006531	Chromium, Total		0.078		mg/L	RR	8/14/02	SW-846 6010B
AEL02006531	Copper		0.030		mg/L	RR	8/14/02	SW-846 6010B
AEL02006531	Nickel		0.054		mg/L	RR	8/14/02	SW-846 6010B
AEL02006531	Tin	<	0.1		mg/L	RR	8/14/02	SW-846 6010B
AEL02006531	Zinc		0.035		mg/L	RR	8/14/02	SW-846 6010B
AEL02006531	eTPH	L	130		ug/L	KAO	8/13/02	CT eTPH
AEL02006531	Acetone	<	10		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Acrolein	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Acrylonitrile	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Benzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Bromobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Bromodichloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Bromoform	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Bromomethane	<	0.5	J	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Carbon disulfide	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Carbon Tetrachloride	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Chlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Chloroethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Chloroform	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Chloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	1,2-Chlorotoluene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	1,4-Chlorotoluene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Dibromochloromethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Dibromomethane	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	1,2-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	1,3-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	1,4-Dichlorobenzene	<	0.5		ug/L	LO	8/7/02	SW-846 8260B

AEL02006531	Dichlorodifluoromethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	1,1-Dichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	1,2-Dichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	1,1-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	cis-1,2-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	trans-1,2-Dichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	1,2-Dichloropropane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	cis-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	trans-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Ethylbenzene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	2-Hexanone	<	1.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Methylene chloride	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Methyl ethyl ketone	<	2.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Methyl iso-butyl ketone	<	2.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Methyl tert-butyl ether	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Styrene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	1,1,1,2-Tetrachloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	1,1,2,2-Tetrachloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Tetrachloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Toluene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	1,1,1-Trichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	1,1,2-Trichloroethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Trichloroethylene	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Trichlorofluoromethane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	1,2,3-Trichloropropane	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Vinyl acetate	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Vinyl chloride	<	0.5	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	Xylenes (Total)	<	1.0	ug/L	LO	8/7/02	SW-846 8260B
AEL02006531	pH of EPA Vial		1		LO	8/7/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006532 **Client Sample ID:** 2108841

Sample Matrix: Groundwater **Received Date:** Tuesday, July 30, 2002
Collected By: LEA **Collect Date:** Tuesday, July 30, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006532	Cyanide, Total	<	0.003		mg/L	KM	8/6/02	SW-846 9014
AEL02006532	Chromium, Hexavalent	<	0.003		mg/L	LWA	7/30/02	SW 846 7196A
AEL02006532	Arsenic	<	0.004		mg/L	MTK	8/5/02	SW-846 7060A
AEL02006532	Cadmium	<	0.0005		mg/L	MTK	8/7/02	SW-846 7131A
AEL02006532	Lead	<	0.0050		mg/L	MTK	8/5/02	SW-846 7421
AEL02006532	Selenium	<	0.005		mg/L	MTK	8/5/02	SW-846 7740
AEL02006532	Mercury	<	0.0002		mg/L	JM	8/5/02	SW-846 7470A
AEL02006532	Silver	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006532	Barium	<	0.010		mg/L	RR	8/14/02	SW-846 6010B
AEL02006532	Chromium, Total	L	0.013		mg/L	RR	8/14/02	SW-846 6010B
AEL02006532	Copper		0.027		mg/L	RR	8/14/02	SW-846 6010B
AEL02006532	Nickel	L	0.029		mg/L	RR	8/14/02	SW-846 6010B
AEL02006532	Tin	<	0.1		mg/L	RR	8/14/02	SW-846 6010B
AEL02006532	Zinc		0.031		mg/L	RR	8/14/02	SW-846 6010B
AEL02006532	eTPH		460		ug/L	KAO	8/9/02	CT eTPH
AEL02006532	Acetone	<	10		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Acrolein	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Acrylonitrile	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Benzene	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Bromobenzene	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Bromodichloromethane	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Bromoform	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Bromomethane	<	0.5	J	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Carbon disulfide	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Carbon Tetrachloride	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Chlorobenzene	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Chloroethane	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Chloroform	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Chloromethane	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	1,2-Chlorotoluene	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	1,4-Chlorotoluene	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Dibromochloromethane	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Dibromomethane	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	1,2-Dichlorobenzene	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	1,3-Dichlorobenzene	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	1,4-Dichlorobenzene	<	0.5		ug/L	LO	8/8/02	SW-846 8260B

AEL02006532	Dichlorodifluoromethane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	1,1-Dichloroethane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	1,2-Dichloroethane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	1,1-Dichloroethylene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	cis-1,2-Dichloroethylene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	trans-1,2-Dichloroethylene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	1,2-Dichloropropane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	cis-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	trans-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Ethylbenzene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	2-Hexanone	<	1.0	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Methylene chloride	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Methyl ethyl ketone	<	2.0	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Methyl iso-butyl ketone	<	2.0	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Methyl tert-butyl ether	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Styrene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	1,1,1,2-Tetrachloroethane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	1,1,2,2-Tetrachloroethane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Tetrachloroethylene		1.6	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Toluene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	1,1,1-Trichloroethane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	1,1,2-Trichloroethane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Trichloroethylene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Trichlorofluoromethane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	1,2,3-Trichloropropane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Vinyl acetate	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Vinyl chloride	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	Xylenes (Total)	<	1.0	ug/L	LO	8/8/02	SW-846 8260B
AEL02006532	pH of EPA Vial		1		LO	8/8/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006533 **Client Sample ID:** 2108842

Sample Matrix: Groundwater **Received Date:** Tuesday, July 30, 2002
Collected By: LEA **Collect Date:** Tuesday, July 30, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006533	Cyanide, Total	<	0.003		mg/L	KM	8/6/02	SW-846 9014
AEL02006533	Chromium, Hexavalent	<	0.003		mg/L	LWA	7/30/02	SW 846 7196A
AEL02006533	Arsenic		0.007		mg/L	MTK	8/5/02	SW-846 7060A
AEL02006533	Cadmium	<	0.0005		mg/L	MTK	8/7/02	SW-846 7131A
AEL02006533	Lead	<	0.0050		mg/L	MTK	8/5/02	SW-846 7421
AEL02006533	Selenium	<	0.005		mg/L	MTK	8/5/02	SW-846 7740
AEL02006533	Mercury	<	0.0002		mg/L	JM	8/5/02	SW-846 7470A
AEL02006533	Silver	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006533	Barium	<	0.010		mg/L	RR	8/14/02	SW-846 6010B
AEL02006533	Chromium, Total	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006533	Copper	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006533	Nickel	<	0.010		mg/L	RR	8/14/02	SW-846 6010B
AEL02006533	Tin	<	0.1		mg/L	RR	8/14/02	SW-846 6010B
AEL02006533	Zinc		0.048		mg/L	RR	8/14/02	SW-846 6010B
AEL02006533	eTPH	<	51		ug/L	KAO	8/9/02	CT eTPH
AEL02006533	Acetone	<	10		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Acrolein	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Acrylonitrile	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Benzene	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Bromobenzene	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Bromodichloromethane	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Bromoform	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Bromomethane	<	0.5	J	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Carbon disulfide	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Carbon Tetrachloride	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Chlorobenzene	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Chloroethane	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Chloroform	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Chloromethane	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	1,2-Chlorotoluene	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	1,4-Chlorotoluene	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Dibromochloromethane	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Dibromomethane	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	1,2-Dichlorobenzene	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	1,3-Dichlorobenzene	<	0.5		ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	1,4-Dichlorobenzene	<	0.5		ug/L	LO	8/8/02	SW-846 8260B

AEL02006533	Dichlorodifluoromethane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	1,1-Dichloroethane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	1,2-Dichloroethane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	1,1-Dichloroethylene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	cis-1,2-Dichloroethylene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	trans-1,2-Dichloroethylene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	1,2-Dichloropropane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	cis-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	trans-1,3-Dichloropropylene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Ethylbenzene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	2-Hexanone	<	1.0	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Methylene chloride	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Methyl ethyl ketone	<	2.0	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Methyl iso-butyl ketone	<	2.0	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Methyl tert-butyl ether	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Styrene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	1,1,1,2-Tetrachloroethane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	1,1,2,2-Tetrachloroethane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Tetrachloroethylene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Toluene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	1,1,1-Trichloroethane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	1,1,2-Trichloroethane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Trichloroethylene	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Trichlorofluoromethane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	1,2,3-Trichloropropane	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Vinyl acetate	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Vinyl chloride	<	0.5	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	Xylenes (Total)	<	1.0	ug/L	LO	8/8/02	SW-846 8260B
AEL02006533	pH of EPA Vial		1		LO	8/8/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006534 **Client Sample ID:** 2108843

Sample Matrix: Groundwater **Received Date:** Tuesday, July 30, 2002
Collected By: LEA **Collect Date:** Tuesday, July 30, 2002

Source: MacDermid, Huntington Ave.
Sample ID: Monitoring Well Sample

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006534	Cyanide, Total	<	0.003		mg/L	KM	8/6/02	SW-846 9014
AEL02006534	Chromium, Hexavalent	<	0.003		mg/L	LWA	7/30/02	SW 846 7196A
AEL02006534	Arsenic		0.008		mg/L	MTK	8/5/02	SW-846 7060A
AEL02006534	Cadmium	<	0.0005		mg/L	MTK	8/7/02	SW-846 7131A
AEL02006534	Lead	<	0.0050		mg/L	MTK	8/5/02	SW-846 7421
AEL02006534	Selenium	<	0.005		mg/L	MTK	8/5/02	SW-846 7740
AEL02006534	Mercury	<	0.0002		mg/L	JM	8/5/02	SW-846 7470A
AEL02006534	Silver	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006534	Barium	<	0.010		mg/L	RR	8/14/02	SW-846 6010B
AEL02006534	Chromium, Total	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006534	Copper	<	0.005		mg/L	RR	8/14/02	SW-846 6010B
AEL02006534	Nickel	<	0.010		mg/L	RR	8/14/02	SW-846 6010B
AEL02006534	Tin	<	0.1		mg/L	RR	8/14/02	SW-846 6010B
AEL02006534	Zinc		0.041		mg/L	RR	8/14/02	SW-846 6010B
AEL02006534	eTPH	<	52		ug/L	KAO	8/13/02	CT eTPH
AEL02006534	Acetone	<	10		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Acrolein	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Acrylonitrile	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Benzene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Bromobenzene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Bromodichloromethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Bromoform	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Bromomethane	<	0.5	J	ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Carbon disulfide	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Carbon Tetrachloride	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Chlorobenzene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Chloroethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Chloroform	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Chloromethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	1,2-Chlorotoluene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	1,4-Chlorotoluene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Dibromochloromethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Dibromomethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	1,2-Dichlorobenzene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	1,3-Dichlorobenzene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	1,4-Dichlorobenzene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B

AEL02006534	Dichlorodifluoromethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	1,1-Dichloroethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	1,2-Dichloroethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	1,1-Dichloroethylene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	cis-1,2-Dichloroethylene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	trans-1,2-Dichloroethylene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	1,2-Dichloropropane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	cis-1,3-Dichloropropylene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	trans-1,3-Dichloropropylene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Ethylbenzene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	2-Hexanone	<	1.0		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Methylene chloride	L	0.9		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Methyl ethyl ketone	<	2.0	J	ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Methyl iso-butyl ketone	<	2.0		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Methyl tert-butyl ether	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Styrene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	1,1,1,2-Tetrachloroethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	1,1,2,2-Tetrachloroethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Tetrachloroethylene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Toluene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	1,1,1-Trichloroethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	1,1,2-Trichloroethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Trichloroethylene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Trichlorofluoromethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	1,2,3-Trichloropropane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Vinyl acetate	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Vinyl chloride	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	Xylenes (Total)	<	1.0		ug/L	LO	8/9/02	SW-846 8260B
AEL02006534	pH of EPA Vial		1			LO	8/9/02	SW-846 8260B

AVERILL
ENVIRONMENTAL
LABORATORY, INC.

REPORT ON LABORATORY EXAMINATIONS

AEL Laboratory No.: AEL02006535 **Client Sample ID:** 2108846 ✓

Sample Matrix: Water **Received Date:** Tuesday, July 30, 2002

Collected By: LEA **Collect Date:** Tuesday, July 30, 2002

Source: MacDermid, Huntington Ave.

Sample ID: Trip Blank for Monitoring Well Samples

	Test		Result		Units	Analyst	Analysis Date	Analysis Method
AEL02006535	Acetone	<	10		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Acrolein	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Acrylonitrile	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Benzene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Bromobenzene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Bromodichloromethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Bromoform	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Bromomethane	<	0.5	J	ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Carbon disulfide	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Carbon Tetrachloride	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Chlorobenzene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Chloroethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	2-Chloroethyl vinyl ether	<	0.5	J	ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Chloroform	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Chloromethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	1,2-Chlorotoluene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	1,4-Chlorotoluene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Dibromochloromethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Dibromomethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	1,2-Dichlorobenzene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	1,3-Dichlorobenzene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	1,4-Dichlorobenzene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Dichlorodifluoromethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	1,1-Dichloroethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	1,2-Dichloroethane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	1,1-Dichloroethylene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	cis-1,2-Dichloroethylene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	trans-1,2-Dichloroethylene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	1,2-Dichloropropane	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	cis-1,3-Dichloropropylene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	trans-1,3-Dichloropropylene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Ethylbenzene	<	0.5		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	2-Hexanone	<	1.0		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Methylene chloride	L	0.7		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Methyl ethyl ketone	<	2.0	J	ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Methyl iso-butyl ketone	<	2.0		ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Methyl tert-butyl ether	<	0.5		ug/L	LO	8/9/02	SW-846 8260B

AEL02006535	Styrene	<	0.5	ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	1,1,1,2-Tetrachloroethane	<	0.5	ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	1,1,2,2-Tetrachloroethane	<	0.5	ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Tetrachloroethylene	<	0.5	ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Toluene	<	0.5	ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	1,1,1-Trichloroethane	<	0.5	ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	1,1,2-Trichloroethane	<	0.5	ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Trichloroethylene	<	0.5	ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Trichlorofluoromethane	<	0.5	ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	1,2,3-Trichloropropane	<	0.5	ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Vinyl acetate	<	0.5	ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Vinyl chloride	<	0.5	ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	Xylenes (Total)	<	1.0	ug/L	LO	8/9/02	SW-846 8260B
AEL02006535	pH of EPA Vial		1		LO	8/9/02	SW-846 8260B

QUALITY CONTROL REPORT

QC Lab#	QC Type	Analyte	% Recovery	RPD	Low Limit	Upper Limit
AEL02006468R	R	4-Bromofluorobenzene	87.2		73 -	155
AEL02006468R	R	Dibromofluoromethane	98.2		82 -	119
AEL02006468R	R	Toluene-d8	105.2		77 -	115
AEL02006468S	S	Selenium	97.25		75 -	125
AEL02006469R	R	4-Bromofluorobenzene	95.4		73 -	155
AEL02006469R	R	Dibromofluoromethane	98.4		82 -	119
AEL02006469R	R	Toluene-d8	98.2		77 -	115
AEL02006469S	S	Selenium	97.54		75 -	125
AEL02006470R	R	4-Bromofluorobenzene	98.4		73 -	155
AEL02006470R	R	Dibromofluoromethane	99.6		82 -	119
AEL02006470R	R	Toluene-d8	97.4		77 -	115
AEL02006470S	S	Chromium, Hexavalent	91.69		75 -	125
AEL02006470S	S	Selenium	90.05		75 -	125
AEL02006471R	R	4-Bromofluorobenzene	96.2		73 -	155
AEL02006471R	R	Dibromofluoromethane	97		82 -	119
AEL02006471R	R	Toluene-d8	96.8		77 -	115
AEL02006471S	S	Selenium	92.51		75 -	125
AEL02006472M	M	Arsenic	78.58	1.34	75 -	125
AEL02006472M	M	Barium	91.88	0.9	75 -	125
AEL02006472M	M	Cadmium	86.75	9.49	75 -	125
AEL02006472M	M	Chromium, Total	85.88	1.73	75 -	125
AEL02006472M	M	Copper	96	1.17	75 -	125
AEL02006472M	M	Lead	0	5.92		
AEL02006472M	M	Nickel	92.3	1.34	75 -	125
AEL02006472M	M	Silver	94.6	2.22	75 -	125
AEL02006472M	M	Tin	98.42	1.9	75 -	125
AEL02006472M	M	Zinc	94.19	1.54	75 -	125
AEL02006472R	R	4-Bromofluorobenzene	89.4		73 -	155
AEL02006472R	R	Dibromofluoromethane	93.6		82 -	119
AEL02006472R	R	Toluene-d8	104.8		77 -	115
AEL02006472S	S	Arsenic	77.28		75 -	125
AEL02006472S	S	Barium	90.99		75 -	125
AEL02006472S	S	Cadmium	97.65		75 -	125
AEL02006472S	S	Chromium, Total	83.88		75 -	125
AEL02006472S	S	Copper	92.4		75 -	125
AEL02006472S	S	Lead	0			

AEL02006472S	S	Nickel	89.4		75	-	125
AEL02006472S	S	Selenium	90.31		75	-	125
AEL02006472S	S	Silver	92.6		75	-	125
AEL02006472S	S	Tin	96.82		75	-	125
AEL02006472S	S	Zinc	92.69		75	-	125
AEL02006473R	R	4-Bromofluorobenzene	96.2		73	-	155
AEL02006473R	R	Dibromofluoromethane	95.4		82	-	119
AEL02006473R	R	Toluene-d8	98.6		77	-	115
AEL02006473S	S	Selenium	96.94		75	-	125
AEL02006474M	M	Arsenic	104.49	0.13	75	-	125
AEL02006474M	M	Cadmium	97.12	1.5	75	-	125
AEL02006474M	M	Lead	0	1.67			
AEL02006474M	M	Selenium	126.21	1.18	75	-	125
AEL02006474R	R	4-Bromofluorobenzene	88.2		73	-	155
AEL02006474R	R	Dibromofluoromethane	98		82	-	119
AEL02006474R	R	Toluene-d8	104.2		77	-	115
AEL02006474S	S	Arsenic	104.35		75	-	125
AEL02006474S	S	Cadmium	98.59		75	-	125
AEL02006474S	S	Lead	0				
AEL02006474S	S	Selenium	127.49		75	-	125
AEL02006475R	R	4-Bromofluorobenzene	97.2		73	-	155
AEL02006475R	R	Dibromofluoromethane	97.8		82	-	119
AEL02006475R	R	Toluene-d8	99.2		77	-	115
AEL02006529R	R	4-Bromofluorobenzene	94.4		73	-	155
AEL02006529R	R	Dibromofluoromethane	98		82	-	119
AEL02006529R	R	Toluene-d8	97		77	-	115
AEL02006530M	M	Mercury	101.48	0.02	75	-	125
AEL02006530R	R	4-Bromofluorobenzene	94.8		73	-	155
AEL02006530R	R	Dibromofluoromethane	103.2		82	-	119
AEL02006530R	R	Toluene-d8	100		77	-	115
AEL02006530S	S	Mercury	101.46		75	-	125
AEL02006531R	R	4-Bromofluorobenzene	96		73	-	155
AEL02006531R	R	Dibromofluoromethane	102		82	-	119
AEL02006531R	R	Toluene-d8	99.8		77	-	115
AEL02006532R	R	4-Bromofluorobenzene	96.4		73	-	155
AEL02006532R	R	Dibromofluoromethane	98.8		82	-	119
AEL02006532R	R	Toluene-d8	98.4		77	-	115
AEL02006533R	R	4-Bromofluorobenzene	97.2		73	-	155
AEL02006533R	R	Dibromofluoromethane	95.8		82	-	119
AEL02006533R	R	Toluene-d8	98.2		77	-	115

AEL02006533S	S	Arsenic	99.32		75 - 125
AEL02006533S	S	Barium	98.23		75 - 125
AEL02006533S	S	Cadmium	97.73		75 - 125
AEL02006533S	S	Chromium, Total	99.18		75 - 125
AEL02006533S	S	Copper	97.88		75 - 125
AEL02006533S	S	Lead	0		
AEL02006533S	S	Nickel	100.09		75 - 125
AEL02006533S	S	Selenium	100.33		75 - 125
AEL02006533S	S	Silver	97.8		75 - 125
AEL02006533S	S	Tin	101.11		75 - 125
AEL02006533S	S	Zinc	101.95		75 - 125
AEL02006534M	M	Cyanide, Total	85.39	0.49	75 - 125
AEL02006534R	R	4-Bromofluorobenzene	96.2		73 - 155
AEL02006534R	R	Dibromofluoromethane	104.6		82 - 119
AEL02006534R	R	Toluene-d8	98		77 - 115
AEL02006534S	S	Chromium, Hexavalent	102.87		75 - 125
AEL02006534S	S	Cyanide, Total	84.96		75 - 125
AEL02006535R	R	4-Bromofluorobenzene	95.2		73 - 155
AEL02006535R	R	Dibromofluoromethane	106		82 - 119
AEL02006535R	R	Toluene-d8	98.6		77 - 115
Blank	B	eTPH	0		
Control	C	eTPH	92.97		75 - 125

EXPLANATION OF QUALIFIERS

Qualifier	Definition
J	Estimated Value: %Difference of daily calibration standard outside control limits.
H	Estimated Value: Concentration above calibration range.
L	Spectral evidence confirms the presence of this compound at a concentration below the calibration limit but above the Method Detection Limit.
B	Qualified due to the presence of compound in the blank.
I	Qualified: Internal standard response outside of acceptable limits.
XC	Qualified due to coelution.

N:\2002\LEA_MACD\06535.snp

(LWA)

Averill Environmental Laboratory, Inc.

AVERILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 33857

PROJECT NAME: MACDERMID INC TCham

PROJECT LOCATION: Huntington Ave CT

PROJECT NUMBER: 91MW206.004

REPORT TO: KIMBERLY CLARKE

INVOICE TO: IC. CLARKE

Source Codes: MW = Monitoring Well; W = Well; S = Soil; O = Outfall; SG = Sludge; RO = Run Off; LF = Landfill; R = River/Stream; L = Lake/Ocean; B = Bottom Sediment; T = Treatment Facility; X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	2108823	S	2	A	4oz	I	VOCs, ETPH, RCRA8+Cr^{VI}, Cu, Ni, Sn, Zn, CN	6546	/	/		
2	2108824	↓	↓	↓	↓	↓	↓	6547	/	/		
3	2108825							6548	/	/		
4	2108826							6549	/	/		
5	2108827	↓	↓	↓	↓	↓	↓	6550	/	/		
6	2108837	MW	3	A	40 ml	H	VOCs		/	/		
7	2108837		1	A	1 l	I	ETPH		/	/		
8	2108837m		1	A	500 ml	N	RCRA8+Cu, Ni, Sn, Zn	6529	/	/		
9	2108837		1	P	250 ml	I	Cr^{VI}		/	/		
10	2108837		1	P	1/2 gal	R	Cn		/	/		
11	2108838		3	A	40 ml	H	VOCs		/	/		
12	2108838		1	A	1 l	I	ETPH		/	/		
13	2108838m	↓	1	A	500 ml	N	RCRA8+ Cu, Ni, Sn, Zn	6530	/	/		

Container Code: P = Plastic; E = EPA VIAL; C = Cube; G = Glass; A = Amber Glass; B = Bacteria Bottle

Preservative Code: I = Iced; F = Filtered; N = Nitric Acid (HNO_3); H = Hydrochloric Acid (HCl); R = Sodium Hydroxide (NaOH); T = Sodium Thiosulfate; S = Sulfuric Acid (H_2SO_4); O = Other, *Specify*

Sampler's Signature	Affiliation	Date	Time
[signature]	LEA	7/30/02	14:30

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-13	[signature]	[signature]	7/30/02	1442
2	1-13	[signature]	FRIEDE -	7/30/2	1572
3					
4					

AVERILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 33864

PROJECT NAME: MacDermid Inc-TCham

PROJECT LOCATION: Huntingdon Avenue

PROJECT NUMBER: 91MW206.004

REPORT TO: Kimberly Clarke

INVOICE TO: Kimberly Clarke

Source Codes: W = Well; O = Outfall; RO = Run Off; R = River/Stream; B = Bottom Sediment; MW = Monitoring Well; S = Soil; SG = Sludge; LF = Landfill; L = Lake/Ocean; T = Treatment Facility; X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
1	2108830	MW	1	A	1L	I	ETPH		✓	✓		
2	2108830		3	E	40 ml	H	VOCs 8260	6468	✓	✓		
3	2108830u		1	A	500 ml	N	RCRA8+ Cu, Ni, Sn & Zn		✓	✓		
4	2108830		1	P	½ gal	R	CN		✓	✓		
5	2108830		1	P	250 ml	I	Cr6		✓	✓		
6	2108832		1	A	1L	I	ETPH		✓	✓		
7	2108832		3	E	40 ml	H	VOCs 8260	6469	✓	✓		
8	2108832u		1	A	500 ml	N	RCRA8+ Cu, Ni, Sn & Zn		✓	✓		
9	2108832		1	P	½ gal	R	CN		✓	✓		
10	2108832		1	P	250 ml	I	Cr6		✓	✓		
11	2108833		1	A	1L	I	ETPH		✓	✓		
12	2108833		3	E	40 ml	H	VOCs 8260	6470	✓	✓		
13	2108833u	↓	1	A	500 ml	N	RCRA8+ Cu, Ni, Sn & Zn		✓	✓		

Container Code: P = Plastic; E = EPA VIAL; C = Cube; G = Glass; A = Amber Glass; B = Bacteria Bottle

Preservative Code: I = Iced; F = Filtered; N = Nitric Acid (HNO_3); H = Hydrochloric Acid (HCl); R = Sodium Hydroxide (NaOH); T = Sodium Thiosulfate; S = Sulfuric Acid (H_2SO_4); O = Other, *Specify*

Sampler's Signature	Affiliation	Date	Time
Jeff Clarke	LEA	07/29/12	15:40

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1-13	Jeff Clarke	FedEx	7/29/12	15:45
2	1-13	FedEx	PRSGR	7/29/12	16:10
3					
4					

AVERILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 33856

PROJECT NAME:	PROJECT LOCATION:	PROJECT NUMBER:
MACDERMID INC - TCham	Huntingdon Avenue	91MW2Q6.004

REPORT TO: KIMBERLY CLARKE
INVOICE TO: KIMBERLY CLARKE

Source Codes: MW = Monitoring Well; W = Well; S = Soil; O = Outfall; SG = Sludge; RO = Run Off; LF = Landfill; R = River/Stream; L = Lake/Ocean; B = Bottom Sediment; T = Treatment Facility; X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
14	2108833	MW	1	P	1/2 gal	R	Cn	6470	✓	✓		
15	2108833		1	P	250 ml	1	Cr6		✓	✓		
16	2108834		1	A	1L	1	~~ETPH~~		✓	✓		
17	2108834		3	E	40 ml	H	VOCs 8260	6471	✓	✓		
18	2108834		1	A	500 ml	N	RCRA 8+ Cu, Ni, Sn, Zn		✓	✓		
19	2108834		1	P	1/2 gal	R	Cn		✓	✓		
20	2108834		1	P	250 ml	1	Cr6		✓	✓		
21	2108835		1	A	1L	1	~~ETPH~~		✓	✓		
22	2108835		3	E	40 ml	H	VOCs 8260	6472	✓	✓		
23	2108835		1	A	500 ml	N	RCRA 8+ Cu Ni, Sn, Zn		✓	✓		
24	2108835		1	P	1/2 gal	R	Cn		✓	✓		
25	2108835	↓	1	P	250 ml	1	Cr6		✓	✓		

Container Code: P = Plastic; E = EPA VIAL; C = Cube; G = Glass; A = Amber Glass; B = Bacteria Bottle
Preservative Code: I = Iced; F = Filtered; N = Nitric Acid (HNO_3); H - Hydrochloric Acid (HCl); R = Sodium Hydroxide (NaOH); T = Sodium Thiosulfate; S = Sulfuric Acid (H_2SO_4)
O = Other, *Specify*

Sampler's Signature	Affiliation	Date	Time
[signature]	LEA	07/29/12	15:40

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	14-25	[signature]	[signature]	7/29/12	1545
2	14-25	[signature]	- FRIDGE -	7/29/12	1610
3					
4					

AVERILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 33855

PROJECT NAME: MACDERMID - TCham

PROJECT LOCATION: Huntington Ave

PROJECT NUMBER: 91MW206.004

REPORT TO: KIMBERLY CLARKE

INVOICE TO: KIMBERLY CLARKE

Source Codes: MW = Monitoring Well; W = Well; S = Soil; O = Outfall; SG = Sludge; RO = Run Off; LF = Landfill; R = River/Stream; L = Lake/Ocean; B = Bottom Sediment; T = Treatment Facility; X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
26	2108839	MW	1	A	1L	I	~~ETPH~~		✓	✓		
27	2108839		3	E	40 ml	H	VOCs 8260		✓	✓		
28	2108839		1	A	500 ml	N	RCRA 8+ Cu Ni Sn & Zn	6473	✓	✓		
29	2108839		1	P	½ gal	R	Cn		✓	✓		
30	2108839		1	P	250 ml	I	Cr 6		✓	✓		
31	2108848		1	A	1L	I	~~ETPH~~		✓	✓		
32	2108848		3	E	40 ml	H	VOCs 8260		✓	✓		
33	2108848		1	A	500 ml	N	RCRA 8+ Cu Ni Sn & Zn	6474	✓	✓		
34	2108848		1	P	½ gal	R	CN		✓	✓		
35	2108848		1	P	250 ml	I	Cr 6		✓	✓		
36	2108847	✓	3	E	40 ml	H	VOCs 8260	6475	✓	✓		

Container Code: P = Plastic; E = EPA VIAL; C = Cube; G = Glass; A = Amber Glass; B = Bacteria Bottle

Preservative Code: I = Iced; F = Filtered; N = Nitric Acid (HNO_3); H - Hydrochloric Acid (HCl); R = Sodium Hydroxide (NaOH); T = Sodium Thiosulfate; S = Sulfuric Acid (H_2SO_4); O = Other, *Specify*

Sampler's Signature	Affiliation	Date	Time
	LEA	07/29/02	15:40

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	26-36			7/29/02	1540
2	26-36		-FRIGE-	7/29/02	1610
3					
4					

AVERILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

CHAIN-OF-CUSTODY RECORD

№ 33858

PROJECT NAME: MacDermid Inc

PROJECT LOCATION: Huntington Ave

PROJECT NUMBER: 91MW204.004

REPORT TO: KIMBERLY CLARKE

INVOICE TO: K. CLARKE

Source Codes: W = Well, O = Outfall, RO = Run Off, R = River/Stream, B = Bottom Sediment; MW = Monitoring Well, S = Soil, SG = Sludge, LF = Landfill, L = Lake/Ocean, T = Treatment Facility; X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
14	2108838	MW	1	P	250 ml	I	Cr^{VI}	6530	✓	✓		
15	2108838		1	P	½ gal.	R	Cn		✓	✓		
16	2108838		3	A	40 ml	H	VOCs		✓	✓		
17	2108840		1	A	1 l	I	ETPH		✓	✓		
18	2108840u		1	A	500 ml	N	RCRA 8+ Cu, Ni, Sn, Zn	6531	✓	✓		
19	2108840		1	P	250 ml	I	Cr^{VI}		✓	✓		
20	2108840		1	P	½ gal	R	Cn		✓	✓		
21	2108841		3	A	40 ml	H	VOCs		✓	✓		
22	2108841		1	A	1 l	I	ETPH		✓	✓		
23	2108841u		1	A	500 ml	N	RCRA 8+ Cu, Ni, Sn, Zn	6532	✓	✓		
24	2108841		1	P	250 ml	I	Cr^{VI}		✓	✓		
25	2108841		1	P	½ gal	R	Cn		✓	✓		
26	2108842		3	A	40 ml	H	VOCs		✓	✓		

Container Code: P = Plastic, E = EPA VIAL, C = Cube, G = Glass, A = Amber Glass, B = Bacteria Bottle

Preservative Code: I = Iced, F = Filtered, N = Nitric Acid (HNO_3), H - Hydrochloric Acid (HCl), R = Sodium Hydroxide (NaOH), T = Sodium Thiosulfate, S = Sulfuric Acid (H_2SO_4)

O = Other, *Specify*

Sampler's Signature	Affiliation	Date	Time
Jeff Clarke	LEA	7/30/02	14:30

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	14-26	Jeff Clarke	K. Clarke	7/30/02	1442
2	14-26	Jeff Clarke	FRIGE	7/30/02	1510
3					
4					

AVERILL ENVIRONMENTAL LABORATORY INC.

100 Northwest Drive
Plainville, Connecticut 06062

Tel: 860-747-0676
CT: 1-800-870-7904

№ 33207

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: Mac Dermid Inc

PROJECT LOCATION: Huntington Ave.

PROJECT NUMBER: 91MW206.004

REPORT TO: KIMBERLY CLARKE

INVOICE TO: K. CLARKE

Source Codes: W = Well; O = Outfall; RO = Run Off; R = River/Stream; B = Bottom Sediment; MW = Monitoring Well; S = Soil; SG = Sludge; LF = Landfill; L = Lake/Ocean; T = Treatment Facility; X = Other, Specify

ITEM NUMBER	SAMPLE NUMBER	SOURCE CODE	CONTAINER NO.	CONTAINER TYPE	CONTAINER SIZE	CONTAINER PRESERV.	ANALYSIS REQUIRED	COMMENTS	TRANSFER NUMBER & CHECK 1	2	3	4
27	2108842	MW	1	A	1L	T	ETPH		✓	✓		
28	2108842a		1	A	500 ml	N	RCRA 8+ Cu, Ni, Sn, Zn	6533	✓	✓		
29	2108842		1	P	250 ml	I	Cr^{VI}		✓	✓		
30	2108842		1	P	½ gal	R	Cn		✓	✓		
31	2108843		3	A	40 ml	H	VOCs		✓	✓		
32	2108843		1	A	1L	I	ETPH		✓	✓		
33	2108843a		1	A	500 ml	N	RCRA 8+ Cu, Ni, Sn, Zn	6534	✓	✓		
34	2108843		1	P	250 ml	I	Cr^{VI}		✓	✓		
35	2108843		1	P	½ gal	R	Cn		✓	✓		
36	2108846	V	3	A	40 ml	H	VOCs		✓	✓		

Container Code: P = Plastic; E = EPA VIAL; C = Cube; G = Glass; A = Amber Glass; B = Bacteria Bottle

Preservative Code: I = Iced; F = Filtered; N = Nitric Acid (HNO_3); H - Hydrochloric Acid (HCl); R = Sodium Hydroxide (NaOH); T = Sodium Thiosulfate; S = Sulfuric Acid (H_2SO_4); O = Other, *Specify*

Sampler's Signature	Affiliation	Date	Time
Jeff Lusty	LEA	7/30/02	14:30

ADDITIONAL COMMENTS:

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	27-36	Jeff Lusty	K. Clarke	7/30/02	1447
2	27-36		– FRIDGE –	7/30/02	1510
3					
4					

Attachment 8

Well Receptor Survey
HRP Associates, Inc.
February 2001

TABLE OF CONTENTS

Section		Page
1.0	INTRODUCTION	1
2.0	SITE SETTING	1
3.0	IDENTIFICATION OF POTENTIAL RECEPTORS	4
4.0	CONCLUSIONS	5

List of Tables

1	Survey Findings	4
2	Public Water Supply Data	5

List of Figures

1	Site Location Map	2
2	Receptor Survey Base Map	3

List of Appendices

A	Well Completion Reports
B	Waterbury Water Company Records
C	Waterbury Tax Assessor's Field Cards
D	CT-DEP Bureau of Water Management P-5 Files

WELL RECEPTOR SURVEY

MacDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CONNECTICUT

1.0 INTRODUCTION

HRP Associates, Inc. (HRP) has conducted a survey of potential receptors in the anticipated down-gradient area or side-gradient area of the above referenced site. The focus of this investigation was on potential public and private water supply sources within 1,400 feet to the south (Steele Brook and Naugatuck River junction), 1,000 feet to the northeast (including several residential properties to the north) (Route 8), 700 feet to the east (Connecticut River), and 1,000 feet to the west (Steele Brook) of the subject site.

2.0 SITE SETTING

The subject parcel (MacDermid, Inc. property) is located at 526 Huntingdon Avenue, in Waterbury, Connecticut (see Figures 1 and 2 for site location). The site area consists of a mix of industrial/commercial and residential properties. The parcels of interest are depicted on Figure 2 as map references 1 through 7.

The approximate geographic coordinates of the site are 41° 34' 31" north latitude and 73° 03' 26" west longitude. The site is located at an elevation of approximately 300 feet above mean sea level according to published U.S.G.S. topographic mapping[1].

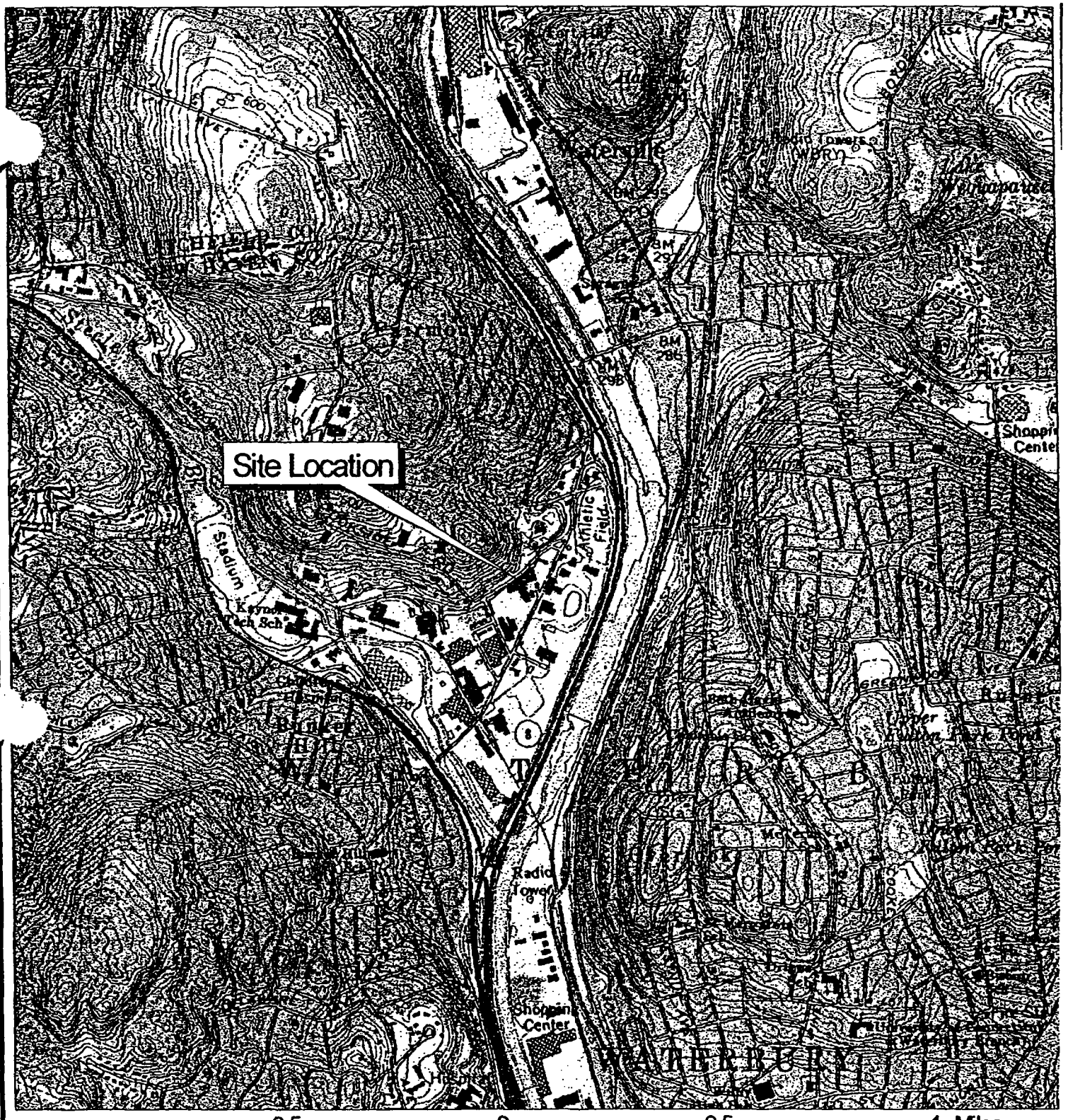
The ground water beneath the subject site and vicinity has been assigned a ground water quality classification of "GB" by the CT DEP, which denotes that ground water may not be suitable for human consumption without treatment due to waste discharges, spills or leaks of chemicals or land use impacts.[2]. Steele Brook, located approximately 0.17 mile southwest of the subject site, has been assigned a surface water classification of "B" indicating it is known or presumed to meet Water Quality Criteria which support designated uses, which may include recreational use; fish and wildlife habitat; agricultural and industrial supply and other legitimate uses including navigation. The Naugatuck River, located 0.2 mile east of the site, has been assigned a surface water classification of "C/B", indicating that, due to point or nonpoint sources of pollution, certain Water Quality Criteria or one or more designated uses assigned to Class B waters are not currently met. The water quality goal is achievement of Class B Criteria and attainment of Class B designated uses.

Based on previous subsurface investigations conducted at the subject site, which have included the installation of overburden ground water monitoring wells, ground water in the shallow overburden aquifer beneath the subject site flows to the south-southeast.

---

[1] United States Geological Survey. 1968. Photorevised 1984. Waterbury Quadrangle, 7.5 Minute Series.

[2] Connecticut Department of Environmental Protection, Water Management Bureau. 1993. Adopted Water Quality Classifications for the Connecticut River and South Central Coastal Basins.



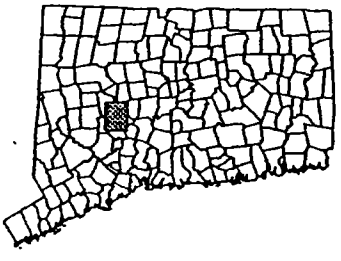


Figure 1, Site Location Map
MacDermid, Inc.
526 Huntingdon Avenue
Waterbury, Connecticut
HRP # MAC0030.RC
25 January 2001

3.0 IDENTIFICATION OF POTENTIAL RECEPTORS

The following sources of data and investigation methodologies for the identification of possible industrial water supply wells/monitor wells have been employed by HRP during this receptor survey. Table 1 summarizes the findings of this survey and indicates the data sources which provided documentation for the resulting confirmation of water supply (private well or public water). These sources are keyed to Table 1 by the circled numbers (①,②, etc). Table 2 lists all the properties within the selected area by street address and Waterbury Assessor's Department map, block, and lot numbers. Property owners' names are listed, as well as the reported confirmation status (from the Waterbury Water Company) of the public water supply connection to the site.

Data Sources:

① Connecticut Department of Environmental Protection (CT DEP) Public Water Supply Atlas
② Published hydrologic data
③ Windshield/walking survey of the site vicinity (visual evidence of well, fire hydrants, water gate valves, etc.)
④ Water supply well completion reports located at the U.S.G.S. Water Resource Division
⑤ Water supply well completion reports located at the Waterbury Health Department
⑥ Queries of the Waterbury Water Company
⑦ City of Waterbury Tax Assessor's Field Card
⑧ Queries of the Waterbury Engineering Department
⑨ Connecticut Department of Environmental Protection (CT DEP) P-5 files

TABLE 1
SURVEY FINDINGS

HRP Figure 2 Designation	Map/Block/Lot	Street Address	Confirmed Industrial Supply or Monitor Well	Confirmed Public Water Supply
1	143/863/2	327 Huntingdon Ave. (IME Associates, LLC)	Yes[1,3] ④⑦	Yes[2] ③⑥
2	143/783/1	346 Huntingdon Ave. (MP&P)	Yes[1,3] ⑤⑦	Yes[2] ③⑥
3	143/864/18	526 Huntingdon Ave. (MacDermid, Inc.)	Yes[1,3] ④⑦	Yes[2] ③⑥
4	143/864/18	420 Huntingdon Ave. (currently MacDermid, Inc.)	Yes[1,3] ④⑦	Yes[2] ③⑥
5	160/783/7	172 E. Aurora Street (U.S. Prolam/Ceilcote)	Yes[1,3] ④⑦	Yes[2,4] ③⑥⑨
6	160/707/2	237 E. Aurora Street (LEA Manufacturing)	Yes[1,3,4] ④⑤⑦⑨	Yes[2,4] ③⑥⑨
7	160/783/1	E. Aurora Street (Waterbury Rolling Mills)	Yes[1,3,4] ④⑤⑦	Yes[2,4] ③⑥⑨

[1] = Well Completion reports identified at the U.S.G.S. or Waterbury Health Department have been included in Appendix A.
[2] = The Waterbury Water Company records indicate connection to a publicly available water supply (Appendix B).
[3] = The Waterbury Tax Assessor's Field Cards have been included in Appendix C.
[4] = The Connecticut Department of Environmental Protection (CT DEP) Bureau of Water Management P-5 Files are included in Appendix D.

TABLE 2

PUBLIC WATER SUPPLY DATA

Map	Block	Lot	Street Address	Owner Name	Connected to Public Water
128	864	3	526 Huntingdon Avenue	MacDermid, Inc.	Yes
129	865	7	000 E. Aurora Street	MacDermid, Inc.	Yes
129	707	8	Huntingdon Avenue	City of Waterbury (Recreation Field)	Yes
129	707	10	7 East Aurora Street	D'Angelo, Anthony P. & Concetta K.	Yes
129	707	12	11 E. Aurora Street	Farr, Leon J. Inc.	Yes
129	707	13	48 Jarrett Avenue	Union Glen Associates, Inc.	Yes
129	707	15	21 E. Aurora Street	City of Waterbury (Water Department)	Yes
129	865	3	2 E. Aurora Street	Fazo, Sali	Yes
129	865	5	000 E. Aurora Street	Fazo, Sali	Yes
129	865	6	24 E. Aurora Street	Tuttle, Pauline T. & Hallie A.	Yes
129	865	4	562 Huntingdon Avenue	Fazo, Sali	Yes
143	707	19	111 E. Aurora Street	Boas, Andrew M. & Cecelia A. (Bernier as Trustees)	Yes
143	707	20	123 E. Aurora Street	Sullivan, James S. Cable Co. Inc.	Yes
143	707	191	117 E. Aurora Street	B & V Realty LLC	Yes
143	707	192	75 E. Aurora Street	Boas, Andrew M. & Cecelia A. (Bernier as Trustees)	Yes
143	777	5	447 Huntingdon Avenue	Filippone, Mary J.	Yes
143	863	2	327 Huntingdon Avenue	IME Associates, LLC	Yes
143	863	3	345 Huntingdon Avenue	D'Agostino, Mario and Michael A.	Yes
143	863	4	407 Huntingdon Avenue	Salvatore, Gervase and Carmela	Yes
143	864	18	000 E. Aurora Street	MacDermid, Inc.	Yes
143	783	1	346 Huntingdon Avenue	Mirror, Polishing and Plating (MP&P)	Yes
143	783	7	Huntingdon Avenue	Halperin Real Estate, LLC	Yes
143	783	8	Huntingdon Avenue	Halperin Real Estate, LLC	Yes
143	783	9	4 Huntingdon Place	Cronin, Dennis C. & Linda L.	Yes
143	783	10	8 Huntingdon Place	Weymer, William H. & Sandra M.	Yes
143	783	11	14 Huntingdon Place	Melendez, Wilfredo	Yes
143	783	12	18 Huntingdon Place	Hardt, William B.	Yes
143	783	13	22 Huntingdon Place	Phillips, Joan C.	Yes
143	783	14	17 Huntingdon Place	Grimsley, Edna P.	Yes
143	783	15	11 Huntingdon Place	Zuta, Zinije	Yes
143	783	16	7 Huntingdon Place	Jacques, David & Lori Ann	Yes
143	783	17	1 Huntingdon Place	Brousseau, George D.	Yes
143	783	21	150 E. Aurora Street	Stein, Harold	Yes
143	783	111	348 Huntingdon Avenue	Halperin Real Estate, LLC	Yes
143	783	211	172 E. Aurora Street	Halperin Real Estate, LLC	Yes
144	707	1	37 E. Aurora Street	Ryder Truck Rental Inc.	Yes
144	707	2	51 E. Aurora Street	Boas, Andrew M. & Cecelia A. (Bernier as Trustees)	Yes
160	707	2	237 E. Aurora Street	OLIG LTD.	Yes

TABLE 2

PUBLIC WATER SUPPLY DATA

Map	Block	Lot	Street Address	Owner Name	Connected to Public Water
160	707	3	225 E. Aurora Street	Arev I Limited Partnership	Yes
160	707	4	181 E. Aurora Street	Arev I Limited Partnership	Yes
160	707	6	137 E. Aurora Street	137 E. Aurora LLC	Yes
160	707	61	000 E. Aurora Street	Stein, Harold (Trustee)	Yes
160	783	1	240 E. Aurora Street	Waterbury Rolling Mills, Inc.	Yes
160	783	7	172 E. Aurora Street	Etherington, Geoffrey II	Yes
161	707	1	173 E. Aurora Street	VBL Realty LLC	Yes

Descriptions of the type(s) of wells identified in the well completion reports for the above-tabled properties are as follows:

- 327 Huntingdon Ave. – Installation of two monitoring wells, dated 11/10/98;
- 346 Huntingdon Ave. – Installation of a ground water remediation well, dated 4/21/89;
- 526 Huntingdon Ave. – Location of six (6) monitoring wells, dated 1/11/95;
- 420 Huntingdon Ave. – Location of one (1) water supply well, dated 1/10/65;
- 172 E. Aurora St. – Installation of two (2) monitoring wells, dated 10/1/98;
- 237 E. Aurora St. – Installation of one (1) industrial water supply well, dated 11/1/67;
- 000 E. Aurora St. – Identification of two (2) industrial water supply test wells, dated 8/1/78 and 3/31/79.

The operational status of these industrial water supply wells is currently unknown.

According to the 1974 State of Connecticut Water Resources Bulletin No. 19, Hydrogeologic Data for Housatonic River Basin, there are five water supply wells located within the designated search radius (Figure 2).

- Wells #(12,12A), located at 526 Huntingdon Ave. (Formerly Waterbury Steel Ball Co.), were completed in 1925 and 1947, respectively. Well #12 is listed as currently unused. Well # 12A is listed as a well used to withdraw water for air conditioning.
- Wells #(341, 341AB), located at 237 E. Aurora St. (LEA Manufacturing), were completed in 1957, 1966, and 1967, respectively. Well #341 is listed as currently unused. Wells #341A and B are listed as wells used to withdraw water for industrial purposes.
- Well #(343), located at 000 E. Aurora St. (Formerly Brock-Hall Dairy Co.), was completed as a well used to withdraw water in 1945 for air conditioning.

The operational status of these wells is currently unknown.

Representatives of the City of Waterbury Engineering Department reported that public water supply lines are installed and available to all occupants in the site vicinity.

Multiple occupants were identified during the January 30, 2001 windshield/walking survey on several parcels located on the south side of E. Aurora Street. Several of these businesses were not listed on the Waterbury Water Company's lists as having public water. These properties map/lot/block numbers (143/707/19, 143/707/20, 143/707/191, 143/707/192, 160/707/6, 160/707/61, 161/707/1) were identified and cross-checked against the Tax Assessors Maps and Field Cards. According to the Field Cards, all map/block/lot parcels are serviced by public water (Appendix C).

4.0 CONCLUSIONS

Five water supply wells were identified in the 1974 State of Connecticut Water Resource Bulletin No. 19, Hydrogeologic Data for Housatonic River Basin. The operational status of these wells is currently unknown. If confirmation of the status of the identified wells is necessary, then an inquiry directed towards the current occupants may be appropriate.

Ten ground water monitoring wells and one ground water remediation well have been identified within the designated search radius surrounding the subject site. Six of these monitoring wells are located on the subject property. Four industrial water supply wells (status unknown) have been identified within the designated search radius. A former occupant of a portion of the current subject site (Raferty Brown Steel Co.) utilized a supply well. The operational status of these industrial water supply wells and monitoring wells is currently unknown. If confirmation of the status of the identified wells is necessary, then an inquiry directed towards the current occupants may be appropriate.

Several occupants along the south side of E. Aurora Street are not identified on the Waterbury Water Company list, but are recorded as being on public water per the Waterbury Tax Assessor's Field Cards. If confirmation of the status of the occupants' public water status is necessary, then an inquiry directed towards the current occupants may be appropriate.

The Naugatuck River and associated wetlands, located approximately 1,000 feet east of the subject site in a hydrogeologic cross to down-gradient position, is considered a potential receptor of any ground water contamination potentially originating from the site. The Naugatuck River has been assigned a water quality classification of "C/B", indicating that it is presumed to be significantly degraded and unsuitable as a potential drinking water supply.

STATE OF CONNECTICUT
DEPARTMENT OF CONSUMER PROTECTION
REAL ESTATE & PROFESSIONAL TRADES DIVISION

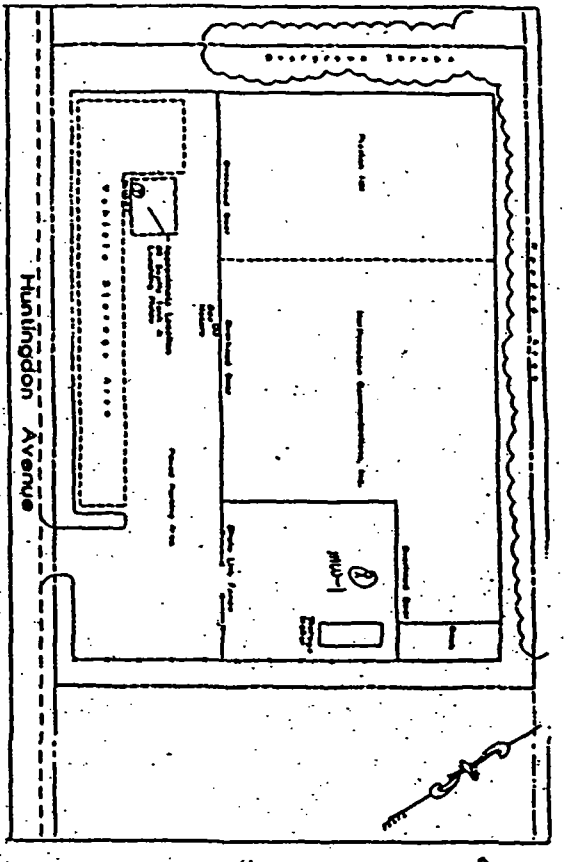
WELL DRILLING COMPLETION REPORT

165 Capitol Avenue, Hartford, Connecticut 06106

OWNER	NAME	ADDRESS
LOCATION OF WELL	(No. & Street) 327 Huntington Ave.	(Town) Waterbury (Lot Number)
PROPOSED USE OF WELL	☐ DOMESTIC ☐ BUSINESS ESTABLISHMENT ☐ FARM ☐ TEST WELL ☐ PUBLIC SUPPLY ☐ INDUSTRIAL ☐ AIR CONDITIONING ☒ OTHER (Specify) Monitoring Wells	
DRILLING EQUIPMENT	☐ ROTARY ☐ COMPRESSED AIR PERCUSSION ☐ CABLE PERCUSSION ☐ OTHER (Specify)	
* CASING DETAILS	LENGTH (feet) / DIAMETER (inches) / WEIGHT PER FOOT / ☐ THREADED ☐ WELDED / DRIVE SHOE ☐ YES ☐ NO / WAS CASING GROUTED? ☐ YES ☐ NO	
* YIELD TEST	☐ BAILED ☐ PUMPED ☐ COMPRESSED AIR / HOURS / YIELD (GPM)	
* WATER LEVEL	MEASURE FROM LAND SURFACE - STATIC (Specify feet) / DURING YIELD TEST (feet) / Depth of Completed Well in feet	
* SCREEN DETAILS	MAKE / LENGTH OPEN TO AQUIFER (feet)	
	SLOT SIZE / DIAMETER (inches) / IF GRAVEL PACKED / Diameter of well including gravel pack (inches) / GRAVEL SIZE (inches) / FROM (feet) / TO (feet)	

DEPTH FROM LAND TO SURFACE FEET TO FEET	FORMATION DESCRIPTION
	*See attached Soil Sampling Logs for details

Sketch exact location of well with distances, to at least two permanent landmarks



If yield was tested at different depths during drilling, list below

FEET	GALLONS PER MINUTE

WELL COMPLETED	PERMIT NO	REGISTRATION NO	DATE OF REPORT	WELL DRILLER (Signature)
10-98	WCR- 152	00086	11-11-98	

DISTRIBUTION: DEPARTMENT OF CONSUMER PROTECTION, DEPARTMENT OF ENVIRONMENTAL PROTECTION, PROPERTY OWNER, WELL DRILLING CONTRACTOR & LOCAL DIRECTOR OF HEALTH.

Soil Sampling Log

Date Started 11-10-98

Date Finish 11-10-98

Weight Of Hammer [X] 140 [ ] 300

Hammer Fall [X] 30' [ ] 24"

Ground Water Observations

Date	Time	Depth
11-10-98	0 hr.	~6.0'

Sampler O.D. 2" I.D. 1 7/8"

Type Of Rig Truck Mounted Rig: D-50

GLACIER DRILLING

78 Golden St.
Meriden, CT 06450
Phone/Fax 203-235-1944

Environmental Remediation, Inc.
87 Church St
East Hartford, CT 06108

Sheet 1 Of 1

Proj. No.

Location 327 Huntington Ave.

Line & STA Waterbury, CT

Offset

Ground Elevation

Hole No. MW -1

Type	Casing	Sampler	Core Barrel
	HSA	SS	
Size I.D.	4 1/4"	1 7/8"	

Dept. Below Surface	Sample No. Depths Elev. Ft.	Type Of Sample	Blows Per 6" On Sample From 0-6	To 6-12	To 12-18	Density Or Consist Moisture	Profile Change Depth Elev.	Field Identification Of Soils Remarks	Sample No.	Pen	Rec
	0-2	SS	12	27	30	Dense		Medium - fine sand, medium - fine gravel, trace of silt, rock	1	24"	14"
					34	Dry		fragments.			
	4-6	SS	2	22	34	Dense		Same as above.	2	24"	12"
					37	Moist					
							8.0'	B.O.B. Refusal.			
								Set a 2" PVC well at 8.0', using:			
								1 Threaded Plug			
								5' Screen, .010 slot			
								2.5' Riser			
								2 1/2 Sand, 50 lb bags			
								1/2 Bentonite Chips			
								1 Expandable Gripper			
								1 Lock			
								1 Road Box, 8"			

Driller: Terry Bell
Assistant: Oliver Privot
Soils Engineer: Carrie Sharkey

Proportions used trace= 0.10%, little = 10.20%, some = 20.35%, and = 35.50%

Sample Type:
C = Cored W = Washed
SS = Split Spoon
UP = Undisturbed Piston

Cohesionless Density
0-10 Loose
10-30 Med. Comp.
30-50 Dense

Total Footage:
Earth Boring 8.0' Ft.
Rock Coring Ft.

Soil Sampling Log

Date Started 11-10-98

Date Finish 11-10-98

Weight Of Hammer [X] 140 [ ] 300

Hammer Fall [X] 30' [ ] 24"

Ground Water Observations

Date	Time	Depth
11-10-98	0 hr.	~6.0'

Sampler O.D. 2" I.D. 1 7/8"

Type Of Rig Truck Mounted Rig: D-50

GLACIER DRILLING
78 Golden St.
Meriden, CT 06450
Phone/Fax 203-235-1944

Environmental Remediation, Inc.
87 Church St
East Hartford, CT 06108

Sheet 1 Of 1

Proj. No.

Location 327 Huntington Ave.

Line & STA Waterbury, CT

Offset

Ground Elevation

Hole No. MW-2

	Casing	Sampler	Core Barrel
Type	HSA	SS	
Size I.D.	4 1/4"	1 7/8"	

Dept. Below Surface	Sample No. Depths Elev. Ft.	Type Of Sample	Blows Per 6" On Sample From	To 6-12	12-18	Density Or Consist Moisture	Profile Change Depth Elev.	Field Identification Of Soils Remarks	Sample No.	Pen	Rec
	0-2	SS	14	20	31	Dense		Medium - fine brown sand, medium - fine gravel, rock fragments, trace of silt.	1	24"	12"
					15						
	4-6	SS	15	5	6	Med. Comp. Wet		Medium - fine brown sand, fine - medium gravel, rock fragments, fine sand, silt and fuel odor.	2	24"	14"
					5						
	6-8	SS	4	4	9	Med. Comp.		Coarse - fine dark brown sand, medium - fine gravel, trace of silt.	3	24"	8"
					14						
	9-11	SS	21	15	5	Med. Comp.		Same as above.	4	24"	10"
					5						
	14-16	SS	2	15	6	Med. Comp.		Fine brown, medium - fine gravel, silt, rock fragments.	5	24"	7"
					5						
							15.0'	B.O.B., set a 2" PVC well using:			
								1 Threaded Plug			
								10' Screen, .010 slot			
								5.5' Riser			
								1/2 Bentonite Chips			
								1 Expandable Gripper			
								1 Lock			
								1 Road Box, 8"			

Driller: Terry Bell

Assistant: Oliver Privott

Soils Engineer: Carrie Sharkey

Proportions used trace= 0.10%, little = 10.20%, some = 20.35%, and = 35.50%

Sample Type:
C = Cored W = Washed
SS = Split Spoon
UP = Undisturbed Piston

Cohesionless Density
0-10 Loose
10-30 Med. Comp.
30-50 Dense

Total Footage:
Earth Boring 15.0 Ft.
Rock Coring Ft.

CONSUMER PROTECTION
WELL DRILLING BOARD
CPR-8 REV. 11-82

STATE OF CONNECTICUT
DEPARTMENT OF CONSUMER PROTECTION
WELL DRILLING PERMIT
165 CAPITOL AVE., HARTFORD, CONNECTICUT 06106

PERMIT NUMBER
138357

LOCATION OF WELL (Town)	(Street)	(Lot Number)	DATE
WATERBURY	HUNTINGDON AVE.	346	APRIL 21, 19[illegible]

OWNER OF WELL
☒ INDIVIDUAL ☐ BUILDER ☐ OTHER (Specify)

OWNER'S ADDRESS
MIRROR POLISHING & PLATING, INC. 346 HUNTINGDON AVE. WATERBURY

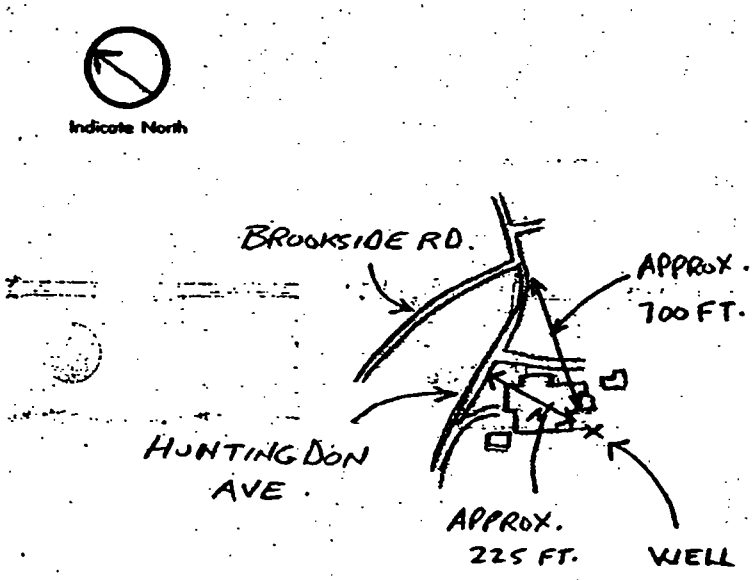
PROPOSED USE OF WELL
☐ DOMESTIC ☐ BUSINESS ESTABLISHMENT ☐ FARM ☐ TEST WELL
☐ PUBLIC SUPPLY ☐ INDUSTRIAL ☐ AIR CONDITIONING ☒ OTHER (Specify) Groundwater Remediation Well

Est. No. [illegible] People [illegible] served
N.A.

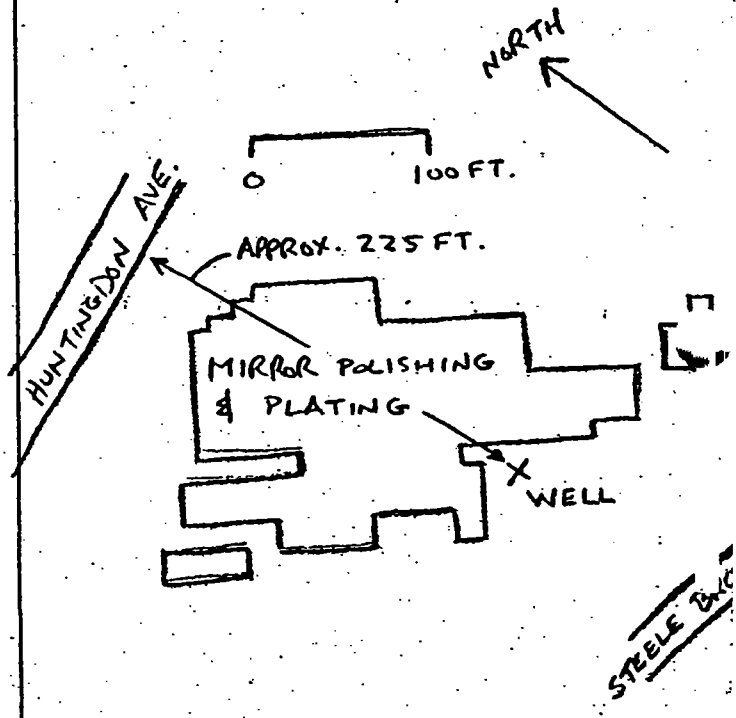
SKETCH OF WELL LOCATION

Locate well with respect to at least two roads, showing distance from intersection and front of lot

Location of lot to at least two roads



Well location on lot and to house (if present)



Approximate number of feet from well to nearest source of possible contamination: WELL IS TO BE INSTALLED SO AS TO EXTRACT CONTAMINATED WAT[illegible]

The undersigned is aware that upon completion of the well, a "Well Completion Report" containing construction details and information required under Sectic 25-131 of the 1969 Supplement to the General Statutes must be sent to the owner, the Board and the Water Resources Commission on the form provided by tl Board. This permit is not valid until all information is filled in and it has been counter-signed by the Director of Health or his agent.

APPLICANT (Signature)	APPLICANT'S ADDRESS	REGISTRATION NO.
[signature]	Boyd Artesian Well Co. Inc. 914 225-3196 RD5 Rt 52 Carmel NY 10512	154
☐ APPROVED ☐ REJECTED	BY (Town Health Officer or Agent)	DATE

REMARKS

DIRECTOR OF HEALTH

WELL DRILLING BOARD
R-8 REV. 11-82

STATE OF CONNECTICUT
DEPARTMENT OF CONSUMER PROTECTION
WELL DRILLING PERMIT
165 CAPITOL AVE., HARTFORD, CONNECTICUT 06106

PERMIT NUMBER
166024

GZA GeoEnvironmental
27 Nack Rd.
Vernon Ct.

LOCATION OF WELL (Town)	(Street)	(Lot Number)	DATE
Waterbury, CT	Huntington Ave	526	1/11/95

OWNER OF WELL
☐ INDIVIDUAL ☐ BUILDER ☑ OTHER (Specify) Business

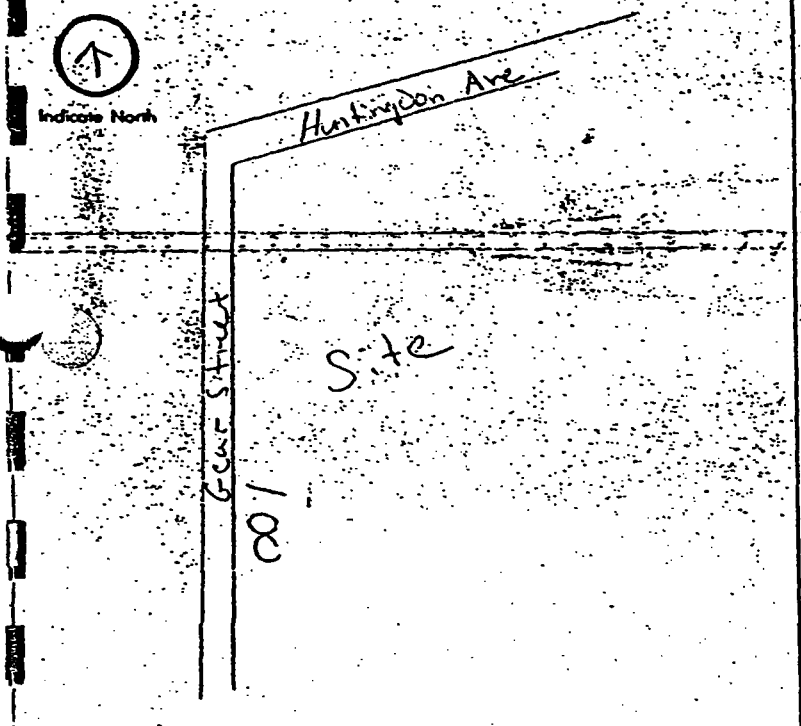
OWNER'S ADDRESS
526 Huntington Ave

PROPOSED USE OF WELL					Est. No. of People being served.
	☐ DOMESTIC	☐ BUSINESS ESTABLISHMENT	☐ FARM	☑ TEST WELL	
	☐ PUBLIC SUPPLY	☐ INDUSTRIAL	☐ AIR CONDITIONING	☐ OTHER (Specify)	

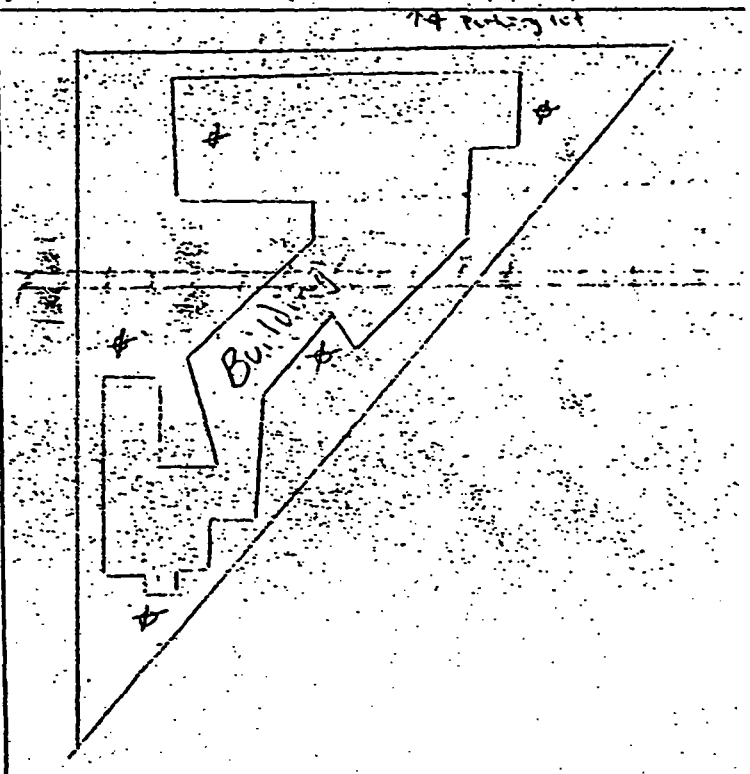
SKETCH OF WELL LOCATION

Locate well with respect to at least two roads, showing distance from intersection and front of lot

Location of lot to at least two roads



Well location on lot and to house (if present)



Approximate number of feet from well to nearest source of possible contamination:

The undersigned is aware that, upon completion of the well, a "Well Completion Report" containing construction details and information required under Section 25-131 of the 1969 Supplement to the General Statutes must be sent to the owner, the Board and the Water Resources Commission on the form provided by the Board. This permit is not valid until all information is filled in and it has been counter-signed by the Director of Health or his agent.

APPLICANT (Signature)	APPLICANT'S ADDRESS	REGISTRATION NO.
GZA GeoEnvironmental	27 Nack R.D. Vernon CT	0054

☐ APPROVED ☐ REJECTED

BY: (Town Health Officer or Agent) Michael Maney, Chief Sanitarian

DATE 1-13-95

REMARKS
Copy of well permit application received by Health Dept 1-13-95 ME

DIRECTOR OF HEALTH

Monitor well

WELL COMPLETION REPORT

CPR-9 REV. 11-82

STATE OF CONNECTICUT
DEPARTMENT OF CONSUMER PROTECTION
WELL DRILLING BOARD
165 CAPITOL AVE.
HARTFORD, CONNECTICUT 06106

Do NOT fill in
STATE WELL NO
OTHER NO

OWNER	NAME: MacDermid	ADDRESS: 526 Huntingdon Ave
LOCATION OF WELL	(No. & Street): 526 Huntingdon Ave	(Town): Waterbury (Lot Number):
PROPOSED USE OF WELL	☐ DOMESTIC ☐ BUSINESS ESTABLISHMENT ☐ FARM ☐ TEST WELL ☐ PUBLIC SUPPLY ☐ INDUSTRIAL ☐ AIR CONDITIONING ☑ OTHER (Specify) monitor well	
DRILLING EQUIPMENT	☐ ROTARY ☐ COMPRESSED AIR PERCUSSION ☐ CABLE PERCUSSION ☑ OTHER (Specify) H.S.A	
CASING DETAILS	LENGTH (feet): DIAMETER (inches): 2" WEIGHT PER FOOT: ☐ THREADED ☐ WELDED DRIVE SHOE: ☐ YES ☑ NO WAS CASING GROUTED: ☐ YES ☑ NO Bent Sea	
YIELD TEST	☑ BAILED ☐ PUMPED ☐ COMPRESSED AIR HOURS: YIELD (G.P.M.): N/A	
WATER LEVEL	MEASURE FROM LAND SURFACE—STATIC (Specify feet): 17' DURING YIELD TEST (feet): Depth of Completed Well in feet below Land surface	
SCREEN DETAILS	MAKE: P.V.C LENGTH OPEN TO AQUIFER (feet): SLOT SIZE: 10 DIAMETER (inches): 2" IF GRAVEL PACKED: Diameter of well including gravel pack (inches): GRAVEL SIZE (inches): N.J. #2 FROM (feet): 15' TO (feet): 25'	

DEPTH FROM LAND SURFACE FEET TO FEET		FORMATION DESCRIPTION
2'	30'	S&G with boulders

Sketch exact location of well with distances, to at least two permanent landmarks

If yield was tested at different depths during drilling, list below

FEET	GALLONS PER MINUTE

DATE WELL COMPLETED	PERMIT NO.	REGISTRATION NO.	DATE OF REPORT	WELL DRILLER (Signature)
1/11/95	166124	54	1/20/95	[signature]

State of Connecticut
WATER RESOURCES COMMISSION
223 State Office Building
Hartford, Connecticut

WELL COMPLETION REPORT

This report must be completed and submitted to State Water Resources Commission no later than 30 days after completion of well.

DO NOT FILL IN
State Well No. ____
Other No. WRL 2-4 (G8)

OWNER Mr. Nelson P. Hart, Raferty Brown Steel Company, P.O. Box 192 Waterbury, Conn.
Name | Street Address | City and Town

WELL DRILLER Premco Drilling, Inc. Box 302 Canton, Conn.
Name | Street Address | City and Town

PROPOSED USE OR USES (Check):
☐ Domestic ☐ Farm ☐ Irrigation ☐ Business Establishment ☐ Municipal ☒ Industrial ☐ Test Well

CASING DETAILS	YIELD TEST		WATER LEVEL (measure from land surface)	SCREEN DETAILS
Length: 36 Feet	☐ Bailed or ☐ Pumped or ☒ Compressed Air	3/4 hr Hours	Static: 150 Feet	Make:
Diameter: 6 Inches		1 G.P.M.	During Yield Test: Feet	Length Ft. Slot Size
Kind: Steel	Yield:	1 G.P.M	DRILLING EQUIPMENT ☐ Cable Tool ☐ Rotary ☒ Other (Specify) Hi-Speed Percussion	Diameter: In.

TOTAL DEPTH OF WELL 400 FEET

WELL LOG

Depth From Ground Surface	Give description of formations penetrated, such as: peat, silt, sand, gravel, clay, hardpan, shale, sandstone, granite, etc. Include size of gravel (diameter) and sand (fine, medium, coarse), color of material, structure (loose, packed, cemented, soft, hard). For example: 0 ft. to 27 ft. fine, packed, yellow sand; 27 ft. to 134 ft. gray granite.
[illegible] FT. to 16 FT.	Sand & Gravel
16 FT. to 95 FT.	Gneiss
95 FT. to 130 FT.	Granite (pink)
130 FT. to 400 FT.	Granite (white)
FT. to FT.	
FT. to FT.	
FT. to FT.	
FT. to FT.	
	YIELD TEST DATA IN G.P.M. If Yield Was Tested At Different Depths During Drilling, List Below
FT.	G.P.M.
FT.	G.P.M.
FT.	G.P.M.
FT.	G.P.M.

Date Well Was Completed: 9/15/65 Date of Report 1/10/65

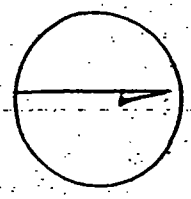
Town Permit Number: #107 Well Driller [signature] (Signature)

Certificate No. 2004

LOCATION OF WELL: TOWN OF WATERBURY

SKETCH SHOWING LOCATION OF PREMISES IN TOWN:

(Show distance and direction from road intersection or other landmark.)



INDICATE NORTH

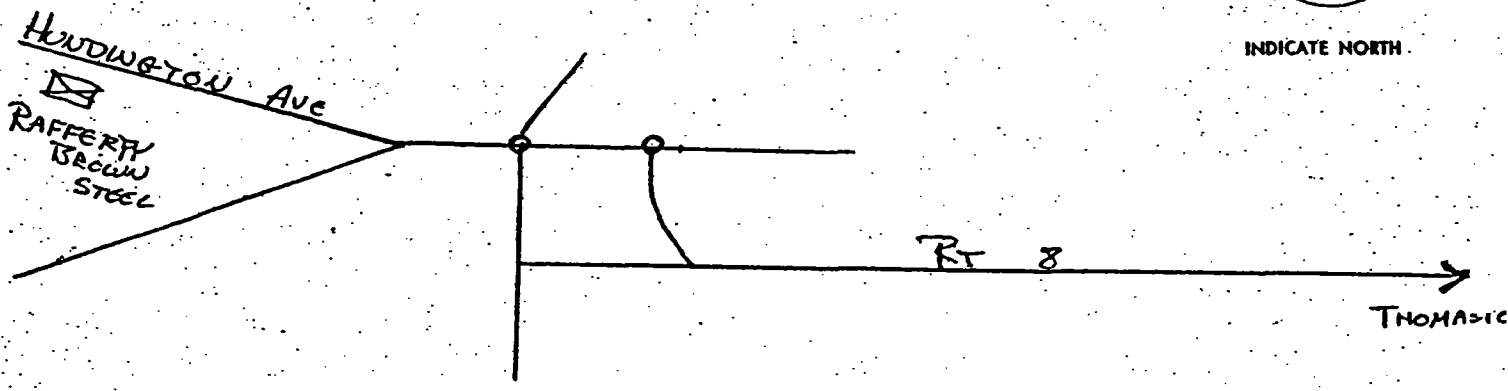
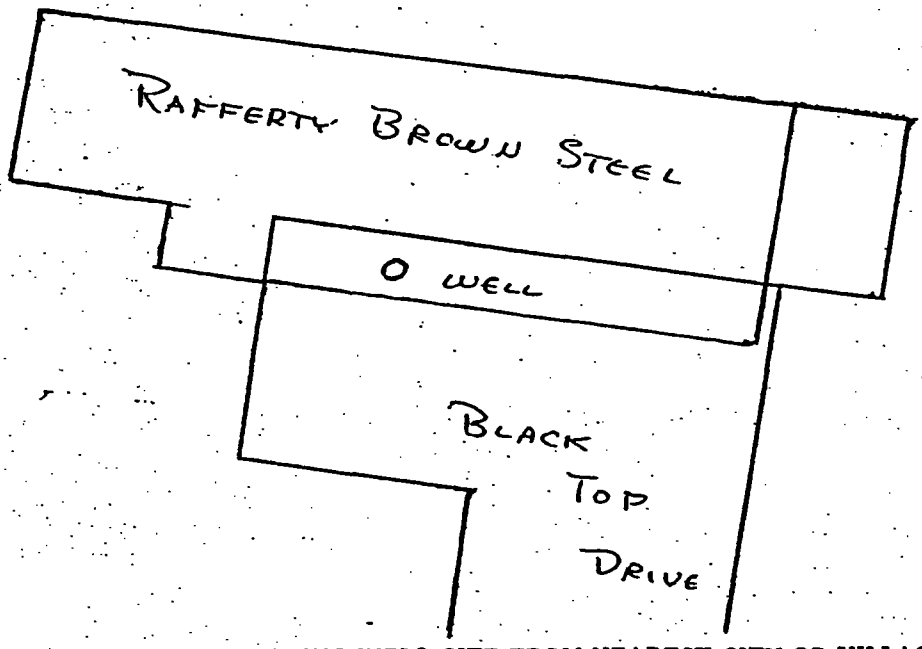


DIAGRAM SHOWING LOCATION OF WELL ON PREMISES:



ROUTE DIRECTIONS FOR REACHING WELL SITE FROM NEAREST CITY OR VILLAGE CENTER:

Town of WATERBURY
CONNECTICUT

No 107

Date 1/4/66

WELL DRILLER'S PERMIT

Fee $4.00

I, Thomas E. Lovell, of the firm of Premco Drilling Co. Inc.
(address) Box 302, Canton, Connecticut
hereby state that I (we) am (are) a well driller duly and currently registered with the State of Connecticut Water Resources Commission and do make application herewith for a Well Driller's Permit in accordance with the provisions of Public Act 187 of the 1963 Session of the Connecticut Legislature, for a well to be drilled on the property of:

Name of Property Owner: Mr. Nelson P. Hart (Raferty Brown Steel Company)

Address of Property Owner: Box 192, Waterbury, Connecticut

Address of Premises on which well is located: 420 Huntington Avenue, Waterbury

The approximate location of the well will be as shown on the reverse side of this permit.

The undersigned is aware that upon completion of this well the above data, together with a well log of information required under (c) and (d) of Public Act 187 of the 1963 Session must be sent to: Water Resources Commission, 223 State Office Building, Hartford, Connecticut on the form entitled "Well Completion Report" which has been supplied to registered drillers.

Thomas E. Lovell
Applicant

This permit is issued for a well located as shown to the above named well driller in accordance with the Provisions of Public Act 187 of the 1963 Session of the Connecticut Legislature this 4th. day of January, 196 6

James C. Stevens
Health Inspector

John J. Stanley
Building Official

BUILDING INSPECTOR'S OFFICE

DATE December 29, 1965

WELL DRILLER'S PERMIT

I, Thomas E. Lovell, of the firm of Premco Drilling, Co., Inc.

(address) Box 302, Canton, Connecticut

hereby state that I (we) am (are) a well driller duly and currently registered with the State of Connecticut Water Resources Commission and do make application herewith for a Well Driller's Permit in accordance with the provisions of PUBLIC ACT 187 of the 1963 Session of the Connecticut Legislature, for a well to be drilled on the property of:

NAME OF PROPERTY OWNER: Mr. Nelson P. Hart
Raferty Brown Steel Company

ADDRESS OF PROPERTY OWNER: Box 192, Waterbury, Connecticut

ADDRESS OF PREMISES ON WHICH WELL IS LOCATED: 420 Huntington Avenue
Waterbury, Connecticut

The undersigned is aware that upon completion of this well the above data, together with a well log of information required under (c) and (d) of Public Act 187 of the 1963 Session must be sent to: Water Resources Commission, 223 State Office Building, Hartford, Connecticut on the form entitled "Well Completion Report" which has been supplied to registered drillers.

T. E. Lovell
APPLICANT

This permit, Number 107, is issued for a well located as shown to the above named driller in accordance with the provisions of Public Act 187 of the 1963 Session of the Connecticut Legislature this 4th. day of January, 1966.

John J. Hartley
BUILDING OFFICIAL

cc: Town Health Director
Water Resources Commission

LOCATION OF WELL: TOWN OF Waterbury

SKETCH SHOWING LOCATION OF PREMISES IN TOWN:
(Show distance and direction from road intersection or other landmark.)

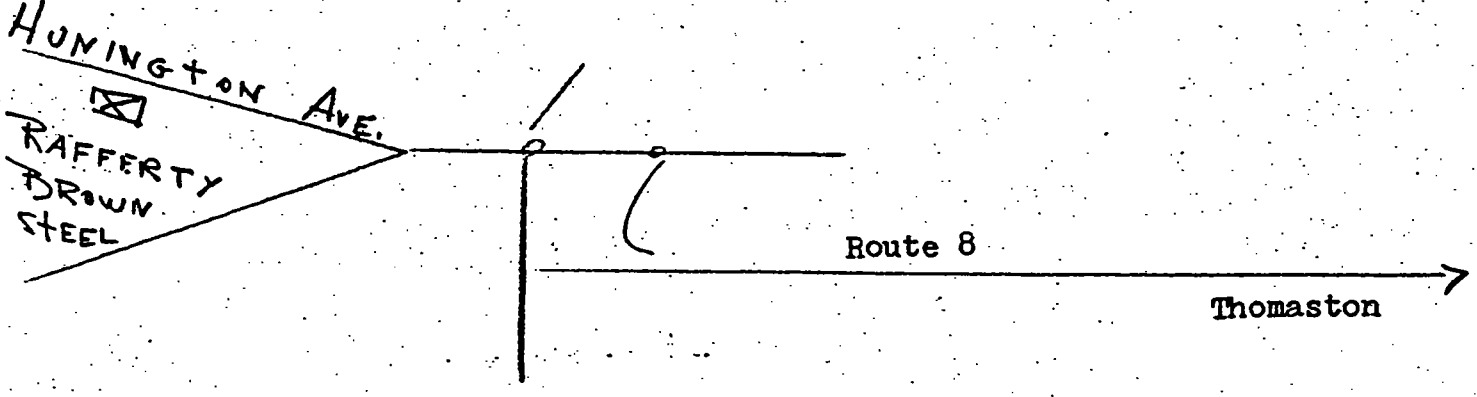
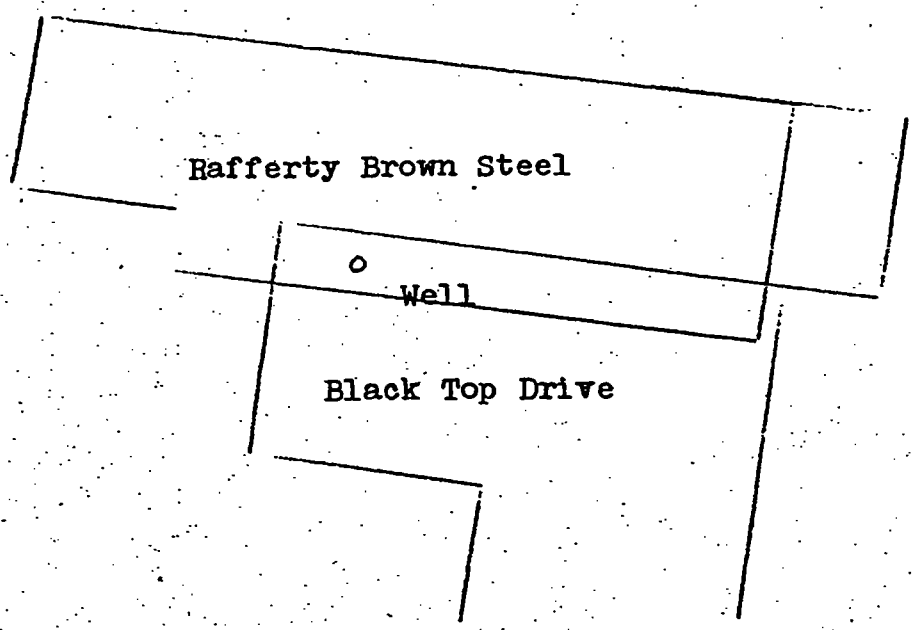


DIAGRAM SHOWING LOCATION OF WELL ON PREMISES:



ROUTE DIRECTIONS FOR REACHING WELL SITE FROM NEAREST CITY OR VILLAGE CENTER:

STATE OF CONNECTICUT
DEPARTMENT OF CONSUMER PROTECTION
REAL ESTATE & PROFESSIONAL TRADES DIVISION

WELL DRILLING COMPLETION REPORT

165 Capitol Avenue, Hartford, Connecticut 06106

OWNER	NAME	ADDRESS
LOCATION OF WELL	(No. & Street) East Auror St. (US Prolam)	(Town) Waterbury
PROPOSED USE OF WELL	☐ DOMESTIC ☐ BUSINESS ESTABLISHMENT ☐ FARM ☐ TEST WELL ☐ PUBLIC SUPPLY ☐ INDUSTRIAL ☐ AIR CONDITIONING ☒ OTHER (Specify)	
DRILLING EQUIPMENT	☐ ROTARY ☐ COMPRESSED AIR PERCUSSION ☐ CABLE PERCUSSION ☐ OTHER (Specify)	
CASING DETAILS	LENGTH (feet) / DIAMETER (inches) / WEIGHT PER FOOT / ☐ THREADED ☐ WELDED / DRIVE SHOE ☐ YES ☐ NO / WAS CASING GROUTED? ☐ YES ☐ NO	
YIELD TEST	☐ BAILED ☐ PUMPED ☐ COMPRESSED AIR / HOURS / YIELD (GPM)	
WATER LEVEL	MEASURE FROM LAND SURFACE - STATIC (Specify feet) / DURING YIELD TEST (feet) / Depth of Completed Well in feet	
SCREEN DETAILS	MAKE / LENGTH OPEN TO AQUIFER (feet)	
	SLOT SIZE / DIAMETER (inches) / IF GRAVEL PACKED: / Diameter of well including gravel pack (inches) / GRAVEL SIZE (inches) / FROM (feet) / TO (feet)	

DEPTH FROM LAND TO SURFACE FEET TO FEET	FORMATION DESCRIPTION
ee attached Soil Sampling Log.	

Sketch exact location of well with distances, to at least two permanent landmarks

If yield was tested at different depths during drilling, list below

FEET	GALLONS PER MINUTE

WELL COMPLETED	PERMIT NO.	REGISTRATION NO.	DATE OF REPORT	WELL DRILLER'S signature
98	WCR-130	00086	10/1/98	

DISTRIBUTION: DEPARTMENT OF CONSUMER PROTECTION, DEPARTMENT OF ENVIRONMENTAL PROTECTION, PROPERTY OWNER, WELL DRILLING CONTRACTOR & LOCAL DIRECTOR OF HEALTH.

Soil Sampling Log

Date Started 9-24-98

Date Finish 9-24-98

Weight Of Hammer [X] 140 [ ] 300

Hammer Fall [X] 30" [ ] 24"

Ground Water Observations

Date	Time	Depth

Sampler O.D. 1 5/8" I.D. 1 3/8"

Type Of Rig Truck Mounted Rig: CME-75

GLACIER DRILLING
78 Golden St.
Meriden, CT 06450
Phone/Fax 203-235-1944

HRP ASSOCIATES, INC.
167 New Britain Ave.
Plainville, CT 06062

Sheet 1 Of 2

Proj. No. ETH0015.RA

Location US Prolam - East Aurora St.

Line & STA Waterbury, CT

Offset

Ground Elevation

Hole No. VEW - 1

Type	Casing	Sampler	Core Barrel
	HW	SS	
Size I.D.	6 1/4"	1 3/8"	

Dept. Below Surface	Sample No. Depths Elev. Ft.	Type Of Sample	Blows Per 6" On Sample From	To 6-12	To 12-18	Density Or Consist Moisture	Profile Change Depth Elev.	Field Identification Of Soils Remarks	Sample No.	Sample Pen	Sample Rec
								Auger to 5.0'.			
	5-7	SS	3	2	1	Loose		Brown coarse - medium sand, trace fine - medium cobble.	1	2.0'	0.1'
					3	Dry		PID B.G. 1.9 ppm;			
								25.2 ppm			
	7-9	SS	2	7	1	Loose		Brown very fine - fine sand, little dark brown coarse - medium sand,	2	2.0'	0.6'
					4	Dry		trace fine - medium cobble, little coarse cobble.			
								PID B.G. 2.1 ppm			
								73.0 ppm			
	9-11	SS	62/2"			Dense		Fractured rock, little dark brown coarse - medium sand, trace fine -	3	2.0'	0.3'
						Dry		medium cobble.			
								PID B.G. 2.8 ppm			
								23.2 ppm			
	11-13	SS	5	8	17	Dense		Tan medium - coarse sand and coarse cobble, little fine - medium	4	2.0'	1.2'
					15	Dry		cobble, trace fractured rock, trace dark brown coarse - medium sand.			
								PID B.G. 2.0 ppm			
								28 ppm			
	13-15	SS	55	22	23	Dense		Fractured rock and tan medium - coarse sand, trace medium - fine	5	2.0'	1.2'
					30	Dry		cobble, trace brown fine - medium sand.			
								PID B.G. 3.1 ppm			
								28.9 ppm			
	15-17	SS	20	23	50/3"	Dense		Fractured rock and tan medium - coarse sand, trace medium - fine	6	2.0'	0.3'
						Dry		cobble, trace brown fine - medium sand.			
								PID B.G. 0.9 ppm			
								10.5 ppm			
	17-19	SS	6	12	10	Med. Comp.		Light brown very fine - fine sand, some fractured rock, little dark	7	2.0'	0.9'
					14	Dry		brown coarse - medium sand, trace medium - fine cobble.			
								PID B.G. 0.7 ppm			
								9.2 ppm			
	19-21	SS	4	8	9	Med. Comp.		Light brown very fine sand, trace coarse cobble.	8	2.0'	1.6"
					10	Dry		PID B.G. 1.0 ppm			
								11.8 ppm			
	21-23	SS	9	8	8	Med. Comp.		Same as above.	9	2.0'	1.6'
					9	Dry		PID B.G. 0.9 ppm			
								19.9 ppm			
	23-25	SS	3	7	8	Med. Comp.		Light brown very fine sand and grey - brown very fine sand, trace	10	2.0'	2.0'
					11	Dry		medium cobble.			
								PID B.G. 0.9 ppm			
								16.3 ppm			
	25 - 27	SS	4	7	10	Med. Comp.		Light brown very fine sand, little brown very fine sand.	11	2.0'	1.8'
					12	Dry		PID B.G. 0.9 ppm			
								9.1 ppm			
	27 - 29	SS	10	10	11	Med. Comp.		Same as above.	12	2.0'	1.8'
					12	Wet @ 28'.		PID B.G. 0.7 ppm			
								9.9 ppm			

Driller: Terry Bell

Assistant: Oliver Privott

Soils Engineer: KPH

Proportions used trace= 0.10%, little = 10.20%, some = 20.35%, and = 35.50%

Sample Type:
C = Cored W = Washed
SS = Split Spoon
UP = Undisturbed Piston

Cohesionless Density
0-10 Loose
10-30 Med. Comp.
30-50 Dense

Total Footage:
Earth Boring 29.0' Ft.
Rock Coring Ft.

Soil Sampling Log

Date Started 9-24-98

Date Finish 9-24-98

Weight Of Hammer [X] 140 [ ] 300

Hammer Fall [X] 30" [ ] 24"

Ground Water Observations

Date	Time	Depth

Sampler O.D. 1 5/8" I.D. 1 3/8"

Type Of Rig Truck Mounted Rig: CME-75

GLACIER DRILLING
78 Golden St.
Meriden, CT 06450
Phone/Fax 203-235-1944

HRP ASSOCIATES, INC.
167 New Britain Ave.
Plainville, CT 06062

Sheet 2 Of

Proj. No. ETH0015.RA

Location US Prolam - East Aurora St.

Line & STA Waterbury, CT

Offset

Ground Elevation

Hole No. VEW - 1

Type	Casing	Sampler	Core Barrel
	HW	SS	
Size I.D.	6 1/4"	1 3/8"	

Dept. Below Surface	Sample No. Depths Elev. Ft.	Type Of Sample	Blows Per 6" On Sample From 0-6	To 6-12	To 12-18	Density Or Consist Moisture	Profile Change Depth Elev.	Field Identification Of Soils Remarks	Sample No.	Pen	Rec
								Set a 4" PVC well at 29.0', using:			
								1 Threaded Plug			
								25' Screen (29.0 - 4.0')			
								3.5' Riser (4.0' = 0.5')			
								19 Sand, 50 lb bags (to 32")			
								1 bag Bentonite Chips (to 20")			
								1 Expendable Gripper			
								1 Curb Box, 8"			
								3 Concrete Mix			

Driller: Terry Bell

Assistant: Oliver Privot

Soils Engineer: KPH

Proportions used trace= 0.10%, little = 10.20%, some = 20.35%, and = 35.50%

Sample Type:
C = Cored W = Washed
SS = Split Spoon
UP = Undisturbed Piston

Cohesionless Density
0-10 Loose
10-30 Med. Comp.
30-50 Dense

Total Footage:
Earth Boring 29.0' Ft.
Rock Coring Ft.

State of Connecticut
WATER RESOURCES COMMISSION
223 State Office Building
Hartford, Connecticut

WELL COMPLETION REPORT

This report must be completed and submitted to State Water Resources Commission no later than 30 days after completion of well.

DO NOT FILL IN
State Well No. _____
Other No. WRC-Wb 7 (1565)

OWNER LEA MANUFACTURING COMPANY (Name) 237 East Aurora St. (Street Address) WATERBURY, (City and Town)

WELL DRILLER THE STEPHEN B. CHURCH COMPANY (Name) - Box 67, (Street Address) SEYMOUR, (City and Town)

PROPOSED USE OR USES (Check):
☐ Domestic ☐ Farm ☐ Irrigation ☐ Business Establishment ☐ Municipal ☒ Industrial ☐ Test Well

CASING DETAILS	YIELD TEST	WATER LEVEL	SCREEN DETAILS
Length: 34 Feet	☐ Bailed or ☒ Pumped or ☐ Compressed Air; 24 Hours	(measure from land surface) Static: 13' 6" Feet	Make: EVERDUR
Diameter: 8 Inches	G.P.M.	During Yield Test: 20' 6" Feet	Length 10 Ft. Slot Size
Kind: STEEL	Yield: 200 G.P.M	DRILLING EQUIPMENT ☒ Cable Tool ☐ Other (Specify) ☐ Rotary	Diameter: 8 In. .025

TOTAL DEPTH OF WELL 42 FEET

WELL LOG

Depth From Ground Surface	Give description of formations penetrated, such as: peat, silt, sand, gravel, clay, hardpan, shale, sandstone, granite, etc. Include size of gravel (diameter) and sand (fine, medium, coarse), color of material, structure (loose, packed, cemented, soft, hard). For example: 0 ft. to 27 ft. fine, packed, yellow sand; 27 ft. to 134 ft. gray granite.
0 FT. to 42 FT.	Hardpan Gravel
FT. to FT.	
FT. to FT.	
FT. to FT.	
FT. to FT.	
FT. to FT.	
FT .to FT.	
FT. to FT.	

YIELD TEST DATA IN G.P.M.
If Yield Was Tested At Different Depths During Drilling, List Below

FT.	G.P.M.
FT.	G.P.M.
FT.	G.P.M.
FT.	G.P.M.

Date Well Was Completed: October 1, 1967
Date of Report November 1, 1967
Town Permit Number: 111
Well Driller THE STEPHEN B. CHURCH COMPANY (Signature) Wallace Duncan

LOCATION OF WELL: TOWN OF WATERBURY

SKETCH SHOWING LOCATION OF PREMISES IN TOWN:-

(Show distance and direction from road intersection or other landmark.)

INDICATE NORTH

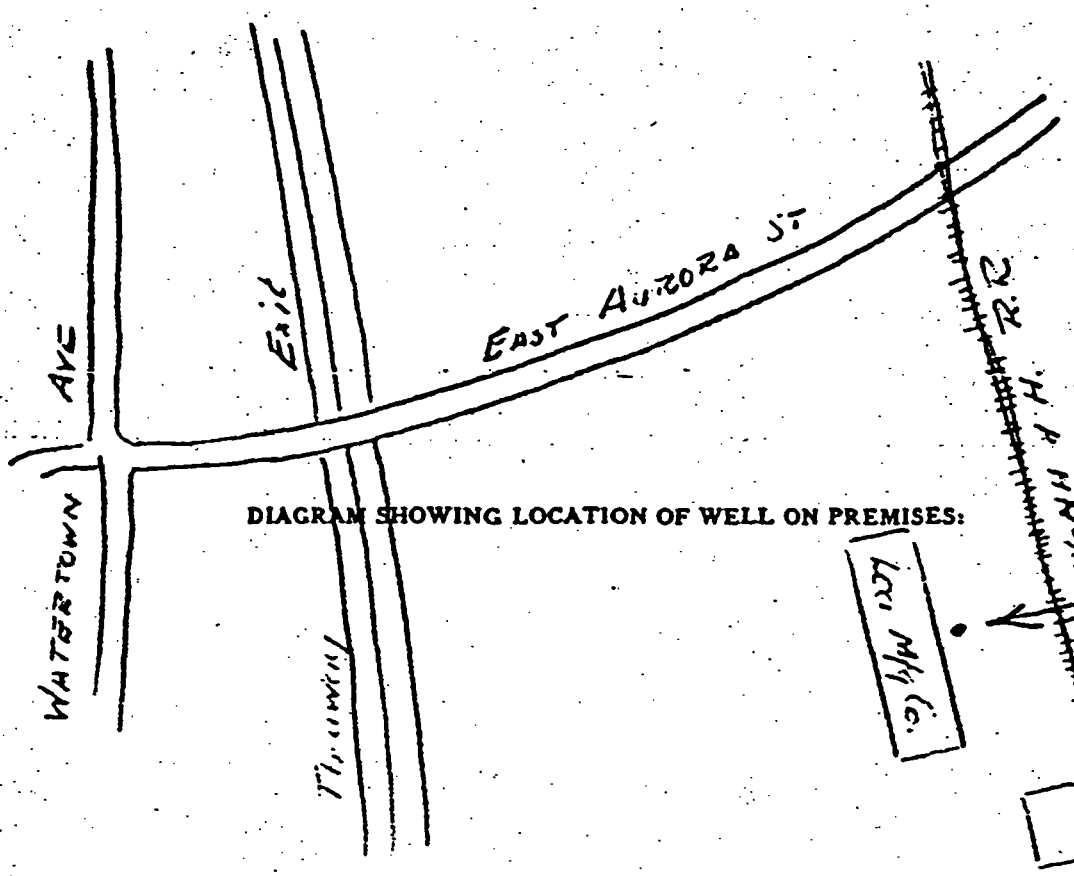


DIAGRAM SHOWING LOCATION OF WELL ON PREMISES:

ROUTE DIRECTIONS FOR REACHING WELL SITE FROM NEAREST CITY OR VILLAGE CENTER:

TOWN of WATERBURY

DATE ~~Sept. 19, 1967~~

WELL DRILLER'S PERMIT

I, WILLIAM S. DUNCAN of the Firm of ~~THE STEPHEN B.~~ CHURCH COMPANY (Address) ~~P.O. Box 67, Seymour, Conn.~~

hereby state that WE are well drillers duly and currently registered with the State of Connecticut Water Resources Commission and do make application herewith for a Well Driller's Permit in accordance with the provisions of Public Act 187 of the 1963 session of the Connecticut Legislature, for a well to be drilled on the property of:

Name of Property Owner: ~~USA MANUFACTURING COMPANY~~

Address of Property Owner: 237 East Aurora St. Waterbury,

Address of Premises on which well is located: Same

Approximate Location of the Well will be as shown on the reverse side of this Permit.

The undersigned is aware that upon completion of this well the above data, together with a well log of information required under (c) and (d) of Public Act 187 of the 1963 session must be sent to: Water Resources Commission, 223 State Office Building, Hartford, Connecticut, on the form entitled "Well Completion Report" which has been supplied to registered drillers.

THE STEPHEN B. CHURCH COMPANY

William S. Duncan

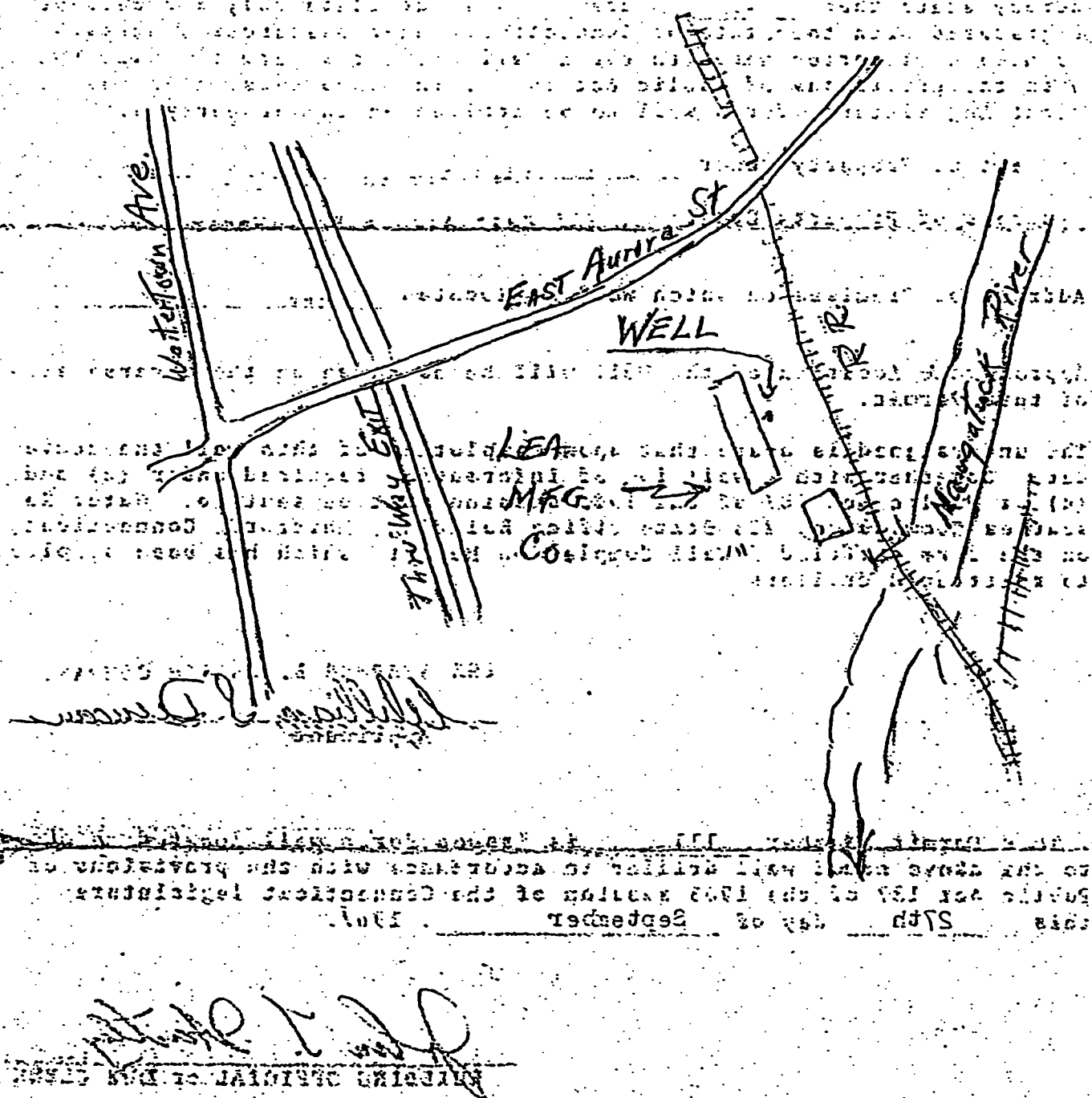
Applicant

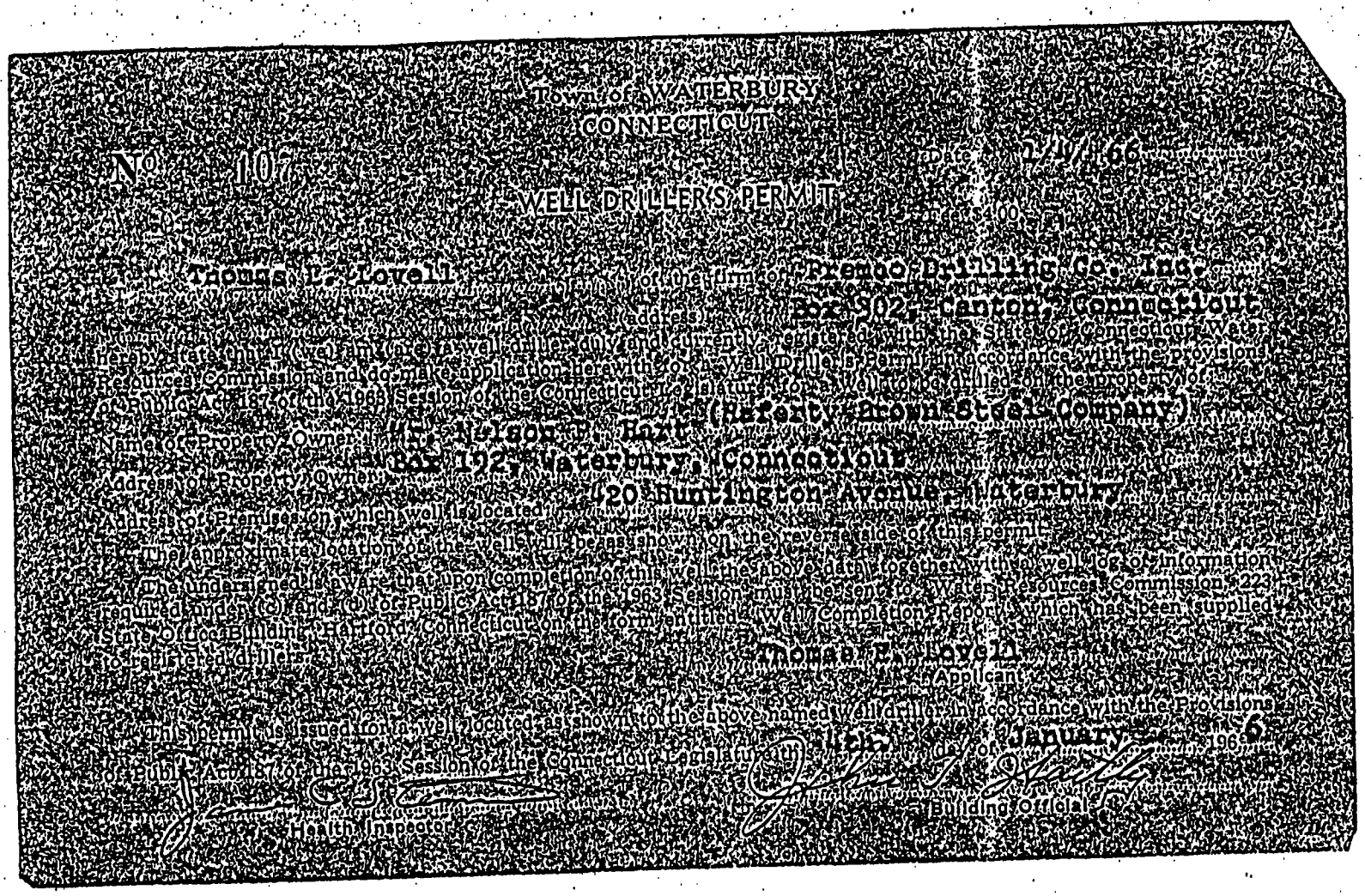
This Permit, Number 111, is issued for a well located as shown to the above named well driller in accordance with the provisions of Public Act 187 of the 1963 session of the Connecticut legislature this 27th day of September, 1967.

John T. Huntley

BUILDING OFFICIAL or TOWN CLERK

CITY OF WATERBURY





Town of WATERBURY
CONNECTICUT

No. 107 Date 1/4/66

WELL DRILLER'S PERMIT

Fee $4.00

Thomas E. Lovell of the firm of Premco Drilling Co. Inc.
(address) Box 302, Canton, Connecticut

hereby state that I (we) am (are) a well driller duly and currently registered with the State of Connecticut Water Resources Commission and do make application herewith for a Well Driller's Permit in accordance with the provisions of Public Act 187 of the 1963 Session of the Connecticut Legislature for a well to be drilled on the property of

Name of Property Owner: Mr. Nelson P. Hart (Haferty Brown Steel Company)

Address of Property Owner: Box 192, Waterbury, Connecticut

Address of Premises on which well is located: 420 Huntington Avenue, Waterbury

The approximate location of the well will be as shown on the reverse side of this permit.

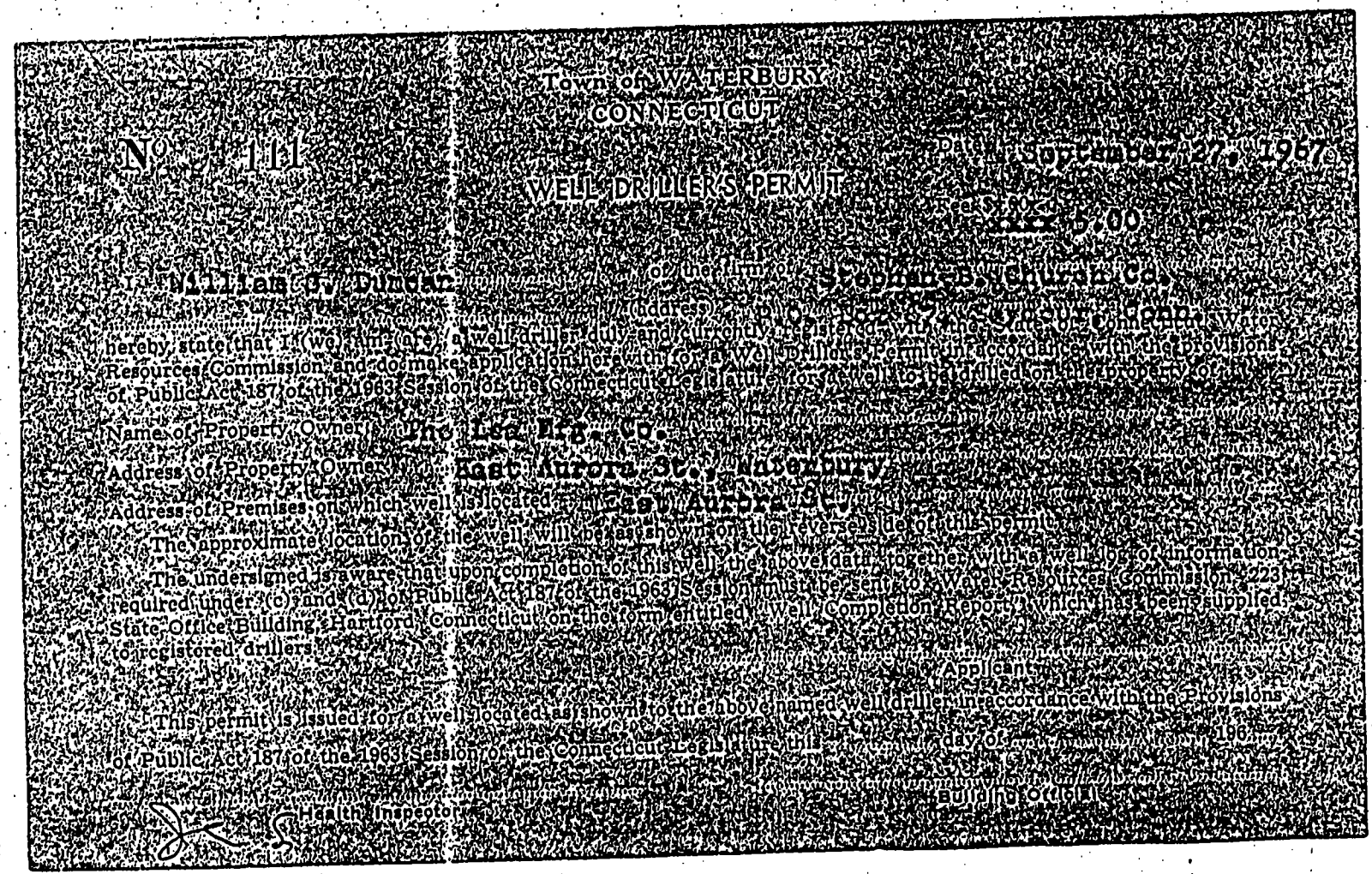
The undersigned is aware that upon completion of this well the above data together with a well log of information required under (c) and (d) of Public Act 187 of the 1963 Session must be sent to Water Resources Commission, 223 State Office Building, Hartford, Connecticut on the form entitled "Well Completion Report" which has been supplied to registered drillers.

Thomas E. Lovell
Applicant

This permit is issued for a well located as shown to the above named well driller in accordance with the Provisions of Public Act 187 of the 1963 Session of the Connecticut Legislature this 4th day of January 1966

Health Inspector

Building Official



Town of WATERBURY
CONNECTICUT

No. 111

Date September 27, 1967

WELL DRILLER'S PERMIT

Fee $ 5.00

I, William G. Duncan of the firm of Stephen B. Church Co.

(address) P.O. Box 87, Seymour, Conn.

hereby state that I (we) am (are) a well driller duly and currently registered with the State of Connecticut Water Resources Commission and do make application herewith for a Well Driller's Permit in accordance with the provisions of Public Act 187 of the 1963 Session of the Connecticut Legislature for a well to be drilled on the property of

Name of Property Owner The Lea Mfg. Co.

Address of Property Owner East Aurora St., Waterbury

Address of Premises on which well is located East Aurora St.

The approximate location of the well will be as shown on the reverse side of this permit.

The undersigned is aware that upon completion of this well the above data, together with a well log of information required under (c) and (d) of Public Act 187 of the 1963 Session must be sent to Water Resources Commission, 223 State Office Building, Hartford, Connecticut on the form entitled "Well Completion Report," which has been supplied to registered drillers.

Applicant

This permit is issued for a well located as shown to the above named well driller in accordance with the Provisions of Public Act 187 of the 1963 Session of the Connecticut Legislature this day of 196

Building Official

Health Inspector

WELL DRILLING BOARD
WDB-4 11-69

STATE OF CONNECTICUT
WELL DRILLING PERMIT
STATE OFFICE BUILDING, HARTFORD, CONNECTICUT 06115

PERMIT NUMBER
47525-

WATERBURY | EAST AURORA STREET

LOCATION OF WELL (Town)	(Street)	(Lot Number)	DATE
WATERBURY ROLLING MILLS, INC.			7/18/78

OWNER OF WELL
☐ INDIVIDUAL ☐ BUILDER ☐ OTHER (Specify)

OWNER'S ADDRESS
East Aurora St., Waterbury, Conn. 06720

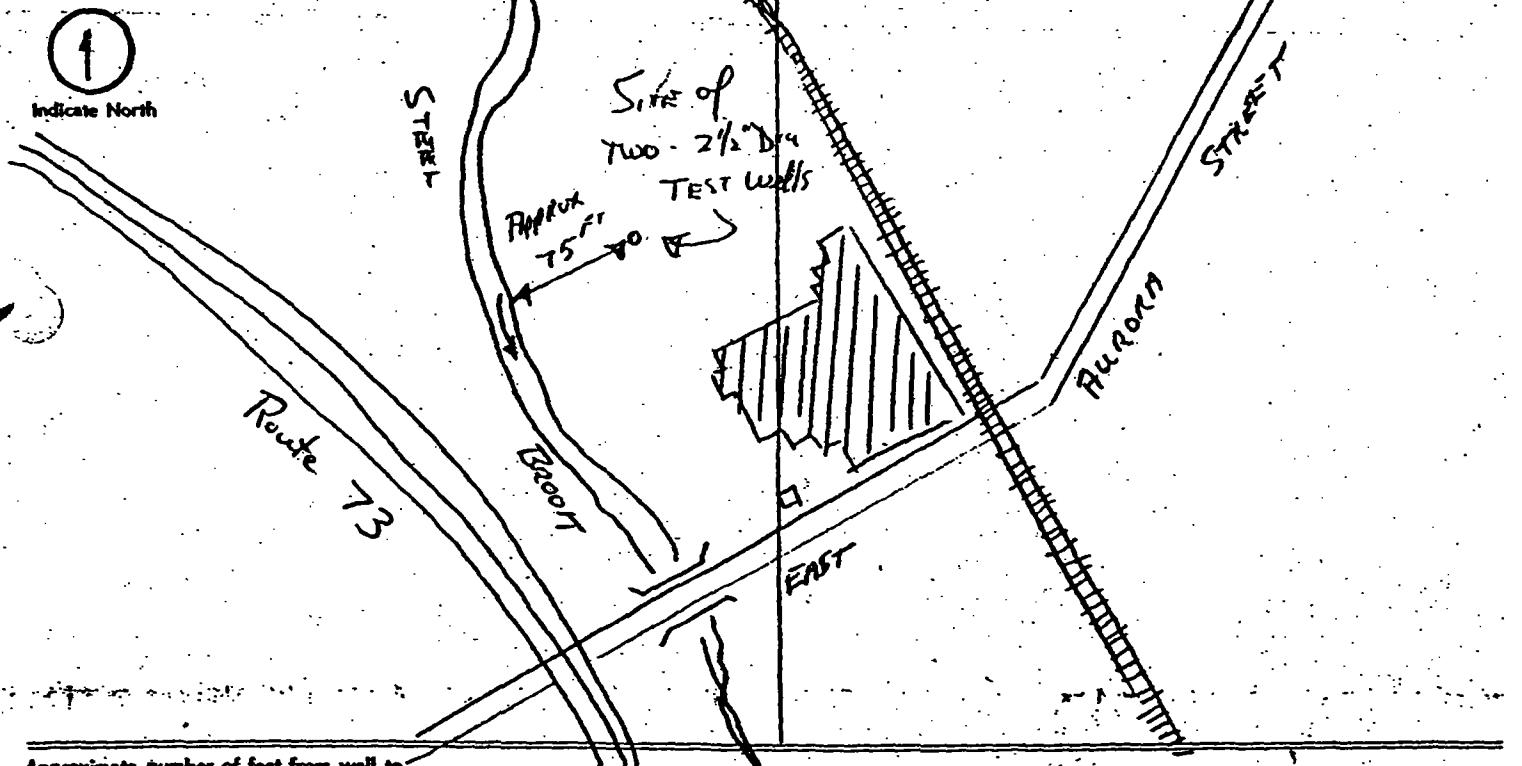
PROPOSED USE OF WELL
☐ DOMESTIC ☐ BUSINESS ESTABLISHMENT ☐ FARM 2½" ☒ TEST WELLS
☐ PUBLIC SUPPLY ☒ INDUSTRIAL ☐ AIR CONDITIONING ☐ OTHER (Specify)

Est. No. of People being served.
NONE

SKETCH OF WELL LOCATION

Locate well with respect to at least two roads, showing distance from intersection and front of lot

Location of lot to at least two roads | Well location on lot and to house (if present)



Approximate number of feet from well to nearest source of possible contamination:

NOT FOR DRINKING PURPOSES

The undersigned is aware that upon completion of the well, a "Well Completion Report" containing construction details and information required under Section 25-131 of the 1969 Supplement to the General Statutes must be sent to the owner, the Board and the Water Resources Commission on the form provided by the Board. This permit is not valid until all information is filled in and it has been counter-signed by the Director of Health or his agent.

APPLICANT (Signature)	APPLICANT'S ADDRESS	REGISTRATION NO.
THE STEPHEN B. CHURCH CO.	P.O. Box 67, Seymour, Conn. 06483	23

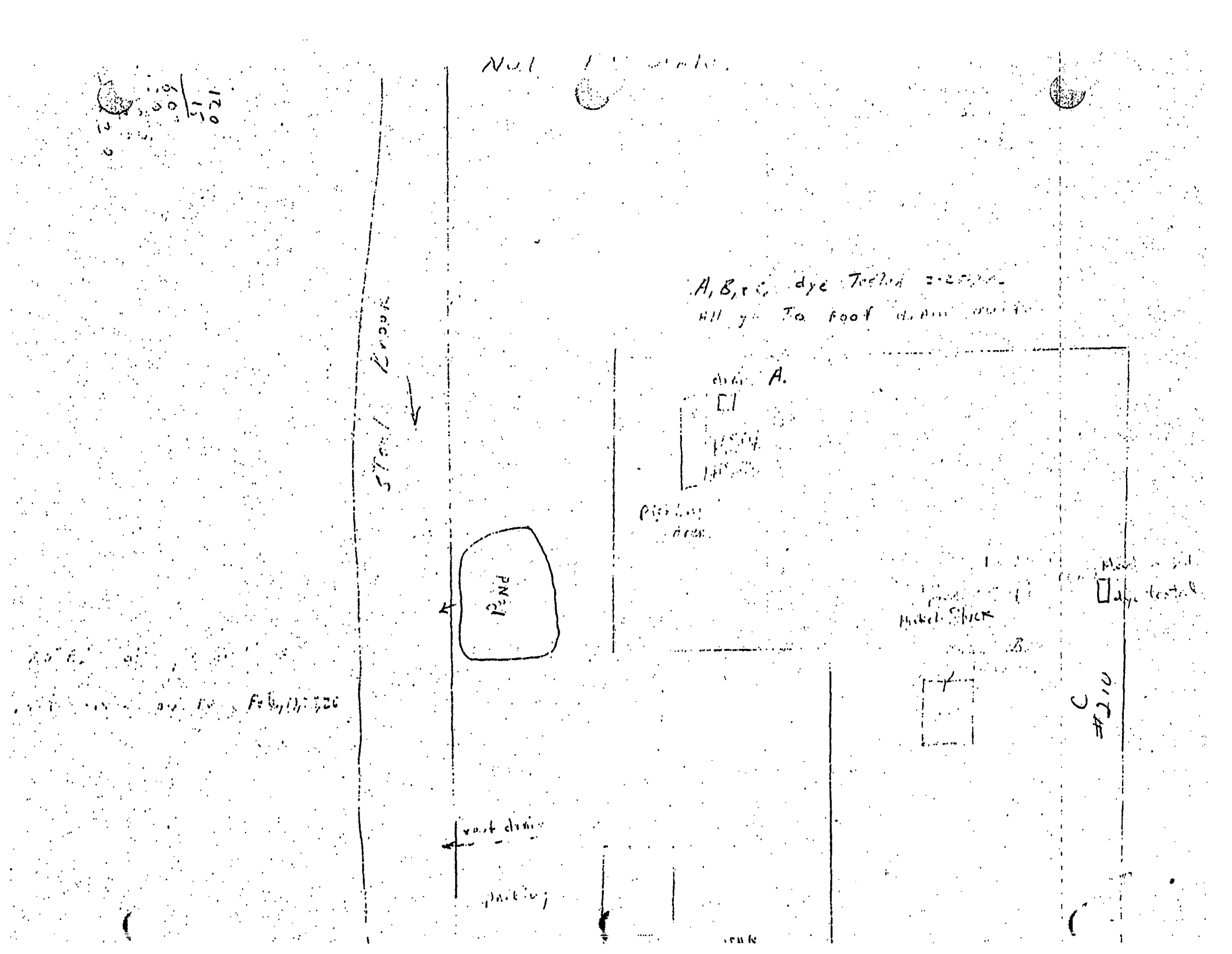
☒ APPROVED ☐ REJECTED

BY (Town Health Officer or Agent) James C. Stem

DATE 8-1-78

REMARKS

DIRECTOR OF HEALTH


A, B, & C dye Tested
All go To roof drain
drain A.
Pond
Nickel Stack
dye tested
C
#210
roof drain
parking

WELL COMPLETION REPORT

WDB-5 12-69 REV. 9-71

STATE OF CONNECTICUT
WELL DRILLING BOARD
State Office Building
HARTFORD, CONNECTICUT 06115

Do NOT fill in
STATE WELL NO.
OTHER NO.

OWNER
NAME: WATERBURY ROLLING MILLS
ADDRESS: East Aurora St., Waterbury 06720

LOCATION OF WELL (No. & Street) (Town) (Lot Number)
East Aurora St., Waterbury, 06720

PROPOSED USE OF WELL
☐ DOMESTIC ☐ BUSINESS ESTABLISHMENT ☐ FARM 2½ ☒ TEST WELLS
☐ PUBLIC SUPPLY ☒ INDUSTRIAL ☐ AIR CONDITIONING ☐ OTHER (Specify)

DRILLING EQUIPMENT
☐ ROTARY ☐ COMPRESSED AIR PERCUSSION ☒ CABLE PERCUSSION ☐ OTHER (Specify)

CASING DETAILS

LENGTH (feet)	DIAMETER (inches)	WEIGHT PER FOOT		DRIVE SHOE	WAS CASING GROUTED?
42'	24"	95#	☐ THREADED ☒ WELDED	☒ YES ☐ NO	☒ YES ☐ NO
57'	16"	63#			

YIELD TEST

			HOURS	YIELD (G.P.M.)
☐ 62' BAILED	☒ 10" PUMPED	☐ 40.5# COMPRESSED AIR	24	140

WATER LEVEL

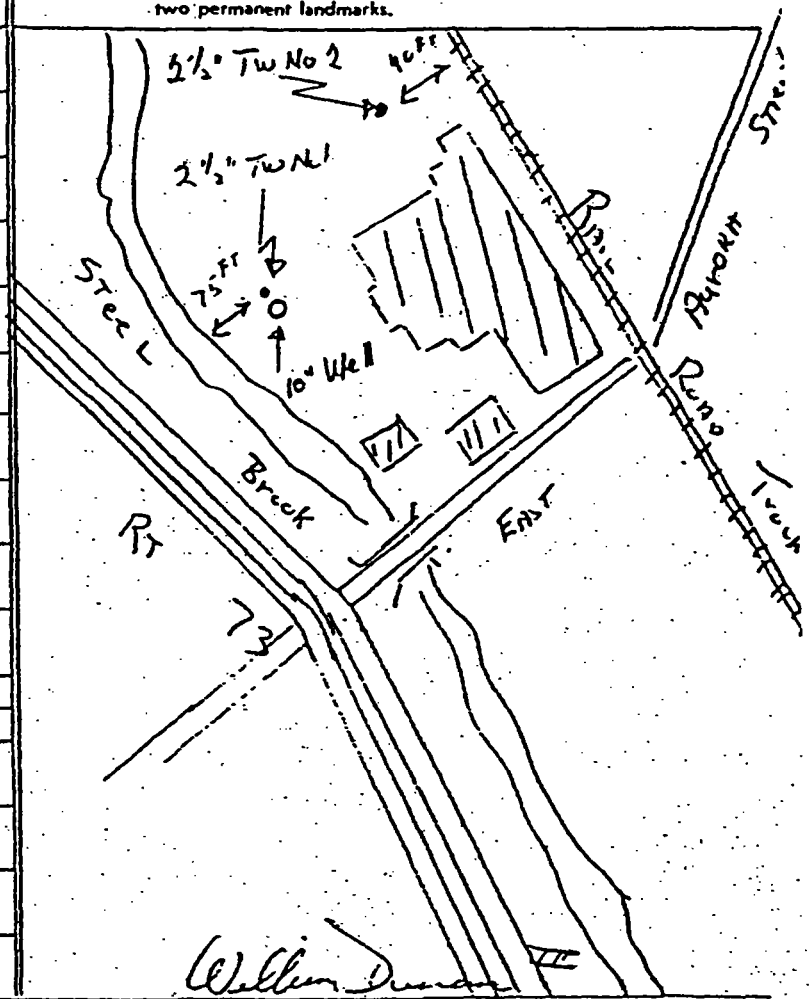
MEASURE FROM LAND SURFACE—STATIC (Specify feet)	DURING YIELD TEST (feet)	Depth of Completed Well in feet below Land surface:
8' 7"	58' 6"	76' 9"

SCREEN DETAILS

MAKE						LENGTH OPEN TO AQUIFER (feet)
JOHNSON						19' 9"
SLOT SIZE	**DIAMETER (inches)**	**IF GRAVEL PACKED:**	**Diameter of well including gravel pack (inches):**	**GRAVEL SIZE (inches)**	**FROM (feet)**	**TO (feet)**
20	10		16"	1/8"	76	20

DEPTH FROM LAND SURFACE FEET to FEET	FORMATION DESCRIPTION
	SEE ATTACHED SHEETS

Sketch exact location of well with distances, to at least two permanent landmarks.



If yield was tested at different depths during drilling, list below

FEET	GALLONS PER MINUTE

WELL COMPLETED	PERMIT NO.	REGISTRATION NO.	DATE OF REPORT	WELL DRILLER (Signature)
4/24/79	47525	23	5/31/79	THE STEPHEN B. CHURCH CO.

DEPT. OF ENVIRONMENTAL PROTECTION

THE STEPHEN B. CHURCH CO., SEYMOUR, CONN.

April 24, 1979

WATERBURY ROLLING MILLS
Waterbury, Ct.

16" x 10" Gravel Pack Well #1

Formation

0' - 9' - Coarse gravel

9' - 25' - fine sand w/silt & clay

25' - 30' - fine to medium sand, very dirty w/silt & clay

30' - 35' - medium to coarse sand, very dirty w/fines & clay

35' - 40' - medium to coarse sand w/some fines & clay & mica

40' - 45' - medium to coarse sand w/some gravel, very dirty w/fines & clay

45' - 50' - coarse sand w/some gravel vy. dirty w/fines & clay

50' - 55' - coarse sand & gravel, hvy. clay & mica

55' - 60' - coarse sand w/some gravel - hvy. fines & clay & mica

60' - 65' - coarse sand & gravel heavy clay packed tight

65' - 70' - coarse sand & gravel, hvy. clay & fines

70' - 73' - coarse sand & gravel, hvy. clay & fines

73' - 75' - gravel hardpan

75' - 76'9" - coarse sand & gravel

76'9" - refusal

Depth - 76' 9"

Pumped - 140 g.p.m. for 24 hours at a pumping level of 58' 6"

Casing - 42 ft. of 24" dia.
57 ft. of 16" dia.
62 ft. of 10" dia.

Screen - 16 ft. of 10" Telescope 20 slot

Gravel Pack - Cape May No. 0 Gravel

6/14-/15

BLACKBERRY [illegible] Mills

2½" Test Well #1

Location: West side of property, near Steele Brook

0'	9'	fill - took water 10'
9'	11'	coarse gravel & cobbles - [illegible] went dry
11'	15'	fine to medium sand, vy. dirty w/silt & clay took - water
15'	20'	fine to medium sand, vy.dirty w/silt & clay - took very little water heavy mica
20'	35'	fine sand w/silt & clay -took vy. little water
35'	45'	fine to medium sand vy.dirty w/silt & clay --took very little water
45'	54'	fine sand w/silt & clay - took no water 50'
54'	55'	medium to coarse sand, vy. dirty clay took little wa
55'	60'	medium to coarse sand, dirty w/fines & clay - pipe drove hard - took water fair
60'	65'	medium to coarse sand, dirty w/fines & heavy mica - took water good - pipe drove easier
65'	70'	medium to coarse sand w/some gravel dirty w/fines & [illegible] took water fair.
70'	75'	medium sand dirty w/fines & mica - took little wate
75'	79'5"	coarse sand & gravel, vy. dirty w/silt & clay - took very [illegible]

79'5" released

Pulled back to 79'

Set 2 screens - [illegible] to slot on top

Developed 1 screen at a time - [illegible] pumped 12 gpm.

both screens pumped 35 gpm - 5 min. 25 sec.

Static - 7' 11"

All samples heavy with mica

Materials left in:

66' 2-1/2" Pipe T.C.

2 1-1/4" Steel test screens - 30 & 40 slot

1 - 1 1/2" Couplings

1' 6" x 1-1/4" Pipe

2- 1 1/4" Couplings

1- 1 1/2" x 1-1/4" bushing

1 1 1/4" End Cap

1- 2 1/2" End cut

1- 2-1/2" Drive Shoe

[illegible]/10/7[illegible]

[illegible] PUBLIC [illegible]

25" Test Well #2

East side of property, near Railroad tracks

[illegible]' - 9'	Coarse gravel - loose pipe drove good
9' - 25'	fine sand w/silt & clay - took no water 15, 20', 25, heavy w/mica
25' - 30'	fine to medium sand, vy. dirty w/silt & clay - took no water packed tight
30' - 35'	medium to coarse sand vy. dirty w/fines & clay - took little water - pipe drove hard - hvy. mica
35' - 40'	medium to coarse sand w/some fines & clay & mica - took water good, pipe drove hard
40' - 45'	medium to coarse sand w/some gravel, very dirty w/fines & clay - took vy. little water heavy mica, pipe drove hard
45' - 50'	coarse sand w/some gravel vy. dirty w/fines & clay - took very little water, heavy mica, pipe drove hard
50' - 55'	coarse sand & gravel, heavy clay & mica - took little water pipe drove hard
55' - 60'	coarse sand w/some gravel hvy. fines & clay & mica took little water, pipe drove hard
60' - 65'	coarse sand & gravel heavy clay packed tight, pipe drove hard, heavy mica - took water good 66'
65' - 70'	coarse sand & gravel, hvy. clay & fines took little w[illegible] 71' pipe drove hard packed tight, heavy mica
70' - 73'	coarse sand & gravel, hvy. clay fines, pipe drove hard, heavy mica
73' 75'	gravel hardpan

static 14' 3

Set 2 screens 66' - 7[illegible] [illegible] slot [illegible] 40 slot [illegible] top

Developed 1 screen at a time - bottom screen made about 1[illegible] g.p.m.

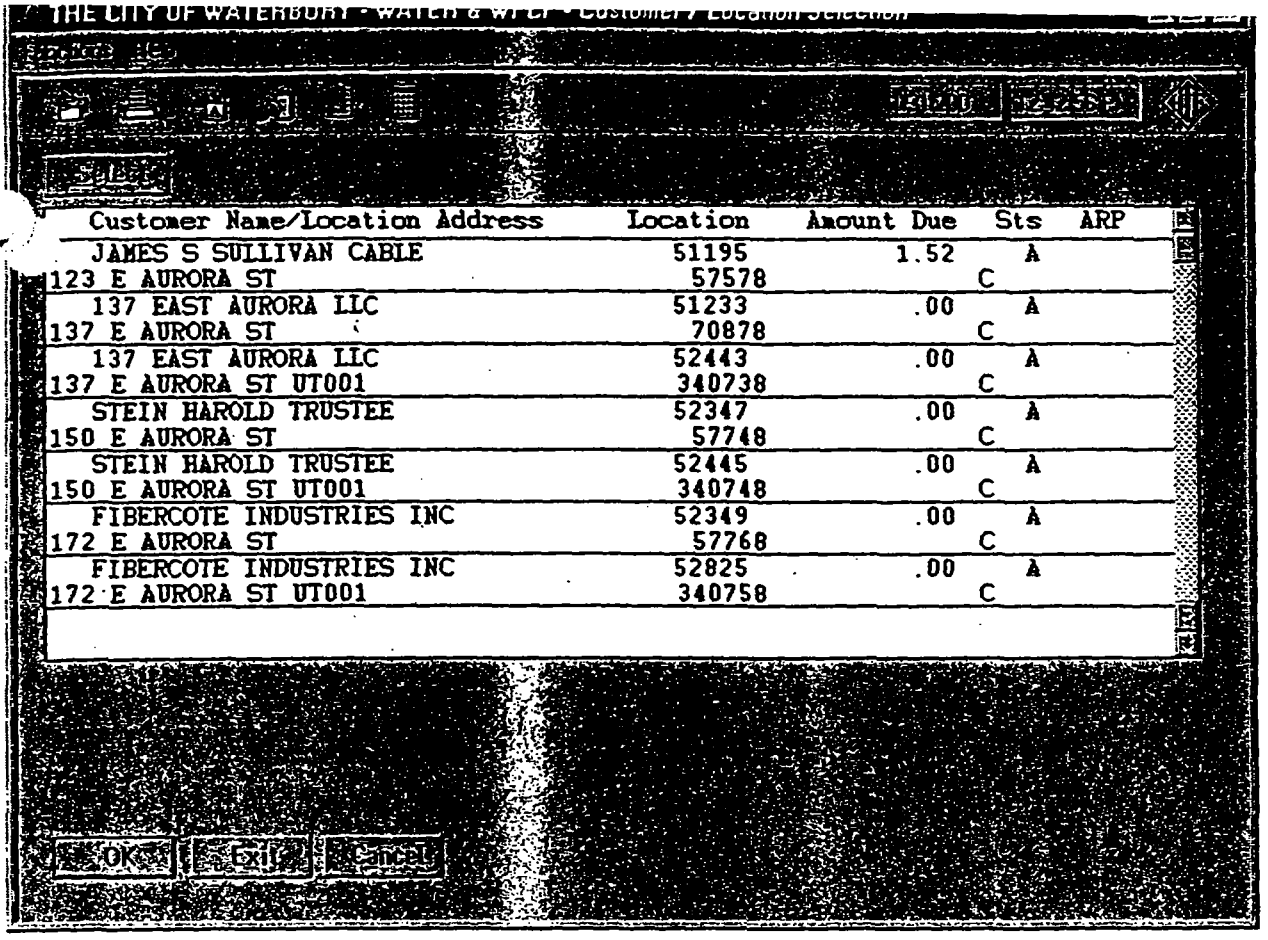
both screens pumped 25 g.p.m.

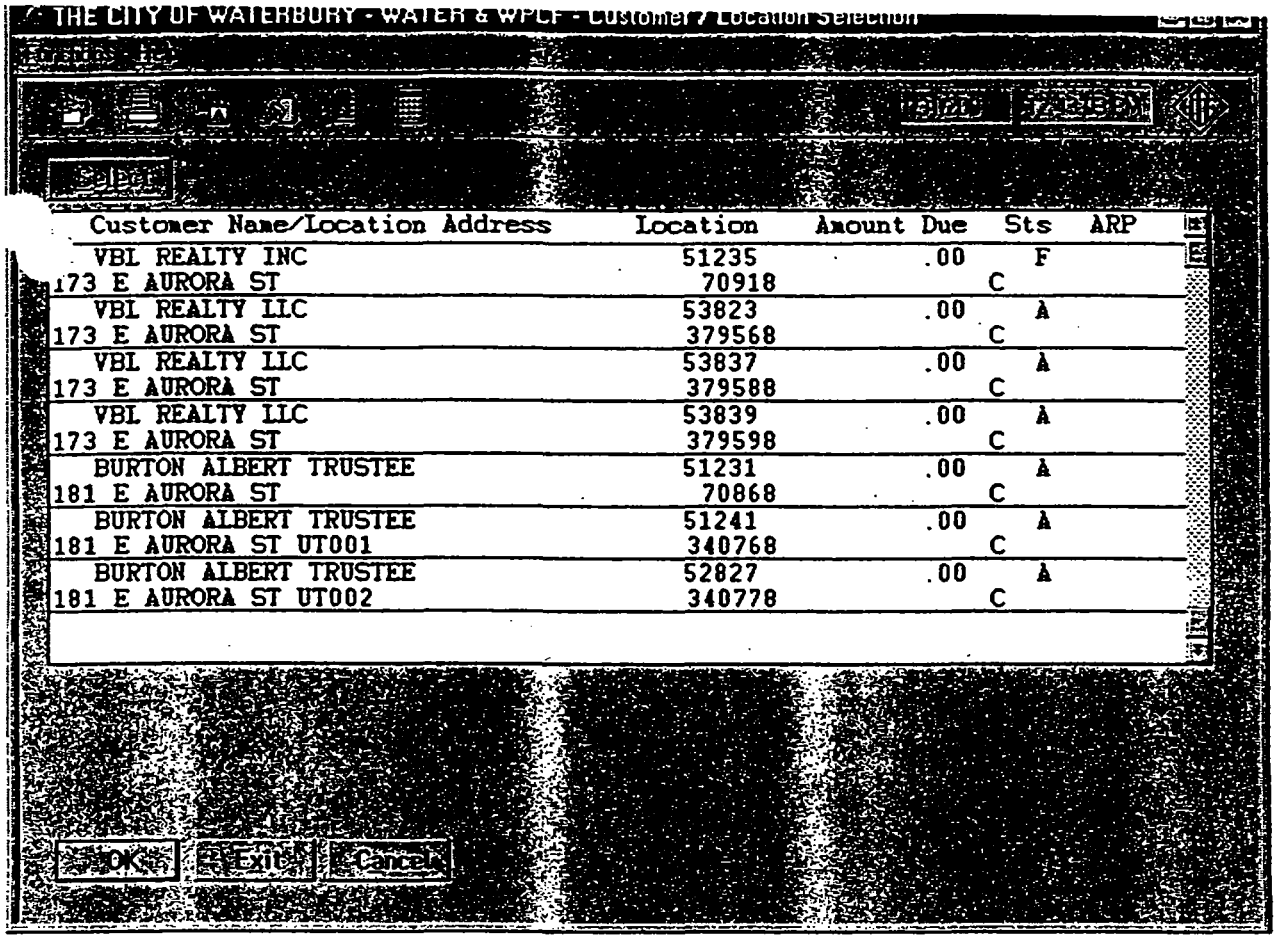
Materials left in

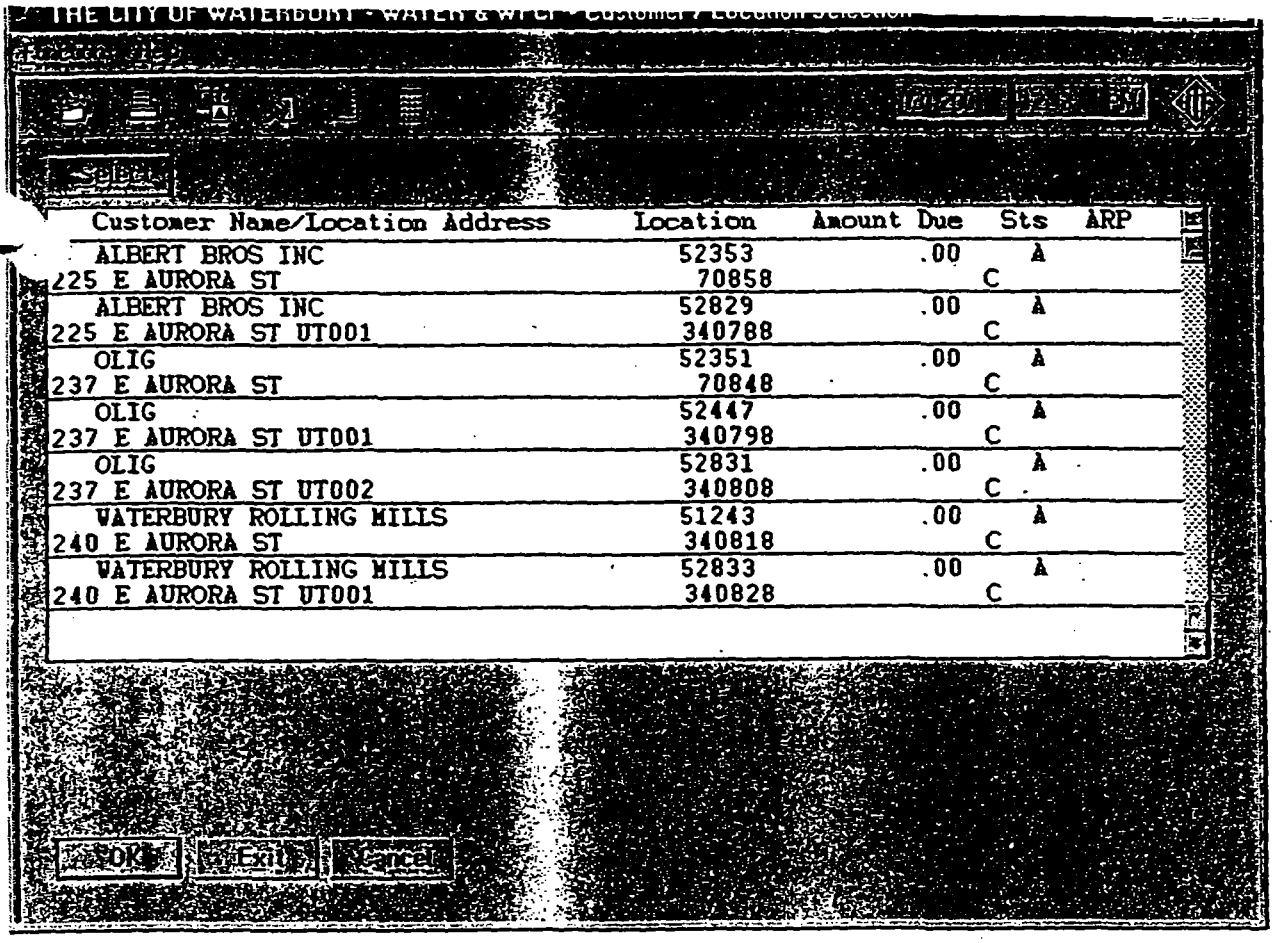
66'	2-1/2	Pipe [illegible]
2 -	1-1/4	Steel Test Screen - 4[illegible] slot
1 -	1-1/4	coupling
1	1-1/2 x 1-1/4	Bushing
1	1-1/4	End Cap
1 -	1-1/2	Coupling
1 -	2-1/2	End Cap
1 -	2-1/2	Drive Shoe

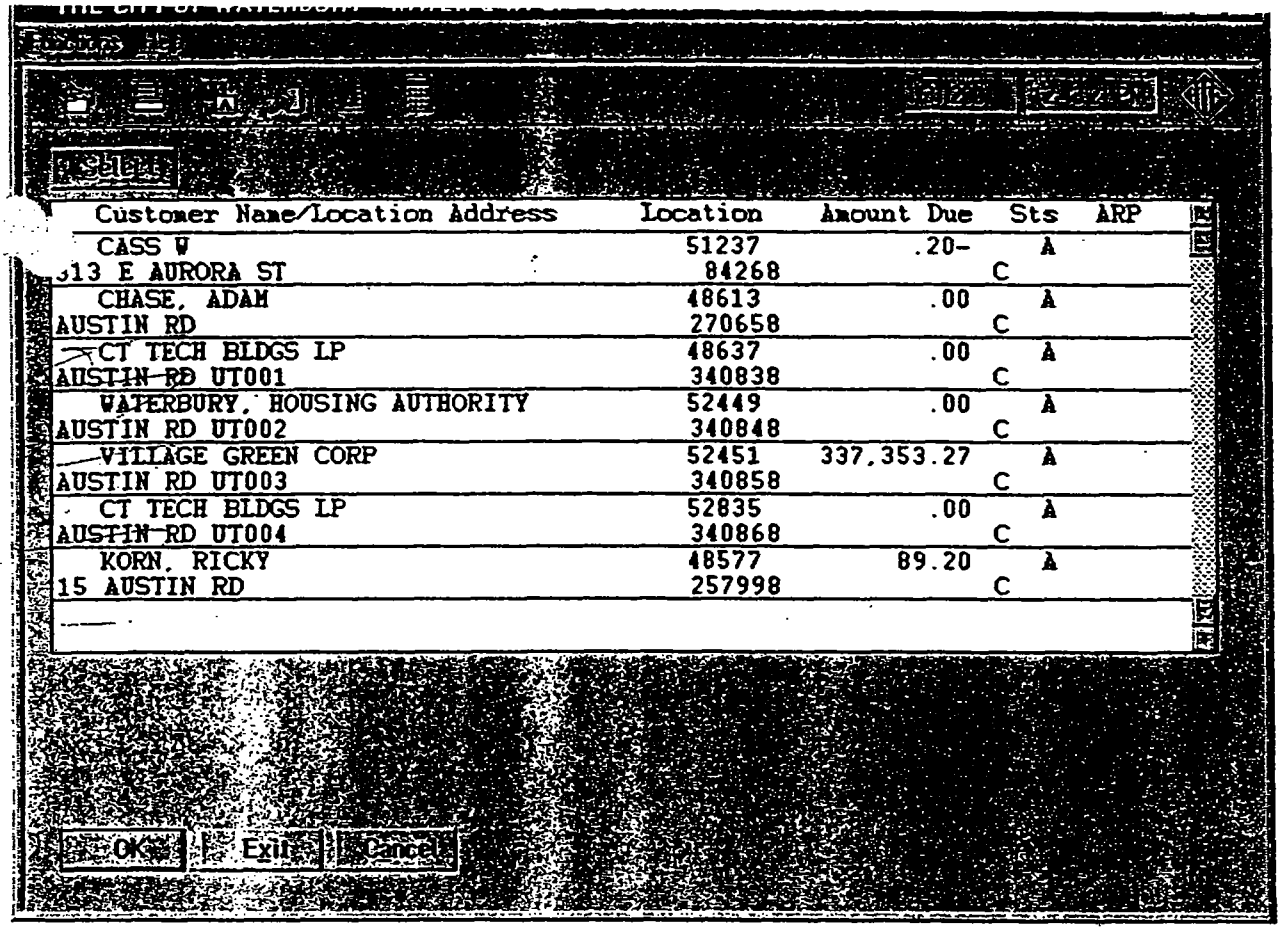
APPENDIX B

Waterbury Water Company Records


THE CITY OF WATERBURY - WATER & WPCF - Customer / Location Selection
Select
Customer Name/Location Address
Location
Amount Due
Sts
ARP
JAMES S SULLIVAN CABLE
123 E AURORA ST
51195
57578
1.52
A
C
137 EAST AURORA LLC
137 E AURORA ST
51233
70878
.00
A
C
137 EAST AURORA LLC
137 E AURORA ST UT001
52443
340738
.00
A
C
STEIN HAROLD TRUSTEE
150 E AURORA ST
52347
57748
.00
A
C
STEIN HAROLD TRUSTEE
150 E AURORA ST UT001
52445
340748
.00
A
C
FIBERCOTE INDUSTRIES INC
172 E AURORA ST
52349
57768
.00
A
C
FIBERCOTE INDUSTRIES INC
172 E AURORA ST UT001
52825
340758
.00
A
C
OK
Exit
Cancel


THE CITY OF WATERBURY - WATER & WPCF - Customer / Location Selection
Select
Customer Name/Location Address
Location
Amount Due
Sts
ARP
VBL REALTY INC
51235
.00
F
173 E AURORA ST
70918
C
VBL REALTY LLC
53823
.00
A
173 E AURORA ST
379568
C
VBL REALTY LLC
53837
.00
A
173 E AURORA ST
379588
C
VBL REALTY LLC
53839
.00
A
173 E AURORA ST
379598
C
BURTON ALBERT TRUSTEE
51231
.00
A
181 E AURORA ST
70868
C
BURTON ALBERT TRUSTEE
51241
.00
A
181 E AURORA ST UT001
340768
C
BURTON ALBERT TRUSTEE
52827
.00
A
181 E AURORA ST UT002
340778
C
OK
Exit
Cancel

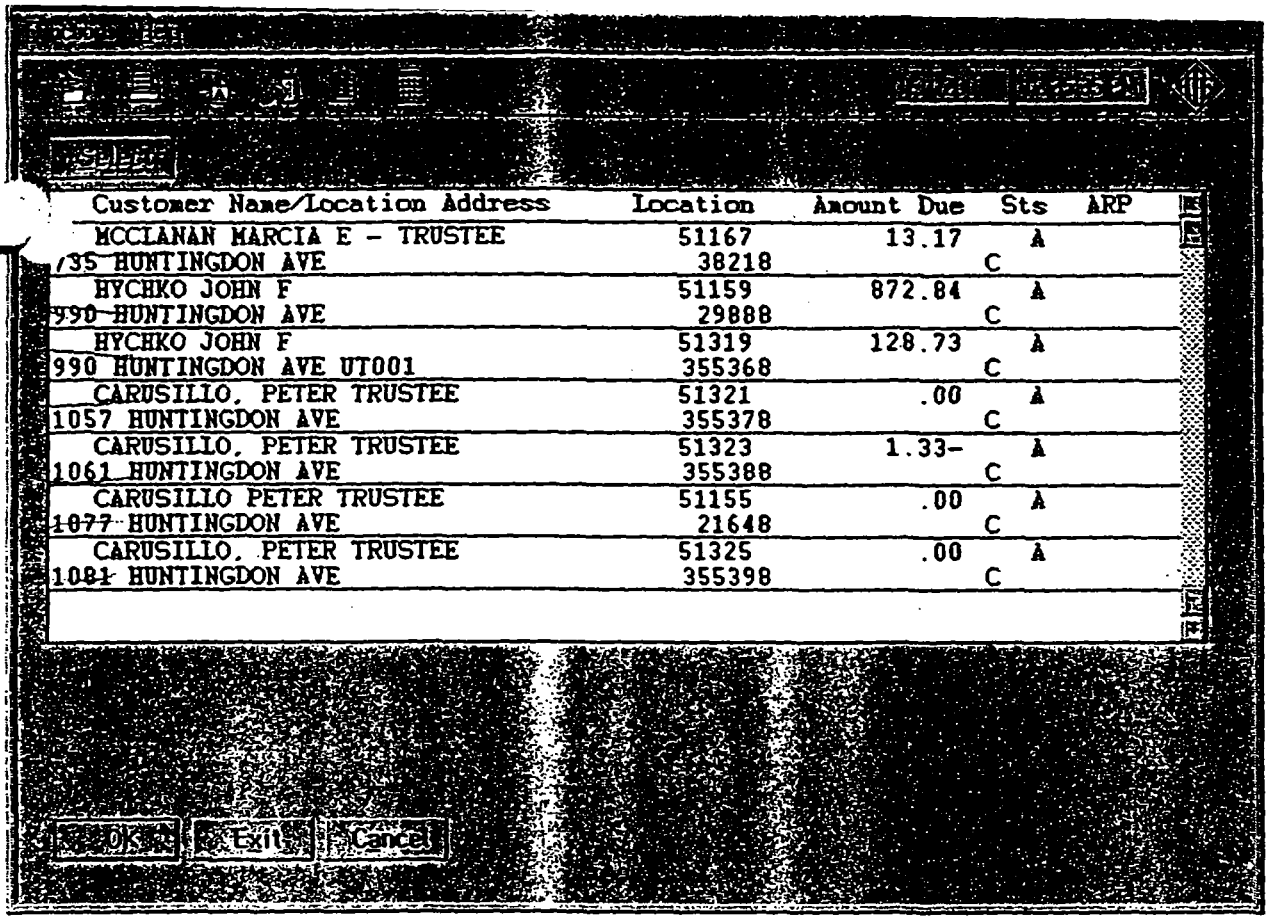

THE CITY OF WATERBURY - WATER & WPCA - Customer / Location Selection
Select
Customer Name/Location Address
Location
Amount Due
Sts
ARP
ALBERT BROS INC
225 E AURORA ST
52353
70858
.00
A
C
ALBERT BROS INC
225 E AURORA ST UT001
52829
340788
.00
A
C
OLIG
237 E AURORA ST
52351
70848
.00
A
C
OLIG
237 E AURORA ST UT001
52447
340798
.00
A
C
OLIG
237 E AURORA ST UT002
52831
340808
.00
A
C
WATERBURY ROLLING MILLS
240 E AURORA ST
51243
340818
.00
A
C
WATERBURY ROLLING MILLS
240 E AURORA ST UT001
52833
340828
.00
A
C
OK
Exit
Cancel



Select

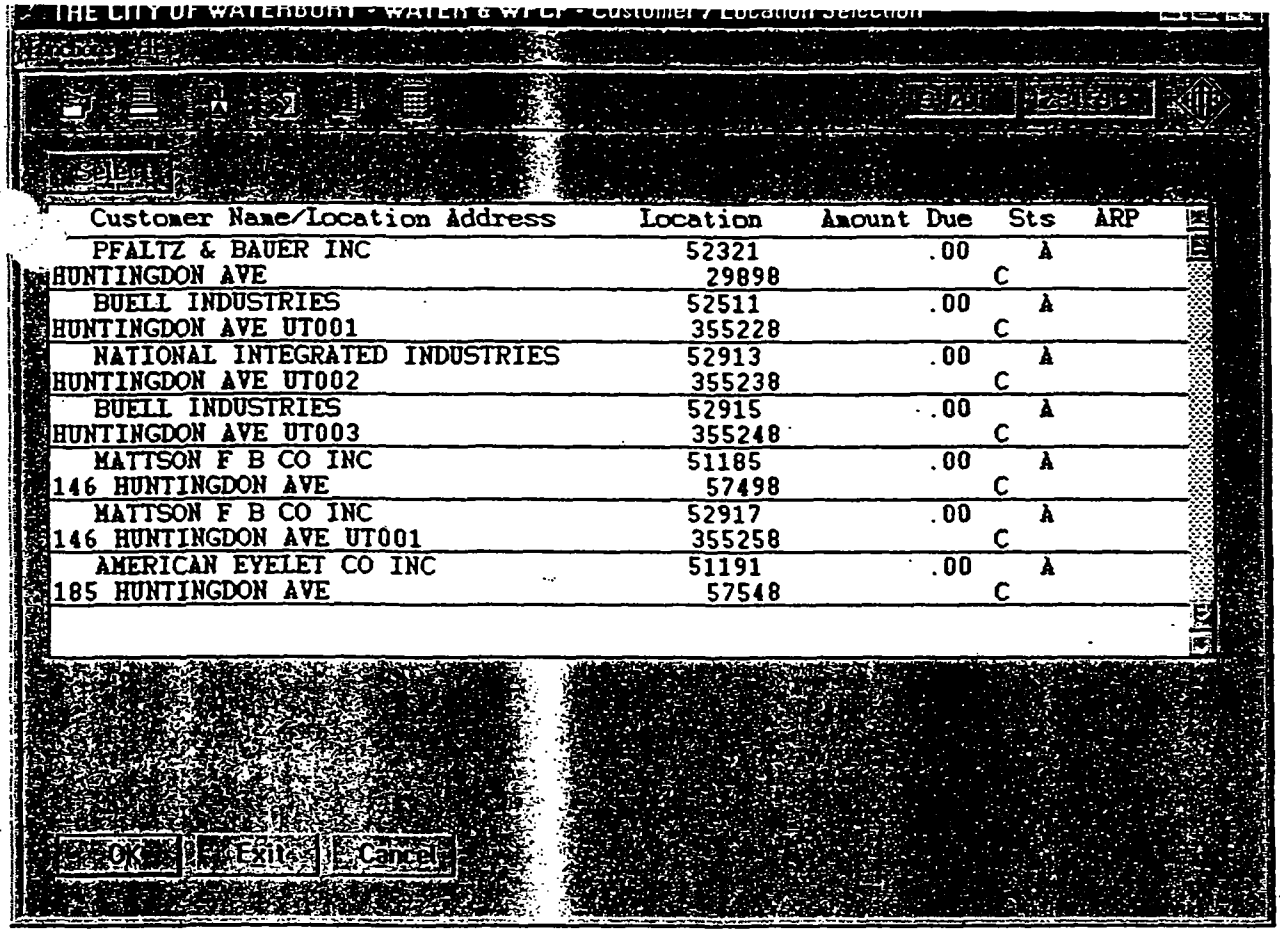
Customer Name/Location Address	Location	Amount Due	Sts	ARP
CASS W	51237	.20-	A	
513 E AURORA ST	84268		C	
CHASE, ADAM	48613	.00	A	
AUSTIN RD	270658		C	
CT TECH BLDGS LP	48637	.00	A	
AUSTIN RD UT001	340838		C	
WATERBURY, HOUSING AUTHORITY	52449	.00	A	
AUSTIN RD UT002	340848		C	
VILLAGE GREEN CORP	52451	337,353.27	A	
AUSTIN RD UT003	340858		C	
CT TECH BLDGS LP	52835	.00	A	
AUSTIN RD UT004	340868		C	
KORN, RICKY	48577	89.20	A	
15 AUSTIN RD	257998		C	

OK | Exit | Cancel



Customer Name/Location Address	Location	Amount Due	Sts	ARP
MCCLANAN MARCIA E - TRUSTEE	51167	13.17	A	
735 HUNTINGDON AVE	38218		C	
HYCHKO JOHN F	51159	872.84	A	
990 HUNTINGDON AVE	29888		C	
HYCHKO JOHN F	51319	128.73	A	
990 HUNTINGDON AVE UT001	355368		C	
CARUSILLO, PETER TRUSTEE	51321	.00	A	
1057 HUNTINGDON AVE	355378		C	
CARUSILLO, PETER TRUSTEE	51323	1.33-	A	
1061 HUNTINGDON AVE	355388		C	
CARUSILLO PETER TRUSTEE	51155	.00	A	
1077 HUNTINGDON AVE	21648		C	
CARUSILLO, PETER TRUSTEE	51325	.00	A	
1081 HUNTINGDON AVE	355398		C	

OK Exit Cancel



THE CITY OF WATERBURY - WATER & WPCP - Customer / Location Selection

Select

Customer Name/Location Address	Location	Amount Due	Sts	ARP
PFALTZ & BAUER INC HUNTINGDON AVE	52321 29898	.00	A C	
BUELL INDUSTRIES HUNTINGDON AVE UT001	52511 355228	.00	A C	
NATIONAL INTEGRATED INDUSTRIES HUNTINGDON AVE UT002	52913 355238	.00	A C	
BUELL INDUSTRIES HUNTINGDON AVE UT003	52915 355248	.00	A C	
MATTSON F B CO INC 146 HUNTINGDON AVE	51185 57498	.00	A C	
MATTSON F B CO INC 146 HUNTINGDON AVE UT001	52917 355258	.00	A C	
AMERICAN EYELET CO INC 185 HUNTINGDON AVE	51191 57548	.00	A C	

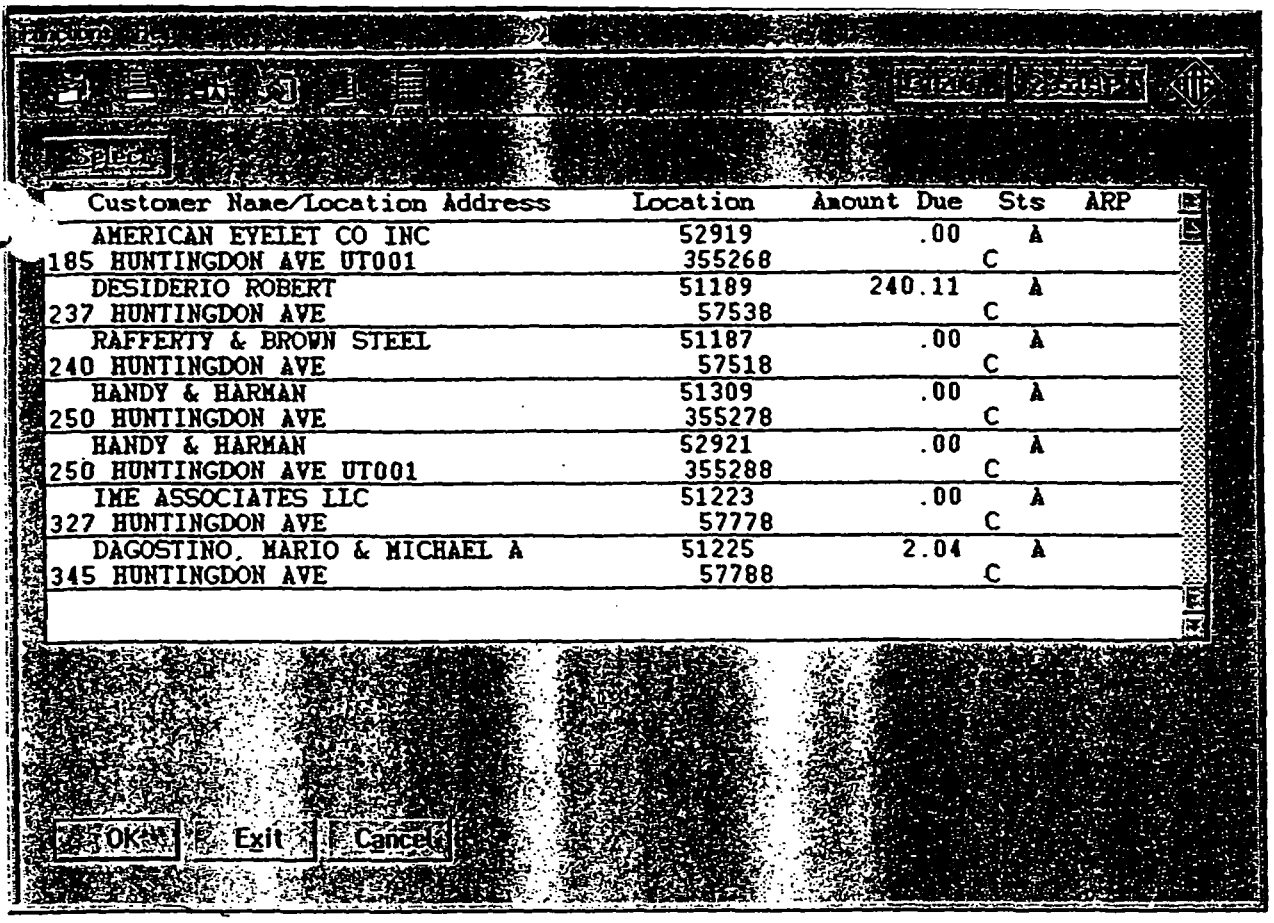
OK Exit Cancel

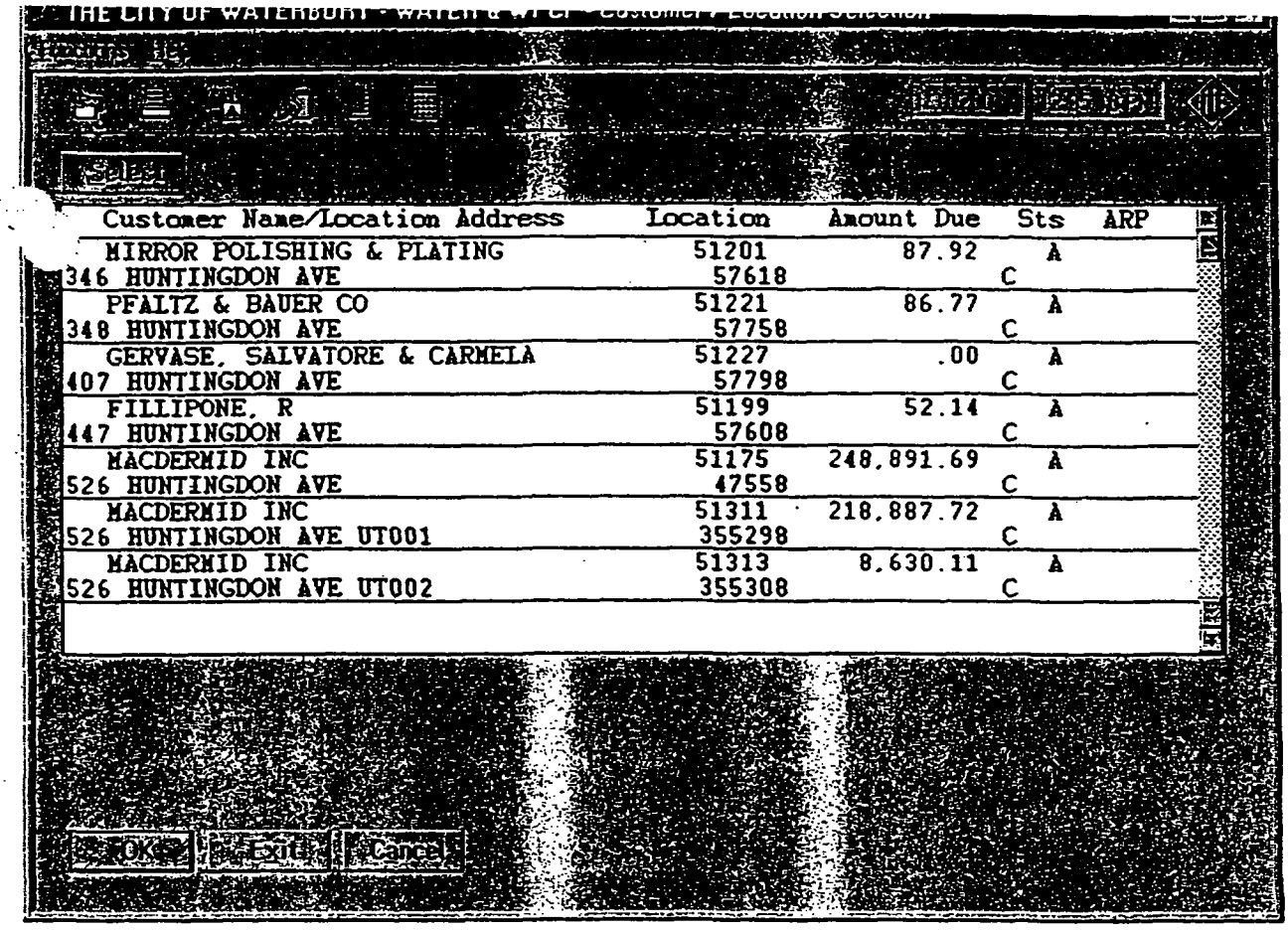
111 Landnet Corp.
E. Aurora

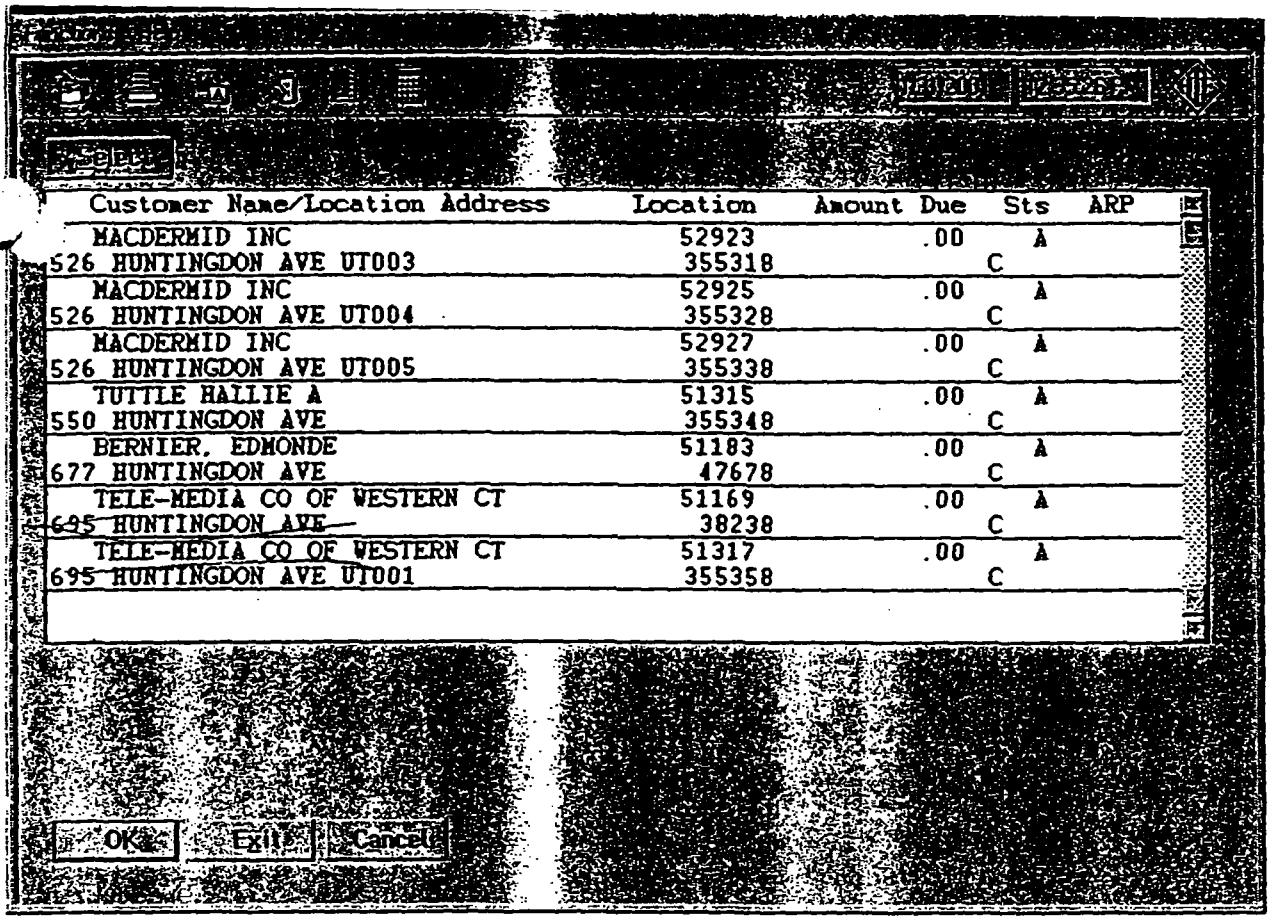
Hy of Waterbury street dept.

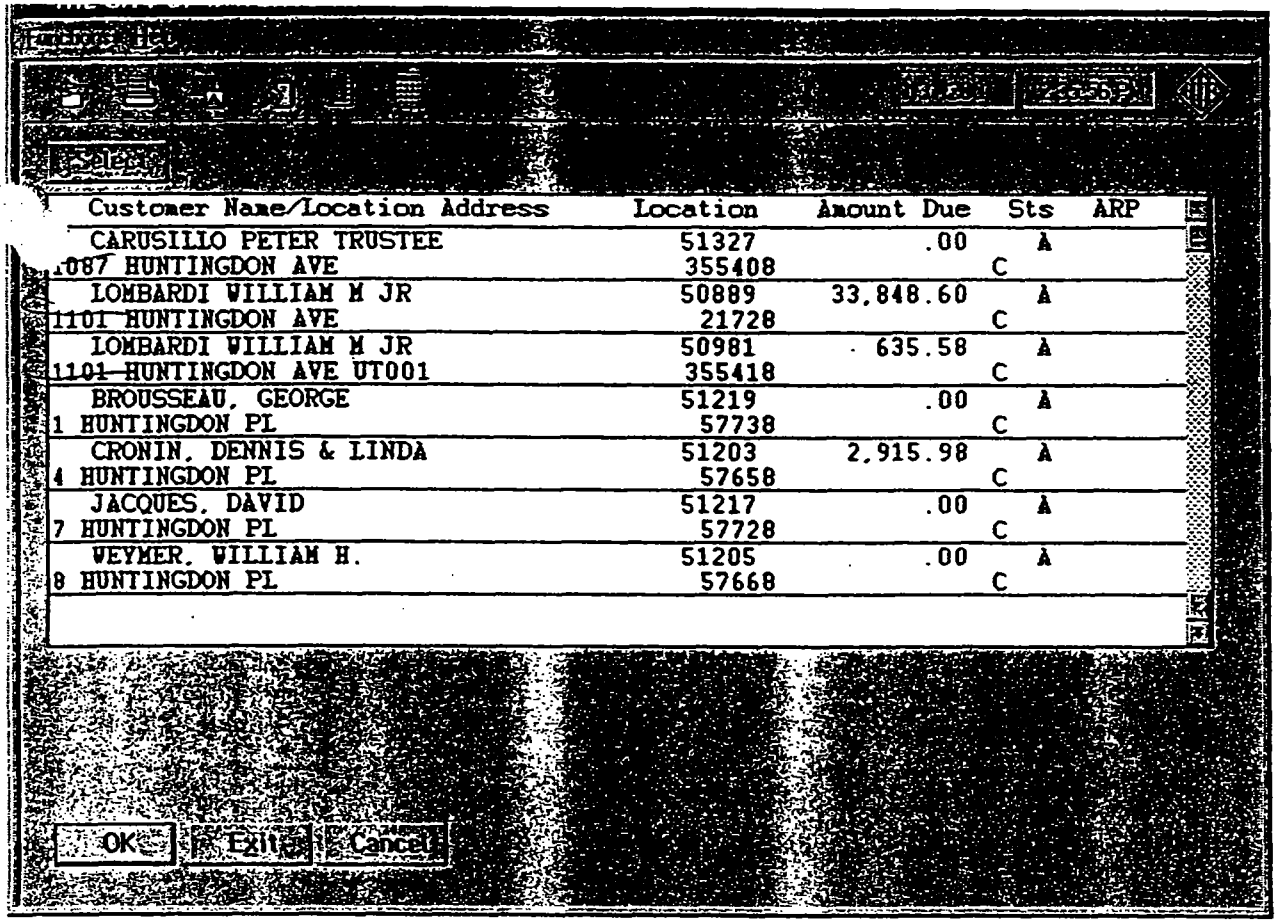
75 [illegible] Supply [illegible] body [illegible]

173B
173A


Select
Customer Name/Location Address
Location
Amount Due
Sts
ARP
AMERICAN EYELET CO INC
52919
.00
A
185 HUNTINGDON AVE UT001
355268
C
DESIDERIO ROBERT
51189
240.11
A
237 HUNTINGDON AVE
57538
C
RAFFERTY & BROWN STEEL
51187
.00
A
240 HUNTINGDON AVE
57518
C
HANDY & HARMAN
51309
.00
A
250 HUNTINGDON AVE
355278
C
HANDY & HARMAN
52921
.00
A
250 HUNTINGDON AVE UT001
355288
C
IME ASSOCIATES LLC
51223
.00
A
327 HUNTINGDON AVE
57778
C
DAGOSTINO, MARIO & MICHAEL A
51225
2.04
A
345 HUNTINGDON AVE
57788
C
OK
Exit
Cancel

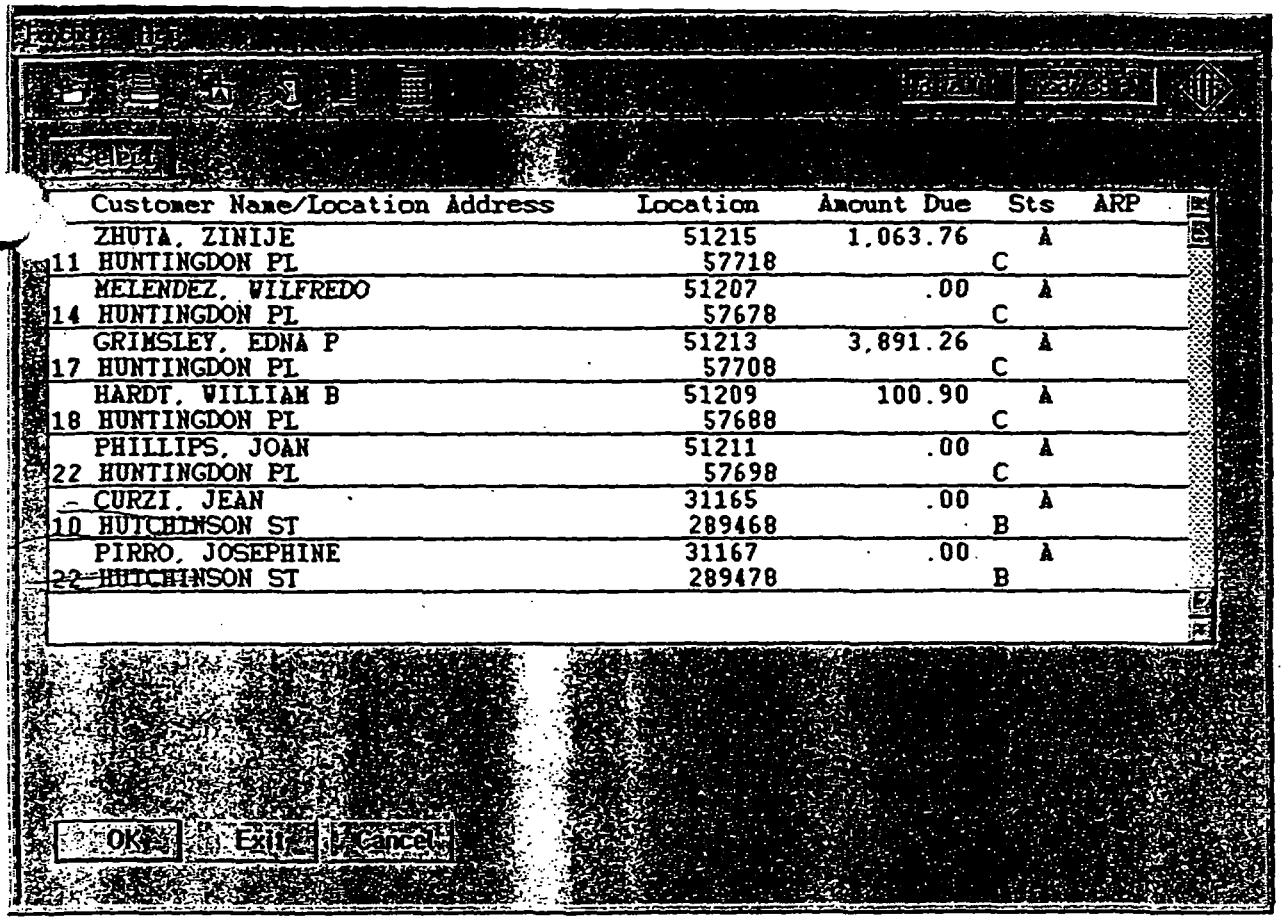

THE CITY OF WATERBURY - WATER & WPCA - Customer / Location Selection
Select
Customer Name/Location Address
Location
Amount Due
Sts
ARP
MIRROR POLISHING & PLATING
346 HUNTINGDON AVE
51201
57618
87.92
A
C
PFALTZ & BAUER CO
348 HUNTINGDON AVE
51221
57758
86.77
A
C
GERVASE, SALVATORE & CARMELA
407 HUNTINGDON AVE
51227
57798
.00
A
C
FILLIPONE, R
447 HUNTINGDON AVE
51199
57608
52.14
A
C
MACDERMID INC
526 HUNTINGDON AVE
51175
47558
248,891.69
A
C
MACDERMID INC
526 HUNTINGDON AVE UT001
51311
355298
218,887.72
A
C
MACDERMID INC
526 HUNTINGDON AVE UT002
51313
355308
8,630.11
A
C
OK
Exit
Cancel


Select
Customer Name/Location Address
Location
Amount Due
Sts
ARP
MACDERMID INC
526 HUNTINGDON AVE UT003
52923
355318
.00
A
C
MACDERMID INC
526 HUNTINGDON AVE UT004
52925
355328
.00
A
C
MACDERMID INC
526 HUNTINGDON AVE UT005
52927
355338
.00
A
C
TUTTLE HALLIE A
550 HUNTINGDON AVE
51315
355348
.00
A
C
BERNIER, EDMONDE
677 HUNTINGDON AVE
51183
47678
.00
A
C
TELE-MEDIA CO OF WESTERN CT
695 HUNTINGDON AVE
51169
38238
.00
A
C
TELE-MEDIA CO OF WESTERN CT
695 HUNTINGDON AVE UT001
51317
355358
.00
A
C
OK
Exit
Cancel

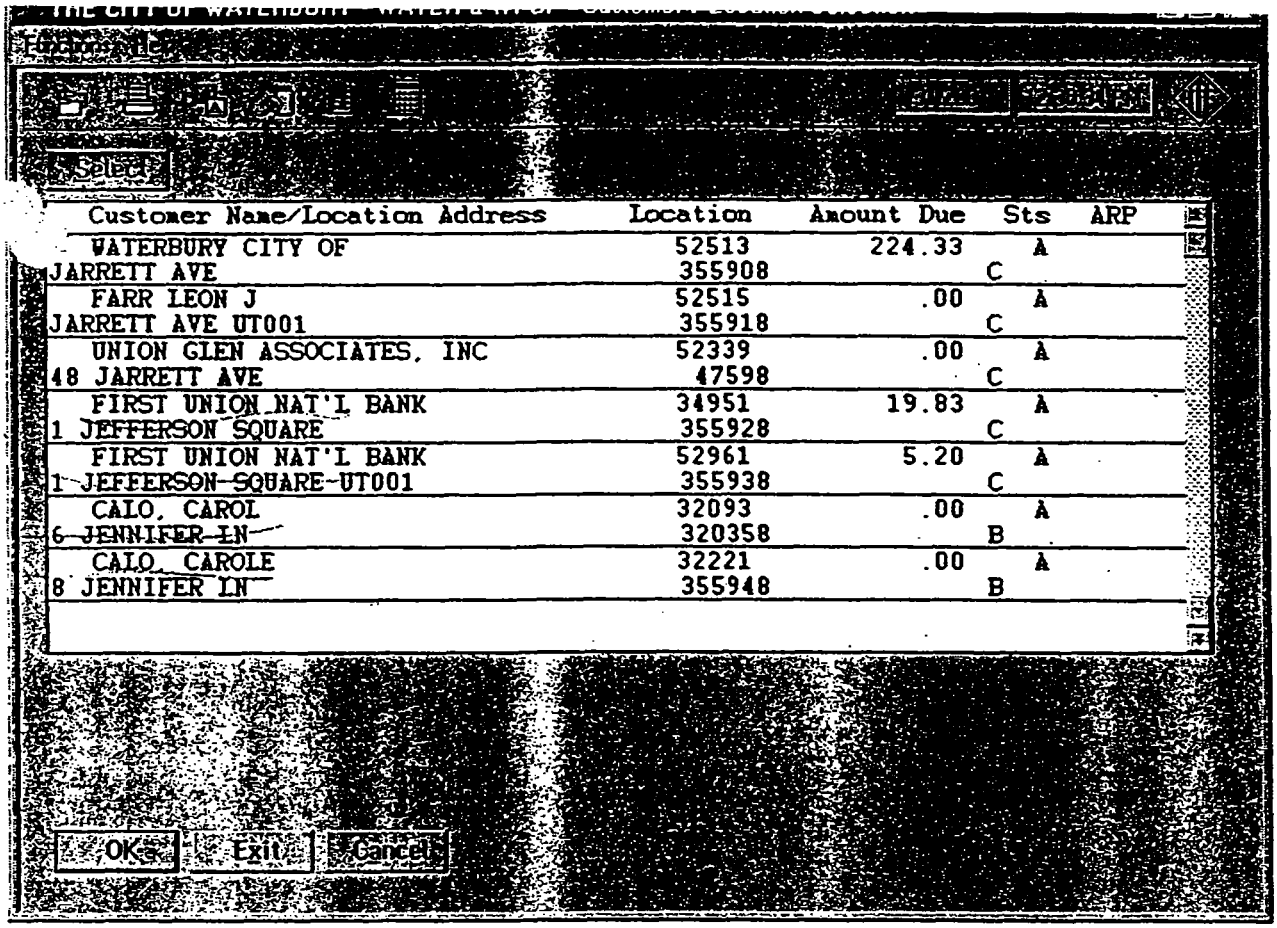


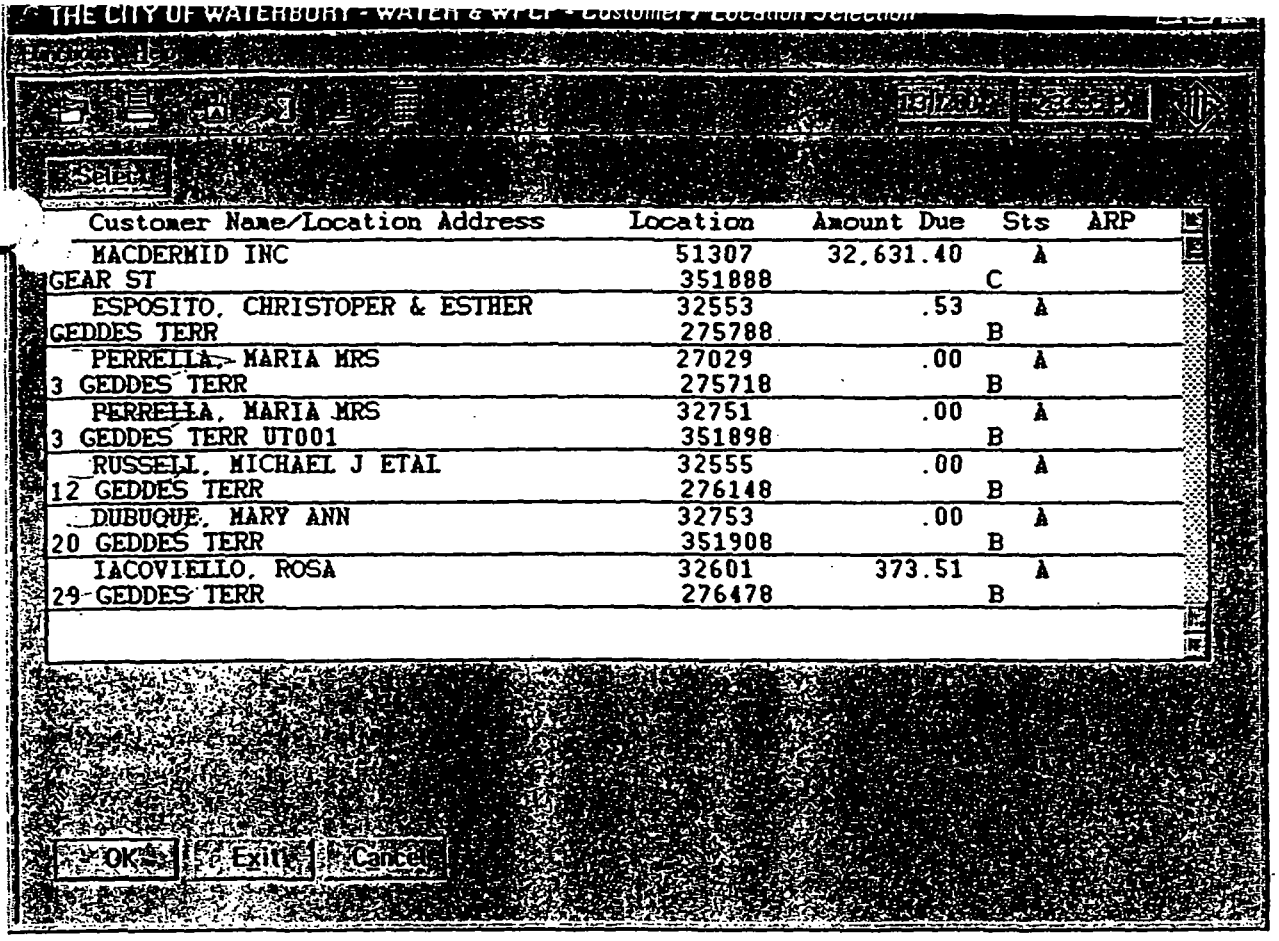
Customer Name/Location Address	Location	Amount Due	Sts	ARP
CARUSILLO PETER TRUSTEE	51327	.00	A	
1087 HUNTINGDON AVE	355408		C	
LOMBARDI WILLIAM M JR	50889	33,848.60	A	
1101 HUNTINGDON AVE	21728		C	
LOMBARDI WILLIAM M JR	50981	635.58	A	
1101 HUNTINGDON AVE UT001	355418		C	
BROUSSEAU, GEORGE	51219	.00	A	
1 HUNTINGDON PL	57738		C	
CRONIN, DENNIS & LINDA	51203	2,915.98	A	
4 HUNTINGDON PL	57658		C	
JACQUES, DAVID	51217	.00	A	
7 HUNTINGDON PL	57728		C	
WEYMER, WILLIAM H.	51205	.00	A	
8 HUNTINGDON PL	57668		C	

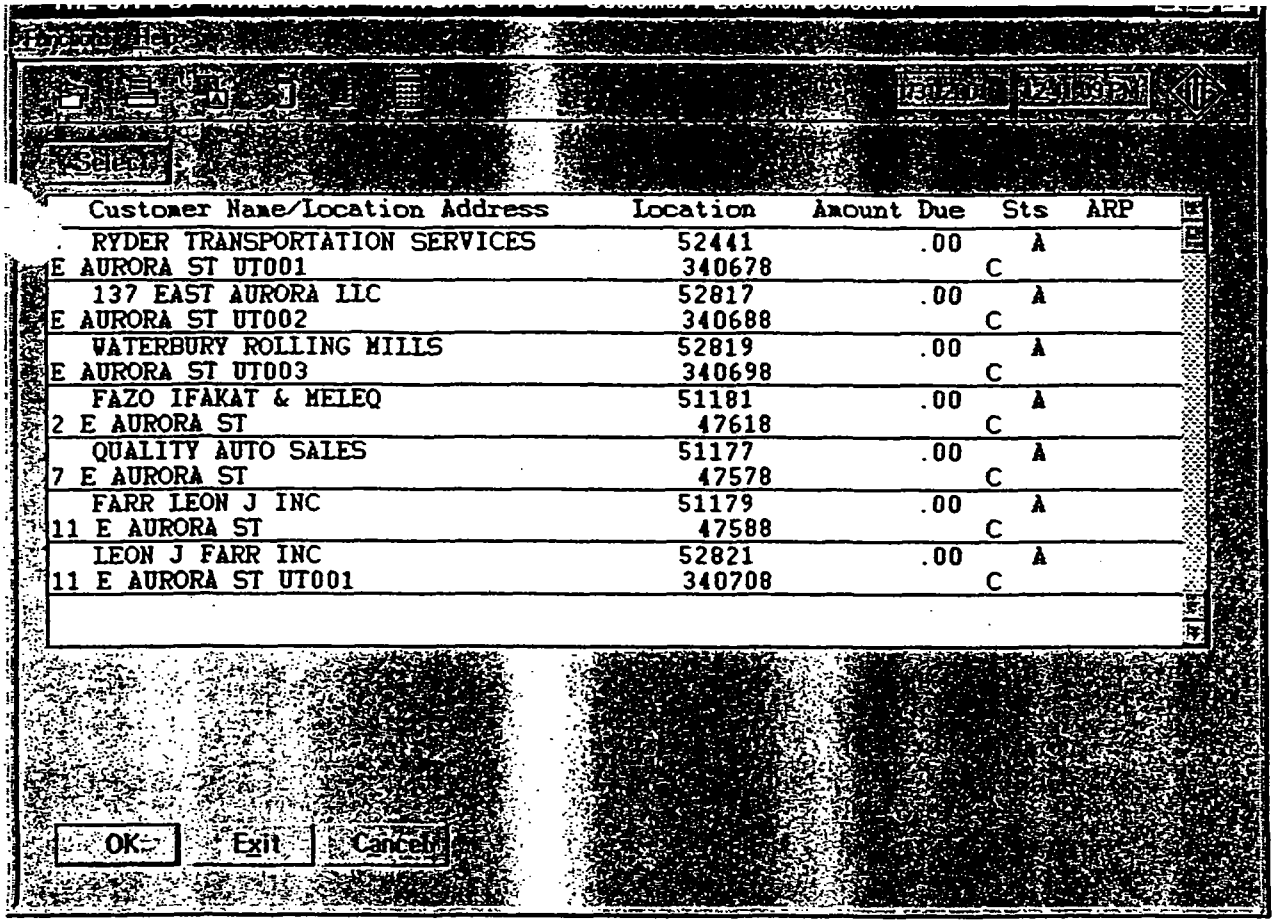
OK Exit Cancel



	Customer Name/Location Address	Location	Amount Due	Sts	ARP
	ZHUTA, ZINIJE	51215	1,063.76	A	
11	HUNTINGDON PL	57718		C	
	MELENDEZ, WILFREDO	51207	.00	A	
14	HUNTINGDON PL	57678		C	
	GRIMSLEY, EDNA P	51213	3,891.26	A	
17	HUNTINGDON PL	57708		C	
	HARDT, WILLIAM B	51209	100.90	A	
18	HUNTINGDON PL	57688		C	
	PHILLIPS, JOAN	51211	.00	A	
22	HUNTINGDON PL	57698		C	
	CURZI, JEAN	31165	.00	A	
10	HUTCHINSON ST	289468		B	
	PIRRO, JOSEPHINE	31167	.00	A	
22	HUTCHINSON ST	289478		B	


Select
Customer Name/Location Address
Location
Amount Due
Sts
ARP
WATERBURY CITY OF
52513
224.33
A
JARRETT AVE
355908
C
FARR LEON J
52515
.00
A
JARRETT AVE UT001
355918
C
UNION GLEN ASSOCIATES, INC
52339
.00
A
48 JARRETT AVE
47598
C
FIRST UNION NAT'L BANK
34951
19.83
A
1 JEFFERSON SQUARE
355928
C
FIRST UNION NAT'L BANK
52961
5.20
A
1 JEFFERSON SQUARE UT001
355938
C
CALO, CAROL
32093
.00
A
6 JENNIFER LN
320358
B
CALO, CAROLE
32221
.00
A
8 JENNIFER LN
355948
B
OK
Exit
Cancel


THE CITY OF WATERBURY - WATER & WPCA - Customer / Location Selection
Select
Customer Name/Location Address
Location
Amount Due
Sts
ARP
MACDERMID INC
51307
32,631.40
A
GEAR ST
351888
C
ESPOSITO, CHRISTOPER & ESTHER
32553
.53
A
GEDDES TERR
275788
B
PERRELLA, MARIA MRS
27029
.00
A
3 GEDDES TERR
275718
B
PERRELLA, MARIA MRS
32751
.00
A
3 GEDDES TERR UT001
351898
B
RUSSELL, MICHAEL J ETAL
32555
.00
A
12 GEDDES TERR
276148
B
DUBUQUE, MARY ANN
32753
.00
A
20 GEDDES TERR
351908
B
IACOVIELLO, ROSA
32601
373.51
A
29 GEDDES TERR
276478
B
OK
Exit
Cancel


Select
Customer Name/Location Address
Location
Amount Due
Sts
ARP
RYDER TRANSPORTATION SERVICES
52441
.00
A
E AURORA ST UT001
340678
C
137 EAST AURORA LLC
52817
.00
A
E AURORA ST UT002
340688
C
WATERBURY ROLLING MILLS
52819
.00
A
E AURORA ST UT003
340698
C
FAZO IFAKAT & MELEQ
51181
.00
A
2 E AURORA ST
47618
C
QUALITY AUTO SALES
51177
.00
A
7 E AURORA ST
47578
C
FARR LEON J INC
51179
.00
A
11 E AURORA ST
47588
C
LEON J FARR INC
52821
.00
A
11 E AURORA ST UT001
340708
C
OK
Exit
Cancel

APPENDIX C

Waterbury Tax Assessor's Field Cards

CITY OF WATERBU[illegible] EAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHD SITE	CARD	SIDE
526 HUNTINGDON AVE	128-864-3	IG		8500001		1

CURRENT OWNER

NAME 1 MACDERMID INC
NAME 2
ADDRESS 0245 FREIGHT ST
ADDRESS WATERBURY
ADDRESS
ZIP 06702

NAME OF BUSINESS

MACDERMID CORP

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	3-1	1.00	100000	70000
	3-3	1.00	45757	32030
	3-2	1.00	2220571	1554400
	TOTAL		2366328	1656430

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
MACDERMID INC	0630	0149	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	3.45		3-1	48000.00	165600	115920
				TOTAL		165600	70000

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	LIGHT IND PROCESSING
VIEW		COMPARED		PROPERTY CLASS	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
526 HUNTINGDON AVE	128-864-3	IG		8500001		1

CURRENT OWNER

NAME 1 - MACDERMID INC
NAME 2 -
ADDRESS - 0245 FREIGHT ST
ADDRESS - WATERBURY
ADDRESS -
ZIP - 06702

NAME OF BUSINESS

MACDERMID CORP

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
MACDERMID INC	0630	0149	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	3.45		3-1	48000.00	165600	115920
					TOTAL	165600	70000

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	LIGHT IND PROCESSING
VIEW		COMPARED		PROPERTY CLASS	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY — REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
HUNTINGDON AVE	129-707-8	RL		8000001	1	

CURRENT OWNER

NAME 1	CITY OF WATERBURY
NAME 2	RECREATION FIELD
ADDRESS	
ADDRESS	236 GRAND ST
ADDRESS	WATERBURY CT
ZIP	06702

NAME OF BUSINESS

0

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	2-5	1.00	1928	1350
	2-2	1.00	6800	4760
	2-1	1.00	302700	211890
	TOTAL		311428	218000

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
CITY OF WATERBURY	478	613	00/00/1937		N	

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	20.18		2-1	42000.00	847560	593292
				TOTAL		847560	211890

SITE

NBHD TYPE	MIXED	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	ATHLETIC FIELDS
VIEW		COMPARED		PROPERTY CLASS	OTHER IND STRUCTURES

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
- 2-1 LAND(EXCEPT APT.BLDS)
- 2-2 BUILDINGS
- 2-3 APARTMENTS
- 2-4 CONDOMINIUMS
- 2-5 OUTBUILDINGS
- 2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
- 3-1 LAND
- 3-2 BUILDINGS
- 3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
- 4-1 LAND
- 4-2 BUILDINGS
- 4-3 OUTBUILDINGS

VACANT LAND 5-
- 5-1 RESIDENTIAL
- 5-2 COMMERCIAL
- 5-3 INDUSTRIAL
- 5-4 WETLANDS
- 5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
7 EAST AURORA ST	129-707-10	IG		8000001		1

CURRENT OWNER

NAME 1 - DANGELO ANTHONY P & CONCETTA K
NAME 2 - SURV
ADDRESS - 7 EAST AURORA ST
ADDRESS - WATERBURY CT
ADDRESS -
ZIP - 06708

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
DANGELO ANTHONY P & CONCETTA K	2565	77	12/21/1989		N	Q
DANGELO ANTHONY P	1102	63	01/01/1974		N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	.58		2-1	42000.00	33600	23520
					TOTAL	33600	32880

SITE

NBHD TYPE	MIXED	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	LRG CHAIN,SALE &SERV
VIEW		COMPARED		PROPERTY CLASS	AUTO SALES & SERVICE

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	2-1	1.00	46971	32880
	2-3	1.00	6157	4310
	2-2	1.00	51114	35780
	TOTAL		104242	72970

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
7 EAST AURORA ST	129-707-10	IG		8000001		1

CURRENT OWNER

NAME OF BUSINESS

NAME 1 DANGELO ANTHONY P & CONCETTA K
NAME 2 SURV
ADDRESS 1 7 EAST AURORA ST
ADDRESS 2 WATERBURY CT
ADDRESS 3
ZIP 06708

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	2-1	1.00	46971	32880
	2-3	1.00	6157	4310
	2-2	1.00	51114	35780
	TOTAL		104242	72970

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
DANGELO ANTHONY P & CONCETTA K	2565	77	12/21/1989		N	Q
DANGELO ANTHONY P	1102	63	01/01/1974		N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	.58		2-1	42000.00	33600	23520
				TOTAL		33600	32880

SITE

NBHD TYPE	MIXED	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	LIGHT IND PROCESSING
VIEW		COMPARED		PROPERTY CLASS	AUTO SALES & SERVICE

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY	LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
11	EAST AURORA ST	129-707-12	IG		8000001		1

CURRENT OWNER

NAME 1 - FARR LEON J INC
NAME 2 -
ADDRESS - 11 EAST AURORA ST
ADDRESS - WATERBURY CT
ADDRESS -
ZIP - 06708

NAME OF BUSINESS

LEON J FARR INC

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	3-1	1.00	35000	24500
	3-2	1.00	61400	42980
	TOTAL		96400	67480

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
FARR LEON J INC	1134	141	00/00/1974	75000	N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	.41		3-1	42000.00	31500	22050
					TOTAL	31500	24500

SITE

NBHD TYPE	COMMERCIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	STRGE,WARE,DIST FACI
VIEW		COMPARED		PROPERTY CLASS	SMALL SHOPS

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP + LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
48 JARRETT AVE	129-707-13	IG		8000001		1

CURRENT OWNER

NAME 1	UNION GLEN ASSOCIATES INC
NAME 2	
ADDRESS	88-22 81 ROAD
ADDRESS	GLENDALE NY
ADDRESS	
ZIP	11385

NAME OF BUSINESS

PRIME

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
UNION GLEN ASSOCIATES INC	3910	173	12/20/1999	275000	Y	W
CIPRIANO MARK,ANGELO FARI	2548	171	11/08/1989	240000	Y	W
COLANGELO NICHOLAS J &	1316	149	04/04/1978		N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	.27		3-1	42000.00	31500	22050
					TOTAL	31500	16100

SITE

NBHD TYPE	MIXED	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	LIGHT	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	LIGHT IND PROCESSING
VIEW		COMPARED		PROPERTY CLASS	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1994	3-1	1.00	23000	16100
	3-2	1.00	113628	79540
	TOTAL		136628	95640
1992	3-1	1.00	23000	16100
	3-2	1.00	60000	42000
	TOTAL		83000	58100
1989	3-1	1.00	23000	16100
	3-2	1.00	60000	42000
	TOTAL		83000	58100

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
- 2-1 LAND(EXCEPT APT.BLDS)
- 2-2 BUILDINGS
- 2-3 APARTMENTS
- 2-4 CONDOMINIUMS
- 2-5 OUTBUILDINGS
- 2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
- 3-1 LAND
- 3-2 BUILDINGS
- 3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
- 4-1 LAND
- 4-2 BUILDINGS
- 4-3 OUTBUILDINGS

VACANT LAND 5-
- 5-1 RESIDENTIAL
- 5-2 COMMERCIAL
- 5-3 INDUSTRIAL
- 5-4 WETLANDS
- 5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
21 EAST AURORA ST	129-707-15	IG		8000001		1

CURRENT OWNER

NAME 1	CITY OF WATERBURY
NAME 2	WATER DEPT
ADDRESS	
ADDRESS	
ADDRESS	
ZIP	00000

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
CITY OF WATERBURY	925	208	01/01/1968		N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	3.02		2-1	42000.00	126840	88788
					TOTAL	126840	88200

SITE

NBHD TYPE	MIXED	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	MULTI USE-MULTI OCCU
VIEW		COMPARED		PROPERTY CLASS	OTHER EXEMPT PROP

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	2-1	1.00	126000	88200
	2-2	1.00	531400	371980
	TOTAL		657400	460180

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
- 2-1 LAND(EXCEPT APT.BLDS)
- 2-2 BUILDINGS
- 2-3 APARTMENTS
- 2-4 CONDOMINIUMS
- 2-5 OUTBUILDINGS
- 2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
- 3-1 LAND
- 3-2 BUILDINGS
- 3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
- 4-1 LAND
- 4-2 BUILDINGS
- 4-3 OUTBUILDINGS

VACANT LAND 5-
- 5-1 RESIDENTIAL
- 5-2 COMMERCIAL
- 5-3 INDUSTRIAL
- 5-4 WETLANDS
- 5-5 OUTBUILDINGS

CITY OF WATERBUR[illegible] EAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
21 EAST AURORA ST	129-707-15	IG		8000002		1

CURRENT OWNER

NAME 1: CITY OF WATERBURY
NAME 2: WATER DEPT
ADDRESS:
ADDRESS:
ADDRESS:
ZIP: 00000

NAME OF BUSINESS

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	2-1	1.00	126000	88200
	2-2	1.00	531400	371980
	TOTAL		657400	460180

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
CITY OF WATERBURY	925	208	01/01/1968		N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
					TOTAL		88200

SITE

NBHD TYPE	MIXED	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	MULTI USE&OCC,GARAGE
VIEW		COMPARED		PROPERTY CLASS	OTHER EXEMPT PROP

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
21 EAST AURORA ST	129-707-15	IG		8000002		1

CURRENT OWNER

NAME 1: CITY OF WATERBURY
NAME 2: WATER DEPT
ADDRESS:
ADDRESS:
ADDRESS:
ZIP: 00000

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
CITY OF WATERBURY	925	208	01/01/1968		N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
					TOTAL		88200

SITE

NBHD TYPE:	MIXED	ELEVATION:		DESIRABILITY:	TYPICAL
ROAD:	LOCAL	SEWER:	YES	LANDSCAPING:	TYPICAL
TRAFFIC:	MEDIUM	WATER:	PUBLIC	DRIVEWAY:	
BLDG SET BACK:		UTILITIES:	GAS/ELEC	MAJOR USE:	MULTI USE&OCC,GARAGE
VIEW:		COMPARED:		PROPERTY CLASS:	OTHER EXEMPT PROP

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	2-1	1.00	126000	88200
	2-2	1.00	531400	371980
	TOTAL		657400	460180

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY — REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
2 EAST AURORA ST	129-865-3	IG		8000001		1

CURRENT OWNER

NAME 1: FAZO SALI
NAME 2:
ADDRESS: 67 MIDDLEWAY EAST
ADDRESS: WATERBURY CT
ADDRESS:
ZIP: 06708

NAME OF BUSINESS:

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
FAZO SALI	4016	59	08/16/2000		N	Q
FAZO IFAKAT & SALI SURV	3257	180	09/14/1995		N	Q
FAZO IFAKAT & MELEQ	2896	340	10/07/1992		N	Q
FAZO SALI & IFAKAT	2676	329	11/07/1990		N	Q
FASO ARIF (LU) & SALI FEE	1655	95	11/30/1983		N	Q
FAZO ARIF & SALI	1655	97	11/30/1983		N	Q
BUSHKA EDWARD I	1632	75	08/05/1983		N	Q
FAZO ARIF & MUSTAFA	1307	217	01/23/1978	35000	N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	.10		2-1	42000.00	31500	22050
				TOTAL		31500	21000

SITE

NBHD TYPE	MIXED	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	DINERS,LUNCHEONETTES
VIEW		COMPARED		PROPERTY CLASS	RESTAURANT/CAFE/BAR

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	2-1	1.00	30000	21000
	2-2	1.00	20000	14000
	TOTAL		50000	35000

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
562 HUNTINGDON AVE	129-865-4	IG		8000001		1

CURRENT OWNER

NAME 1 - FAZO SALI
NAME 2 -
ADDRESS - 67 MIDDLEWAY EAST
ADDRESS - WATERBURY CT
ADDRESS -
ZIP - 06708

NAME OF BUSINESS

0

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
FAZO SALI	4016	59	08/16/2000		N	Q
FAZO IFAKAT & SALI SURV	3257	180	09/14/1995		N	Q
FAZO IFAKAT & MELEQ	2896	340	10/07/1992		N	Q
FAZO SALI & IFAKAT	2676	329	11/07/1990		N	Q
FAZO ARIF (LU) & SALI	1655	95	11/30/1983		N	Q
FAZO ARIF & SALI	1655	97	11/30/1983		N	Q
BUSHKA EDWARD I	1632	75	08/05/1983		N	Q
FAZO ARIF & MUSTAFA	1307	220	01/23/1978		N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	.13		5-2	42000.00	31500	22050
					TOTAL	31500	9660

SITE

NBHD TYPE	MIXED	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	
VIEW		COMPARED		PROPERTY CLASS	VACANT LAND-COMM

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	5-2	1.00	13800	9660
	TOTAL		13800	9660

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
EAST AURORA ST	129-865-5	IG		8000001		1

CURRENT OWNER

NAME 1: FAZO SALI
NAME 2:
ADDRESS: 67 MIDDLEWAY EAST
ADDRESS: WATERBURY CT
ADDRESS:
ZIP: 06708

NAME OF BUSINESS

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	3-1	1.00	30000	21000
	TOTAL		30000	21000

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
FAZO SALI	4016	59	08/16/2000		N	Q
FAZO IFAKAT & SALI SURV	3257	180	09/15/1995		N	Q
FAZO IFAKAT & MELEQ	2896	340	10/07/1992		N	Q
FAZO SALI & IFAKAT	2676	329	11/07/1990		N	Q
FAZO ARIF (LU) & SALI	1655	95	11/30/1983		N	Q
FAZO ARIF & SALI	1655	97	11/30/1983		N	Q
BUSHKA EDWARD I	1632	75	08/05/1983		N	Q
FAZO ARIF & MUSTAFA	1307	220	01/23/1978		N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	.27		3-1	42000.00	31500	22050
				TOTAL		31500	21000

SITE

NBHD TYPE	MIXED	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SETBACK		UTILITIES	GAS/ELEC	MAJOR USE	
VIEW		COMPARED		PROPERTY CLASS	PARKING LOT/STRUCT

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
24 EAST AURORA ST	129-865-6	IG		8000001		1

CURRENT OWNER

NAME 1 - TUTTLE PAULINE T & HALLIE A
NAME 2 - TEN-COM
ADDRESS - 680 NORTH CHURCH ST
ADDRESS - NAUGATUCK CT
ADDRESS -
ZIP - 06770

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
TUTTLE PAULINE T & HALLIE A	1848	323	01/17/1986		N	Q
TUTTLE PAULINE T & HALLIE	1560	70	06/16/1982	175000	N	W
NVT REALTY INC	1295	21	11/02/1977	125000	N	W

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	2-1	1.00	75000	52500
	2-5	1.00	914	640
	2-2	1.00	79885	55920
	TOTAL		155799	109060

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	.67		2-1	42000.00	33600	23520
				TOTAL		33600	52500

SITE

NBHD TYPE	MIXED	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	LRG CHAIN,SALE &SERV
VIEW		COMPARED		PROPERTY CLASS	OTHER COMM STRUCTURE

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY — REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
EAST AURORA ST	129-865-7	IG		8000001		1

CURRENT OWNER

NAME 1: MACDERMID INC
NAME 2:
ADDRESS: 245 FREIGHT ST
ADDRESS: WATERBURY CT
ADDRESS:
ZIP: 06702

NAME OF BUSINESS

MACDERMID CORP-VAC LOT

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	5-3	1.00	17000	11900
	TOTAL		17000	11900

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
MACDERMID INC	762	128	01/01/1901		N	0

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	.65		5-3	42000.00	33600	23520
				TOTAL		33600	11900

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESTRAGILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	
VIEW		COMPARED		PROPERTY CLASS	VACANT LAND-IND

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
346 HUNTINGDON AVE	143-783-1	IG		8000001		1

CURRENT OWNER

NAME 1 MIRROR POLISHING & PLATING
NAME 2 COMPANY INC
ADDRESS 0346 HUNTINGDON AVE
ADDRESS WATERBURY
ADDRESS
ZIP 06708

NAME OF BUSINESS

P & P INC

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
MIRROR POLISHING & PLATING	1806	0329	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	5.53		3-1	42000.00	232260	162582
					TOTAL	232260	101500

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	HEAVY MANUFACTURING
VIEW		COMPARED		PROPERTY CLASS	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	3-1	1.00	145000	101500
	3-3	1.00	11585	8110
	3-2	1.00	644771	451340
	TOTAL		801356	560950

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
346 HUNTINGDON AVE	143-783-1	IG		8000001		1

CURRENT OWNER

NAME 1: MIRROR POLISHING & PLATING
NAME 2: COMPANY INC
ADDRESS: 0346 HUNTINGDON AVE
ADDRESS: WATERBURY
ADDRESS:
ZIP: 06708

NAME OF BUSINESS

P & P INC

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
MIRROR POLISHING & PLATING	1806	0329	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	5.53		3-1	42000.00	232260	162582
					TOTAL	232260	101500

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESTRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SETBACK		UTILITIES	GAS/ELEC	MAJOR USE	HEAVY MANUFACTURING
VIEW		COMPARED		PROPERTY CLASS	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION		ASSRS MAP - LOT -	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
346	HUNTINGDON AVE	143-783-1	IG		8000002		1

CURRENT OWNER		NAME OF BUSINESS
NAME 1	MIRROR POLISHING & PLATING	P & P INC
NAME 2	COMPANY INC	
ADDRESS	0346 HUNTINGDON AVE	
ADDRESS	WATERBURY	
ADDRESS		
ZIP	06708	

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
MIRROR POLISHING & PLATING	1806	0329	00/00/0000			

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	3-1	1.00	145000	101500
	3-3	1.00	11585	8110
	3-2	1.00	644771	451340
	TOTAL		801356	560950

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
					TOTAL		101500

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	LOW RISE OFF BUILDIN
VIEW		COMPARED		PROPERTY CLASS	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY — REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
HUNTINGDON AVE	143-783-7	IG		8000001		1

CURRENT OWNER

NAME 1	HALPERIN REAL ESTATE LLC
NAME 2	
ADDRESS	172 EAST AURORA ST
ADDRESS	WATERBURY CT
ADDRESS	
ZIP	06708

NAME OF BUSINESS

0

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
HALPERIN REAL ESTATE LLC	3354	337	06/19/1998	575000	N	W
PFALTZ & BAUER INC	1697	164	06/27/1984		N	W
BRISTOL FLOWED GASKET CO	911	629	00/00/1968		N	O

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1999	5-3	1.00	16640	11650
	TOTAL		16640	11650
1989	5-3	1.00	3000	2100
	TOTAL		3000	2100

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	.76		5-3	42000.00	9450	6615
				TOTAL		9450	11650

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SETBACK		UTILITIES	GAS/ELEC	MAJOR USE	
VIEW		COMPARED		PROPERTY CLASS	VACANT LAND-IND

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
HUNTINGDON AVE	143-783-8	IG		8000001		1

CURRENT OWNER

NAME 1	HALPERIN REAL ESTATE LLC
NAME 2	
ADDRESS	172 EAST AURORA ST
ADDRESS	WATERBURY CT
ADDRESS	
ZIP	06708

NAME OF BUSINESS: 0

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
HALPERIN REAL ESTATE LLC	3354	337	06/19/1996	575000	N	W
PFALTZ & BAUER INC	1697	164	06/27/1984		N	W
BRISTOL FLOWED GASKET CO	911	629	00/00/1968		N	O

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1999	5-3	1.00	11010	7710
	TOTAL		11010	7710
1989	5-3	1.00	7000	4900
	TOTAL		7000	4900

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	.51		5-3	42000.00	23520	16464
					TOTAL	23520	7710

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	
VIEW		COMPARED		PROPERTY CLASS	VACANT LAND-IND

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
- 2-1 LAND(EXCEPT APT.BLDS)
- 2-2 BUILDINGS
- 2-3 APARTMENTS
- 2-4 CONDOMINIUMS
- 2-5 OUTBUILDINGS
- 2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
- 3-1 LAND
- 3-2 BUILDINGS
- 3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
- 4-1 LAND
- 4-2 BUILDINGS
- 4-3 OUTBUILDINGS

VACANT LAND 5-
- 5-1 RESIDENTIAL
- 5-2 COMMERCIAL
- 5-3 INDUSTRIAL
- 5-4 WETLANDS
- 5-5 OUTBUILDINGS

CITY OF WATERBURY — PROPERTY DATA

PRC	LOCATION	PARCEL ID	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SUB DE
4	HUNTINGDON PL	143-783-9	IG		5050001 OF 01	1	

CURRENT OWNER

NAME 1 - CRONIN DENNIS C & LINDA L SURV
NAME 2 -
ADDRESS - 4 HUNTINGDON PL
ADDRESS - WATERBURY CT
ADDRESS -
ZIP - 06708

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
CRONIN DENNIS C & LINDA L SURV	1277	42	07/12/1977	17000	N	W

LAND DESCRIPTION DATA

LAND TYPE	LAND CODE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FUEL VALUE	ASSESSED
PRIME SITE	FRNT&DEPTH	50.00	120.00	1-1	400.00	20700	14490
					TOTAL	20700	3150

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	1-1	1.00	4500	3150
	1-3	1.00	26000	18200
	TOTAL		30500	21350

SITE

NBHD TYPE	MIXED
ROAD	LOCAL
TRAFFIC	LIGHT
BLDG SET BACK	LESS THAN 30'
VIEW	AVERAGE
ELEVATION	EVEN
SEWER	YES
WATER	PUBLIC
UTILITIES	GAS/ELEC
COMPARED	TYPICAL
DESIRABILITY	TYPICAL
LANDSCAPING	TYPICAL
DRIVEWAY	NO

NOTES

DVL 1
'82 6700A 75%,6700A CO 11/82

COST CALCULATIONS

PROPERTY CLASSIFICATION CODES

RESIDENTIAL 1-
1-1 LAND
1-2 EXCESS ACREAGE
1-3 DWELLINGS
1-4 OUTBUILDINGS
1-5 CONDOMINIUMS
1-6 MOBILE MFG HOMES
1-7 CONDO OPTIONS
1-8 MIXED - USE

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL LAND
5-2 COMMERCIAL LAND
5-3 INDUSTRIAL LAND
5-4 WETLANDS
5-5 OUTBUILDINGS

USE ASSESSMENT 6-
6-1 FARM
6-2 FOREST
6-3 OPEN SPACE
6-4 OUTBUILDINGS
6-5 WATER SUPPLY

CITY OF WATERBURY REAL PROPERTY DATA

PRC	LOCATION	PARCEL ID	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
8	HUNTINGDON PL	143-783-10	IG		5050001 OF 02		1

CURRENT OWNER

NAME 1 : WEYMER WILLIAM H & SANDRA M
NAME 2 :
ADDRESS : 30 SUNSET LANE
ADDRESS : WOLCOTT CT
ADDRESS :
ZIP : 06716

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
WEYMER WILLIAM H & SANDRA M	4078	309	12/22/2000		N	Q
PHILLIPS JOAN C & WILLIAM	3948	26	03/20/2000		N	Q
PHILLIPS JOAN C & VANESSA	3948	20	03/20/2000		N	Q
PHILLIPS JOAN C & WILLIAM	3101	263	05/23/1994		N	Q
WEYMER WILLIAM H	3101	164	05/20/1994	30000	N	S
VITONE JOHN R	3101	160	05/20/1994		N	P
VITONE LOUISE L & JOHN R	1579	129	10/01/1982		N	Q
VITONE LOUISE L	654	365	00/00/1952		N	Q

LAND DESCRIPTION DATA

LAND TYPE	LAND CODE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	FRNT&DEPTH	50.00	120.00	1-1	400.00	20700	14490
					TOTAL	20700	3150

SITE

NBHD TYPE	MIXED
ROAD	LOCAL
TRAFFIC	LIGHT
BLDG SET BACK	LESS THAN 30'
VIEW	AVERAGE
ELEVATION	EVEN
SEWER	YES
WATER	PUBLIC
UTILITIES	GAS/ELEC
COMPARED	TYPICAL
DESIRABILITY	TYPICAL
LANDSCAPING	TYPICAL
DRIVEWAY	PAVED

NOTES

'97 4601C ADDITION TO GARAGE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1997	1-1	1.00	4500	3150
	1-3	1.00	11042	7730
	1-4	1.00	4800	3360
	TOTAL		20342	14240
1996	1-1	1.00	4500	3150
	1-3	1.00	11042	7730
	1-4	1.00	3600	2520
	TOTAL		19142	13400
1989	1-1	1.00	4500	3150
	1-3	1.00	11042	7730
	1-4	1.00	200	140
	TOTAL		15742	11020

COST CALCULATIONS

PROPERTY CLASSIFICATION CODES

RESIDENTIAL 1-
1-1 LAND
1-2 EXCESS ACREAGE
1-3 DWELLINGS
1-4 OUTBUILDINGS
1-5 CONDOMINIUMS
1-6 MOBILE MFG HOMES
1-7 CONDO OPTIONS
1-8 MIXED - USE

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL LAND
5-2 COMMERCIAL LAND
5-3 INDUSTRIAL LAND
5-4 WETLANDS
5-5 OUTBUILDINGS

USE ASSESSMENT 6-
6-1 FARM
6-2 FOREST
6-3 OPEN SPACE
6-4 OUTBUILDINGS
6-5 WATER SUPPLY

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
8 HUNTINGDON PL	143-783-10	IG	7900002		1	

CURRENT OWNER

NAME 1: WEYMER WILLIAM H & SANDRA M
NAME 2:
ADDRESS: 30 SUNSET LANE
ADDRESS: WOLCOTT CT
ADDRESS:
ZIP: 06716

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
WEYMER WILLIAM H & SANDRA M	4078	309	12/22/2000		N	Q
PHILLIPS JOAN C & WILLIAM	3948	26	03/20/2000		N	Q
PHILLIPS JOAN C & VANESSA	3948	20	03/20/2000		N	Q
PHILLIPS JOAN C & WILLIAM	3101	263	05/23/1994		N	Q
WEYMER WILLIAM H	3101	164	05/20/1994	30000	N	S
VITONE JOHN R	3101	160	05/20/1994		N	P
VITONE LOUISE L & JOHN R	1579	129	10/01/1982		N	Q
VITONE LOUISE L	654	365	00/00/1952		N	Q

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED

TOTAL 3150

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION	EVEN	DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	LIGHT	WATER	PUBLIC	DRIVEWAY	PAVED
BLDG SET BACK	30' TO 60'	UTILITIES	GAS/ELEC	MAJOR USE	LIGHT IND PROCESSING
VIEW		COMPARED	TYPICAL	PROPERTY CLASS	WAREHOUSES-IND

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1997	1-1	1.00	4500	3150
	1-3	1.00	11042	7730
	1-4	1.00	4800	3360
	TOTAL		20342	14240
1996	1-1	1.00	4500	3150
	1-3	1.00	11042	7730
	1-4	1.00	3600	2520
	TOTAL		19142	13400
1989	1-1	1.00	4500	3150
	1-3	1.00	11042	7730
	1-4	1.00	200	140
	TOTAL		15742	11020

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 *CONDOMINIUMS*
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PRI	LOCATION	PARCEL ID	ZONE	CENSUS TRACT	NBHDSITE	CARD	SUB
14	HUNTINGDON PL	143-783-11	IG		5050001 OF 01	1	

CURRENT OWNER

NAME 1 - MELENDEZ WILFREDO
NAME 2 -
ADDRESS - 14 HUNTINGDON PL
ADDRESS - WATERBURY CT
ADDRESS -
ZIP - 06708

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
MELENDEZ WILFREDO	4066	98	11/22/2000	72500	Y	W
WEYMER WILLIAM H & JOAN C	3948	28	03/20/2000		N	Q
TOMLIN VANESSA L & JOAN C	3948	23	03/20/2000		N	Q
WEYMER WILLIAM H & JOAN C	3387	212	08/02/1996	45000	Y	W
KNIGHT MARY	3371	89	08/02/1996		N	P
KNIGHT JOHN R & MARY	681	122	01/01/1954	11500	N	O

LAND DESCRIPTION DATA

LAND TYPE	LAND CODE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	FRNT&DEPTH	50.00	120.00	1-1			
				TOTAL			3150

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	1-1	1.00	4500	3150
	1-3	1.00	12914	9040
	1-4	1.00	100	70
	TOTAL		17514	12260

SITE

NBHD TYPE	MIXED
ROAD	LOCAL
TRAFFIC	LIGHT
BLDG SET BACK	LESS THAN 30'
VIEW	AVERAGE
ELEVATION	EVEN
SEWER	YES
WATER	PUBLIC
UTILITIES	GAS/ELEC
COMPARED	TYPICAL
DESIRABILITY	TYPICAL
LANDSCAPING	TYPICAL
DRIVEWAY	NOT PAVED

NOTES

DVL3

COST CALCULATIONS

PROPERTY CLASSIFICATION CODES

RESIDENTIAL 1-
1-1 LAND
1-2 EXCESS ACREAGE
1-3 DWELLINGS
1-4 OUTBUILDINGS
1-5 CONDOMINIUMS
1-6 MOBILE MFG HOMES
1-7 CONDO OPTIONS
1-8 MIXED - USE

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL LAND
5-2 COMMERCIAL LAND
5-3 INDUSTRIAL LAND
5-4 WETLANDS
5-5 OUTBUILDINGS

USE ASSESSMENT 6-
6-1 FARM
6-2 FOREST
6-3 OPEN SPACE
6-4 OUTBUILDINGS
6-5 WATER SUPPLY

CITY OF WATERBURY — L PROPERTY DATA

PRC	LOCATION	PARCEL ID	ZONE	CENSUS TRACT	NBHDSITE	CARD	S D
18	HUNTINGDON PL	143-783-12	IG	.	5050001 OF 01	1	

CURRENT OWNER

NAME 1 - HARDT WILLIAM B
NAME 2 -
ADDRESS - 18 HUNTINGDON PLACE
ADDRESS - WATERBURY CT
ADDRESS -
ZIP - 06708

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
HARDT WILLIAM B	3028	2	11/05/1993	63000	Y	W
AUTERI PASQUALE P & JOANN	1424	110	12/04/1979		N	W

LAND DESCRIPTION DATA

LAND TYPE	LAND CODE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	FRNT&DEPTH	50.00	120.00	1-1	400.00	20700	14490
					TOTAL	20700	3150

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	1-1	1.00	4500	3150
	1-3	1.00	12214	8550
	TOTAL		16714	11700

SITE

NBHD TYPE	MIXED
ROAD	LOCAL
TRAFFIC	LIGHT
BLDG SET BACK	LESS THAN 30'
VIEW	AVERAGE
ELEVATION	EVEN
SEWER	YES
WATER	PUBLIC
UTILITIES	GAS/ELEC
COMPARED	TYPICAL
DESIRABILITY	TYPICAL
LANDSCAPING	TYPICAL
DRIVEWAY	NOT PAVED

NOTES

DVL 4

COST CALCULATIONS

PROPERTY CLASSIFICATION CODES

RESIDENTIAL 1-
1-1 LAND
1-2 EXCESS ACREAGE
1-3 DWELLINGS
1-4 OUTBUILDINGS
1-5 CONDOMINIUMS
1-6 MOBILE MFG HOMES
1-7 CONDO OPTIONS
1-8 MIXED - USE

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL LAND
5-2 COMMERCIAL LAND
5-3 INDUSTRIAL LAND
5-4 WETLANDS
5-5 OUTBUILDINGS

USE ASSESSMENT 6-
6-1 FARM
6-2 FOREST
6-3 OPEN SPACE
6-4 OUTBUILDINGS
6-5 WATER SUPPLY

CITY OF WATERBURY REAL PROPERTY DATA

PRI	LOCATION	PARCEL ID	ZONE	CENSUS TRACT	NBHDSITE	CARD	S DI
22	HUNTINGDON PL	143-783-13	IG		5050001 OF 01	1	

CURRENT OWNER

NAME 1 - PHILLIPS JOAN C
NAME 2 -
ADDRESS - 22 HUNTINGDON PL
ADDRESS - WATERBURY CT
ADDRESS -
ZIP - 06708

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
PHILLIPS JOAN C	4073	171	12/11/2000		N	Q
WEYMER WILLIAM H & JOAN C	3948	30	03/20/2000		N	Q
TOMLIN VANESSA & JOAN C	3948	17	03/20/2000		N	Q
WEYMER-WILLIAM N & JOAN	2899	116	10/16/1992	41200	Y	Q
FEDERAL HOME LOAN MORTGAG	2851	115	05/13/1992		N	X
ROSADO WILSON & NAIDO	1748	138	02/14/1985	49000	N	W
PERKINS GERALD S & JESSIE	1610	315	04/19/1983	37000	N	W
	1264	61	04/12/1977		N	O
BARNEY ALCIBETH L	1264	68	04/12/1977		N	O

LAND DESCRIPTION DATA

LAND TYPE	LAND CODE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	FRNT&DEPTH	80.00	120.00	1-1	400.00	23400	16380
					TOTAL	23400	3300

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	1-1	1.00	4714	3300
	1-3	1.00	11742	8220
	1-4	1.00	200	140
	TOTAL		16656	11660

SITE

NBHD TYPE	MIXED
ROAD	LOCAL
TRAFFIC	LIGHT
BLDG SETBACK	LESS THAN 30'
VIEW	AVERAGE
ELEVATION	EVEN
SEWER	YES
WATER	PUBLIC
UTILITIES	GAS/ELEC
COMPARED	TYPICAL
DESIRABILITY	TYPICAL
LANDSCAPING	TYPICAL
DRIVEWAY	PAVED

NOTES

DVL PT 5

COST CALCULATIONS

PROPERTY CLASSIFICATION CODES

RESIDENTIAL 1-
1-1 LAND
1-2 EXCESS ACREAGE
1-3 DWELLINGS
1-4 OUTBUILDINGS
1-5 CONDOMINIUMS
1-6 MOBILE MFG HOMES
1-7 CONDO OPTIONS
1-8 MIXED - USE

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL LAND
5-2 COMMERCIAL LAND
5-3 INDUSTRIAL LAND
5-4 WETLANDS
5-5 OUTBUILDINGS

USE ASSESSMENT 6-
6-1 FARM
6-2 FOREST
6-3 OPEN SPACE
6-4 OUTBUILDINGS
6-5 WATER SUPPLY

CITY OF WATERBURY — L PROPERTY DATA

PRC	LOCATION	PARCEL ID	ZONE	CENSUS TRACT	NBHDSITE	CARD	S D
17	HUNTINGDON PL	143-783-14	IG		5050001 OF 01	1	

CURRENT OWNER

NAME 1 GRIMSLEY EDNA P
NAME 2
ADDRESS 17 HUNTINGDON PL
ADDRESS WATERBURY CT
ADDRESS
ZIP 06708

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
GRIMSLEY EDNA P	1581	290	10/20/1982		N	Q
GRIMSLEY ADDIES D	1408	174	09/14/1979	29900	N	W

LAND DESCRIPTION DATA

LAND TYPE	LAND CODE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	FRNT&DEPTH	50.00	120.00	1-1	400.00	20700	14490
					TOTAL	20700	3150

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	1-1	1.00	4500	3150
	1-3	1.00	12785	8950
	1-4	1.00	100	70
	TOTAL		17385	12170

SITE

NBHD TYPE	MIXED
ROAD	LOCAL
TRAFFIC	LIGHT
BLDG SET BACK	LESS THAN 30'
VIEW	AVERAGE
ELEVATION	EVEN
SEWER	YES
WATER	PUBLIC
UTILITIES	GAS/ELEC
COMPARED	TYPICAL
DESIRABILITY	TYPICAL
LANDSCAPING	TYPICAL
DRIVEWAY	NOT PAVED

NOTES

COST CALCULATIONS

PROPERTY CLASSIFICATION CODES

RESIDENTIAL 1-
1-1 LAND
1-2 EXCESS ACREAGE
1-3 DWELLINGS
1-4 OUTBUILDINGS
1-5 CONDOMINIUMS
1-6 MOBILE MFG HOMES
1-7 CONDO OPTIONS
1-8 MIXED - USE

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 *OUTBUILDINGS*

VACANT LAND 5-
5-1 RESIDENTIAL LAND
5-2 COMMERCIAL LAND
5-3 *INDUSTRIAL LAND*
5-4 WETLANDS
5-5 OUTBUILDINGS

USE ASSESSMENT 6-
6-1 FARM
6-2 FOREST
6-3 OPEN SPACE
6-4 OUTBUILDINGS
6-5 WATER SUPPLY

CITY OF WATERBURY REAL PROPERTY DATA

PRI	LOCATION	PARCEL ID	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
11	HUNTINGDON PL	143-783-15	IG		5050001 OF 01	1	

CURRENT OWNER

NAME 1 - ZUTA ZINIJE
NAME 2 - % SEVEN BROTHERS RESTAURANT
ADDRESS - 19 CHERRY ST
ADDRESS - WATERBURY CT
ADDRESS -
ZIP - 06702

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
ZUTA ZINIJE	1608	144	04/05/1983		N	O
ZUTA ZINIJE & VULLNET ZHU	1576	32	09/13/1982	26000	N	
TURNER EST JANET R	1565	106	07/14/1982		N	S
TURNER JANET R	695	359	01/01/1953		N	Q

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	1-1	1.00	4500	3150
	1-3	1.00	10985	7690
	1-4	1.00	242	170
	TOTAL		15727	11010

LAND DESCRIPTION DATA

LAND TYPE	LAND CODE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	FRNT&DEPTH	50.00	120.00	1-1	400.00	20700	14490
					TOTAL	20700	3150

SITE

NBHD TYPE - MIXED
ROAD - LOCAL
TRAFFIC - LIGHT
BLDG SET BACK - LESS THAN 30'
VIEW - AVERAGE
ELEVATION - EVEN
SEWER - YES
WATER - PUBLIC
UTILITIES - GAS/ELEC
COMPARED - TYPICAL
DESIRABILITY - TYPICAL
LANDSCAPING - TYPICAL
DRIVEWAY - NOT PAVED

NOTES

DVL 8

COST CALCULATIONS

PROPERTY CLASSIFICATION CODES

RESIDENTIAL 1-
1-1 LAND
1-2 EXCESS ACREAGE
1-3 DWELLINGS
1-4 OUTBUILDINGS
1-5 CONDOMINIUMS
1-6 MOBILE MFG HOMES
1-7 CONDO OPTIONS
1-8 MIXED - USE

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL LAND
5-2 COMMERCIAL LAND
5-3 INDUSTRIAL LAND
5-4 WETLANDS
5-5 OUTBUILDINGS

USE ASSESSMENT 6-
6-1 FARM
6-2 FOREST
6-3 OPEN SPACE
6-4 OUTBUILDINGS
6-5 WATER SUPPLY

CITY OF WATERBURY REAL PROPERTY DATA

PRC	LOCATION	PARCEL ID	ZONE	CENSUS TRACT	NBHDSITE	CARD	S
7	HUNTINGDON PL	143-783-16	IG		5050001 OF 01	1	

CURRENT OWNER

NAME 1 : JACQUES DAVID & LORI ANN SURV
NAME 2 :
ADDRESS : 7 HUNTINGDON PL
ADDRESS : WATERBURY CT
ADDRESS :
ZIP : 06708

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
JACQUES DAVID & LORI ANN SURV	3394	235	10/04/1996		N	Q
JACQUES DAVID	2927	341	01/05/1993		N	N
BEAUDOIN DOROTHY M & LOUI	2927	343	01/05/1993	67000	Y	W
BEAUDOIN DOROTHY	2927	342	01/05/1993		N	Q
BEAUDOIN DOROTHY M & LOUI	1609	310	04/15/1983		N	Q
BEAUDOIN DOROTHY M	1609	312	04/15/1983		N	Q
BEAUDOIN DOROTHY M	1079	220	00/00/1973		N	P

LAND DESCRIPTION DATA

LAND TYPE	LAND CODE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	FRNT&DEPTH	50.00	120.00	1-1	400.00	20700	14490
					TOTAL	20700	3150

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	1-1	1.00	4500	3150
	1-3	1.00	12742	8920
	1-4	1.00	100	70
	TOTAL		17342	12140

SITE

NBHD TYPE	MIXED
ROAD	LOCAL
TRAFFIC	LIGHT
BLDG SET BACK	LESS THAN 30'
VIEW	AVERAGE
ELEVATION	EVEN
SEWER	YES
WATER	PUBLIC
UTILITIES	GAS/ELEC
COMPARED	TYPICAL
DESIRABILITY	TYPICAL
LANDSCAPING	TYPICAL
DRIVEWAY	NOT PAVED

NOTES

DVL 7

COST CALCULATIONS

PROPERTY CLASSIFICATION CODES

RESIDENTIAL 1-
1-1 LAND
1-2 EXCESS ACREAGE
1-3 DWELLINGS
1-4 OUTBUILDINGS
1-5 CONDOMINIUMS
1-6 MOBILE MFG HOMES
1-7 CONDO OPTIONS
1-8 MIXED - USE

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL LAND
5-2 COMMERCIAL LAND
5-3 INDUSTRIAL LAND
5-4 WETLANDS
5-5 OUTBUILDINGS

USE ASSESSMENT 6-
6-1 FARM
6-2 FOREST
6-3 OPEN SPACE
6-4 OUTBUILDINGS
6-5 WATER SUPPLY

CITY OF WATERBURY REAL PROPERTY DATA

PRC	LOCATION	PARCEL ID	ZONE	CENSUS TRACT	NBHDSITE	CARD	S D
1	HUNTINGDON PL	143-783-17	IG		5050001 OF 01	1	

CURRENT OWNER

NAME 1 - BROUSSEAU GEORGE D
NAME 2 -
ADDRESS - 1 HUNTINGDON PL
ADDRESS - WATERBURY CT
ADDRESS -
ZIP - 06708

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
BROUSSEAU GEORGE D	670	20	01/01/1953	8000	N	W

LAND DESCRIPTION DATA

LAND TYPE	LAND CODE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	FRNT&DEPTH	50.00	120.00	1-1	400.00	20700	14490
					TOTAL	20700	3150

SITE

NBHD TYPE	MIXED
ROAD	LOCAL
TRAFFIC	LIGHT
BLDG SET BACK	LESS THAN 30'
VIEW	AVERAGE
ELEVATION	EVEN
SEWER	YES
WATER	PUBLIC
UTILITIES	GAS/ELEC
COMPARED	TYPICAL
DESIRABILITY	TYPICAL
LANDSCAPING	TYPICAL
DRIVEWAY	NO

NOTES

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	1-1	1.00	4500	3150
	1-3	1.00	12157	8510
	TOTAL		16657	11660

COST CALCULATIONS

PROPERTY CLASSIFICATION CODES

RESIDENTIAL 1-
1-1 LAND
1-2 EXCESS ACREAGE
1-3 DWELLINGS
1-4 OUTBUILDINGS
1-5 CONDOMINIUMS
1-6 MOBILE MFG HOMES
1-7 CONDO OPTIONS
1-8 MIXED - USE

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL LAND
5-2 COMMERCIAL LAND
5-3 INDUSTRIAL LAND
5-4 WETLANDS
5-5 OUTBUILDINGS

USE ASSESSMENT 6-
6-1 FARM
6-2 FOREST
6-3 OPEN SPACE
6-4 OUTBUILDINGS
6-5 WATER SUPPLY

CITY OF WATERBU[illegible] REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
150 EAST AURORA ST	143-783-21	IG		8000001		1

CURRENT OWNER

NAME 1: STEIN HAROLD
NAME 2:
ADDRESS: 839A HERITAGE VILLAGE
ADDRESS: SOUTHBURY CT
ADDRESS:
ZIP: 06488

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
STEIN HAROLD	1317	98	04/19/1978		N	W
STEIN HAROLD & TORRINGT	0504	0264	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	2.52		3-1	42000.00	105840	74088
					TOTAL	105840	59500

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	LIGHT IND PROCESSING
VIEW		COMPARED		PROPERTY CLASS	MED MANUFAC/ASSEMBLY

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1994	3-1	1.00	85000	59500
	3-2	1.00	481300	336910
	TOTAL		566300	396410
1992	1-0		535444	374811
	TOTAL		535444	374811

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION		ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
150	EAST AURORA ST	143-783-21	IG		8000001		1

CURRENT OWNER

NAME 1 - STEIN HAROLD
NAME 2 -
ADDRESS - 839A HERITAGE VILLAGE
ADDRESS - SOUTHBURY CT
ADDRESS -
ZIP - 06488

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
STEIN HAROLD	1317	98	04/19/1978		N	W
STEIN HAROLD & TORRINGT	0504	0264	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	2.52		3-1	42000.00	105840	74088
					TOTAL	105840	59500

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION -		DESIRABILITY -	TYPICAL
ROAD	LOCAL	SEWER -	YES	LANDSCAPING -	TYPICAL
TRAFFIC	MEDIUM	WATER -	PUBLIC	DRIVEWAY -	
BLDG SET BACK		UTILITIES -	GAS/ELEC	MAJOR USE -	LIGHT IND PROCESSING
VIEW		COMPARED -		PROPERTY CLASS	MED MANUFAC/ASSEMBLY

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1994	3-1	1.00	85000	59500
	3-2	1.00	481300	336910
	TOTAL		566300	396410
1992	1-0		535444	374811
	TOTAL		535444	374811

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION		ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
150	EAST AURORA ST	143-783-21	IG		8000001		1

CURRENT OWNER

NAME 1	STEIN HAROLD
NAME 2	
ADDRESS	839A HERITAGE VILLAGE
ADDRESS	SOUTHBURY CT
ADDRESS	
ZIP	06488

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
STEIN HAROLD	1317	98	04/19/1978		N	W
STEIN HAROLD & TORRINGT	0504	0264	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	2.52		3-1	42000.00	105840	74088
					TOTAL	105840	59500

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	LIGHT IND PROCESSING
VIEW		COMPARED		PROPERTY CLASS	MED MANUFAC/ASSEMBLY

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1994	3-1	1.00	85000	59500
	3-2	1.00	481300	336910
	TOTAL		566300	396410
1992	1-0		535444	374811
	TOTAL		535444	374811

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
150 EAST AURORA ST	143-783-21	IG		8000001		1

CURRENT OWNER

NAME 1	STEIN HAROLD
NAME 2	
ADDRESS	839A HERITAGE VILLAGE
ADDRESS	SOUTHBURY CT
ADDRESS	
ZIP	06488

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
STEIN HAROLD	1317	98	04/19/1978		N	W
STEIN HAROLD & TORRINGT	0504	0264	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	2.52		3-1	42000.00	105840	74088
					TOTAL	105840	59500

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESTRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	LIGHT IND PROCESSING
VIEW		COMPARED		PROPERTY CLASS	MED MANUFAC/ASSEMBLY

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C/O DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1994	3-1	1.00	85000	59500
	3-2	1.00	481300	336910
	TOTAL		566300	396410
1992	1-0		535444	374811
	TOTAL		535444	374811

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
150 EAST AURORA ST	143-783-21	IG		8000002		1

CURRENT OWNER

NAME 1: STEIN HAROLD
NAME 2:
ADDRESS: 839A HERITAGE VILLAGE
ADDRESS: SOUTHBURY CT
ADDRESS:
ZIP: 06488

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
STEIN HAROLD	1317	98	04/19/1978		N	W
STEIN HAROLD & TORRINGT	0504	0264	00/00/0000			

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1994	3-1	1.00	85000	59500
	3-2	1.00	481300	336910
	TOTAL		566300	396410
1992	1-0		535444	374811
	TOTAL		535444	374811

BASE DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED

TOTAL 59500

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	LIGHT IND PROCESSING
VIEW		COMPARED		PROPERTY CLASS	MED MANUFAC/ASSEMBLY

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION		ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE CARD	SIDE
348	HUNTINGDON AVE	143-783-111	IG		8000001	1

CURRENT OWNER		NAME OF BUSINESS
NAME 1	HALPERIN REAL ESTATE LLC	0
NAME 2		
ADDRESS 1	172 EAST AURORA ST	
ADDRESS 2	WATERBURY CT	
ADDRESS 3		
ZIP	06708	

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
HALPERIN REAL ESTATE LLC	3354	337	06/19/1996	575000	N	W
PFALTZ & BAUER INC	1697	164	06/27/1984		N	W
BRISTOL FLOWED GASKET COM	935	598	00/00/1969	45000	N	

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	.85		2-1	42000.00	37800	26460
					TOTAL	37800	11260

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	MULTI USE-MULTI OCCU
VIEW		COMPARED		PROPERTY CLASS	SM RETAIL-10000 SQFT

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1999	2-1	1.00	16080	11260
	2-5	1.00	1742	1220
	2-2	1.00	17328	12130
	TOTAL		35150	24610
1989	2-1	1.00	41142	28800
	2-5	1.00	1742	1220
	2-2	1.00	17328	12130
	TOTAL		60212	42150

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
- 2-1 LAND(EXCEPT APT.BLDS)
- 2-2 BUILDINGS
- 2-3 APARTMENTS
- 2-4 CONDOMINIUMS
- 2-5 OUTBUILDINGS
- 2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
- 3-1 LAND
- 3-2 BUILDINGS
- 3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
- 4-1 LAND
- 4-2 BUILDINGS
- 4-3 OUTBUILDINGS

VACANT LAND 5-
- 5-1 RESIDENTIAL
- 5-2 COMMERCIAL
- 5-3 INDUSTRIAL
- 5-4 WETLANDS
- 5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
172 EAST AURORA ST	143-783-211	IG		8000001		1

CURRENT OWNER

NAME 1 - HALPERIN REAL ESTATE LLC
NAME 2 -
ADDRESS - 172 EAST AURORA ST
ADDRESS - WATERBURY CT
ADDRESS -
ZIP - 06708

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
HALPERIN REAL ESTATE LLC	3354	337	06/19/1996	575000	N	W
PFALTZ & BAUER INC	1697	164	06/27/1984	700000	N	W
BRISTOL FLOWED GASKET CO	940	323	01/01/1969		N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	3.92		3-1	42000.00	164640	115248
					TOTAL	164640	55130

SITE

NBHD TYPE -	INDUSTRIAL	ELEVATION -		DESIRABILITY -	TYPICAL
ROAD -	LOCAL	SEWER -	YES	LANDSCAPING -	TYPICAL
TRAFFIC -	MEDIUM	WATER -	PUBLIC	DRIVEWAY -	
BLDG SET BACK -		UTILITIES -	GAS/ELEC	MAJOR USE -	LIGHT IND PROCESSING
VIEW -		COMPARED -		PROPERTY CLASS -	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1999	3-1	1.00	78750	55130
	3-3	1.00	6428	4500
	3-2	1.00	309285	216500
	TOTAL		394463	276130
1989	3-1	1.00	64285	45000
	3-3	1.00	6428	4500
	3-2	1.00	309285	216500
	TOTAL		379998	266000

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
172 EAST AURORA ST	143-783-211	IG		8000001		1

CURRENT OWNER

NAME 1	HALPERIN REAL ESTATE LLC
NAME 2	
ADDRESS	172 EAST AURORA ST
ADDRESS	WATERBURY CT
ADDRESS	
ZIP	06708

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
HALPERIN REAL ESTATE LLC	3354	337	06/19/1996	575000	N	W
PFALTZ & BAUER INC	1697	164	06/27/1984	700000	N	W
BRISTOL FLOWED GASKET CO	940	323	01/01/1969		N	W

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1999	3-1	1.00	78750	55130
	3-3	1.00	6428	4500
	3-2	1.00	309285	216500
	TOTAL		394463	276130
1989	3-1	1.00	64285	45000
	3-3	1.00	6428	4500
	3-2	1.00	309285	216500
	TOTAL		379998	266000

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	3.92		3-1	42000.00	164640	115248
					TOTAL	164640	55130

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	LIGHT IND PROCESSING
VIEW		COMPARED		PROPERTY CLASS	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
- 2-1 LAND(EXCEPT APT.BLDS)
- 2-2 BUILDINGS
- 2-3 APARTMENTS
- 2-4 CONDOMINIUMS
- 2-5 OUTBUILDINGS
- 2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
- 3-1 LAND
- 3-2 BUILDINGS
- 3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
- 4-1 LAND
- 4-2 BUILDINGS
- 4-3 OUTBUILDINGS

VACANT LAND 5-
- 5-1 RESIDENTIAL
- 5-2 COMMERCIAL
- 5-3 INDUSTRIAL
- 5-4 WETLANDS
- 5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
111 EAST AURORA ST	143-707-19	IG		8000001		1

CURRENT OWNER

NAME OF BUSINESS

NAME 1: BOAS ANDREW M & CECELIA A
NAME 2: BERNIER AS TRUSTEES
ADDRESS: 666 THIRD AVE
ADDRESS: % DUNNINGTON, BARTHOLOW & MILL
ADDRESS: NEW YORK NY
ZIP: 10017

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	2-1	1.00	15000	10500
	2-2	1.00	25000	17500
	TOTAL		40000	28000

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
BOAS ANDREW M & CECELIA A	4019	100	08/22/2000		N	V
BERNIER EDMONDE F	1138	77	01/01/1974	125000	N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	.90		2-1	42000.00	37800	26460
					TOTAL	37800	10500

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	MULTI USE-MULTI OCCU
VIEW		COMPARED		PROPERTY CLASS	OFFICE BUILD/1&2 STY

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION		ASSRS MAP	LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
123	EAST AURORA ST	143-707-20		IG		8000001		1

CURRENT OWNER

NAME 1	SULLIVAN JAMES S CABLE CO INC
NAME 2	
ADDRESS	123 EAST AURORA ST
ADDRESS	WATERBURY CT
ADDRESS	
ZIP	06708

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
SULLIVAN JAMES S CABLE CO INC	693	196	01/01/1954	42000	N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	1.10		2-1	42000.00	46200	32340
					TOTAL	46200	24500

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	MULTI USE-MULTI OCCU
VIEW		COMPARED		PROPERTY CLASS	SM RETAIL-10000 SQFT

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1993	2-1	1.00	35000	24500
	2-2	1.00	62300	43610
	TOTAL		97300	68110
1989	2-1	1.00	35000	24500
	2-5	1.00		
	2-2	1.00	62300	43610
	TOTAL		97300	68110

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION		ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
117	EAST AURORA ST	143-707-191	IG		8000001		1

CURRENT OWNER

NAME 1: B & V REALTY LLC
NAME 2:
ADDRESS: 109 NICHOLS DR
ADDRESS: WATERBURY CT
ADDRESS:
ZIP: 06708

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
B & V REALTY LLC	3524	192	09/16/1997	800000	Y	W
UPS THRIFT PLAN CORP	1022	0182	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	3.50		3-1	42000.00	147000	102900
					TOTAL	147000	81900

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	STRGE,WARE,DIST FACI
VIEW		COMPARED		PROPERTY CLASS	WAREHOUSES-IND

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1998	3-1	1.00	117000	81900
	3-2	1.00	546130	382290
	TOTAL		663130	464190
1993	3-1	1.00	117000	81900
	3-2	1.00	494700	346290
	TOTAL		611700	428190
1989	3-1	1.00	117000	81900
	3-3	1.00		
	3-2	1.00	494700	346290
	TOTAL		611700	428190

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION		ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE CARD	SIDE
75	EAST AURORA ST	143-707-192	IG		8000001	1

CURRENT OWNER

NAME 1	BOAS ANDREW M & CECELIA A
NAME 2	BERNIER AS TRUSTEES
ADDRESS	% DUNNINGTON,BARTHOLW &MILLER
ADDRESS	666 THIRD AVE
ADDRESS	NEW YORK NY
ZIP	10017

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
BOAS ANDREW M & CECELIA A	4019	100	08/22/2000		N	V
BERNIER EDMONDE F	1138	77	01/01/1974	125000	N	W

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1993	3-1	1.00	100000	70000
	3-2	1.00	126400	88480
	TOTAL		226400	158480
1989	3-1	1.00	100000	70000
	3-3	1.00		
	3-2	1.00	126400	88480
	TOTAL		226400	158480

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	3.03		3-1	42000.00	127260	89082
				TOTAL		127260	70000

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	SMALL IND,AUTO BODY
VIEW		COMPARED		PROPERTY CLASS	SMALL SHOPS

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	CONF DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
75 EAST AURORA ST	143-707-192	IG		8000001		1

CURRENT OWNER

NAME 1: BOAS ANDREW M & CECELIA A
NAME 2: BERNIER AS TRUSTEES
ADDRESS: % DUNNINGTON,BARTHOLW &MILLER
ADDRESS: 666 THIRD AVE
ADDRESS: NEW YORK NY
ZIP: 10017

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
BOAS ANDREW M & CECELIA A	4019	100	08/22/2000		N	V
BERNIER EDMONDE F	1138	77	01/01/1974	125000	N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	3.03		3-1	42000.00	127260	89082
					TOTAL	127260	70000

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	SMALL IND,AUTO BODY
VIEW		COMPARED		PROPERTY CLASS	SMALL SHOPS

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1993	3-1	1.00	100000	70000
	3-2	1.00	126400	88480
	TOTAL		226400	158480
1989	3-1	1.00	100000	70000
	3-3	1.00		
	3-2	1.00	126400	88480
	TOTAL		226400	158480

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY P L PROPERTY DATA

PRC	LOCATION	PARCEL ID	ZONE	CENSUS TRACT	NBHDSITE	CARD	S D
447	HUNTINGDON AVE	143-777-5	IP		5050001 OF 01	1	

CURRENT OWNER

NAME 1: FILIPPONE MARY J
NAME 2:
ADDRESS: 447 HUNTINGDON AVE
ADDRESS: WATERBURY CT
ADDRESS:
ZIP: 06708

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
FILIPPONE MARY J	1723	135	10/26/1984		N	Q
FILIPPONE ROCCO & MARY J	655	248	00/00/1952	11500	N	W

LAND DESCRIPTION DATA

LAND TYPE	LAND CODE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	FRNT&DEPTH	100.00	200.00	1-1	400.00	25200	17640
					TOTAL	25200	5250

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	1-1	1.00	7500	5250
	1-3	1.00	20100	14070
	TOTAL		27600	19320

SITE

NBHD TYPE	MIXED
ROAD	LOCAL
TRAFFIC	MEDIUM
BLDG SET BACK	30' TO 60'
VIEW	AVERAGE
ELEVATION	ABOVE
SEWER	YES
WATER	PUBLIC
UTILITIES	GAS/ELEC
COMPARED	TYPICAL
DESIRABILITY	TYPICAL
LANDSCAPING	TYPICAL
DRIVEWAY	PAVED

NOTES

COST CALCULATIONS

PROPERTY CLASSIFICATION CODES

RESIDENTIAL 1-
1-1 LAND
1-2 EXCESS ACREAGE
1-3 DWELLINGS
1-4 OUTBUILDINGS
1-5 CONDOMINIUMS
1-6 MOBILE MFG HOMES
1-7 CONDO OPTIONS
1-8 MIXED - USE

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL LAND
5-2 COMMERCIAL LAND
5-3 INDUSTRIAL LAND
5-4 WETLANDS
5-5 OUTBUILDINGS

USE ASSESSMENT 6-
6-1 FARM
6-2 FOREST
6-3 OPEN SPACE
6-4 OUTBUILDINGS
6-5 WATER SUPPLY

CITY OF WATERBUR[illegible]EAL PROPERTY DATA

PROPERTY [illegible]ION		ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
327	HUNTINGDON AVE	143-863-2	IG		8000001		1

CURRENT OWNER

NAME 1: I M E ASSOCIATES LLC
NAME 2:
ADDRESS: 85 RICHARD RD
ADDRESS: WOLCOTT CT
ADDRESS:
ZIP: 06716

NAME OF BUSINESS

GEM CONSTRUCTION

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	3-1	1.00	18000	12600
	3-2	1.00	147357	103150
	TOTAL		165357	115750

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
I M E ASSOCIATES LLC	3875	49	10/07/1999	330000	Y	W
LUKOS RITA TRUSTEE	1544	104	02/26/1982	12000	N	W
COLONIAL BANK	1498	124	04/07/1981		N	X
MILES FOUNDATION INC	1426	245	12/17/1979		N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	1.32		2-1	42000.00	55440	38808
					TOTAL	55440	12600

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	STRGE,WARE,DIST FACI
VIEW		COMPARED		PROPERTY CLASS	OTHER IND STRUCTURES

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE CARD	SIDE
345 HUNTINGDON AVE	143-863-3	IP		5050001	1

CURRENT OWNER

NAME 1	DAGOSTINO MARIO & MICHAEL A
NAME 2	SURV
ADDRESS	33 WILLIAM ST
ADDRESS	WATERTOWN CT
ADDRESS	
ZIP	06795

NAME OF BUSINESS

0

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
DAGOSTINO MARIO & MICHAEL A	3008	175	09/14/1993	57000	Y	W
GEM CONSTRUCTION CO INC	2486	141	06/15/1989	150000	Y	W
AUGER LEDGER & CLEMENCE	789	30	01/01/1960		N	Q

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	FRNT&DEPTH	92.50	134.00	1-1			
					TOTAL		4200

SITE

NBHD TYPE	MIXED	ELEVATION	EVEN	DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	LIGHT	WATER	PUBLIC	DRIVEWAY	PAVED
BLDG SET BACK	MORE THAN 60'	UTILITIES	GAS/ELEC	MAJOR USE	CONVERTED APTS
VIEW	AVERAGE	COMPARED	TYPICAL	PROPERTY CLASS	05-19 FAMILY

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1998	2-6	1.00	6000	4200
	2-3	1.00	26043	18230
	TOTAL		32043	22430
1996	1-1	1.00	6000	4200
	1-3	1.00	26043	18230
	TOTAL		32043	22430
1994	1-1	1.00	6000	4200
	1-3	1.00	21542	15080
	TOTAL		27542	19280
1992	1-1	1.00	6000	4200
	1-3	1.00	21542	15080
	1-4	1.00	200	140
	TOTAL		27742	19420
1989	1-1	1.00	6000	4200
	1-3	1.00	21542	15080
	1-4	1.00	200	140
	TOTAL		27742	19420

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY PROPERTY DATA

PROP	LOCATION	PARCEL ID	ONE	CENSUS TRACT	NBHDSITE	CARD	9 DI
407	HUNTINGDON AVE	143-863-4	IP		5050001 OF 01	1	

CURRENT OWNER

NAME 1: GERVASE SALVATORE N & CARMELA
NAME 2: SURV
ADDRESS: 407 HUNTINGDON AVE
ADDRESS: WATERBURY CT
ADDRESS:
ZIP: 06708

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
GERVASE SALVATORE N & CARMELA	1745	3	01/30/1985		N	W
SADLER, JOE	1599	338	02/04/1983		N	P
SADLER JOE & ELIZABETH	637	161	00/00/1951	11500	N	W

LAND DESCRIPTION DATA

LAND TYPE	LAND CODE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	FRNT&DEPTH	103.00	120.00	1-1	400.00	25470	17829
					TOTAL	25470	3500

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	1-1	1.00	5000	3500
	1-3	1.00	19571	13700
	TOTAL		24571	17200

SITE

NBHD TYPE	MIXED
ROAD	LOCAL
TRAFFIC	MEDIUM
BLDG SET BACK	30' TO 60'
VIEW	AVERAGE
ELEVATION	ABOVE
SEWER	YES
WATER	PUBLIC
UTILITIES	GAS/ELEC
COMPARED	TYPICAL
DESIRABILITY	TYPICAL
LANDSCAPING	TYPICAL
DRIVEWAY	PAVED

NOTES

COST CALCULATIONS

PROPERTY CLASSIFICATION CODES

RESIDENTIAL 1-
1-1 LAND
1-2 EXCESS ACREAGE
1-3 DWELLINGS
1-4 OUTBUILDINGS
1-5 CONDOMINIUMS
1-6 MOBILE MFG HOMES
1-7 CONDO OPTIONS
1-8 MIXED - USE

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL LAND
5-2 COMMERCIAL LAND
5-3 INDUSTRIAL LAND
5-4 WETLANDS
5-5 OUTBUILDINGS

USE ASSESSMENT 6-
6-1 FARM
6-2 FOREST
6-3 OPEN SPACE
6-4 OUTBUILDINGS
6-5 WATER SUPPLY

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
EAST AURORA ST	143-864-18	IG		8000001		1

CURRENT OWNER

NAME 1 - MACDERMID INCORPORATED
NAME 2 -
ADDRESS - 0245 FREIGHT ST
ADDRESS - WATERBURY
ADDRESS -
ZIP - 06702

NAME OF BUSINESS

MACDERMID INC

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
MACDERMID INCORPORATED	1297	0286	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	3.43		3-1	42000.00	144060	100842
					TOTAL	144060	105000

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION -		DESIRABILITY -	TYPICAL
ROAD -	LOCAL	SEWER -	YES	LANDSCAPING -	TYPICAL
TRAFFIC -	MEDIUM	WATER -	PUBLIC	DRIVEWAY -	
BLDG SET BACK -		UTILITIES -	GAS/ELEC	MAJOR USE -	LIGHT IND PROCESSING
VIEW -		COMPARED -		PROPERTY CLASS	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	3-1	1.00	150000	105000
	3-2	1.00	285000	199500
	TOTAL		435000	304500

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
37 EAST AURORA ST	144-707-1	IG		8000001		1

CURRENT OWNER

NAME 1	RYDER TRUCK RENTAL INC
NAME 2	
ADDRESS	P O BOX 205719
ADDRESS	MIAMI FL
ADDRESS	
ZIP	33102

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
RYDER TRUCK RENTAL INC	0543	0047	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	3.98		3-1	42000.00	167160	117012
					TOTAL	167160	91000

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	MULTI USE-MULTI OCCU
VIEW		COMPARED		PROPERTY CLASS	OTHER IND STRUCTURES

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	3-1	1.00	130000	91000
	3-2	1.00	170000	119000
	TOTAL		300000	210000

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
- 2-1 LAND(EXCEPT APT.BLDS)
- 2-2 BUILDINGS
- 2-3 APARTMENTS
- 2-4 CONDOMINIUMS
- 2-5 OUTBUILDINGS
- 2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
- 3-1 LAND
- 3-2 BUILDINGS
- 3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
- 4-1 LAND
- 4-2 BUILDINGS
- 4-3 OUTBUILDINGS

VACANT LAND 5-
- 5-1 RESIDENTIAL
- 5-2 COMMERCIAL
- 5-3 INDUSTRIAL
- 5-4 WETLANDS
- 5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE CARD	SIDE
51 EAST AURORA ST	144-707-2	IG		8000001	1

CURRENT OWNER

NAME 1 - BOAS ANDREW M & CELCELIA A
NAME 2 - BERNIER AS TRUSTEES
ADDRESS - % DUNNINGTON,BARTHOLOW &MILLER
ADDRESS - 666 THIRD AVE
ADDRESS - NEW YORK NY
ZIP - 10017

NAME OF BUSINESS

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	3-1	1.00	150000	105000
	3-2	1.00	209400	146580
	TOTAL		359400	251580

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
BOAS ANDREW M & CELCELIA A	4019	103	08/22/2000		N	V
BERNIER EDMONDE	1263	92	04/05/1977	200000	N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	4.50		3-1	42000.00	189000	132300
					TOTAL	189000	105000

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	STRGE,WARE,DIST FACI
VIEW		COMPARED		PROPERTY CLASS	TRUCK TERMINALS-IND

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION		ASSRS MAP	LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
51	EAST AURORA ST	144-707-2		IG		8000001		1

CURRENT OWNER

NAME-1: BOAS ANDREW M & CELCELIA A
NAME-2: BERNIER AS TRUSTEES
ADDRESS: % DUNNINGTON,BARTHOLOW &MILLER
ADDRESS: 666 THIRD AVE
ADDRESS: NEW YORK NY
ZIP: 10017

NAME OF BUSINESS

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	3-1	1.00	150000	105000
	3-2	1.00	209400	146580
	TOTAL		359400	251580

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
BOAS ANDREW M & CELCELIA A	4019	103	08/22/2000		N	V
BERNIER EDMONDE	1263	92	04/05/1977	200000	N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	4.50		3-1	42000.00	189000	132300
				TOTAL		189000	105000

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	STRGE,WARE,DIST FACI
VIEW		COMPARED		PROPERTY CLASS	TRUCK TERMINALS-IND

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
237 EAST AURORA ST	160-707-2	IG		8000001		1

CURRENT OWNER

NAME 1: OLIG LTD
NAME 2:
ADDRESS: 237 EAST AURORA ST
ADDRESS: WATERBURY CT
ADDRESS:
ZIP: 06708

NAME OF BUSINESS

THE LEA MANUFACTURING CO.

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	3-1	1.00	212000	148400
	3-2	1.00	788000	551600
	TOTAL		1000000	700000

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
OLIG LTD	4036	48	09/26/2000		N	N
LEA MANUFACTURING CO	1653	122	11/18/1983		N	N
W G CORPORATION	1647	311	10/21/1983		N	Q
LEA MANUFACTURING CO	748	372	00/00/1946		N	O

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	7.60		3-1	42000.00	319200	223440
				TOTAL		319200	148400

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	HEAVY	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	LIGHT MANUFACTURING
VIEW		COMPARED		PROPERTY CLASS	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
225 EAST AURORA ST	160-707-3	IG		8000001		1

CURRENT OWNER

NAME 1: AREV I LIMITED PARTNERSHIP
NAME 2:
ADDRESS: 225 EAST AURORA ST
ADDRESS2: WATERBURY CT
ADDRESS3:
ZIP: 06708

NAME OF BUSINESS

ALBERT BROTHER'S SCRAP METAL S

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1989	3-1	1.00	70000	49000
	3-3	1.00	135000	94500
	3-2	1.00	195000	136500
	TOTAL		400000	280000

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
AREV I LIMITED PARTNERSHIP	2852	116	05/15/1992		N	Q
ALBERT BURTON TRUSTEE	958	127	01/01/1970		N	O

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	2.80		3-1	42000.00	117600	82320
				TOTAL		117600	49000

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	STRGE,WARE,DIST FACI
VIEW		COMPARED		PROPERTY CLASS	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION		ASSES MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
181	EAST AURORA ST	160-707-4	IG		8000001		1

CURRENT OWNER

NAME 1: AREV I LIMITED PARTNERSHIP
NAME 2:
ADDRESS: 0225 AURORA ST
ADDRESS: WATERBURY
ADDRESS:
ZIP: 06708

NAME OF BUSINESS

PRECISION SPLITTING INC.

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
AREV I LIMITED PARTNERSHIP	0636	0486	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	8.65		3-1	42000.00	363300	254310
					TOTAL	363300	170580

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	HEAVY MANUFACTURING
VIEW		COMPARED		PROPERTY CLASS	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1994	3-1	1.00	243685	170580
	3-2	1.00	155785	109050
	TOTAL		399470	279630
1992	3-1	1.00	243685	170580
	3-2	1.00	150000	105000
	TOTAL		393685	275580
1989	3-1	1.00	243685	170580
	3-2	1.00	150000	105000
	TOTAL		393685	275580

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
181 EAST AURORA ST	160-707-4	IG		8000002		1

CURRENT OWNER

NAME 1: AREV I LIMITED PARTNERSHIP
NAME 2:
ADDRESS: 0225 AURORA ST
ADDRESS: WATERBURY
ADDRESS:
ZIP: 06708

NAME OF BUSINESS

BLDG #2

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
AREV I LIMITED PARTNERSHIP	0636	0486	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
					TOTAL	170580	

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	HEAVY MANUFACTURING
VIEW		COMPARED		PROPERTY CLASS	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1994	3-1	1.00	243685	170580
	3-2	1.00	155785	109050
	TOTAL		399470	279630
1992	3-1	1.00	243685	170580
	3-2	1.00	150000	105000
	TOTAL		393685	275580
1989	3-1	1.00	243685	170580
	3-2	1.00	150000	105000
	TOTAL		393685	275580

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION		ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
181	EAST AURORA ST	160-707-4	IG		8000003		1

CURRENT OWNER

NAME 1 - AREV I LIMITED PARTNERSHIP
NAME 2 -
ADDRESS - 0225 AURORA ST
ADDRESS - WATERBURY
ADDRESS -
ZIP - 06708

NAME OF BUSINESS

BLDG #3

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
AREV I LIMITED PARTNERSHIP	0636	0486	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
					TOTAL		170580

SITE

NBHD TYPE -	INDUSTRIAL	ELEVATION -		DESIRABILITY -	TYPICAL
ROAD -	LOCAL	SEWER -	YES	LANDSCAPING -	TYPICAL
TRAFFIC -	MEDIUM	WATER -	PUBLIC	DRIVEWAY -	
BLDG SET BACK -		UTILITIES -	GAS/ELEC	MAJOR USE -	MULTI USE-MULTI OCCU
VIEW -		COMPARED -		PROPERTY CLASS -	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1994	3-1	1.00	243685	170580
	3-2	1.00	155785	109050
	TOTAL		399470	279630
1992	3-1	1.00	243685	170580
	3-2	1.00	150000	105000
	TOTAL		393685	275580
1989	3-1	1.00	243685	170580
	3-2	1.00	150000	105000
	TOTAL		393685	275580

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBU[illegible] REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
137 EAST AURORA ST	160-707-6	IG		8000001		1

CURRENT OWNER

NAME 1 - 137 EAST AURORA LLC
NAME 2 -
ADDRESS - 109 NICHOLS DR
ADDRESS - WATERBURY CT
ADDRESS -
ZIP - 06708

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
137 EAST AURORA LLC	3184	337	01/27/1995	500000	Y	W
137 EAST AURORA LLC	03184	00337	01/27/1995		N	W
STEIN HAROLD TRUSTEE	1317	0098	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	6.08		3-1	42000.00	255360	178752
					TOTAL	255360	111290

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	LIGHT IND PROCESSING
VIEW		COMPARED		PROPERTY CLASS	SMALL SHOPS

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1997	3-1	1.00	158980	111290
	3-3	1.00	2328	1630
	3-2	1.00	244090	170860
	TOTAL		405398	283780
1996	3-1	1.00	158980	111285
	3-3	1.00	2328	1630
	3-2	1.00	234657	164260
	TOTAL		395965	277175
1993	3-1	1.00	158980	111290
	3-3	1.00	2328	1630
	3-2	1.00	234657	164260
	TOTAL		395965	277180
1989	3-1	1.00	161314	112920
	3-3	1.00	2328	1630
	3-2	1.00	234657	164260
	TOTAL		398299	278810

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
EAST AURORA ST	160-707-61	IG		8000001		1

CURRENT OWNER

NAME 1 - STEIN HAROLD TRUSTEE
NAME 2 -
ADDRESS - 839A HERITAGE VILLAGE
ADDRESS2 - SOUTHBURY CT
ADDRESS3 -
ZIP - 06488

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
STEIN HAROLD TRUSTEE	1317	98	04/07/1976		N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	.59		5-3	42000.00	33600	23520
					TOTAL	33600	10720

SITE

NBHD TYPE -	INDUSTRIAL	ELEVATION -		DESIRABILITY -	TYPICAL
ROAD -	LOCAL	SEWER -	YES	LANDSCAPING -	TYPICAL
TRAFFIC -	MEDIUM	WATER -	PUBLIC	DRIVEWAY -	
BLDG SET BACK -		UTILITIES -	ELECTRIC	MAJOR USE -	
VIEW -		COMPARED -	TYPICAL	PROPERTY CLASS	VACANT LAND-IND

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1997	5-3		15320	10720
	TOTAL		15320	10720
1996	5-3		15320	10725
	TOTAL		15320	10725
1993	5-3		15320	10720
	TOTAL		15320	10720

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
240 EAST AURORA ST	160-783-1	IG		8000001		1

CURRENT OWNER

NAME 1: WATERBURY ROLLING MILLS INC
NAME 2:
ADDRESS: 0240 EAST AURORA ST
ADDRESS: WATERBURY CT
ADDRESS:
ZIP: 06708

NAME OF BUSINESS

WATERBURY ROLLING MILLS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
WATERBURY ROLLING MILLS INC	0197	0425	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	*FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	12.15		3-1	42000.00	510300	357210
					TOTAL	510300	172560

SITE

NBHD TYPE:	INDUSTRIAL	ELEVATION:		DESIRABILITY:	TYPICAL
ROAD:	LOCAL	SEWER:	YES	LANDSCAPING:	TYPICAL
TRAFFIC:	HEAVY	WATER:	PUBLIC	DRIVEWAY:	
BLDG SET BACK:		UTILITIES:	GAS/ELEC	MAJOR USE:	HEAVY MANUFACTURING
VIEW:		COMPARED:		PROPERTY CLASS:	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C. O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1999	3-1	1.00	246510	172560
	3-2	1.00	722600	505820
	TOTAL		969110	678380
1998	3-1	1.00	246510	172560
	3-2	1.00	479170	335420
	TOTAL		725680	507980
1989	3-1	1.00	215000	150500
	3-2	1.00	386600	270620
	TOTAL		601600	421120

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION		ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
240	EAST AURORA ST	160-783-1	IG		8000001		1

CURRENT OWNER

NAME 1	WATERBURY ROLLING MILLS INC
NAME 2	
ADDRESS	0240 EAST AURORA ST
ADDRESS	WATERBURY CT
ADDRESS	
ZIP	06708

NAME OF BUSINESS

WATERBURY ROLLING MILLS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
WATERBURY ROLLING MILLS INC	0197	0425	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	12.15		3-1	42000.00	510300	357210
					TOTAL	510300	172560

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	HEAVY	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	HEAVY MANUFACTURING
VIEW		COMPARED		PROPERTY CLASS	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBU 'EAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
240 EAST AURORA ST	160-783-1	IG		8000002		1

CURRENT OWNER

NAME 1 - WATERBURY ROLLING MILLS INC
NAME 2 -
ADDRESS - 0240 EAST AURORA ST
ADDRESS - WATERBURY CT
ADDRESS -
ZIP - 06708

NAME OF BUSINESS

OFFICE BLDG

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
WATERBURY ROLLING MILLS INC	0197	0425	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED

TOTAL 172560

SITE

NBHD TYPE -	INDUSTRIAL	ELEVATION -		DESIRABILITY -	TYPICAL
ROAD -	LOCAL	SEWER -	YES	LANDSCAPING -	TYPICAL
TRAFFIC -	HEAVY	WATER -	PUBLIC	DRIVEWAY -	
BLDG SET BACK -		UTILITIES -	GAS/ELEC	MAJOR USE -	LOW RISE OFF BUILDIN
VIEW -		COMPARED -		PROPERTY CLASS -	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1999	3-1	1.00	246510	172560
	3-2	1.00	722600	505820
	TOTAL		969110	678380
1998	3-1	1.00	246510	172560
	3-2	1.00	479170	335420
	TOTAL		725680	507980
1989	3-1	1.00	215000	150500
	3-2	1.00	386600	270620
	TOTAL		601600	421120

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
240 EAST AURORA ST	160-783-1	IG		8000003		1

CURRENT OWNER

NAME 1: WATERBURY ROLLING MILLS INC
NAME 2:
ADDRESS: 0240 EAST AURORA ST
ADDRESS: WATERBURY CT
ADDRESS:
ZIP: 06708

NAME OF BUSINESS

BLDG #3

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
WATERBURY ROLLING MILLS INC	0197	0425	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED

TOTAL 172560

SITE

NBHD TYPE:	INDUSTRIAL	ELEVATION:		DESIRABILITY:	TYPICAL
ROAD:	LOCAL	SEWER:	YES	LANDSCAPING:	TYPICAL
TRAFFIC:	HEAVY	WATER:	PUBLIC	DRIVEWAY:	
BLDG SET BACK:		UTILITIES:	GAS/ELEC	MAJOR USE:	MULTI USE-MULTI OCCU
VIEW:		COMPARED:		PROPERTY CLASS:	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1999	3-1	1.00	246510	172560
	3-2	1.00	722600	505820
	TOTAL		969110	678380
1998	3-1	1.00	246510	172560
	3-2	1.00	479170	335420
	TOTAL		725680	507980
1989	3-1	1.00	215000	150500
	3-2	1.00	386600	270620
	TOTAL		601600	421120

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBU 'EAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
240 EAST AURORA ST	160-783-1	IG		8000004		1

CURRENT OWNER

NAME 1 - WATERBURY ROLLING MILLS INC
NAME 2 -
ADDRESS - 0240 EAST AURORA ST
ADDRESS - WATERBURY CT
ADDRESS -
ZIP - 06708

NAME OF BUSINESS

BLDG #4

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
WATERBURY ROLLING MILLS INC	0197	0425	00/00/0000			

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED

TOTAL 172560

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	HEAVY	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	HEAVY MANUFACTURING
VIEW		COMPARED		PROPERTY CLASS	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1999	3-1	1.00	246510	172560
	3-2	1.00	722600	505820
	TOTAL		969110	678380
1998	3-1	1.00	246510	172560
	3-2	1.00	479170	335420
	TOTAL		725680	507980
1989	3-1	1.00	215000	150500
	3-2	1.00	386600	270620
	TOTAL		601600	421120

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
172 EAST AURORA ST	160-783-7	IG		8000001		1

CURRENT OWNER

NAME 1 ETHERINGTON GEOFFREY II
NAME 2
ADDRESS PO BOX 1248
ADDRESS MADISON CT
ADDRESS
ZIP 06443

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
ETHERINGTON GEOFFREY II	1456	284	07/25/1980	585000	N	W
CONNECTICUT DEVELOPMENT C	1112	270	01/01/1974		N	O

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	3.24		3-1	42000.00	136080	95256
					TOTAL	136080	70000

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	LIGHT MANUFACTURING
VIEW		COMPARED		PROPERTY CLASS	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
1994	3-1	1.00	100000	70000
	3-2	1.00	850000	595000
	TOTAL		950000	665000
1992	3-1	1.00	100000	70000
	3-2	1.00	1260000	882000
	TOTAL		1360000	952000
1989	3-1	1.00	100000	70000
	3-2	1.00	1260000	882000
	TOTAL		1360000	952000

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBUR[illegible] EAL PROPERTY DATA

PROPERTY LOCATION	ASSESS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
172 EAST AURORA ST	160-783-7	IG		8000001		1

CURRENT OWNER

NAME 1 ~ ETHERINGTON GEOFFREY II
NAME 2 ~
ADDRESS ~ PO BOX 1248
ADDRESS ~ MADISON CT
ADDRESS ~
ZIP ~ 06443

NAME OF BUSINESS

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
ETHERINGTON GEOFFREY II	1456	284	07/25/1980	585000	N	W
CONNECTICUT DEVELOPMENT C	1112	270	01/01/1974		N	O

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	3.24		3-1	42000.00	136080	95256
				TOTAL		136080	70000

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	LIGHT MANUFACTURING
VIEW		COMPARED		PROPERTY CLASS	LIGHT MANUFAC/ASSEMB

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION		ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
173	EAST AURORA ST	161-707-1	IG		8000001		1

CURRENT OWNER

NAME 1: VBL REALTY LLC
NAME 2:
ADDRESS: 109 NICHOLS DR
ADDRESS: WATERBURY CT
ADDRESS:
ZIP: 06708

NAME OF BUSINESS

MIDWAY AUTO BODY

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
VBL REALTY LLC	3554	81	11/21/1997	325000	Y	W
CARPENTIER DENNIS & JUANI	3221	328	06/01/1995		N	Q
GRANT EDWARD C	2271	311	04/21/1988		N	P
GRANT EDWARD C & HELEN	979	40	01/01/1971		N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	1.50		2-1	42000.00	63000	44100
					TOTAL	63000	31500

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	SMALL IND,AUTO BODY
VIEW		COMPARED		PROPERTY CLASS	GARAGE

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
2000	2-1	1.00	45000	31500
	2-5	1.00	1785	1250
	2-2	1.00	51514	36060
	2-2	1.00	116570	81600
	TOTAL		214869	150410
1999	2-1	1.00	45000	31500
	2-5	1.00	1785	1250
	2-2	1.00	51514	36060
	TOTAL		98299	68810
1989	2-1	1.00	45000	31500
	2-5	1.00	1785	1250
	2-2	1.00	51514	36060
	TOTAL		98299	68810

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBU[illegible] REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
173 EAST AURORA ST	161-707-1	IG		8000002		1

CURRENT OWNER

NAME 1 VBL REALTY LLC
NAME 2
ADDRESS 109 NICHOLS DR
ADDRESS WATERBURY CT
ADDRESS
ZIP 06708

NAME OF BUSINESS

AUTO BODY SHOP & OFFICE

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
VBL REALTY LLC	3554	81	11/21/1997	325000	Y	W
CARPENTIER DENNIS & JUANI	3221	328	06/01/1995		N	Q
GRANT EDWARD C	2271	311	04/21/1988		N	P
GRANT EDWARD C & HELEN	979	40	01/01/1971		N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED

TOTAL 31500

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	SMALL IND,AUTO BODY
VIEW		COMPARED		PROPERTY CLASS	GARAGE

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
2000	2-1	1.00	45000	31500
	2-5	1.00	1785	1250
	2-2	1.00	51514	36060
	2-2	1.00	116570	81600
	TOTAL		214869	150410
1999	2-1	1.00	45000	31500
	2-5	1.00	1785	1250
	2-2	1.00	51514	36060
	TOTAL		98299	68810
1989	2-1	1.00	45000	31500
	2-5	1.00	1785	1250
	2-2	1.00	51514	36060
	TOTAL		98299	68810

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBURY REAL PROPERTY DATA

PROPERTY LOCATION	ASSRS MAP - LOT	ZONE	CENSUS TRACT	NBHDSITE	CARD	SIDE
173 EAST AURORA ST	161-707-1	IG		8000001		1

CURRENT OWNER

NAME 1 VBL REALTY LLC
NAME 2
ADDRESS 109 NICHOLS DR
ADDRESS WATERBURY CT
ADDRESS
ZIP 06708

NAME OF BUSINESS

TRUCK GARAGE

OWNER HISTORY

NAME	VOL	PAGE	DATE	SALE PRICE	VALID	DEED TYP
VBL REALTY LLC	3554	81	11/21/1997	325000	Y	W
CARPENTIER DENNIS & JUANI	3221	328	06/01/1995		N	Q
GRANT EDWARD C	2271	311	04/21/1988		N	P
GRANT EDWARD C & HELEN	979	40	01/01/1971		N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED
PRIME SITE	ACREAGE	1.50		2-1	42000.00	63000	44100
					TOTAL	63000	31500

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESIRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	STRGE,WARE,DIST FACI
VIEW		COMPARED		PROPERTY CLASS	GARAGE

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
2001	2-1	1.00	45000	31500
	2-5	1.00	1785	1250
	2-2	1.00	43690	30580
	2-2	1.00	233140	163200
	TOTAL		323615	226530
2000	2-1	1.00	45000	31500
	2-5	1.00	1785	1250
	2-2	1.00	51514	36060
	2-2	1.00	116570	81600
	TOTAL		214869	150410
1989	2-1	1.00	45000	31500
	2-5	1.00	1785	1250
	2-2	1.00	51514	36060
	TOTAL		98299	68810

PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

CITY OF WATERBU[RY] REAL PROPERTY DATA

PROPERTY LOCATION		ASSESS'S MAP - LOT	ZONE	CENSUS TRACT	NBHD/SITE	CARD	SIDE
173	EAST AURORA ST	161-707-1	IG		8000002		1

CURRENT OWNER

NAME 1	VBL REALTY LLC
NAME 2	
ADDRESS 1	109 NICHOLS DR
ADDRESS 2	WATERBURY CT
ADDRESS 3	
ZIP	06708

NAME OF BUSINESS

AUTO BODY SHOP & OFFICE

OWNER HISTORY

NAME	VOL.	PAGE	DATE	SALE PRICE	VALID	DEED TYP
VBL REALTY LLC	3554	81	11/21/1997	325000	Y	W
CARPENTIER DENNIS & JUANI	3221	328	06/01/1995		N	Q
GRANT EDWARD C	2271	311	04/21/1988		N	P
GRANT EDWARD C & HELEN	979	40	01/01/1971		N	W

LAND DESCRIPTION DATA

LAND TYPE	ACREAGE	MEASURE 1	MEASURE 2	USE CODE	UNIT PRICE	FULL VALUE	ASSESSED

TOTAL 31500

SITE

NBHD TYPE	INDUSTRIAL	ELEVATION		DESTRABILITY	TYPICAL
ROAD	LOCAL	SEWER	YES	LANDSCAPING	TYPICAL
TRAFFIC	MEDIUM	WATER	PUBLIC	DRIVEWAY	
BLDG SET BACK		UTILITIES	GAS/ELEC	MAJOR USE	SMALL IND,AUTO BODY
VIEW		COMPARED		PROPERTY CLASS	GARAGE

BUILDING PERMITS

NUMBER	DATE	VALUE	DESCRIPTION	C.O. DATE	COMP DATE

ASSESSMENT INFORMATION

YEAR	CLASS	UNITS	FULL VALUE	ASSESSED
2001	2-1	1.00	45000	31500
	2-5	1.00	1785	1250
	2-2	1.00	43690	30580
	2-2	1.00	233140	163200
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	2-2	1.00	116570	81600
	TOTAL		214869	150410
1989	2-1	1.00	45000	31500
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PROPERTY CLASSIFICATION CODES

COMMERCIAL 2-
2-1 LAND(EXCEPT APT.BLDS)
2-2 BUILDINGS
2-3 APARTMENTS
2-4 CONDOMINIUMS
2-5 OUTBUILDINGS
2-6 LAND (APT BUILDINGS)

INDUSTRIAL 3-
3-1 LAND
3-2 BUILDINGS
3-3 IMPROVEMENTS

PUBLIC UTILITY 4-
4-1 LAND
4-2 BUILDINGS
4-3 OUTBUILDINGS

VACANT LAND 5-
5-1 RESIDENTIAL
5-2 COMMERCIAL
5-3 INDUSTRIAL
5-4 WETLANDS
5-5 OUTBUILDINGS

APPENDIX D

CT DEP Bureau of Water Management P-5 Files

F-3 FIC

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATER COMPLIANCE/HAZARDOUS WASTE MANAGEMENT

INDUSTRIAL SURVEY
EPWC-9 NEW 1/83

COMPANY NAME: Fiberite Industries	TOWN: Waterbury	DEP/WPC NO.
	VILLAGE	REC. STREAM WATERSHED
ADDRESS: 172 East Aurora St.	CHIEF OFFICIAL - TITLE: Stewart Hendler	PHONE: 755-1344
MAILING ADDRESS (if different from location)	CONTACT - TITLE: Jules Koch - Director Plant Engineering; John Zoldy - Director of Operations	PHONE: same

NO. of EMP.	TOTAL	PRODUCTION	DAYS WORKED	SHIFTS
	25	13	4-6	1, 10 hr.

DATE ESTABLISHED 4/88 REPORTED BY: R. Langan DATE 11/19/83

PRODUCTS Pre-preg. Fiberglass (Resin impregnated fiberglass) Shipped in rolls.

PROCESSES - Date Discharge Established (each process)

A Mixing
B Impregnation
C Drying & Curing
D Research & Development lab

TYPE OF WASTE (each process)

A waste solvents from cleanup (vessels, floor, equipment)
B None
C None except solvents driven off into air collection system to incinerator.
Waste solvents

WATER USAGE	Gals.-per-day	HOW COMPUTED	DISCHARGED T
Sanitary Sewage	375	25 employees X 15 gpd	Sanitary Sewer
Industrial Waste	2880	Non-contact cooling water from head roller	Boiler System recycled to roof drain
	1040	Non-contact cooling water from Thermoplastic Tank	Storm system via Roof drain
	? minimal	Air system (pumps) - particle & condensate vent pipes (2)	into ground
Clean Discharge			
Boiler Water	? minimal	Potential Condensate return tank overflows and	ground
~~In Product~~		2 Safety valve pressure release (steam & water) pipes (Boiler)	ground
Unaccounted		Actual boiler blowdown is close looped.	
TOTAL	4295		

WATER SOURCE(S) City Water | Add details on well(s)

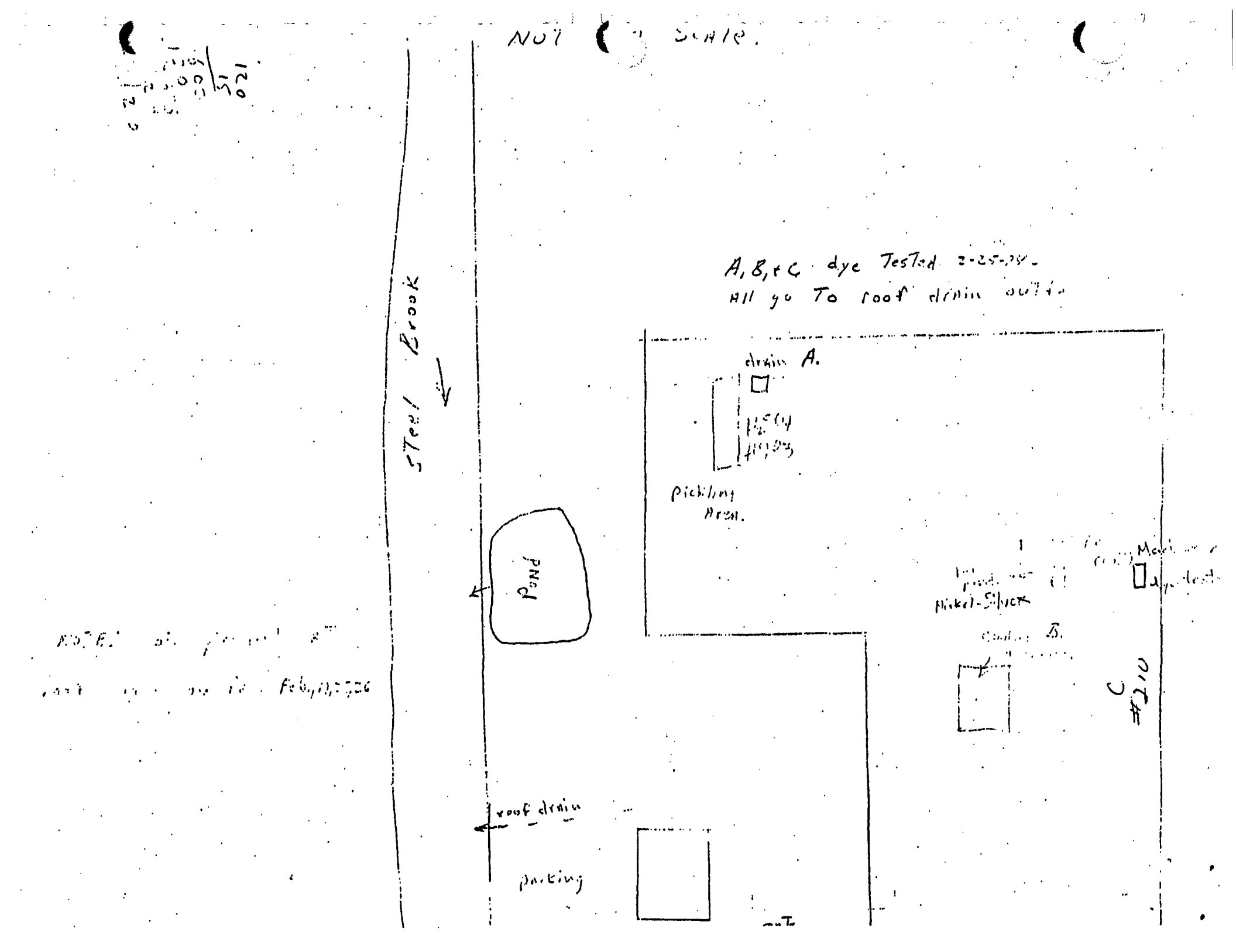
SANITARY TREATMENT — None

INDUSTRIAL TREATMENT — None

SAMPLE(S) COLLECTED None LOCATION

INSPECTOR'S COMMENTS Acetone delivery transfer pipe connection is exposed, pipe should be extended into acetone waste solvent containment area. Two metal pipe drains in floor of raw material storage room should be sealed. There are 36 monitoring wells on site which are maintained and sampled by HRP, Monitoring wells installed due to former U.S.T.'s.

NOT TO SCALE.


A, B, & C dye Tested 2-25-98.
All go To roof drain outfall
drain A.
Pickling Area.
Steel Brook
Pond
roof drain
parking
Nickel-Silver
B.
C

STATE OF CONNECTICUT
WATER RESOURCES COMMISSION

Form P

Out of Business

ph. 753-1157

Name of company	Town Watercury Location on Map
Fairmont Corp. of America	Village
Mailing Address	Rec. Stream Steel brook Watershed Naugat
102 E. Aurora St.	Contact Mr Sader, George Water
	Type of Problem Serious Routine Minor
Date Established 1972	No. of Emp. 85 68 17 55/1
Date of Last Ex. —	Report by E. Pizzuto Date 3-21-74

Products Sponge Carpet underlay

Processes A Cooling water for Mills Calanders Banbury, Air Co

B Cooling Cans - cool finished product

C Pumps on cooling line - flow Through

D Spray + Atomizers

Origin of Wastes

Wastes Contain A

B

C Heat Transfer oil.

D Process oil

Comments Not Covered by Above Data (C) used oil stored in 55 gal. drum variable amounts - hauled away by Conn waste oil, or Prospect San (D) residual oil from finished product runs over ground to storm sewer - variable flow.

Water Used For	San. Wastes	Industrial Wastes	Clean Water
Discharged To	Municipal	Storm Sewer	Storm Sewer
Water Usage	Gals-per-day	How Computed	
Sanitary Sewage	1,575	85 emp. x 15 gpcd. + ≈ 30 shou	
Industrial Wastes	4,000	Estimate	
Clean Discharge	69,200	Estimate - over	
Boiler Water	2,160	Estimate, formula - 150 hp.	
In Product	—		
Unaccounted	22,055	make-up for A+B. (Total - all other	
Total Used	119,250	1,192,500 ft³/qtr. ÷10	

SANITARY TREATMENT - Municipal

INDUSTRIAL TREATMENT - NONE

File Data Available:

NOTES: WATER Bill - qtr ending 3-1-74 1,192,500 cu. ft

NOTE: company has oil problem - oil residue from exhaust fans settles on roof during rain [illegible] via storm drain.

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATER COMPLIANCE/HAZARDOUS WASTE MANAGEMENT

INDUSTRIAL SURVEY
EPWC-9 NEW 1/83

COMPANY NAME	TOWN	DEP/WPC NO.
U.S. Reclaim Inc	Waterbury	151 - [illegible]
172 East Aurora St.	VILLAGE	REC. STREAM WATERSHED
ADDRESS Waterbury Ct.	CHIEF OFFICIAL - TITLE Andrew Esposito Chief Exec. Officer	PHONE 755-1344
MAILING ADDRESS (if different from location)	CONTACT - TITLE William Simmons V.P.	PHONE 755-1344

NO. of EMP.	TOTAL	PRODUCTION	DAYS WORKED	SHIFTS
	104		5	8 to 3:41

DATE ESTABLISHED ~~1973~~ Fullgrad → 1985 REPORTED BY: Terry Beaulieu DATE 10-7-86

PRODUCTS Electrical Circuit Board Laminates

PROCESSES - Date Discharge Established (each process)

A Mixing (Resin) Vats
B Treating (Impregnating machines)
C Cutting
D Two Laminating Presses (1-dug Kiss) Oct 1985
E. Trimming
F. Inspect + test circuit board for Q.C.
G. Plate Buffer (machine)

TYPE OF WASTE (each process)

A Solvent (Acetone)
B Glass Fabric to dumpster/NK cooling water
C Scrap
D Non-contact cooling water
E. Copper scrap (resold)
F. Rinsewater with spent etching (Ferric Chlo
G Contact water disch to a 12'x12'x1
holding Pit in Bldg. Pumped out. At [illegible] drum
sludge + water once/yr by E.I.R-W.P

WATER USAGE	Gals.-per-day	HOW COMPUTED	DISCHARGED TO
Sanitary Sewage	1560	104 Emp x 15 gpd = 1560	City Sewer
Industrial Waste			
Clean Disch		air conditioning to cooling tower / No Disch	
Clean Disch		Laminating press (Non contact) Solidified in Pkg	drain → C.B. → Riv
Clean Discharge		cooling rolls water from impregnating machine	C.B → River
		(See Notes)*	
Boiler Water	generates 14# lbs steam pressure	Condensate water. Heats laminate presses yearly. Heats pit in winter.	Catch Basin
In Product			
Unaccounted			
TOTAL	69,460		

WATER SOURCE(S) Utility Water Co / 6-30-86 ~~ft.~~ 10¢ incr / 1000 gal details on well(s) 6946 ÷ 10¢ = 69,460

SANITARY TREATMENT — City Sewer

INDUSTRIAL TREATMENT — None

SAMPLE(S) COLLECTED 5 at C. Basin LOCATION Dye tested sump in Boiler Feed Pump room / Surfaced in C.B.

REMARKS/COMMENTS Had trt system for rinsewater (containing copper) when they existed in Stamford. Permit Application to U.S Reclaim in order to bring them into compliance.

* Condensate H2O from boiler vent builds pressure + then flows thru stack on roof of Bldg, spewing hot water to the ground which makes its way to a nearby catch

EPWC-9 NEW 1/83 (Back)

WASTE PROFILE *

TYPE OF WASTE	Amount/Frequency gals, lbs./wk, mo., yr.	On-Site Storage Less than 90 days (1) More than 90 days (2) drums, tanks etc.	Transporter	OFF-SITE Hazardous Waste Facility Licensed ? ____
Metal Containing Acid Waste	15 gals/month	(1)	EWR	Pending
Metal Containing Cyanide Waste	5 gals/month	(1)		
(Periodically a bad batch: 360 gals, eg. 20 yds - Corrosive solids - 1985 -)		(1)		

*List of chemicals used by Lea enclosed.

Has this firm notified EPA (under RCRA) ? NO _____ YES ✓ ID Number CTP000006069

IF YES as a-Generator: Transporter: *TSDF :

INVENTORY INFORMATION

1) Has this Firm notified EPA under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 PL 96-510 (commonly known as Superfund)? NO _____ YES _____

Attach copy of Notification, if available

2) WASTE PROFILE prior to Nov. 11, 1980 (off-site disposal)

TYPE OF WASTE	Amount/Frequency	How Long (dates)	Transporter	Off-Site Location

3) Is there any evidence of On-Site disposal ? NO ✓ YES _____ Poor handling/storage NO ✓ YES _____

IF YES - Include approx. location on diagram and indicate type of waste, amount or frequency & time on-site disposal was used. (Specify any historical on-site disposal):

DIAGRAMS/SCHEMATICS: SAMPLES COLLECTED SCHEDULE TO SAMPLE

* Cleaned out x1 at days end.
(1) Size tanks & Number: Lea Brite area (Cleaners) (550 gal tanks)
(2) Cleaner tanks. - Liquid-brite - 10 (550 gal t
- Liquid-Cleaner - 1 (550 g
Discharge goes to the sanitary sewer (rinses).

* See breakdown of "Areas of Water Discharge" enclosed.

SUPERFUND - Provides for liability, compensation, clean-up and emergency response

RCRA - Resources Conservation and Recovery Act of 1976 (Hazardous Waste Disposal Control)

*TSDF - (Treatment, Storage/Disposal Facility) storage over 90 days/on-site treatment and/or disposal

STATE OF CONNECTICUT
WATER RESOURCES COMMISSION

Form P-5

Name of company Bristol Flowed Gasket Co	Town Waterbury Location on Map 103
	Village
Mailing Address	Rec. Stream Watershed Naugatuck R.
P.O. Box 2125 (172 E. Aurora St.)	Contact Adrian Heche Jr. - Plant Manager
Waterbury 06720	Type of Problem Serious Routine Minor None
Date Established June 1967	No. of Emp. 90 15 75 2 60 30
Date of Last Ex. —	Report by R.W. Senack Date 11-29-72

Products metal stamping

Processes A stamping
B gaskets (neoprene)
C drying
D

Origin of Wastes

Wastes Contain A metal scrap, synthetic coolants, water soluble oils
B
C
D

Comments Not Covered by Above Data *water soluble oil is recirculated - synthetic coolants and waste oil are stored in concrete holding tank (6'x12'x6'±) and collected by Joe's Sanitation Service 16 Taft Ave. Oakville

Water Used For	San. Wastes	Industrial Wastes	Clean Water
Discharged To	sewer	*	
Water Usage	Gals-per-day	How Computed	
Sanitary Sewage	1,350	90 emp. x 15 gpcd = 1,350 gpd	
Industrial Wastes		12 machines on water soluble oil [illegible] waste 200 gal/yr 10 machines on synthetic coolant [illegible] waste 80 gal/yr	
Clean Discharge		air comp. recirculated cooling waters	
Boiler Water			
In Product			
Unaccounted			
Total Used	1,350	water [illegible] includes [illegible] Gaynor Electric Co. 18,600 [illegible]	

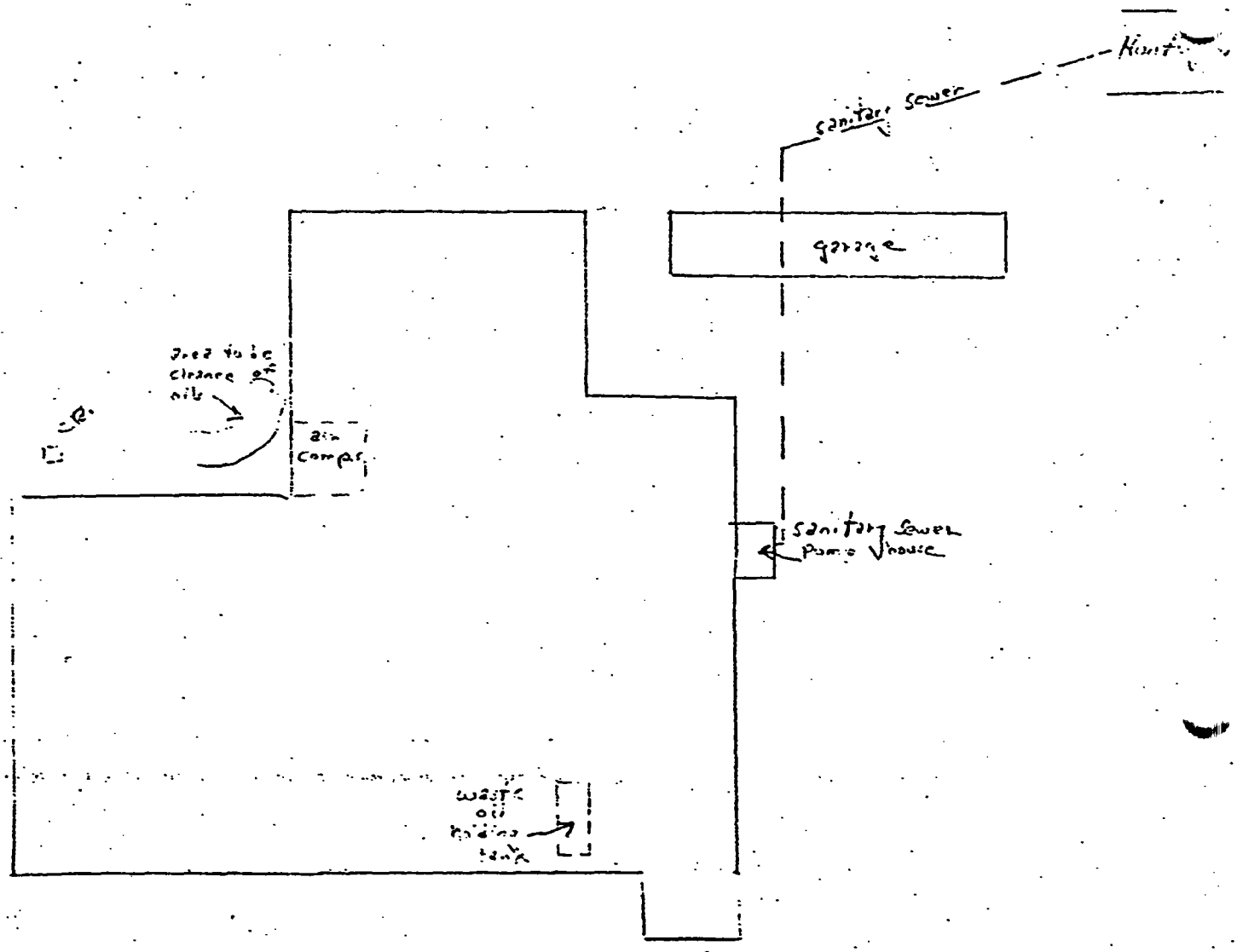
SANITARY TREATMENT - municipal sanitary sewer - [illegible]

INDUSTRIAL TREATMENT - None

File Data Available:

TES: water supply - City of Waterbury - [illegible] - 18,600 cu ft/qtr.
Tenant - Gaynor Electric Co., Inc.

Note - Diagram not to scale



STATE OF CONNECTICUT
WATER RESOURCES COMMISSION

Form P-5

Name of company Gaynor Electric Co. Inc.	Town Waterbury Location on Map 102
	Village
Mailing Address	Rec. Stream Watershed Naugatuck R.
P.O. Box 2125 (172 E. Aurora St.)	Contact Mr. Gaynor - President
Waterbury 06720	Type of Problem Serious Routine Minor None
Date Established June 1, 1972	No. of Emp. 55 6 49 1
Date of Last Ex. —	Report by R.W. Senack Date 11-29-72

Products Electric switches for appliance industry

Processes A bench type work - tapping, drilling & assembly

B

C

D

Origin of Wastes

Wastes Contain A

B None

C

D

Comments Not Covered by Above Data

Water Used For	San. Wastes	Industrial Wastes	Clean Water
Discharged To	Sewer		
Water Usage	Gals-per-day	How Computed	
Sanitary Sewage	510	water consumption Bristol Flowed Gasket Co. 1,850 g/d. minus sanitary use 1,250 g/d = Gaynor Elec. use - 510	
Industrial Wastes			
Clean Discharge			
Boiler Water			
In Product			
Unaccounted			
Total Used	510	Total of Knowns	

SANITARY TREATMENT - municipal sanitary sewer - Huntingdon Pl.

INDUSTRIAL TREATMENT - None

File Data Available:

NOTES: Property owner - Bristol Flowed Gasket Co. (P-5)

STATE OF CONNECTICUT - Form 1064

Name of Company SPERRY RAND CORP.	Town WATERBURY Village	Location on Map 22			
WHEELER FLECTRIC DIV.	Receiving Stream STEEL BROOK	Watershed NAUGATUCK RIVER			
Mailing Address	Contact [illegible]				
172 EAST AURORA ST.	Type of Problem - Serious, Routine, Minor, None				
Date Est. 1945	No. of Employees	300	75	225	1
Date Last Exp. —	Report by J. AHERN	Date 4/10/62			

Products [illegible]

Processes A ASSEMBLY

B

C

D

Origin of Waste

[illegible]

Waste Contains

A

B

C

D

Water Used For	Sanitary Wastes	Industrial Wastes	Clean Water
Discharged To	SEWER	—	STREAM

Water Usage	Gals per day	How Computed
Sanitary Sewage	7500	500 x 15
Industrial Wastes	—	—
Clean Discharge	56190	T - (SS + BW) = C.D
Boiler Water	900	250 H.P. - 16 HRS. - 5% make-up
In Product		
Unaccounted		
[illegible]	NEGL.	WATER TOWER
Total Used	65390	653900 CU FT / QUAR

SANITARY TREATMENT - STORM SEWER → STEEL BROOK

INDUSTRIAL TREATMENT - —

File Data Available

NOTES:

STATE OF CONNECTICUT
WATER RESOURCES COMMISSION

Form P

Name of company	Town Waterbury — Location on Map 22
Sperry [illegible] Div. Wheeler Electronics Plant	Village
Mailing Address	Rec. Stream — Watershed
150 E. Aurora St.	Contact Phil Paulone - Plt. Eng.
	Type of Problem — Serious — Routine — Minor — No
Date Established 1947	No. of Emp. 350 — 125 — 225 — —
Date of Last Ex. —	Report by E. Pizzuto — Date 12-20-74

Products: Electronic computers

Processes:
- A Electronic assembly
- B soldering
- C painting - Dry filters
- D Degreaser - III Trichlorethane - Hubbard Hall chem

Origin of Wastes: B + D

Wastes Contain:
- A
- B vegetable oil
- C
- D sludge from still - solvent.

Comments Not Covered by Above Data: (B + D) - stored in 55 gal drums outside of plant - hauled away by Environmental oil & waste removal, (B) ≈ 250-300 gal/yr. (C) ≈ 1,000 gal/yr.

Water Used For	San. Wastes	Industrial Wastes	Clean Water
Discharged To	Municipal	Licenced waste Hauler	Storm Sewer
Water Usage	Gals-per-day	How Computed	
Sanitary Sewage	5,250	350 emp. x 15 gpcd. (25 gpcd)	
Industrial Wastes		Licenced waste hauler	
Clean Discharge	1,000 3,500	N.C. - 5 gpm x 2½ hrs Degreaser + still - 500 gal/hr. x 7 hrs	
Boiler Water	2,700	Heating surface 1180 ÷ 10 = 180 hp. 180 x 100 x 1500	
In Product	—		
Unaccounted	6,740	21,190 - 14,450	
	2,000	Air Cond. comp. - month of Sept. 150 Ton	
Total Used	21,190	211,900 cu. ft./gm. ÷ 10	

SANITARY TREATMENT - Municipal — NOTE - 1-1-75 - [illegible]

INDUSTRIAL TREATMENT -

File Data Available:

NOTES: City of [illegible] - 211,900 cu. ft. - [illegible]

NOTE: New water meter installed in early December 1974

consumption may be [illegible]

Water Bill - Harold Stein - [illegible]

STATE OF CONNECTICUT
WATER RESOURCES COMMISSION

Form 1

Name of company	Town Waterbury Location on Map
Lea Mfg. Co.	Village
Mailing Address	Rec. Stream Steel Brook Watershed Naug[illegible]
2[illegible] E. Aurora St.	Contact [illegible]
	Type of Problem Serious Routine Minor
Date Established 1952	No. of Emp. [illegible]
Date of Last Ex. 1964	Report by E. [illegible] Date [illegible]

Products Industrial Aerosol Compound - Paint [illegible]

Processes A Liquid [illegible]

B Laboratory - Analysis of Plating solutions

C

D

Origin of Wastes

Wastes Contain A [illegible] water

B [illegible]

C

D

Comments Not Covered by Above Data B Aprox. [illegible]

Water Used For	San. Wastes	Industrial Wastes	Clean Water
Discharged To	Municipal	(A) Municipal	Stream
Water Usage	Gals-per-day	How Computed	
Sanitary Sewage	1,140	76 [illegible]	
Industrial Wastes	6,000	estimate	
Clean Discharge	29,6	estimate [illegible]	
Boiler Water	3 024	[illegible] hp. + [illegible] hp. [illegible]	
In Product	[illegible]	[illegible]	
Unaccounted	[illegible]		
Total Used	[illegible]	[illegible]	

SANITARY TREATMENT - Municipal

INDUSTRIAL TREATMENT - Municipal (A)

File Data Available:

NOTES: Two well water Sources - Municipal + Well

Well Water ≈ 12,000 gpd.

City of Waterbury, Waterbury - [illegible] ending [illegible] - 63:6[illegible]

1806

753.5116

STATE OF CONNECTICUT - Form 1064

Name of Company LEA MFG. CO	Town WATERBURY Village Location on Map 71
	Receiving Stream [illegible] Watershed NAUGATUCK RIVER
Mailing Address	Contact [illegible]
237 EAST AURORA ST	Type of Problem - Serious, (Routine), Minor, None
Date Est. 1952	No. of Employees [illegible] 4 18 1- [illegible]
Date Last Exp. 195[illegible]	Report by V. AHERN Date 6/10/62

Products ABRASIVE COMPOUNDS

Processes A [illegible]

B [illegible]

C [illegible]

D

Origin of Waste

C

Waste Contains

A [illegible]

B [illegible]

C

D

Water Used For	Sanitary Wastes	Industrial Wastes	Clean Water
Discharged To	SEWER	STREAM (U)	STREAM

Water Usage	Gals per day	How Computed
Sanitary Sewage	330	22x15
Industrial Wastes	14,912	T-(SS+BW+CD)= I.W.
Clean Discharge	4800	10 gpm - 8hrs
Boiler Water	416	125 HP 8hrs 10% make-up
In Product	-	Negl.
Unaccounted		
Total Used	20,458	103900 cu FT + 100,080 cu FT/YEAR

cit 10,39 wcl 10,[illegible]

SANITARY TREATMENT - MUNICIPAL SEWER

INDUSTRIAL TREATMENT - SUMP PIT -> STEEL BROOK

File Data Available

NOTES:

P-5 UPDATED 4/1
ORIGINAL - 3

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATER COMPLIANCE/HAZARDOUS WASTE MANAGEMENT

INDUSTRIAL SURVEY
EPWC-9 NEW 1/83

COMPANY NAME: LEA MANUFACTURING CO.	TOWN: WATERBURY	DEP/WPC NO.: 151-071
	VILLAGE:	REC. STREAM WATERSHED:
ADDRESS: 237 EAST AURORA ST.	CHIEF OFFICIAL - TITLE: WILLIAM MILLMAN - PRESIDENT	PHONE: 574-6780
MAILING ADDRESS (if different from location):	CONTACT - TITLE: RICHARD J. HELLER - TECH. DIRECTOR	PHONE: 753-5116

NO. of EMP.	TOTAL	PRODUCTION	DAYS WORKED	SHIFTS
	75	25 ℓ 13 SALES 10 MANAGE 25 OFFICE		

DATE ESTABLISHED 1964 REPORTED BY: E. SPENCER DATE 4/14/87

PRODUCTS INDUSTRIAL ABRASIVE COMPOUNDS, PAINT STRIPPER.

PROCESSES - Date Discharge Established (each process)

A LIQUID BUFFING COMPOUND. RINSING + COOLING

B LABORATORY - ANALYSIS OF PLATING SOLUTIONS

C CLEANERS. MANUFACTURE OF.

D CHEMICAL BRIGHTNERS

TYPE OF WASTE (each process)

A DYE, SOAP, FATTY ACIDS, TALLOW + WATER

B CONTAMINATED PLATING SOLUTIONS - Ni, Cu, Zn, Cr, Sn + PAINT SOLVENT

C DETERGENT WASTES

ABOUT 300 gals/wk of chemicals are collected in carboys for reclamation → EWR

WATER USAGE	Gals.-per-day	HOW COMPUTED	DISCHARGED T
Sanitary Sewage	1,125	75 employees x 15 gpd = 1,125 gpd.	San Sewer
Industrial Waste	6,000 (3/20)		
(Well Water) Clean Discharge	25,000	Water Bill 711 H Cu ft. } 3rd + 4th	Steele Brook - (Application
PROCESS RINSE	1,800	740 H Cu ft } qtr 1986.	
Boiler Water	2,000	ave = 72,550 gpd	
In Product	2,000		
Unaccounted	32,156 (old P-5) 3/20		
TOTAL	70,061		

WATER SOURCE(S) Add details on well(s) 5,000 cooling from wells; 10,000 from municipal (ave.

SANITARY TREATMENT — MUNICIPAL

INDUSTRIAL TREATMENT — MUNICIPAL

SAMPLE(S) COLLECTED _____ LOCATION

NOTES/COMMENTS

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Form

Name of company	Town Waterbury Location on Map [illegible]
Waterbury Rolling Mills	Village
Mailing Address	Rec. Stream Steel brook Watershed Naugatuck
East Aurora St.	Contact Mr. [illegible] - Alt. Eng.
	Type of Problem Serious Routine Minor N
Date Established ≈ 1906	No. of Emp. 120 89 31 90/20/
Date of Last Ex. —	Report by E. Pizzuto Date 1-21-74

Products Flat coiled stock, Brass nickle silver, & Bronze.

Processes A Continuous Casting
B Rolling E. Blanking
C Annealling G. Parts cleaner - hand [illegible]
D slitting

Origin of Wastes

Wastes Contain A
B 1 lube oil 2 water
C
D

Comments Not Covered by Above Data (B) 1 [illegible], (B) 2 water used to [illegible] rolls discharged to stream. (C) [illegible]

Water Used For	San. Wastes	Industrial Wastes	Clean Water
Discharged To	[illegible]	Stream	
Water Usage	Gals-per-day	How Computed	
Sanitary Sewage		120 emp. x 15 gpcd. + 12 emp. x [illegible]	
Industrial Wastes			
Clean Discharge			
Boiler Water		3 x [illegible] hp. [illegible]	
In Product			
Unaccounted			
Total Used	1,769	17,692 cu. ft. [illegible]	

SANITARY TREATMENT - Municipal
INDUSTRIAL TREATMENT - Trea[illegible]

File Data Available:

NOTES: City water [illegible] for sanitary & cooling makeup only
17,692 cu. ft. Inst. [illegible]
All water used in mill taken from Steel brook

STATE OF CONNECTICUT – Form 1064

Name of Company WATERBURY ROLLING MILLS INC.	Town WATERBURY Village Location on Map 27
	Receiving Stream STEEL'S BROOK Watershed NAUGATUCK RIVER
Mailing Address EAST AURORA ST	Contact JEAN KRRWIN - PLANT SUPT. Type of Problem – (Serious) Routine, Minor, None
Date Est. 1903	No. of Employees 100 15 85 2 — 8 — 5
Date Last Exp. –	Report by J. AHERN Date 6/10/62

Products CASTING, ROLLING, NICKEL, SILVER, BRASS, PHOSPHOR BRONZE

Processes
A CASTING
B ROLLING
C PICKLING
D ANNEALING

Origin of Waste

C

Waste Contains
A SULFURIC ACID (E) ZINC
B NITRIC ACID (F) PHOSPHOR
C NICKEL
D COPPER

Water Used For	Sanitary Wastes	Industrial Wastes	Clean Water
Discharged To	STREAM (U)	STREAM (U)	STREAM

Water Usage	Gals per day	How Computed
Sanitary Sewage	1500	100 X 15
Industrial Wastes	10,200	T-(SS+BW+COD) I.W.
Clean Discharge	108,000	90% TOTAL (CONTACT)
Boiler Water	300	150 HP – 10 HRS – 5% MAKE UP
In Product		
Unaccounted		
Total Used	120,000	250 GPM – 8 HRS (CONTACT)

SANITARY TREATMENT – STORM SEWER → STEEL BROOK

INDUSTRIAL TREATMENT – STEEL BROOK

File Data Available

NOTES: I.W. RUN THROUGH SEDIMENT PITS FIRST.

Pickle sol. are 10%, (2) 800 gal TANKS dumped 4-5 MO.

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Form P-

ph. 754-[illegible]

Name of company	Town Waterbury Location on Map 027
Terbury Rolling [illegible]	Village
Mailing Address	Rec. Stream Steel brook Watershed Naugatuc
[illegible]	Contact Mr. Poveromo - Plt. Eng.
	Type of Problem Serious Routine Minor Non
Date Established 1920	No. of Emp. 120 89 21 90/20/10
Date of Last Ex. —	Report by E. Pizzuto Date 1-21-74

Products Brass, Nickle silver + Bronze. Flat coiled stock

Processes A Rolling E. Blanking

B casting. - cooling Tower G. Part: Cleaner - Brouhin Sover

C annealling - atmospheric N. H. Pickling

D slitting

Origin of Wastes

Wastes Contain A River water, oil H. - Nitric + Sulfuric Acid.

B

C

D

Comments Not Covered by Above Data

D2 - Reused. - stored in barrels when spent.

H. - strip pickling line - rinse goes to pond, Dip Tanks - rinse goes to river - outfall downstream from pond.

Water Used For	San. Wastes	Industrial Wastes	Clean Water
Discharged To	Municipal.	Stream	Stream
Water Usage	Gals-per-day	How Computed	
Sanitary Sewage	1,920	120 emp x 15 gpcd. + 12 showers x 10 - [illegible]	
Industrial Wastes		Taken From Steele Brook - not metered.	
Clean Discharge	—		
Boiler Water		3 x 100 hp. (Aprox.)	
In Product	—		
Unaccounted			
Total Used	1,769	17,692 cu. ft. ÷ 10 - Does not include Industrial waste.	

SANITARY TREATMENT - Municipal

INDUSTRIAL TREATMENT - NONE

Name Data Available:

NOTES: over.

City WATER - used for sanitary + cooling make up.

Water data - 17,692 cu. ft. last qtr. - Municipal

[illegible]

US EPA New England
RCRA Document Management System
Image Target Sheet

RDMS Document ID # 102733

Facility Name: MacDermid Inc

Facility ID#: CTD001164599

Phase Classification: R-13

Purpose of Target Sheet:

[X] Oversized (in Site File) [ ] Oversized (in Map Drawer)

[ ] Page(s) Missing (Please Specify Below)

[ ] Potential FOIA Exempt [ ] Other (Please Provide Purpose Below)

Description of Oversized Material, if applicable:

Figure 2: Receptor Survey Base Map 2/2001

[X] Map [ ] Photograph [ ] Other (Please Specify Below)

* Please Contact the EPA New England RCRA Records Center to View This Document *

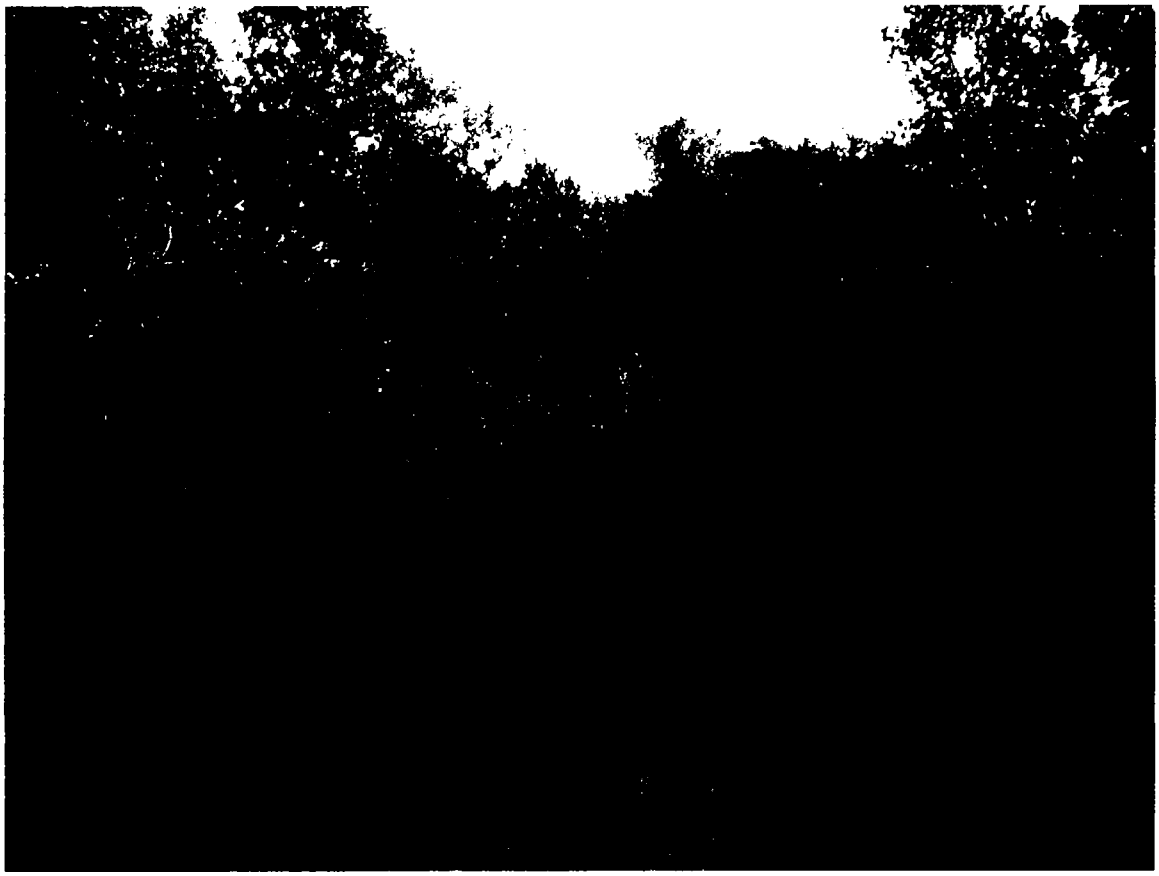
Attachment 9

Photographs

One of two discarded drums on the North Parcel (to the right of the pipe).

The asphalt cap of the closed Sludge Disposal Area, looking south.

The asphalt cap of the closed Sludge Disposal Area, looking north.



Steele Brook, looking south from East Aurora Street.

View of Naugatuck River Facing North From Huntingdon Avenue Bridge at Route 8. July 20, 2004

View of Naugatuck River Facing North from West Main Bridge. July 20, 2004. Route 8 is depicted to the West.

Attachment 10

Project and Activity Analysis Guidebook
Loureiro Engineering Associates, Inc.
November 2002

PROJECT AND ACTIVITY ANALYSIS GUIDEBOOK

MacDermid, Incorporated
526 Huntingdon Avenue
Waterbury, Connecticut

November 2002

Prepared for

MACDERMID INCORPORATED
245 Freight Street
Waterbury, Connecticut 06702

Prepared by

LOUREIRO ENGINEERING ASSOCIATES, INC.
An Employee Owned Company
100 Northwest Drive
Plainville, Connecticut

Comm. No. 91MH206.003

Table of Contents

		Page
1.	**INTRODUCTION, PURPOSE AND SCOPE**	**1-1**
1.1	Goal of PAA	1-1
2.	**TERMINOLOGY**	**2-1**
2.1	PAA	2-1
2.2	PAA Inquiry	2-1
2.3	PAA Approval	2-1
2.4	Facility Alteration	2-1
2.5	PAA Threshold Criteria	2-1
3.	**PAA PROCESS**	**3-1**
3.1	Process Details	3-1
3.2	Responsibilities	3-2
3.2.1	PAA Inquiry	3-2
3.2.2	PAA Approval	3-2
3.3	PAA Awareness Training	3-3
3.4	PAA Auditing	3-3

ATTACHMENTS

Attachment	A	Flow Chart of General Steps Taken to Assess Environmental Exposure
Attachment	B	Project and Activity Analysis Form

ACRONYMS

CSM	Conceptual Site Model
EHS	Environmental Health and Safety
EI	Environmental Indicator
EID	Environmental Indicator Determination
EPA	United States Environmental Protection Agency
LEA	Loureiro Engineering Associates, Inc.
MSDS	Material Safety Data Sheet
PAA	Project and Activity Analysis
RCRA	Resource Conservation and Recovery Act
TSDF	Treatment, Storage and Disposal Facility
VCAP	Voluntary Corrective Action Program

1. INTRODUCTION, PURPOSE AND SCOPE

This guidebook addresses MacDermid Incorporated (MacDermid) property located at 526 Huntingdon Avenue in Waterbury, Connecticut (the Site). MacDermid has elected to make use of the institutional control process for managing and controlling the human health risks that may be present at the Site and that may result in exposures as a result of, or during, facility changes. This control process is called Project and Activity Analysis (PAA).

The purpose of the PAA process is to provide the basis for a consistent approach to addressing the stabilization requirements associated with facility changes at the Huntingdon Avenue Site. The PAA process is being implemented to control human exposure to environmental contaminants in soil and groundwater. Regardless of the particular facility change, any activity that results or could potentially result in human exposure to soil and/or groundwater is subject to the PAA process. Facility modifications that would prompt a PAA include:

- Onsite underground utility repair;
- Onsite landscaping (involving excavation to depths greater than 6-inches; routine maintenance would not be included);
- Onsite excavation outside of landscaped areas to any depth;
- Pavement replacement; and
- Removal of building structures including flooring.

A flow chart, to be utilized during PAA process to assess potential environmental exposures, has been included in Attachment A.

1.1 Goal of PAA

The PAA has been designed to establish a change to management systems in the interest of:

- Minimizing potential environmental and health and safety impacts;
- Ensuring continued compliance with all applicable local, state and federal environmental health and safety regulations; and
- Ensuring facility changes, are reviewed by MacDermid Environmental Health and Safety personnel to minimize impacts.

2. TERMINOLOGY

In developing the PAA guidebook, certain terminology is used to describe facility features, equipment, participating MacDermid personnel (or designated subcontractors), and processes. The section provides a description of the components of this guidebook.

2.1 PAA

Project and Activity Analysis - A review process by which facility changes and site modifications are reviewed by MacDermid Environmental Health and Safety personnel for the purpose of minimizing potential exposure and impacts to the environment and human health.

2.2 PAA Inquiry

Party or process that initiates a PAA. The person making such an inquiry should be the most knowledgeable and responsible for the facility modification.

2.3 PAA Approval

Issued by a MacDermid Environmental Health and Safety professional or other qualified person authorized by a MacDermid Environmental Health and Safety professional following the appropriate review of the facility modification. The approving party may include one person or a team of people having the appropriate specific technical expertise.

2.4 Facility Alteration

A change or modification to the facility structure or infrastructure. A change or modification may include but is not limited to: underground utilities, activities resulting in water discharges, excavations to depths greater than 6 inches in landscaped areas, repair to drains, excavation to any depth outside landscaped areas, removal and replacement of paving, removal of building structures or parts thereof, repair to sumps, and repairs to trenches.

2.5 PAA Threshold Criteria

PAA Threshold Criteria are those default numeric criteria utilized in the evaluation of analytical data to qualitatively assess the potential risks associated with exposure to soil and groundwater at the Site. Specifically, soil PAA Threshold Criteria are the default numeric Commercial/Industrial Direct Exposure Criteria established in Section 22a-133k-2 of the Regulations of Connecticut State Agencies. Groundwater Threshold Criteria are the default

numeric Groundwater Protection Criteria and Commercial/Industrial Volatilization Criteria established in Section 22a-133K-3 of the Regulations of Connecticut State Agencies.

As these default criteria can be modified through modification to the underlying Connecticut regulation, the person or persons reviewing a PAA shall ensure PAA Threshold Criteria are current.

3. PAA PROCESS

A process flow chart to be utilized in implementing the PAA process is provided as Attachment A.

3.1 Process Details

- All PAA shall be submitted and approved prior to initiation of a facility alteration. NO work shall be started without PAA approval. Examples of activities which require a PAA include but are not limited to:
    - Repair of underground utilities;
    - Activities resulting in water discharges;
    - Excavations to depths greater than 6 inches in landscaped areas;
    - Repair to onsite facility drains;
    - Excavation to any depth outside landscaped areas;
    - Removal and replacement of paving;
    - Removal of building structures or parts thereof;
    - Repair to sumps; and
    - Repairs to trenches.
- The scope of a PAA may be for single facility alteration or for an entire building or Site modification.
- The PAA should be submitted as early as possible in the proposed alteration process to ensure a complete review and evaluation of process change.
- Exemptions to the PAA process exist and include those alterations that do not present a potential impact to soil, groundwater or air and which also do not create a potential exposure to soil or groundwater at the Site.
- The MacDermid Environmental Health and Safety team should be consulted whenever clarification is required.

3.2 Responsibilities

3.2.1 PAA Inquiry

The person or party requesting an alteration will submit a PAA request to the designated PAA Approval group, most likely the Environmental Health and Safety team. The PAA request will be completed on a standardized request form, either in hardcopy or electronic form. The following provides a description of the types of information that is included on a PAA request form. A copy of a generic form is included in Attachment B.

- In order for a comprehensive assessment and subsequent approval to occur, the person requesting the alteration must supply adequate information which will generally include: type and description of alteration, material safety data sheets (MSDS) as appropriate, chemical usage, location of proposed alteration, and applicable supporting documentation (e.g. drawings, specifications, process sheets, etc.). The person seeking PAA approval must supply additional information, as requested by the approving party.

- Once an approval is granted, the person requesting approval must,

    - Note the PAA approval number on any financial information as necessary;

    - Meet all conditions assigned to the requesting party. This may also apply to any subcontractors or third parties working as part of the alteration.

    - Communicate any specific conditions of the PAA to individuals, subcontractors or parties involved with the alteration. This may include posting the PAA in the location of the proposed alteration.

- The person or party requesting the PAA is responsible for fulfilling any PAA conditions issued by the approving party prior to initiating the alteration.

- Once the alterations are completed, the person requesting the PAA is responsible for closing it and ensuring the approval team is notified.

3.2.2 PAA Approval

The person or party issuing an approval for a PAA will have the responsibility of reviewing, approving, identifying conditions, and maintaining a record of open and closed PAA. As part of the PAA review, all applicable environmental, health and safety laws, regulations, permits and standard operating procedures will be considered. In the event the PAA is incomplete and/or

additional information or supporting documentation is required, then the person reviewing the PAA will immediately notify the person submitting the PAA.

If the person reviewing the PAA does not have specific technical knowledge or the necessary resources to review all aspects of the PAA, then the person must forward the PAA to the appropriate knowledgeable person or parties for review.

The following administrative responsibilities are assigned to the person reviewing the PAA.

- The person reviewing the PAA must do so in a reasonable time period. A record will be maintained by the reviewer that documents the review and approval or provides an explanation for rejection of the PAA. Upon completion of the review process, the person who submitted the PAA will be notified and provided with the status of the PAA (i.e. approval, denial, approval with conditions).

- The approving party must include all conditions which are necessary to ensure records are updated including but not limited to inventory changes, permits, emergency response plans, and project assessment.

- Once the alterations have been completed, the approving party is responsible for ensuring the PAA is closed out and recorded appropriately through either written or electronic documentation. Closure of the PAA should be completed by the person requesting the alteration (See Section 3.2.1).

3.3 PAA Awareness Training

Any and all new, transferred or current MacDermid employees whose job responsibilities may include alterations to the Site are required under this PAA process to receive PAA awareness training. PAA awareness training may also be incorporated as a component of other related training for those employees at the Site, including but not limited to health and safety training and hazardous materials handling and shipping.

Training records must be maintained for those personnel who receive PAA awareness training and these records will be maintained with other employee training records.

3.4 PAA Auditing

The PAA process should be audited annually, at a minimum, to verify compliance with this procedure. As with personnel training, the auditing process may be incorporated into other related Site or management system audits. Audits of the PAA process must be recorded and

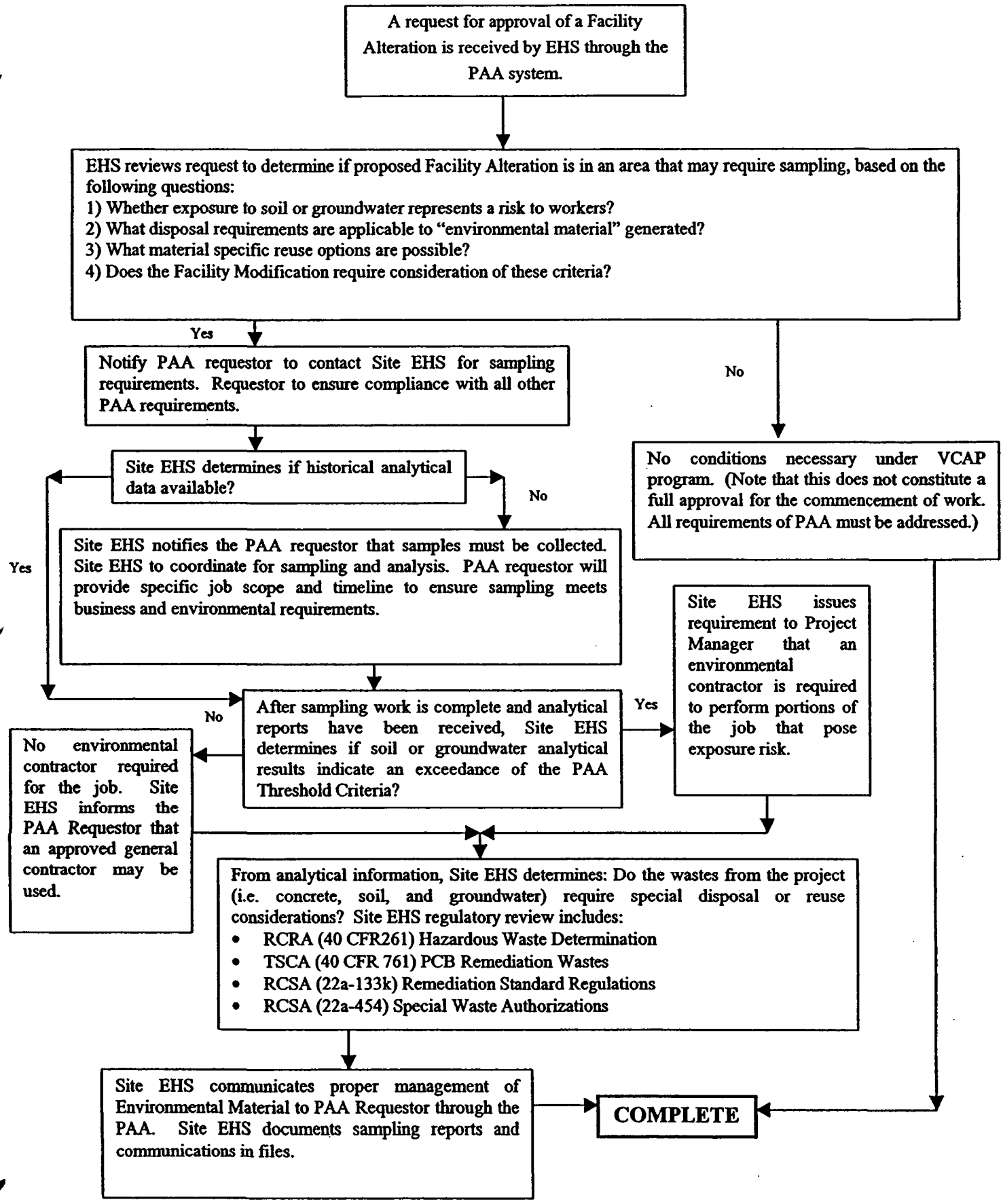
maintained at the facility or appropriate MacDermid office. Specific items to be included in such an audit may include:

- PAA are submitted for all appropriate activities.
- PAA are processed in a timely manner.
- PAA are posted, as necessary.
- PAA conditions, if applicable, are met.

Attachment A

Flow Chart of General Steps Taken

to Assess Environmental Exposure


A request for approval of a Facility Alteration is received by EHS through the PAA system.
EHS reviews request to determine if proposed Facility Alteration is in an area that may require sampling, based on the following questions:
1) Whether exposure to soil or groundwater represents a risk to workers?
2) What disposal requirements are applicable to "environmental material" generated?
3) What material specific reuse options are possible?
4) Does the Facility Modification require consideration of these criteria?
Yes
No
Notify PAA requestor to contact Site EHS for sampling requirements. Requestor to ensure compliance with all other PAA requirements.
No conditions necessary under VCAP program. (Note that this does not constitute a full approval for the commencement of work. All requirements of PAA must be addressed.)
Site EHS determines if historical analytical data available?
No
Yes
Site EHS notifies the PAA requestor that samples must be collected. Site EHS to coordinate for sampling and analysis. PAA requestor will provide specific job scope and timeline to ensure sampling meets business and environmental requirements.
Site EHS issues requirement to Project Manager that an environmental contractor is required to perform portions of the job that pose exposure risk.
Yes
No
After sampling work is complete and analytical reports have been received, Site EHS determines if soil or groundwater analytical results indicate an exceedance of the PAA Threshold Criteria?
No environmental contractor required for the job. Site EHS informs the PAA Requestor that an approved general contractor may be used.
From analytical information, Site EHS determines: Do the wastes from the project (i.e. concrete, soil, and groundwater) require special disposal or reuse considerations? Site EHS regulatory review includes:
• RCRA (40 CFR261) Hazardous Waste Determination
• TSCA (40 CFR 761) PCB Remediation Wastes
• RCSA (22a-133k) Remediation Standard Regulations
• RCSA (22a-454) Special Waste Authorizations
Site EHS communicates proper management of Environmental Material to PAA Requestor through the PAA. Site EHS documents sampling reports and communications in files.
COMPLETE

Attachment B

Project and Activity Analysis Form

PAA REQUEST FORM		
PAA Number		**Date**
Site Location:	526 Huntingdon Avenue, Waterbury, Connecticut	

PAA Information			
PAA Inquiry Name:			
Telephone Number:			
PAA Inquiry Alternate Name:			
Telephone Number:			
Description of Proposed Alteration:			
Location Description:		Interior	Exterior

PAA Checklist	
Question	Answer
Any known hazardous constituents (metals, volatile organic compounds, cyanide, etc.)?	
Additional Information:	
Does this process require excavation or floor removal?	
Additional Information:	
Does this process require a trench, pit or activities in a below grade structure?	
Additional Information:	
Will the work performed affect underground utilities?	
Additional Information:	
Does this procedure create or remove confined space areas?	
Additional Information:	
Does this process use water?	
Additional Information:	
Does this process create wastewater?	
Additional Information:	
Does this process require dewatering operations?	
Additional Information:	
Will waste be generated during the process?	
Additional Information:	
Will you be altering the facility in any way?	
Additional Information:	
Will this process require lock-out/tag-out?	
Additional information:	

PAA Approvals				
Name:	Date Approved:		Approval Status:	
Name:	Date Approved:		Approval Status:	
Name:	Date Approved:		Approval Status:	
Name:	Date Approved:		Approval Status:	
Name:	Date Approved:		Approval Status:	
Name:	Date Approved:		Approval Status:	

PAA REQUEST FORM		
PAA Number		**Date**
Site Location:	526 Huntingdon Avenue, Waterbury, Connecticut	

PAA Conditions	
Condition Number	
Condition	
Required By	
Required Closer	
Date Completed	
Completed	
Condition Number	
Condition	
Required By	
Required Closer	
Date Completed	
Completed	
Condition Number	
Condition	
Required By	
Required Closer	
Date Completed	
Completed	
Condition Number	
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Completed	
Condition Number	
Condition	
Required By	
Required Closer	
Date Completed	
Completed	