

**ENGINEERING EVALUATION/COST ANALYSIS
SAUER DUMP SITE
DUNDALK, MARYLAND**

Prepared for:



**U.S. Environmental Protection Agency Region III
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LIST OF ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirements
BCHD	Baltimore County Health Department
bgs	below ground surface
BLRA	Baseline Risk Assessment
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COMAR	Code of Maryland Regulations
CWA	Clean Water Act
DOT	Department of Transportation
EE/CA	Engineering Evaluation/Cost Analysis
ENSAT	Environmental Service and Technology Corporation
EOCS	Extent of Contamination Study
EPA	U.S. Environmental Protection Agency
ESTD	Ex Situ Thermal Desorption
FFS	Focused Feasibility Study
FRTR	Federal Remediation Technologies Roundtable
FS	Feasibility Study
GRA	General Response Actions
HGL	HydroGeoLogic, Inc.
IC	Institutional Control
ITRC	Interstate Technology and Regulatory Council
LDR	Land Disposal Restrictions
MDE	Maryland Department of the Environment
mg/kg	milligrams per kilogram
MPRSA	Marine Protection, Research, and Sanctuaries Act
NAAQS	National Ambient Air Quality Standards
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPDES	National Pollutant Discharge Elimination System

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

NRWQC	National Recommended Water Quality Criteria
ORNL	Oak Ridge National Laboratory
OSHA	Occupational Safety and Health Administration
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
ppm	parts per million
PRG	Preliminary Remediation Goal
PRP	Potentially Responsible Party
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RSL	Regional Screening Level
SARA	Superfund Amendments and Reauthorization Act
SI	Site Investigation
SVOC	Semivolatile Organic Compound
TBC	To Be Considered
TPO	Technology Process Option
TSCA	Toxic Substances Control Act
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

This Engineering Evaluation and Cost Analysis (EE/CA) has been developed for the Sauer Dump Site under Contract Number EP-S3-07-05 with Region III of the U.S. Environmental Protection Agency (EPA).

The purpose of this EE/CA is to develop and evaluate removal alternatives that may be feasible for addressing potential risks to human health and the environment posed by contaminated soils and sediments at the Site. This EE/CA was prepared in accordance with the EPA guidance *Conducting Non-Time-Critical Removal Actions Under CERCLA* (1993) and is organized as follows:

- Section 1 summarizes the Site history and setting, as well as current Site characteristics.
- Section 2 identifies the removal objectives, potential applicable or relevant and appropriate requirements (ARARs), Preliminary Remedial Goals (PRGs), and the estimated areas and volumes of soils and sediments requiring remediation.
- Section 3 screens remedial technologies with the potential to remediate soils/sediments and groundwater, and identifies those technologies retained for the development of removal alternatives.
- Section 4 develops potential removal alternatives and evaluates each one in detail with respect to effectiveness, implementability, and cost. This section also includes a comparative analysis of the removal alternatives.
- Section 5 summarizes the results of the EE/CA.

SUMMARY OF THE SITE CONDITIONS AND HISTORY

The Sauer Dump Site is located adjacent to Lynhurst Road in Dundalk, Baltimore County, Maryland (Site). The former operational area of the Site is approximately 2.2 acres and is currently owned by the Wittstadt Hunting Club. A majority of the Sauer Dump Site is located within Parcel 425 with samples indicating that some portions of Parcels 137, 295, 464, 503, and 574 were also impacted by the former operations at the Site. Some of these affected parcels contain structures that are used for residential purposes. Residential properties border the Site to the north, northwest, east, and southwest. The southern boundary of the Site is a cove that is part of the Back River, which is a tributary of the Chesapeake Bay. Wetlands adjacent to this cove and extending along the east and west side of the former operational area are considered to be part of the impacted area. The Site is former marshy land that was stabilized using fill material. Non-tidal wetland areas within the Sauer Dump Site were formed by fill operations at the Site. The groundwater gradient was observed to be towards the south (towards the Back River).

The Site was acquired by Mr. Fredrick Sauer (now deceased) and operated as an unpermitted dump and salvage yard beginning as early as the 1950s through the time of Sauer's death in 1990. Dumping activities were limited after the nature of the Site came to the attention of the Baltimore County Health Department (BCHD) and the Maryland Department of the

Environment (MDE) in 1984. The Site's use as an unpermitted dump and salvage yard resulted in the release of hazardous materials. The majority of the Site is covered with approximately 10 feet of fill consisting of soil and debris.

Mr. Sauer was ordered by BCHD to close Site operations in 1984 and by September of 1985, the Site was graded and a majority of the material on-site had been removed. MDE conducted a Preliminary Assessment (PA) in 1985, and EPA conducted a Site Investigation (SI) in 1986. The analytical data indicated contaminant concentrations in Site sediments, soils, and surface water that exceeded risk-based screening criteria. Subsequent investigations confirmed soil, sediment, surface water, and ground water contamination at concentrations above the respective risk-based screening criteria.

Site investigations conducted after the initial MDE and EPA work include:

- EPA Expanded Site Inspection (1991 – 1994)
- MDE Continued Site Investigations (1996, 1999, and 2001)
- MDE Polychlorinated Biphenyl (PCB) Hot-Spot Delineation and Groundwater Investigation (2002)
- MDE Data Gap Sampling Events (2004 and 2005)
- Extent of Contamination Study (2006-2007)

The primary contaminants in the Site's surface soils, subsurface soils, and sediments are metals, particularly lead and chromium, and polychlorinated biphenyls (PCBs); however volatile and semivolatile organic compounds (VOCs and SVOCs) were detected at elevated levels in multiple samples. Previous Site investigation activities concluded that, while most of the surface soils within the boundary of Parcel 425 had been impacted by Site contaminants, there were two "Hot Spots" within the area. One was located along the southeastern boundary of Parcel 425 where it joins Parcel 137. The other "Hot Spot" was much smaller in size and was located in the south-central portion of the Site near the Back River wetlands. Previous surface and subsurface soil sampling activities have shown that the access road to the Site (through Parcel 503 and 464) has been impacted by former Site activities. Site contaminants have also been detected in the sediments located in the wetlands at the Site. One of the "Hot Spots" previously discovered includes portions of the Southeast Finger wetlands, which extend into Parcels 137 and 295. In addition, elevated levels of Site contaminants have been detected in the Pond area and the Back River wetlands.

REMOVAL OBJECTIVES

The following Removal Objectives were identified:

- Reduce exposure to non-carcinogens in the soils and sediments via the potential exposure routes of inhalation, ingestion, and dermal contact.
- Reduce exposure to carcinogens in the soils and sediments via the potential exposure routes of inhalation, ingestion, and dermal contact.

- Reduce risks to human health and ecological communities exposed directly to chemicals in the soils and sediments and indirectly to these chemicals via bioaccumulation of Site contaminants in fish in the receiving waters.
- Minimize the further spread of contamination via any of the following major migration pathways:
 - Soils to groundwater,
 - Soils to surface water,
 - Soils to sediments,
 - Soils to air,
 - Groundwater to surface water, and
 - Sediments to surface water.

PRELIMINARY REMEDIAL GOALS (PRGs)

PRGs are concentrations used as initial cleanup goals to support the development and evaluation of different remedial approaches. PRGs are not the final cleanup standards. Sampling at the Site was conducted for a large suite of contaminants (Target Analyte List/Target Compound List) that were the targets of investigation. There were several detected contaminants which exceeded screening level ecological risk assessment values. These screening values are not intended to be strictly used as clean up criteria and are intended to be conservative in nature in the early part of the risk assessment process. Two contaminants (PCBs and lead) have been identified as primary risk drivers from a human health and ecological risk assessment perspective and also serve as potential markers to delineate areas for a removal action. Furthermore, evaluated remedial alternatives do not selectively address individual contaminants differentially from the perspective of chemical treatment or degradation.

The following PRGs were used to identify the area and volume of contaminated media to be addressed by the EE/CA:

- 400 milligrams per kilogram (mg/kg)¹ lead in soils,
- 1 mg/kg total PCBs in soils,
- 1 mg/kg total PCBs in sediments, and
- 130 mg/kg lead in sediments.

The PRGs for lead and total PCBs in soils are consistent with other sites within EPA Region III, where remediation goals of 400 mg/kg lead and 1 mg/kg PCBs in soils have been established based on results of those sites' baseline risk assessments. The PRG for PCBs in sediments, 1 mg/kg, is based on the practical engineering limitations of dredging technologies. For sediments, the lead PRG of 130 mg/kg reflects consideration of Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems (MacDonald, *et al*, 2000), as noted in the August 2007 Action Memorandum (EPA, 2007).

¹ Also referred to as parts per million (ppm).

The surface water PRGs are based on National Recommended Water Quality Criteria (NRWQC). The Freshwater Chronic values of 0.000064 micrograms per liter (ug/l)² total PCBs and 8.1 ug/l lead were selected for surface water at this Site. Because groundwater at the Site will not be used as a source of drinking water, the primary concern is to ensure that groundwater contaminants do not discharge to surface water at concentrations which would result in impairment of the surface water quality. Accordingly, the Freshwater Chronic NRWQC are also appropriate as the groundwater PRGs. The surface water and groundwater PRGs are provided in Table 2.2.

SOIL AND SEDIMENT VOLUME CALCULATION

To determine the volume of soils and sediments requiring remediation, chemical concentrations detected in soil and sediment samples were compared to the corresponding PRGs. For the evaluation, data from the following reports were used: Environmental Service and Technology Corporation (ENSAT) Remedial Investigation (RI) and Focused Feasibility Study (FFS), July 2002 (ENSAT, 2002a); ENSAT Remedial Investigation, August 2005 (ENSAT, 2005); and Malcolm Pirnie Extent of Contamination Study (EOCS), June 2007 (Malcolm Pirnie, 2007).

The lateral extent of soil contamination greater than PRGs was estimated from the surface soil data. The available data indicate that portions of Parcels 137, 295, 425, 464, 503, and 574 are characterized by soil contamination in excess of the PRGs. Subsurface data were used to estimate the vertical extent of contamination requiring remediation. In general, if no subsurface soil data were available, the depth of contamination requiring remediation was assumed to be 8 feet below ground surface (bgs). In the southern portion of Parcel 425, a depth of 3.5 feet was assumed based on data defining the depth to groundwater. On Parcel 137, an average remediation depth of 4 feet was assumed. The estimated maximum volume of Site soils requiring remediation is 16,760 cubic yards.

For sediments, the remedial volume was based on an assumed remediation depth of 4 feet in areas with wetland vegetation. It is estimated that a total of 7,740 cubic yards of sediments will require remediation.

Additional sediment volumes from the Back River might require remediation, but the only sample that showed concentrations greater than those proposed for the Site was collected in 1999. Submerged sediment samples have been collected 14 times from within the Back River at locations adjacent to the Sauer Dump Site. Given the time span since this sample was collected (over nine years), the mobile nature of river sediments (especially in a tidal location), and natural attenuation, the area is currently assumed to meet the PRGs. Additional sampling of the Back River sediments should be performed to confirm that the sediments do not exceed the PRGs.

² Also referred to as parts per billion (ppb).

TECHNOLOGY PROCESS SCREENING AND DEVELOPMENT OF ALTERNATIVES

Technology Process Options (TPOs) representing a range of technology types with the potential to address at least some portion of the Site contamination were identified. These TPOs were then screened based on their ability to treat Site wastes, feasibility for implementation, and relative costs of implementation.

Those TPOs that were retained from the initial screening steps were assembled into removal alternatives that could meet the removal objectives for the Site. These removal alternatives were evaluated in terms of effectiveness, implementability, and cost. The four alternatives selected for the detailed evaluation are described below.

Alternative 1: No Action

The no action alternative is included as a baseline in the comparison of other alternatives, as required by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). No removal activities or institutional controls (ICs) would be implemented under this alternative, although some level of natural attenuation might occur.

Alternative 2: Surface Cap, Excavation and Off-Site Disposal

This alternative consists of the following components:

- Removal and off-site disposal of surface debris;
- Clearing and grubbing of Parcel 425 and removal and disposal of materials;
- Confirmation sampling to proceed concurrently with all excavation to ensure that removal requirements are met;
- Excavation of contaminated soils with PCBs greater than 100 ppm regardless of depth and lead greater than 1,000 ppm in the upper 2 feet would be excavated from Parcels 425 and 574 for proper off-site disposal;
- Excavation of all contaminated soils with PCBs greater than 1 ppm and lead greater than 400 ppm from the residential properties (Parcels 137, 295, 464, 503, and portions of 574) adjacent to Parcel 425;
- Excavation of the contaminated sediments from the affected wetlands. All sediments with PCBs greater than 1 ppm and lead greater than 130 ppm in the upper 4 feet and any PCBs that exceed 100 ppm below that depth would be excavated;
- Previously collected data generally supports the conclusion that sediments in the Back River meet the PRGs. Verification sampling of sediments along the Back River shoreline would be undertaken to assess the validity of that conclusion. If PRGs are not met, sediments with PCBs greater than 1 ppm and lead greater than 130 ppm in the upper 4 feet and any PCBs that exceed 100 pm below that depth would be excavated;
- Excavated soils and sediments would be temporarily stockpiled in a staging area established on Parcel 425. Confirmation sampling from the stockpile would be performed to verify that PCB concentrations are less than 100 ppm and lead

concentrations are less than 1,000 ppm. Soils and sediments meeting these criteria would be placed across the upland portions of Parcel 425. Soils and sediments exceeding these criteria would be transported off-site for proper disposal;

- After completion of excavation and confirmation sampling, all excavated areas, with the exception of Parcel 425, would be restored by backfilling and re-vegetation; Parcel 425 would be re-graded and compacted after placement of the excavated soils and sediments and backfilled as required to maintain proper grade and drainage in preparation for construction of a TSCA soil cover;
- Construction of a TSCA compacted soil cover over the contaminated soils and sediments which exceed 1 ppm PCBs on Parcel 425;
- Installation of replacement monitoring wells, if necessary, and a monitoring program to monitor the effectiveness of the remediation effort and groundwater quality. Groundwater monitoring would be conducted on a semi-annual basis for a four year period beginning after the construction activities are complete. Constituents to be monitored include lead and PCBs; and
- Implementation of Institutional Controls to ensure that future land use remains non-residential on Parcel 425; to provide long-term Site access for monitoring and maintenance of TSCA cover; installation and maintenance of fence around capped area of the Site; recordation of deed notices to notify any future purchasers of the property of the need for continued maintenance of the TSCA cover and fence and the cleanup levels left at the Site.

Alternative 3: Surface Cap, Excavation, Off-Site Disposal and Groundwater Collection and Treatment

This alternative includes the same elements as Alternative 2, with the following exceptions:

- Excavation of contaminated soils with PCBs greater than 10 ppm and lead greater than 400 ppm at any depth from Parcels 425 and 574 for proper off-site disposal;
- Excavation of the contaminated sediments from the affected wetlands. All sediments with PCBs greater than 1 ppm and lead greater than 130 ppm would be excavated;
- Excavated soils and sediments with PCB concentrations less than 10 ppm and lead concentrations less than 400 ppm would be placed across the upland portions of Parcel 425 for capping. Soils and sediments exceeding these criteria would be transported off-site for proper disposal;
- Installation of a groundwater collection system to control off-site migration of groundwater from the former dump area;
- Installation of a groundwater treatment system to remove lead and PCBs from the captured groundwater and discharge the water to the Back River;
- Implementation of long-term operation, maintenance, and monitoring for the groundwater collection and treatment system; and
- Implementation of Institutional Controls to ensure that future land use remains non-residential on Parcel 425; to provide long-term Site access for monitoring and maintenance of TSCA cover; installation and maintenance of fence around capped area

of the Site; recordation of deed notices to notify any future purchasers of the property of the need for continued maintenance of the TSCA cover and fence and the cleanup levels left at the Site.

Alternative 4: Excavation, Off-Site Disposal and Groundwater Collection and Treatment

This alternative consists of the elements of Alternative 2 with the following additional components:

- No cap would be installed at the Site;
- Excavation of contaminated soils with PCBs greater than 1 ppm and lead greater than 400 ppm at any depth from all parcels for proper off-site disposal;
- Excavation of the contaminated sediments from the affected wetlands. All wetland sediments with PCBs greater than 1 ppm and lead greater than 130 ppm would be excavated for proper off-site disposal;
- Proper off-site landfilling of excavated soils with greater than 1 ppm and less than 500 ppm of PCBs;
- After completion of excavation and confirmation sampling, all excavated areas would be restored;
- Installation of a groundwater collection and treatment system and associated long-term monitoring and maintenance, as described for Alternative 3; and
- Recordation of deed notices to ensure that groundwater use is restricted, if necessary.

ANALYSIS OF ALTERNATIVES

Alternative 1

Effectiveness: Because no action would be performed, this alternative would not protect human health or the environment. Current and future risks from soil and sediment contamination at the Site would not be significantly different from those that currently exist. ARARs would not be met. Because no action would be taken, this alternative does not pose any risks associated with implementation.

Implementability: Because no action would be taken, this alternative could be implemented easily.

Costs: There are no costs associated with Alternative 1

Alternative 2

Effectiveness: This alternative provides effective, long-term protection of human health and the environment by either removing the contaminated materials or eliminating the potential contact pathway. The removed materials would be disposed in an off-site landfill or incinerated at a permitted, off-site facility. Alternative 2 would decrease soil and sediment

contaminant mobility, toxicity, and volume. Installation of a TSCA cap would reduce the potential for erosion of soils and prevent dermal contact with contaminated soils. The cap would also minimize the infiltration of liquids through the contaminated soils remaining at the Site.

Implementation of ICs would also increase the long term protectiveness of this alternative. Installation of a fence around the capped area of the Site would effectively restrict access to the Site. The requirement for deed notices would ensure that any potential future purchaser of the property comprising the Site would be aware that contamination remains on the Site and of the necessity for maintaining the cap and the fence.

This alternative would comply with ARARs provided the entire Site is classified as a single Area of Concern (AOC) to meet land disposal restriction (LDR) criteria in TSCA and the Resource Conservation and Recovery Act (RCRA) (see Section 2.2.1). This alternative would also meet the risk-based criteria of the TSCA regulations at 40 CFR § 761.61(c). Alternative 2 would provide limited control of groundwater interaction with soils and sediments below the compacted soil cap. Any soil contamination remaining below the capped areas could come in contact with the tidally influenced groundwater. While Alternative 2 would not initially provide for groundwater treatment, if the monitoring program implemented as part of this alternative indicated that unacceptable levels of Site contaminants are impacting the groundwater and/or the Back River, a groundwater capture and treatment system could be put in place to address the problem.

Implementability: This alternative could be implemented with standard construction equipment and readily available materials and labor. No major technical difficulties are anticipated in implementing this alternative and it could be implemented within a relatively short period of time. Currently, there are only three facilities capable of incinerating the Site soils/sediments with PCB concentrations greater than 500 mg/kg. These facilities are in Texas or Utah, necessitating the use of long distance truck transportation. The risk associated with off-site transport is the potential for contamination to spread through spills or accidents. Also, long-term administrative resources would be required to ensure compliance with the ICs and maintenance of the cover.

Cost: The cost calculations for Alternative 2 are presented in Appendix B-1.

- The capital cost for Alternative 2 is estimated to be \$ 5.31 Million
- The present worth O&M cost is approximately \$ 729,000
- The total project cost (present worth) is estimated to be \$ 6.04 Million

Alternative 3

Effectiveness: Alternative 3 would be more effective at reducing risks related to Site contamination than Alternative 2 because soils with PCB concentrations greater than 10 ppm (instead of 100 ppm) or lead concentrations greater than 400 ppm (instead of 1,000 ppm) would be removed from the Site. Additionally, Alternative 3 would provide controls to prevent off-site migration of groundwater from beneath the compacted soil cap. The excavation and off-site disposal of additional contaminated soils and sediments and the construction of a groundwater collection and treatment system would increase short-term impacts including increased construction activities and truck traffic. Alternative 3 would comply with ARARs. As in Alternative 2, the Site would be considered a single AOC with respect to LDR compliance. The groundwater collection and treatment system would have the added benefit of preventing the potential migration of contaminated groundwater to the wetland areas and surface waters. Alternative 3 would decrease contaminant mobility, toxicity, and volume in both the groundwater and soils/sediments.

Implementation of ICs would also increase the long term protectiveness of this alternative. Installation of a fence around the capped area of the Site would effectively restrict access to the Site. The requirement for deed notices would ensure that any potential future purchaser of the property comprising the Site would be aware that contamination remains on the Site and of the necessity for maintaining the cap and the fence.

Implementability: Alternative 3 would be somewhat more difficult to implement than Alternative 2 because of the additional excavation of soils and sediments that would be required. Currently, there are only three facilities capable of incinerating the Site soils/sediments with PCB concentrations greater than 500 mg/kg. These facilities are in Texas or Utah, necessitating the use of long distance truck transportation. The risk associated with off-site transport is the potential for contamination to spread through spills or accidents and this risk would be increased with this alternative because of the additional loads of contaminated soils and sediments that would need to be transported off-site for disposal. This alternative would also require the construction of a groundwater collection, treatment, and discharge system. While a National Pollutant Discharge Elimination System (NPDES) permit would not be required to discharge the treated groundwater to the Back River, it would be necessary to comply with the substantive requirements of 40 CFR Part 122. For groundwater, the treatment requirements for lead and PCBs are 8.1 ug/l and 0.000064 ug/l, respectively, making it difficult, if not impossible, to achieve the required level of treatment for PCBs.

Additional long-term administrative resources would be required to ensure compliance with the ICs as well as maintenance of the cover system and fence and maintenance and monitoring of the collection and treatment system. It would also take longer to implement this alternative than it would for Alternative 2 because of the increased excavation and construction activities required.

Cost: The cost calculations for Alternative 3 are presented in Appendix B-2.

- The capital cost for Alternative 3 is estimated to be \$ 7.77 Million
- The present worth O&M cost is approximately \$ 1.63 Million
- The total project cost (present worth) is estimated to be \$ 9.39 Million

Alternative 4

Effectiveness: Because all soils and sediments with contamination concentrations above the PRGs would be removed from the Site, Alternative 4 would provide the greatest long-term protection to human health and the environment and more effective control of contaminant migration relative to the other alternatives. As with Alternative 3, the groundwater collection and treatment system would prevent the potential migration of residual contaminated groundwater to the wetland areas and surface waters. Alternative 4 shares the same short-term excavation and transportation impacts identified for Alternative 3; however, truck traffic would be greatly increased. This alternative would decrease contaminant mobility, toxicity, and volume and would comply with ARARs.

Implementability: Because all soils would be disposed off-site, there would be a significant increase in truck traffic relative to the other alternatives. The risk associated with off-site transport is the potential for contamination to spread through spills or accidents and this risk would be greatly increased with this alternative because of the significant number of additional loads of contaminated soils and sediments that would need to be transported off-site for disposal. In addition, there are currently only three facilities capable of incinerating the Site soils/sediments with PCB concentrations greater than 500 mg/kg. These facilities are in Texas or Utah, necessitating the use of long distance truck transportation. Public opposition to the traffic impacts from the extensive off-site transportation requirements of this alternative could potentially make implementability more difficult than for Alternatives 2 and 3. This alternative would also require the construction of a groundwater collection, treatment, and discharge system and would require compliance with the substantive requirements of a NPDES permit. For groundwater, the treatment requirements for lead and PCBs are 8.1 ug/l and 0.000064 ug/l, respectively, making it difficult, if not impossible, to achieve the required level of treatment for PCBs.

It would take considerably longer to implement this alternative than it would to implement Alternative 2. Additional long-term administrative resources would be required to ensure compliance with any ICs determined to be necessary as well as maintenance and monitoring of the collection and treatment system.

Cost: The cost calculations for Alternative 4 are presented in Appendix B-3.

- The capital cost for Alternative 4 is estimated to be \$ 11.41 Million

- The present worth O&M cost is approximately
\$ 1.32 Million
- The total project cost (present worth) is estimated to be
\$ 12.72 Million

COMPARATIVE ANALYSIS AND RECOMMENDED ALTERNATIVE

Alternative 1, No Action, would not be an effective alternative. This alternative would not protect human health or the environment, would not prevent contaminant migration, and would not comply with ARARs.

Alternatives 2, 3, and 4 would provide generally effective approaches to the protection of human health and the environment. All three alternatives would comply with ARARs, although Alternatives 2 and 3 rely on the classification of the entire Site as a single Area of Concern. Alternative 2 would address the interaction and discharge of groundwater with Site contaminants that are left under the capped areas through monitoring rather than collection and treatment. Alternative 2 would also allow more contaminated materials (PCBs < 100 ppm and lead < 1,000 ppm) to remain on the Site (albeit under a TSCA cap) than the other alternatives. Alternatives 2, 3, and 4 would eliminate the soil exposure pathways which contribute to the unacceptable human health and ecological risks, but Alternatives 2 and 3 would require the ongoing maintenance of a cap to ensure that the pathway remains blocked. All three of these alternatives would prevent continued migration of soil and sediment contaminants, although again, Alternatives 2 and 3 would require cap maintenance to ensure that migration is prevented in the long term. Because it would require the removal and off-site disposal of the most highly contaminated material (down to 1 ppm PCBs and 400 ppm lead), Alternative 4 would provide the highest degree of long-term protection.

Alternatives 2, 3, and 4 each would pose short-term risks to workers and the community. These risks, however, could be mitigated through use of engineering controls, personal protective equipment, and vapor/dust suppression measures. Alternative 4 would pose the greatest short-term risks because of the significant increase in excavation activities and truck traffic required. Alternative 2 would pose the least short-term risks.

Alternatives 2 and 3 would decrease, but not eliminate, contaminant mobility and would reduce contaminant toxicity and volume. Alternative 4 would eliminate contaminant mobility and would reduce contaminant toxicity and volume. Alternatives 2 and 3 would provide additional protection of human health and the environment through the implementation of ICs.

The implementability evaluation indicated that Alternative 4 would be the most difficult to implement and would take the longest amount of time to implement because of the need for greater excavation of soils and sediments and off-site disposal of all contaminated soils and sediments. Alternatives 3 and 4 would be difficult to implement because the PRGs for groundwater may be impossible to meet. Aside from the No Action Alternative, Alternative 2 would be the easiest to implement.

Alternative 2, with a total present worth of \$6.04 million, would be less expensive than Alternatives 3 and 4. Alternative 4 has the both the highest degree of protectiveness and the greatest estimated cost, \$ 12.72 million. Alternative 3 would provide a high degree of protection at a cost of \$ 9.39 million.

Based on the comparison performed as part of this evaluation, all the alternatives appear to be generally protective with Alternative 4 appearing to be the most protective as well as the most difficult to implement and the most costly. The incremental cost increases (approximately 55% between Alternatives 2 and 3, and 35% between Alternatives 3 and 4) are accompanied by increases in overall protectiveness that are difficult to quantify accurately and, in the case of the groundwater pathway, may be difficult or impossible to achieve. Alternative 2 appears to be the most easily implemented and least costly protective approach for this Site.

ENGINEERING EVALUATION/COST ANALYSIS SAUER DUMP SITE DUNDALK, MARYLAND

1.0 INTRODUCTION

This Engineering Evaluation and Cost Analysis (EE/CA) has been developed for the Sauer Dump Site (Site) a former unlicensed dump and salvage yard located in Dundalk, Maryland (Figure 1.1). This EE/CA has been prepared by HydroGeoLogic, Inc. (HGL) under Contract Number EP-S3-07-05 with Region III of the U.S. Environmental Protection Agency (EPA), in accordance with Tasks 12 and 13 of Work Assignment 020NSEE03EW.

1.1 PURPOSE AND ORGANIZATION OF THE REPORT

The purpose of this EE/CA Report is to develop and evaluate removal action alternatives to address potential risks to human health and the environment posed by contaminated sediments and soils at the Sauer Dump Site. The scope of this EE/CA is based on discussions with EPA and information obtained from previous Site investigations performed by other consultants.

This document has been prepared in accordance with the requirements of the NCP, 40 Code of Federal Regulations (CFR) Part 300, regulations for implementing the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as well as the EPA guidance, *Conducting Non-Time-Critical Removal Actions Under CERCLA* (EPA, 1993). The EE/CA is organized as follows:

- The subsequent subsections of Section 1 summarize Site history and setting, as well as current Site characteristics.
- Section 2 identifies the removal objectives, potential applicable or relevant and appropriate requirements (ARARs), Preliminary Remedial Goals (PRGs), and the estimated areas and volumes of sediments and soils requiring remediation.
- Section 3 identifies and screens technologies with the potential to address the soils/sediments and groundwater contamination.
- Section 4 describes the removal alternatives developed from the technologies retained in Section 3. Section 4 also contains a detailed and comparative analysis of the removal alternatives.
- Section 5 summarizes the results of the EE/CA.

1.2 SITE BACKGROUND

Background information on the Sauer Dump Site is summarized below. Additional background material can be found in the July 2002 Remedial Investigation (RI) and Focused Feasibility Study (FFS) prepared by Environmental Service and Technology Corporation (ENSAT)

(ENSAT, 2002a) and in the June 2007 Extent of Contamination Study (EOCS) Report prepared by Malcolm Pirnie (Malcolm Pirnie, 2007).

The majority of the Site is located within Parcel 425, with some portions of Parcels 137, 295, 464, 503, and 574 impacted by, and/or included in, the former operations at the Site. A Site map showing the parcel boundaries along with the locations and designations of the wetland areas is included as Figure 1.2.

1.2.1 Site Location and Description

The Sauer Dump Site is located behind and adjacent to residential properties on Lynhurst Road, Dundalk, Baltimore County, Maryland. The area is a mixture of residential and undeveloped properties. The Site is estimated to be 5.7 acres (including portions of surrounding parcels that are known to have been impacted by the contamination) in size, and the main property (Parcel 425) is currently owned by the Wittstadt Hunting Club. Some of the affected parcels include structures that are used for residential purposes. A precise determination of the Site boundaries is not possible at this point because the existing data do not sufficiently delineate the areal extents of the Site contamination. Parcel 425 is largely vegetated with tall grasses, reeds, trees, and scrub brush and is surrounded by a chain-link fence to control access to the Site. Two gates, located along the northern and southern perimeters of the fence, are locked to prevent unauthorized access.

Parcel 425 is former marshy land that was stabilized using fill material. There is a ponded area located to the northwest of Parcel 425. The southern boundary of the Site is a cove that is part of the Back River, which is a tributary of the Chesapeake Bay. (Figure 1.1) Wetlands adjacent to this cove and extending along the east and west side of the former operational area are considered to be part of the impacted area. Previous Site investigations concluded that the wetlands onsite that are not tidally influenced were formed by fill operations within the Sauer Dump Site. Past Site operations have impacted an estimated 1.44 acres of wetlands surrounding the upland portions of the Site. The vegetation observed within the wetlands is predominantly reeds (*Phragmites* – an invasive species).

1.2.2 Site Operational History

According to previous reports, the main portion of the Site was owned by Mr. Fredrick Sauer (now deceased) and was operated as an unpermitted dump and salvage yard beginning as early as the 1950s and continuing until Sauer's death in 1990. Activities at the Site were limited in the mid-1980s when the nature of the Site came to the attention of the Baltimore County Health Department (BCHD) and the Maryland Department of the Environment (MDE). Based on soil, sediment, surface water, and groundwater data, the Site's use as an unpermitted dump and salvage yard resulted in the release of hazardous materials.

1.3 PREVIOUS SITE INVESTIGATIONS

1.3.1 MDE and EPA Initial Site Investigations

To address concerns raised by BCHD about the Site, two Site Investigations were performed between 1985 and 1986. MDE conducted a Preliminary Assessment (PA) and Site Investigation (SI) and EPA conducted a SI. During the investigations, salvage and dump operations were observed on Site and in portions of the surrounding residential area.

The Site was observed to be relatively flat with mounds of dumped domestic and construction debris, burned paint waste, and several charred areas. Salvage items observed during the Site investigations included scrap metal, empty tanks and drums, abandoned trucks, open roll-off containers, construction equipment, concrete conduit, wood chips, and abandoned automobiles. An oily sheen was observed on-site and in the adjacent wetlands. The BCHD ordered Mr. Sauer to close Site operations in 1984. By September of 1985, a majority of the material on-site had been removed. However, later observations indicated that dumping and salvage operations continued until Sauer's death in 1990.

During Site Investigation activities, soil, sediment, and surface water samples were collected and analyzed for VOCs, SVOCs, total metals, pesticides, and PCBs. The data indicated the presence of these analytes at concentrations greater than the risk-based screening criteria.

1.3.2 MDE Site Investigation (1990)

In 1990, surface soil and sediment samples were collected from the Site. The samples were analyzed for VOCs, total metals, pesticides, and PCBs. Metals and PCBs were detected at concentrations exceeding the risk-based screening criteria. During Site Investigation activities, piles of scrap metal, tanks, and a three-to-eight foot deep pile of rubble/fill were observed at the Site.

1.3.3 EPA Expanded Site Inspection

An expanded Site inspection was conducted by EPA between 1991 and 1994. Soil, sediment, and surface water samples were collected and analyzed for VOCs, SVOCs, total metals, pesticides, and PCBs. Analytical results indicated contamination of all three media at concentrations greater than the risk-based screening criteria.

During the expanded Site inspection activities, field personnel observed that a majority of the Site had been covered to an approximate 10 foot depth with fill and debris. Debris included a tractor trailer, concrete, bricks, rebar, tires, drums, furniture, a curing oven, broken asphalt, empty 55-gallon drums, and a 1,000-gallon storage tank. Oil sheens were observed in the wetlands.

1.3.4 MDE Investigations (1996-2005)

Between 1996 and 2005, MDE completed the following field investigations:

- In 1996, soil, sediment, and surface water samples were collected and analyzed for metals and PCBs.
- In 1999, soil, sediment, surface water, and groundwater samples were collected and analyzed for VOCs, SVOCs, metals, pesticides, and PCBs. Surface water and groundwater samples were analyzed for total metals and dissolved metals.
- In 2001, five shallow monitoring wells were installed. Soil, sediment, and groundwater samples were collected and analyzed for VOCs, SVOCs, metals, pesticides, and PCBs. The groundwater samples were analyzed for total and dissolved metals. A topographic survey of the Site and the surrounding lands was conducted.
- In 2002, surface water, groundwater, and soil samples were collected and analyzed for PCBs. Field based screening assays were used to delineate PCB contamination in Site soils. Water level monitoring was performed to assess the extent of tidal influence on the Site groundwater. A wetlands survey was also completed.
- In 2004, soil samples were collected and analyzed for metals, SVOCs, pesticides, and PCBs.
- In 2005, soil samples were collected and analyzed for PCBs.

The analytical results of these investigations indicated the presence of VOC, SVOC, metals, pesticide, and PCB contamination at concentrations greater than risk-based screening levels. The primary contaminants were identified as lead and PCBs. Based on the laboratory and field data two PCB “Hot Spots” were identified (one in the southeast and one in the south-central portion of the Site).

Groundwater monitoring data indicated that the local groundwater gradient is towards the Back River. However, tidal influences have been observed in the pond and in four of the five ground water monitoring wells located on the Site.

1.3.5 Extent of Contamination Study

In 2007, the Potentially Responsible Parties’ (PRPs’) contractor (Malcolm Pirnie) performed soil, sediment, and groundwater sampling activities to address data gaps identified from previous Site investigations. Data gaps that were identified included:

- Delineation of PCB and lead contamination on Parcel 137;
- Background data for surface and subsurface soils east of the Site;
- Surface soil analytical data for Parcels 503 and 464;
- Collection of additional sediment samples for PCB and lead analyses; and,
- Collection of surface water and groundwater samples.

Site reconnaissance was performed prior to the initiation of sampling activities. The results of these field activities are described below.

1.3.5.1 Site Reconnaissance

An initial Site reconnaissance visit was performed by Malcolm Pirnie in December 2006 to determine the existing Site conditions. Observations of the Site visit are listed below.

- Monitoring well MW-1 could not be located;
- The Site was heavily vegetated;
- The well annulus around monitoring well MW-4 was left open, which might have compromised the integrity of the well; and,
- Some of the proposed sampling locations were in asphalt-covered areas.

Based on the observations from the initial Site visit, a second Site visit was performed in January 2007 prior to the start of sampling activities. During this Site visit, the final planned locations of the field samples were identified. In addition, it was determined that all Site monitoring wells, with the exception of MW-1, were compromised and should be overdrilled. Because MW-1 could not be located, this well was identified as requiring re-installation.

1.3.5.2 Soil and Sediment Sampling

In January 2007, 32 surface soil and nine subsurface soil samples were collected. The surface soil samples were analyzed for lead and PCBs. The subsurface soil samples were collected from two to three feet bgs and analyzed for lead, PCBs, VOCs, and SVOCs.

Nine sediment samples were collected with seven from the wetlands, one from the pond area, and one from the Back River. The sediment samples were collected from the top six inches of sediments below the organic build-up and were analyzed for lead and PCBs.

The most commonly detected PCB compound was Aroclor 1260, which was detected in 25 of the 32 surface soil samples and eight of the nine subsurface soil samples. Lead was detected in all of the surface and subsurface soil samples. The highest lead and PCB concentrations were observed in the samples collected from the “Hot Spot” locations. Low concentrations of VOCs and SVOCs were detected in several of the subsurface soil samples.

1.3.5.3 Surface Water Sampling

In January 2007, two surface water samples were collected from the Back River shoreline. These samples were co-located with sediment samples DG-SD08-0.5 and DG-SD09-0.5. The samples were collected soon after the peak of high tide and prior to sediment sampling activities to minimize elevated turbidity readings from re-suspended sediments. The filtered and unfiltered surface water samples were analyzed for lead and PCBs.

Using EPA Method 8082, no PCBs were detected in the unfiltered and filtered samples. Using the congener method (EPA Method 1668), PCBs were detected at low concentrations in both the filtered and unfiltered samples. Lead was detected in one filtered sample and both unfiltered samples.

1.3.5.4 Groundwater Monitoring Well Installation and Sampling

Well installation activities occurred in January 2007. Five wells were installed using the hollow stem auger method and were constructed of two-inch diameter polyvinyl chloride casing and screen. In February 2007, groundwater samples were collected from the five monitoring wells and analyzed for total and dissolved lead and PCBs. PCBs were detected only in the unfiltered sample from well MW-4 when the samples were analyzed using EPA Method 8082. When the samples were analyzed using EPA Method 1668, PCBs were detected in the filtered and unfiltered samples from all five wells. Lead was detected in three unfiltered samples, but not in any of the filtered samples.

1.4 NATURE AND EXTENT OF CONTAMINATION

The analysis of the nature and extent of contamination as presented in this EE/CA is based on the soil and sediment data provided in the reports for the previous investigations identified in Section 1.3. The locations of the samples collected as part of these investigations are presented on Figure 1.3. Over the course of the 22 years of Site investigations and assessments, 132 surface soil samples, 216 subsurface soil samples, 67 sediment samples, 47 surface water, and 28 groundwater samples have been collected (including duplicate field samples and quality control samples). The samples were collected from Parcels 137, 295, 425, 464, 503, and 574. The analytical results for the surface soil, subsurface soil, sediment, surface water, and groundwater samples are included in Appendix A as Tables A.1 through A.5. The nature and extent of contamination in Site soils and sediments are briefly summarized in the subsections below.

Because of the lack of “clean” perimeter samples (i.e., those showing no contamination or only background concentrations of Site contaminants), a precise delineation of the areal extents of the Site contamination could not be derived. The impacted area referred to in this report should therefore be viewed as the estimated minimum extent of contamination.

1.4.1 Surface and Subsurface Soil Contamination

The primary soil contaminants at the Site are metals (particularly lead) and PCBs. Previous Site Investigation activities concluded that while most of the surface soils within the boundary of Parcel 425 had been impacted to some extent by Site contaminants, there were two PCB/lead “Hot Spots” within the area. One was located along the southeastern boundary of Parcel 425, adjacent to Parcel 137. This “Hot Spot” included portions of the Southeast Finger wetlands. The other “Hot Spot” was much smaller in size and was located in the south-central portion of the Site near the Back River wetlands. PCB concentrations in the larger of these “Hot Spots” exceeded 1,000 milligrams per kilogram (mg/kg), with a maximum detection of 33,000 mg/kg. Across the majority of the Site, including the adjacent affected parcels, PCB concentrations were substantially lower (orders of magnitude) than those observed in the “Hot Spots”.

Lead concentrations greater than 1,000 mg/kg, and some detections even greater than 10,000 mg/kg, were observed in the soil samples. Other metals, including arsenic, chromium, selenium, vanadium, and zinc, were detected at substantially elevated concentrations.

Previous surface and subsurface soil sampling activities have shown that the access road to the Site and other areas of Parcel 503 and 464 have also been impacted by former Site activities along with areas of Parcel 137, Parcel 295, and Parcel 574. The extent of soil contamination above PRGs is presented graphically on Figure 1.4.

1.4.2 Sediment Contamination

The primary sediment contaminants are also metals, particularly lead, and PCBs. Multiple sediment samples had lead concentrations in excess of 500 mg/kg. Elevated concentrations of arsenic, chromium, and selenium were also detected in several sediment samples. One of the aforementioned “Hot Spots” includes portions of the Southeast Finger wetlands, which extend into Parcels 137 and 295. In addition, elevated concentrations of Site contaminants have been detected in sediments from the Pond area and the Southwest Finger wetlands (located primarily on Parcel 574), and in the wetlands adjacent to the Back River. Contaminant concentrations in excess of the PRGs were also detected in one Back River sediment sample that was collected in 1999, but given the time span since this sample was collected (over nine years), the mobile nature of river sediments (especially in a tidal location), natural attenuation, and the presence of adjacent samples that do not exceed the PRGs, additional sampling should be performed to determine whether, and to what extent remediation of these sediments would be needed. The extent of sediment contamination greater than PRGs is presented graphically on Figure 1.5.

1.5 CONTAMINANT FATE AND TRANSPORT

This section summarizes the potential fate and transport pathways for the soil and sediment contaminants. Detailed discussion of contaminant fate and transport, including chemical-specific fate and transport characteristics, can be found in the EOCS Report (Malcolm Pirnie, 2007).

The original contaminant sources were the waste and debris dumped at the Site. The historical reports indicate that the majority of the surface and subsurface waste and debris has been removed from the Site. However, the debris which remains at the Site could be a continuing source of contamination. In addition, contaminated soils and sediments act as a source of contamination for groundwater and surface water. The contaminated soils might also be a continuing source for sediment contamination.

Potential migration pathways include surface soil erosion, precipitation infiltration, surface water flow, sediment movement, and groundwater flow. Each of the potential migration pathways is briefly described below.

Contaminants in surface soils could migrate by erosion and overland flow during storm events or by leaching with infiltrating precipitation. The primary contaminants, metals and PCBs,

tend to associate with soil particles, causing them to be more susceptible to erosion. Contaminants associated with soil particles might also become entrained in air if dust is generated. Wind can transport these airborne particulates. The potential for dust emissions depends upon the extent to which the Site is vegetated. Volatile compounds in soils may volatilize into ambient air.

Soluble contaminants could leach from surface soils to subsurface soils with infiltrating precipitation. This leaching process can transport the contaminants to the groundwater. Once dissolved within the groundwater, the contaminants will migrate via advection, dispersion, and diffusion. Sorption to or association of contaminants with solid surfaces can retard the leaching of contaminants to and transport of contaminants within the groundwater.

Contaminants sorbed to sediment particles could be transported by erosional processes during storm events. Contaminants dissolved in the water contained within the sediment interstitial spaces will move with the water flux through the sediments. For sediments along the Back River shoreline, associated contaminants might dissolve directly into the surface water and migrate with the river's flow.

The Site contaminants can also be transformed by a variety of processes. Metals may be transformed to more or less soluble forms by changes in reductive oxidation (redox) conditions. Metals and organic compounds can also accumulate in the tissues of plants and animals. Some organic compounds might be degraded by microbial or chemical processes. The primary organic contaminant, PCBs, tends to be recalcitrant to degradation reactions.

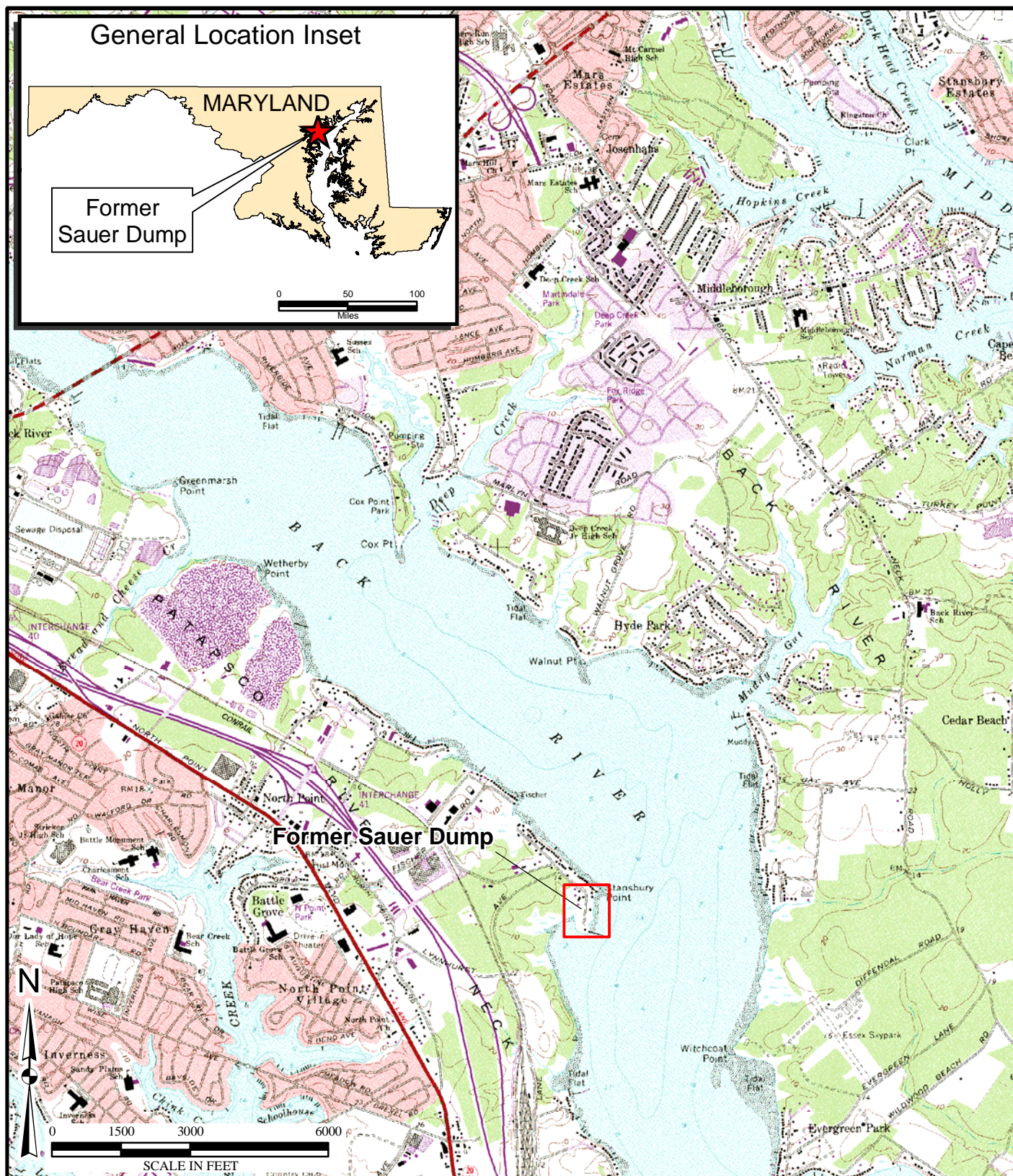
1.6 SUMMARY OF BASELINE RISK ASSESSMENT

As part of the MDE 2002 Site Investigation, a Baseline Risk Assessment (BLRA) was prepared (ENSAT, 2002b). The BLRA assessed potential threats to non-residential receptors (adult visitor, youth visitor, child visitor, and construction worker) exposed to the Site contaminants. Exposure of these receptors to soil contaminants was associated with potential cancer risks greater than 1E-04 and hazard indices greater than 1. The potential effects due to lead exposure were not quantified. However, the BLRA noted that some lead detections significantly exceeded the recommended residential soil screening value of 400 mg/kg, and concluded that there was potential for the lead contamination to cause adverse effects.

The BLRA determined that exposure of the child visitor to contaminants in the Site sediments resulted in a non-cancer Hazard Index (HI) greater than 1, indicating the potential for adverse effect.

The BLRA did not include an analysis of potential effects of soil contaminants on ecological receptors. The sediment data were screened against ecological benchmarks. Based on this screening, the BLRA concluded that the PCBs in sediments might pose a threat to ecological receptors.

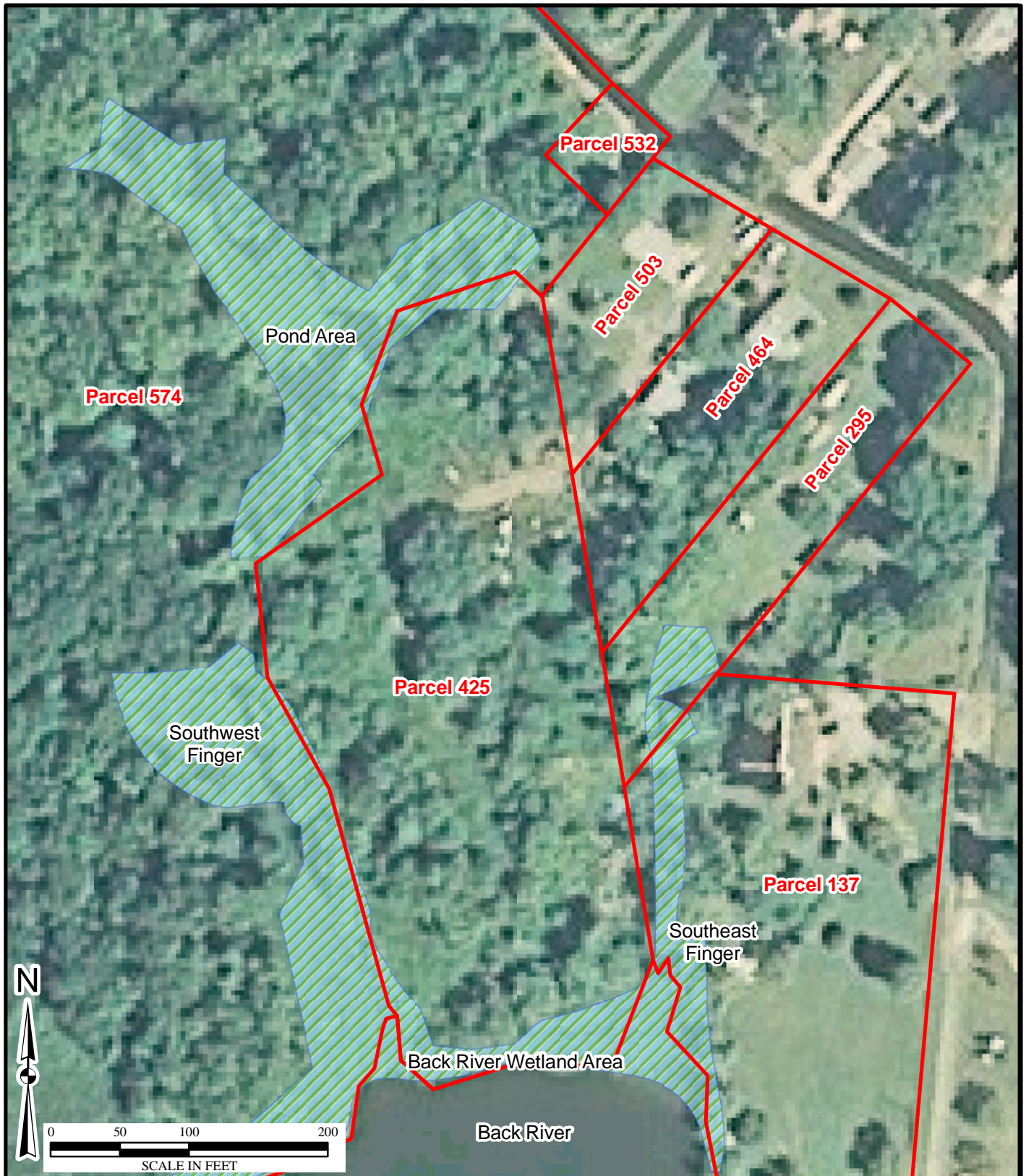
FIGURES



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 Map Source: USGS Quadrangle Map,
 Middle River, MD 1996
 11/10/08 PD



Figure 1.1
Site Location Map



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site_map.mxd
Map Source: NAIP,
Middle River, MD 2007
11/10/08 PD

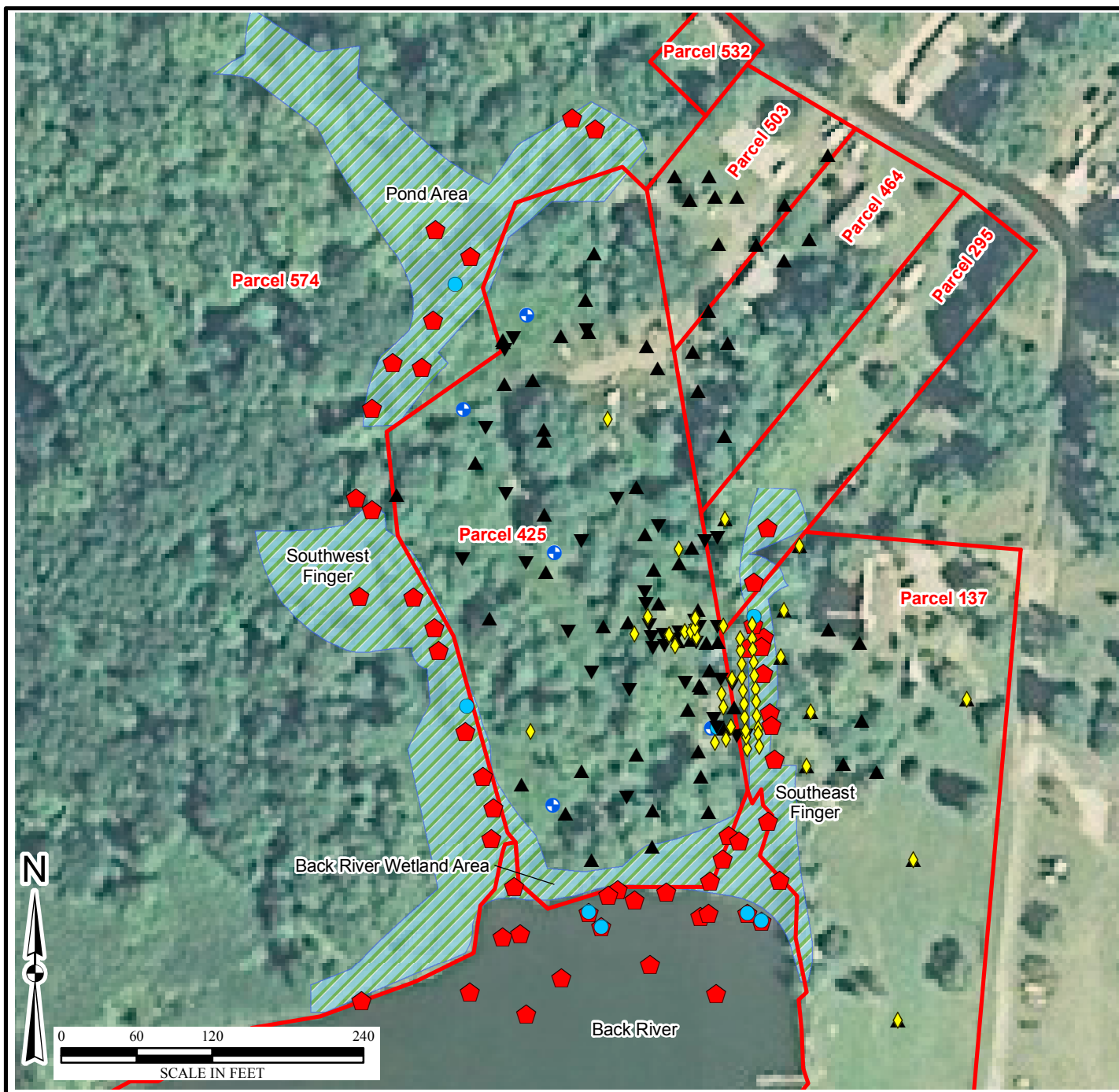


Legend

- Parcel Boundary
- Surveyed Wetlands (ENSAT, 2005)

Figure 1.2
Site Detail Map

**Figure 1.3
Historic
Sample Locations**



Legend

- ⊕ Groundwater Sample
- Surface Water Sample
- ▲ Surface Soil Sample
- ▼ Subsurface Soil Sample
- ◆ Surface and Subsurface Soil Sample
- ⬠ Sediment Sample
- Parcel Boundary
- ▨ Surveyed Wetlands (ENSAT, 2005)

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Historic_Sample_Loc_L.mxd
Map Source: NAIP,
Middle River, MD 2007
11/10/08 PD



Figure 1.4
Extent of Contamination
for Soils
(Surface and Subsurface)

Legend

- ▲ Surface Soil Sample Exceeding PRG
- ▼ Subsurface Soil Sample Exceeding PRG
- ◆ Surface and Subsurface Soil Sample Exceeding PRG
- Parcel Boundary
- Grid Soil Samples
- Surveyed Wetlands (ENSAT, 2005)

Notes:
All soil samples shown on figure contained one or more PRG exceedances.

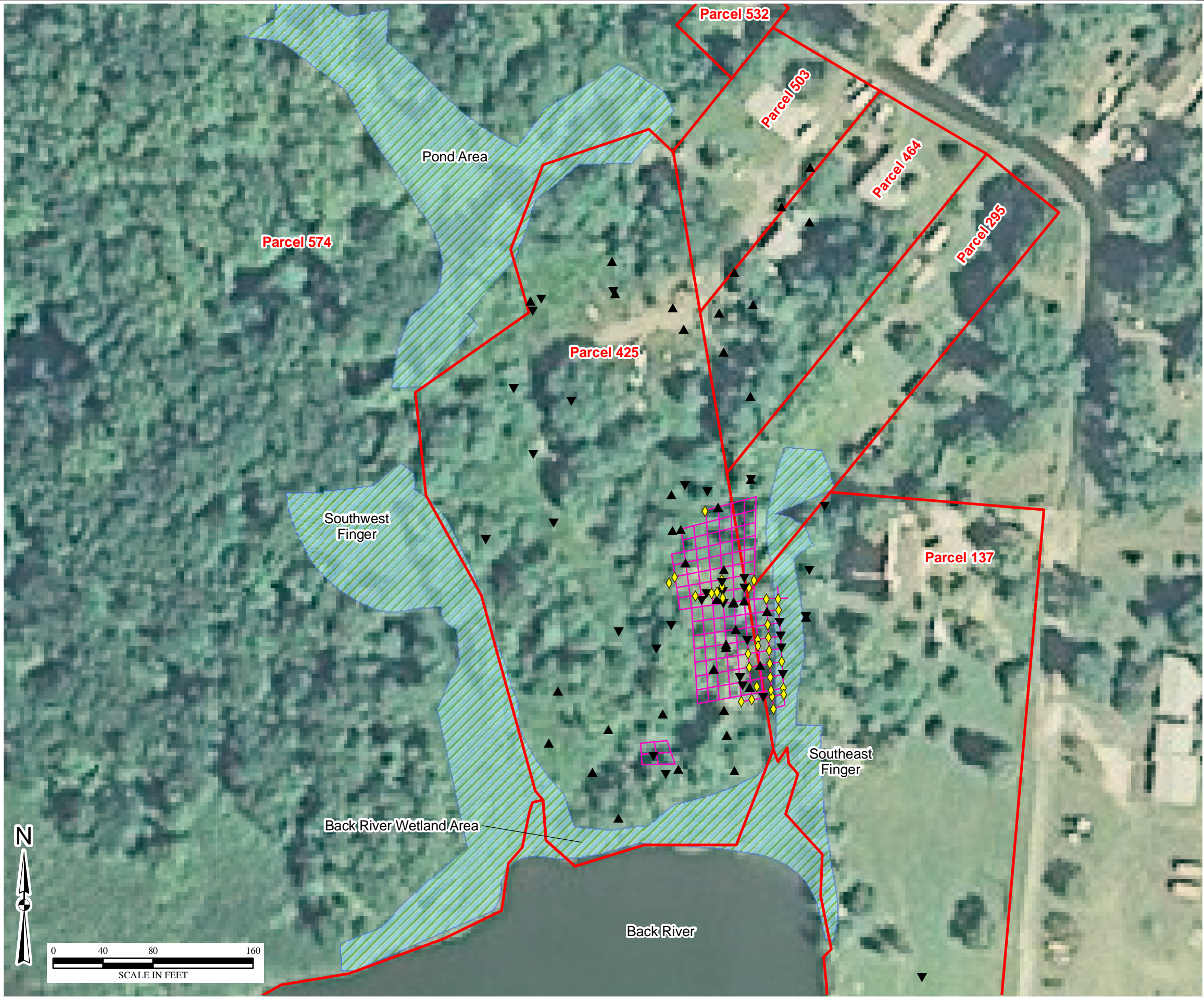





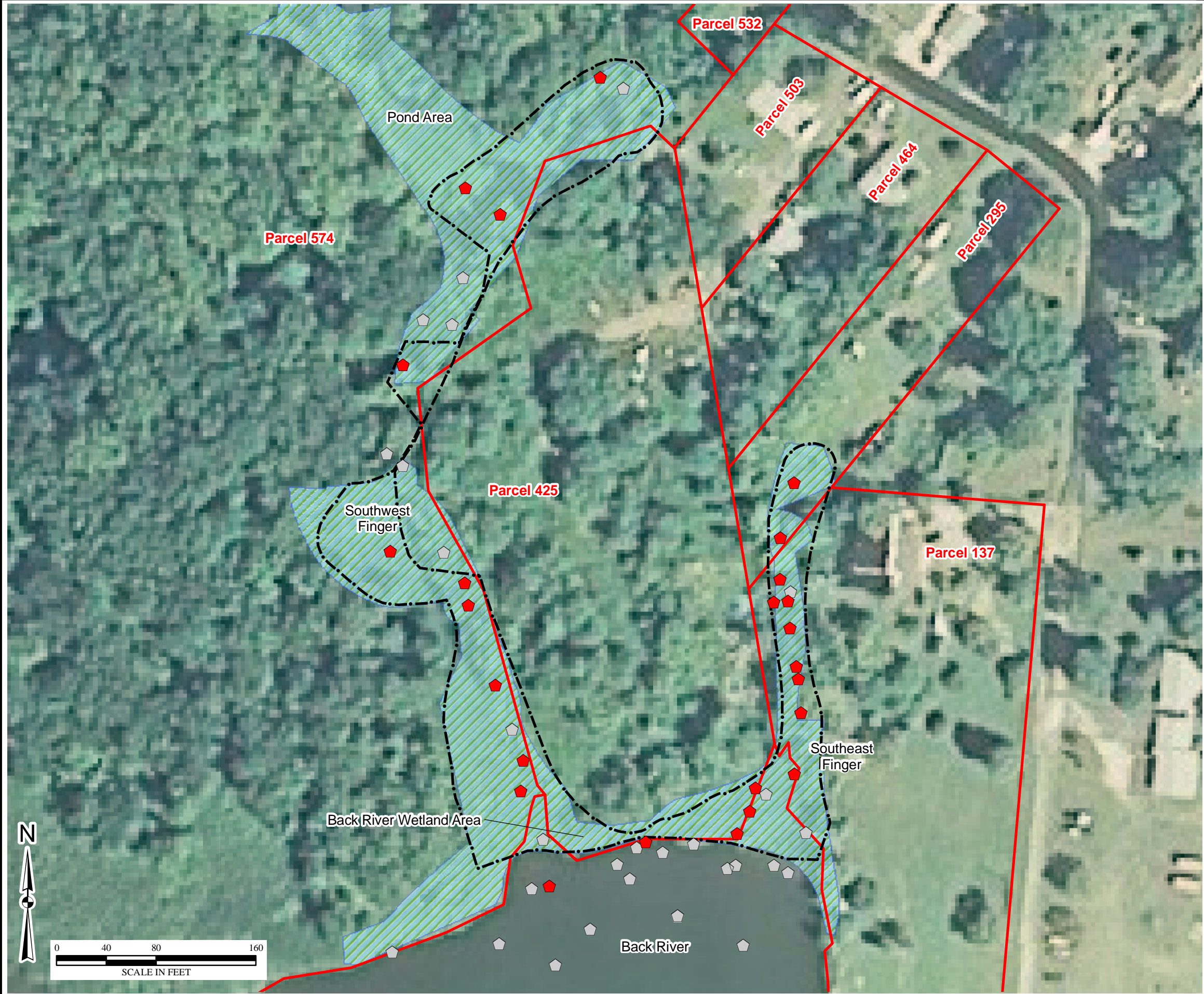


Figure 1.5
Extent of Contamination
in Sediment

Legend

-  Sediment Sample with Lead > 130 ppm or PCBs > 1.00 ppm
-  Sediment Sample with Lead < 130 ppm and PCBs < 1.00 ppm
-  Proposed Limits of Excavation for Sediment
-  Parcel Boundary
-  Surveyed Wetlands (ENSAT, 2005)



2.0 REMOVAL OBJECTIVES

This section identifies the removal objective and goals for the Site. The removal objectives are described in Section 2.1. This is followed by identification of the potential ARARs with which the selected removal alternative must comply. To provide target cleanup levels that ensure the removal objectives will be met, quantifiable PRGs are then presented. Finally these PRGs are used to estimate the volume of contaminated materials that might require remediation.

2.1 REMOVAL OBJECTIVES

The following removal objectives were identified:

- Reduce exposure to non-carcinogens in the soils and sediments via the potential exposure routes of inhalation, ingestion, and dermal contact.
- Reduce exposure to carcinogens in the soils and sediments via the potential exposure routes of inhalation, ingestion, and dermal contact.
- Reduce risks to human health and ecological communities exposed directly to chemicals in the soils and sediments and indirectly to these chemicals via bioaccumulation in fish in the receiving waters.
- Minimize the further spread of contamination via any of the following major migration pathways:
 - Soils to groundwater,
 - Soils to surface water,
 - Soils to sediments,
 - Soils to air,
 - Groundwater to surface water, and
 - Sediments to surface water.

2.2 IDENTIFICATION OF POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

The EPA document *Conducting Non-Time-Critical Removal Actions Under CERCLA* (1993) specifies that the EE/CA should evaluate each removal alternative in terms of its ability to comply with the substantive standards of potential ARARs. Federal and state regulations were reviewed to identify potential ARARs and To Be Considered (TBC) criteria.

ARARs include:

- Any standard, requirement, criterion, or limitation under any Federal environmental law, such as the Toxic Substances Control Act (TSCA), the Clean Air Act (CAA), the Clean Water Act (CWA), the Marine Protection, Research, and Sanctuaries Act (MPRSA), and the Resource Conservation and Recovery Act (RCRA).
- Any promulgated standard, requirement, criterion, or limitation under a state environmental or facility siting law, including those contained in EPA-approved programs, which has been identified by the state to EPA in a timely manner.

ARARs consist of two sets of requirements, those that are applicable and those that are relevant and appropriate. Applicable requirements are those substantive standards that specifically address the situation at a CERCLA site. However, an applicable requirement need not have been promulgated specifically to apply to CERCLA sites. When making a determination of the applicability of a requirement, the site circumstances are compared to the following jurisdictional prerequisites:

- Who is subject to the statute or regulation;
- What types of substances or activities fall under the authority of the statute or regulation;
- What is the time period for which the statute or regulation is in effect; and,
- What types of activities does the statute or regulation require, limit, or prohibit.

If this comparison indicates that the site circumstances are consistent with these prerequisites, the requirement is applicable.

Requirements that are not applicable must be evaluated further to determine whether they are relevant and appropriate. Requirements that address situations sufficiently similar to the proposed response action and are well suited to the conditions of the site are considered to be relevant. In some cases, only portions of a requirement will be both relevant and appropriate.

In addition to the ARARs, information that is provided in certain federal and state criteria, advisories, guidance, and proposed standards, though not legally enforceable, can be helpful in selecting a removal action and/or determining how protective the removal action will be. These “to be considered” (TBC) requirements complement the use of ARARs but do not compete with or replace them (EPA, 1992).

Potential chemical-specific, location-specific, and action-specific ARARs for the Site, along with potential TBC requirements, are summarized in Table 2.1. These ARARs and TBC requirements are considered potential because they become final only after the EE/CA is approved and issued. The following sections provide additional details on potential federal and state ARARs and TBC requirements for the Site.

2.2.1 Chemical-Specific ARARs

As stated in 52 Federal Register 32496, chemical-specific ARARs typically, “set health or risk-based concentration limits or discharge limitations in various environmental media for specific hazardous substances, pollutants, or contaminants.” These ARARs may address contaminants in the specific media of concern (soils and sediments in this case), or contaminants in waste streams generated by a removal alternative. The potential chemical-specific ARARs are described below:

Toxic Substances Control Act - TSCA regulates chemical substances and mixtures whose manufacture, processing, distribution, or disposal might present an unreasonable risk of injury

to human health and the environment. Portions of TSCA (specifically 40 CFR Part 761) address PCB cleanup levels, remediation methods, and remediation waste and are applicable to this Site. 40 C.F.R. § 761.61 provides cleanup and disposal options for PCB remediation waste and includes self-implementing procedures for a general, moderately-sized site where there should be low residual environmental impact from remedial activities. 40 CFR § 761.61(a)(1) indicates that the listed “self-implementing procedures” are not binding on CERCLA actions and may not be used without prior EPA approval to clean up, among other things, sediments, surface water, groundwater, or drinking water sources. However, these “self-implementing” provisions are relevant and appropriate for consideration when selecting a cleanup alternative for this Site.

Resource Conservation and Recovery Act - RCRA, as amended, 42 USC §§6901 et seq., defines hazardous waste and regulates its handling and disposal. RCRA could be applicable to the Sauer Dump Site because some of the Site soils and sediments may be hazardous and would require handling, storage, treatment, and disposal as hazardous wastes. In addition, it is possible that spent carbon from any off-gas or sediment dewatering treatment units might be considered a hazardous waste.

Clean Air Act - The CAA governs air emissions generated by removal or remedial activities at CERCLA sites. National Ambient Air Quality Standards (NAAQS) that are found in 40 CFR Part 50 have been promulgated under the CAA for six criteria pollutants, including airborne particulates. Air quality standards that would potentially be applicable to the Site include those for lead and particulate matter. The associated Maryland Implementation Plans for the Attainment and Maintenance of NAAQS (40 CFR Part 52 §§ 1070-1118 Subpart V) codify Maryland’s Implementation Plan for attaining the NAAQS. The CAA is applicable to any remedy that causes the emission of pollutants, including airborne particles. In particular, dust suppression measures must be included in any remedy that involves construction/earth moving activities.

Clean Water Act - The CWA sets water quality criteria at levels that are protective of human health and of aquatic life in streams, lakes, and rivers. CWA criteria will be considered applicable for the removal alternatives that might affect the water quality in the nearby wetlands or Back River. These alternatives would include removal technologies that could impact stormwater quality or that generate water requiring discharge.

Code of Maryland Regulations (COMAR) Title 26 - Title 26 of COMAR is promulgated by MDE and the relevant provisions which may be applicable or relevant and appropriate for consideration at the Site are listed below:

- *COMAR 26.08. Water Pollution*—This regulation establishes criteria and standards for discharge limitations and degradation of waters of the state. It is potentially applicable to any alternatives that include discharge of treated groundwater into surface water.
- *COMAR 26.11. Air Regulations*—This regulation provides ambient air quality standards, general emissions standards, and restrictions for air emissions from construction

- *COMAR 26.13. Disposal of Controlled Hazardous Substances*—Provides criteria to identify hazardous waste and listed waste, including Maximum Concentrations of Contaminants for the Toxicity Characteristic.

2.2.2 Location-Specific ARARs

Location specific ARARs are restrictions on certain types of activities based on Site characteristics. Location-specific ARARs govern activities conducted within critical environments such as wetlands, endangered or protected species habitats, and historic locations.

Coastal Zone Management Act (16 USC §§ 1451 et seq.) and Coastal Zone Act Reauthorization Amendments of 1990 - This Act and its Amendments require that any activities that directly affect the coastal zone and are conducted or supported by federal agencies be performed in a manner that is consistent with the approved state coastal zone management program. Because the Sauer Dump Site is located in the Maryland coastal zone, both the Act and the related Amendments are applicable to the Site. All activities must be performed, to the extent practicable, in a manner consistent with Maryland's coastal zone management program, and MDE must be consulted during EPA's determination of whether the activities are appropriate.

National Recommended Water Quality Criteria (NRWQC) - The National Recommended Water Quality Criteria are a compilation of all EPA's recommended ambient water quality criteria for the protection of aquatic life and human health (EPA, 2006). These criteria are applicable to the Site because the groundwater discharges to the Back River and Site sediments and soils currently impact surface water quality in the Back River.

COMAR 26.23.02. – Provides for a comprehensive watershed management plan to protect from an individual or cumulative effect that degrades the sensitive nature of the aquatic ecosystem. This provision could be applicable to any alternative that could have a detrimental impact on water quality standards or which degrades surface or ground water quality.

2.2.3 Action-Specific ARARs

Action-specific ARARs are usually technology or activity based directions or limitations that control actions taken at hazardous waste sites. Action-specific ARARs are triggered by the types of actions under consideration. Potential action-specific ARARs are identified below:

Resource Conservation and Recovery Act – RCRA could be applicable to various activities that could be part of a removal alternative because some of the Site soils and sediments might be classified as hazardous waste. If the chosen removal alternative results in generation of a waste stream, the substantive standards of RCRA could apply to that waste stream. The following parts of the RCRA regulations are considered potentially applicable to the activities at the Sauer Dump Site:

- 40 CFR Part 261 defines hazardous waste and identifies characteristic and listed wastes that would be considered hazardous.
- 40 CFR §§ 262.10-44 establish standards for hazardous waste determinations, manifesting, pre-transport requirements, and other activities that are carried out by hazardous waste generators.
- 40 CFR §§ 264.111-120 establish standards for the closure of, and post-closure care for, sites containing hazardous wastes.
- 40 CFR §§ 264.300-310 establish standards for owners and operators of facilities that store or dispose of hazardous waste in landfills. These sections are applicable to remedies that include landfilling (on-site or off-site) of contaminated soils and sediments.
- 40 CFR §§ 264.340-351 establish standards for owners and operators of facilities that store or treat hazardous waste in incinerators. These sections are applicable to remedies that include low temperature thermal desorption and/or incineration of soils and sediments.
- 40 CFR §§ 263.10-31 establish standards applicable to transporters of hazardous waste.
- 40 CFR Part 270 establishes the hazardous waste permit program. The substantive requirements of the permit program would be met, but no permit would be obtained for on-site activities. Any off-site treatment and/or disposal options proposed as part of a removal alternative must include use of a RCRA-permitted treatment, storage, or disposal facility for materials determined to be hazardous.

U.S. Department of Transportation Hazardous Material Regulations (49 CFR Parts 171-174, 177, 178, and 180) - These regulations establish requirements for labeling, packaging, and shipping hazardous materials. All hazardous wastes that are transported off-site must be handled in accordance with these regulations.

National Pollutant Discharge Elimination System Requirements (40 CFR Part 122) - These regulations implement §§ 318, 402, and 405 of CWA, 33 U.S.C. §§ 1251 et seq., and address all pollutant discharges into the nation's waters. Wastewater generated during construction activities or as part of a selected treatment option must be managed in accordance with the substantive requirements of CWA.

COMAR Title 26 - The following regulations in Title 26 of COMAR are potential action-specific ARARs at the Site:

- *COMAR 26.02. Occupational, Industrial, and Residential Hazards* – Provides limits on the maximum allowable levels of noise at the Site boundaries during Site remediation work to protect the health, general welfare, and property of the people of the State.
- *COMAR 26.04. Regulation of Water Supply, Sewage Disposal, and Solid Waste*– Provides specifications for well construction and abandonment and for proper closure and post closure monitoring and maintenance of landfills.

- *COMAR 26.13. Disposal of Controlled Hazardous Substances* – Provides for the design, installation, and operation of a groundwater monitoring system capable of detecting any potential off-site migration of hazardous substances.
- *COMAR 26.17. Water Management* – Requires that any land clearing, grading, or other earth disturbances which disturb over 5,000 square feet of land area and over 100 cubic yards of earth have an erosion and sediment control plan. Provides that stormwater must be managed to prevent off-site sedimentation.

Occupational Safety and Health Administration (OSHA) Hazardous Waste Operator Regulations (29 CFR Parts 1904, 1910, and 1926) - These regulations establish requirements for personnel working on projects involving the handling and/or disposal of hazardous wastes. Although the OSHA regulations are not ARARs, all work performed at the Site must be done in accordance with these regulations. All workers with a potential to be exposed to hazardous substances as a result of their work on Site activities must be properly trained and certified as required under these regulations.

2.2.4 To Be Considered Materials

The following are sources of information that are to be considered during the development of a remedy for the Sauer Dump Site:

Oak Ridge National Laboratory Regional Screening Levels - The Oak Ridge National Laboratory (ORNL) Regional Screening Levels (RSLs) provide soil concentrations that are associated with a cancer risk of 1E-06 or a non-cancer hazard quotient of 1 for a standard resident exposure (residential soil RSLs) or industrial worker exposure (industrial soil RSLs). In addition, this table provides toxicological information that can be used in the development of PRGs to protect human health.

Oak Ridge National Laboratory Ecotoxicological Screening Benchmarks (1997) - This document provides non-enforceable ecological toxicity screening levels considered protective of different ecological receptors. These values will be considered in the development of ecological PRGs for the Sauer Dump Site.

EPA Ecological Soil Screening Levels - For a number of chemicals, EPA has developed soil concentrations that are considered protective of different ecological receptors. These values will be considered in the development of ecological PRGs for the Sauer Dump Site.

Maryland Department of the Environment Residential Soil Cleanup Standards - These standards include an approach to develop numeric Cleanup Standards for hazardous substances in soils, and provide information on use of the Standards in the conduct of remedial actions. Information in these standards will be used in the development of PRGs.

1994 Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities, August 1998 - This guidance establishes cleanup criteria for lead in soils. These criteria will be considered in the development of lead PRGs.

National Oceanographic and Atmospheric Administration Effects Range-Low Benchmarks - The Effects Range-Low benchmark values indicate sediment concentrations below which adverse effects to the benthic organisms rarely occur. They serve as non-enforceable ecological toxicity screening levels. These values will be considered in the development of ecological PRGs for the Sauer Dump Site.

EPA Region III Freshwater Sediment Screening Values - The EPA Region III Freshwater Sediment screening values provide sediment concentrations conservatively determined to be protective of benthic organisms. These benchmarks will be considered in the development of sediment PRGs.

2.3 DETERMINATION OF PRELIMINARY REMEDIAL GOALS AND DESCRIPTION OF CONTAMINATED MEDIA

2.3.1 Development of Preliminary Remedial Goals (PRGs)

PRGs are concentrations used as initial cleanup goals to support the development and evaluation of different remedial approaches. PRGs are not the final cleanup standards. The following PRGs were used to identify the area and volume of contaminated media to be addressed by the EE/CA:

- 400 mg/kg lead in soils,
- 1 mg/kg total PCBs in soils,
- 1 mg/kg total PCBs in sediments, and
- 130 mg/kg lead in sediments.

The PRGs for lead and total PCBs in soils are consistent with other sites within EPA Region III, where remediation goals of 400 mg/kg lead and 1 mg/kg PCBs in soils have been established based on results of those sites' baseline risk assessments. The PRG for PCBs in sediments, 1 mg/kg, is based on the practical engineering limitations of available dredging technologies. For sediments, the lead PRG of 130 mg/kg reflects consideration of Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems (MacDonald, *et al*, 2000), as noted in the August 2007 Action Memorandum (EPA, 2007).

The surface water PRGs are based on NRWQC. The Freshwater Chronic values of 0.000064 ug/l total PCBs and 8.1 ug/l lead were selected for surface water at this Site. Because groundwater at the Site will not be used as a source of drinking water, the primary concern is to ensure that groundwater contaminants do not discharge to surface water at concentrations which would result in impairment of the surface water quality. Accordingly, the Freshwater Chronic NRWQC are also appropriate as the groundwater PRGs. The surface water and groundwater PRGs are provided in Table 2.2.

2.3.2 Volume Estimates – Soils and Sediments

To determine the volume of soils and sediments requiring remediation, data from the following reports were used: RI/FFS Report (ENSAT, 2002a), RI Report (ENSAT 2005), and EOCS Report (Malcolm Pirnie, 2007). The data in these reports were compared to the PRGs presented in Table 2.2.

Subsurface data were used to estimate the vertical extent of contamination requiring remediation. The depth of the remedial volume is based on comparison of soil contaminant concentrations to both human health and ecological PRGs even though, under current conditions, these receptors would not be exposed to the subsurface contaminants. In the future, construction activities could result in turn over of the soils, leading to the exposure of subsurface soils and thereby allowing ecological receptors (worms, plants, fish and wildlife) and non-construction worker receptors (child visitor) to come into direct contact with the associated contaminants. If the remedial volume does not consider this subsurface contamination, then land use controls to prevent all future construction and excavation activities at the Site would be required. Locations and depths where contaminants were detected at concentrations in excess of the PRGs are included in the estimated area and volume requiring remediation.

The lateral extent of soil contamination greater than PRGs was estimated from the surface soil data. When calculating the volume of soils requiring remediation, it is typically assumed that future construction could be reasonably expected to disturb soils as deep as 10 to 12 feet or to the average depth of the groundwater table in the area in question. Where no subsurface soil data were available, the depth of contamination requiring remediation was generally assumed to be 8 feet bgs. In the southern portion of Parcel 425, a depth of 3.5 feet was assumed based on data defining the depth to groundwater. On Parcel 137, an average remediation depth of 4 feet was assumed. The available data indicate that portions of Parcels 137, 295, 425, 464, 503, and 574 are characterized by soil contamination in excess of the PRGs (Figures 1.4 and 1.5). The estimated maximum volume of Site soils requiring remediation is approximately 16,760 cubic yards.

For sediments, the remedial volume was based on an assumed remediation depth of 4 feet in areas with wetland vegetation. It is estimated that a total of 7,740 cubic yards of sediments will require remediation.

Additional sediment volumes from the Back River might require remediation, but the only sample that showed concentrations greater than those proposed for the Site was collected in 1999. There have been other samples in the immediate area of this sample that did not have PCBs in excess of the PRGs, and it is likely that the sediments that were sampled in 1999 have been washed to other areas given the tidal and stream transport that would have occurred since that time. Additional sampling of the Back River sediments should be performed to confirm that the sediments do not exceed the PRGs.

Table 2.3 summarizes the estimated area and volume of soils and sediments requiring remediation.

2.3.3 Groundwater Management

Based on observed groundwater elevations across the Site, groundwater is generally assumed to flow from north to south across the Site with discharge into the Back River. However, groundwater is influenced by the tidal movements of the Back River. Consequently, in those alternatives where a groundwater management feature was required, the use of point extraction wells was avoided to minimize the extraction and treatment of water from the Back River and the adjacent wetlands. In these instances, gravel filled groundwater recovery trenches were specified to capture Site groundwater prior to its discharge into the river.

TABLES

Table 2.1
Applicable or Relevant and Appropriate Requirements (ARARs) and To Be Considered Material (TBCs)
for Sauer Dump Site

ARAR or TBC	Citation	ARAR Class	Requirement Synopsis	Applicability to Proposed Remedies
I. CHEMICAL SPECIFIC				
Toxic Substances Control Act (TSCA)	15 U.S.C. §§ 2601 et seq. 40 CFR Part 761	Applicable	TSCA regulates chemical substances and mixtures whose manufacture, processing, distribution, or disposal might present an unreasonable risk of injury to human health and the environment.	Portions of the TSCA deal specifically with PCB remediation waste. The self-implementation requirements are not binding on CERCLA actions, and may not be used to address contamination in sediments, surface water, or groundwater without EPA approval. TSCA also provides performance-based and risk-based methods for addressing PCB-contaminated remediation waste.
Resource Conservation and Recovery Act of 1976; Hazardous and Solid Waste Amendments of 1984	42 USC §§6901 et seq.	Applicable	Identifies what constitutes a hazardous waste.	Some of the Site soils and sediments may be hazardous and would be treated as hazardous wastes. Spent carbon from any off-gas treatment units might be considered a hazardous waste.
Clean Air Act	42 USC §7401 40 CFR Part 50	Applicable	NAAQS are promulgated under the CAA for six criteria pollutants, including airborne particulates	CAA is applicable to any remedy that causes the emission of pollutants, including airborne particles. Air quality standards potentially applicable to the Site include those for lead and particulate matter.
Maryland Implementation Plans for the Attainment and Maintenance of National Ambient Air Quality Standards	40 CFR Part 52 §§ 1070-1118 Subpart V	Applicable	Codify Maryland's Implementation Plan for attaining the NAAQS	Applicable to determining compliance with the CAA
Maryland air quality regulations	COMAR 26.11	Applicable	Promulgates air quality regulations for Maryland.	Requirements for emissions of toxic air pollutants and particulates are potentially applicable to Site remedies involving soil excavation or on-site treatment of media

Table 2.1 (continued)
Applicable or Relevant and Appropriate Requirements (ARARs) and To Be Considered Material (TBCs)
for Sauer Dump Site

ARAR or TBC	Citation	ARAR Class	Requirement Synopsis	Applicability to Proposed Remedies
Clean Water Act (CWA)	33 U.S.C. §§ 1251 et seq.	Applicable	Water quality criteria set at levels to protect human health and aquatic life in streams, lakes, and rivers.	Applicable to any portion of remedy which may affect the water quality in the nearby wetlands or Back River. This includes remedial construction activities that could impact stormwater quality and remedies that generate water requiring discharge.
Maryland Water Pollution Regulations	COMAR 26.08.	Applicable	Establishes criteria and standards for discharge limitations and policy for anti-degradation of waters of the State.	Potentially applicable to any remedies that have impact on the Site's groundwater and surface water, include discharge to surface or ground water.
Maryland Disposal of Controlled Hazardous Substances	COMAR 26.13	Applicable	Provides criteria to identify hazardous waste and listed waste, including Maximum Concentrations of Contaminants for the Toxicity Characteristic.	Some of the Site soils and sediments may be hazardous and would be treated as hazardous wastes.
National Recommended Water Quality Criteria	NA	Applicable	Provides a compilation of ambient water quality criteria for the protection of aquatic life and human health	Applicable to groundwater that discharges to the Back River and to the surface water of the Back River itself.
ORNL RSLs	NA	To be considered	Non-enforceable soil concentrations that are protective of human health under a given set of exposure circumstances (residential vs. industrial).	The ORNL RSLs provide soil concentrations that are associated with a cancer risk of 1E-06 or a non-cancer hazard quotient of 1 for a standard resident exposure (residential soil RSLs) or industrial worker exposure (industrial soil RSLs). In addition, this table provides toxicological information that can be used in the development of PRGs to protect human health.
ORNL Ecotoxicological Screening Benchmarks	NA	To be considered	Provides non-enforceable benchmark values protective of specific ecological receptors.	These benchmarks will be considered in the development of ecological PRGs for the Sauer Dump Site.

Table 2.1 (continued)
Applicable or Relevant and Appropriate Requirements (ARARs) and To Be Considered Material (TBCs)
for Sauer Dump Site

ARAR or TBC	Citation	ARAR Class	Requirement Synopsis	Applicability to Proposed Remedies
EPA Ecological Soil Screening Levels	NA	To be considered	Non-enforceable screening levels protective of specific ecological receptors.	These benchmarks will be considered in the development of ecological PRGs for the Sauer Dump Site.
Maryland Department of the Environment (MDE) Residential Soil Cleanup Standards	State of Maryland Department of the Environment cleanup Standards for Soil and Groundwater, August 2001.	To be Considered	Include approach to develop numeric Cleanup Standards for hazardous substances in soils, and provide information on use of the Standards in the conduct of remedial actions	Will be considered in development of soil PRGs.
1994 Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities, August 1998	OSWER Directive 9200.4-27P.	To be Considered	Establishes cleanup criteria for lead in soils	Will be considered in development of soil PRGs.
National Oceanographic and Atmospheric Administration Effects Range-Low Benchmarks	NA	To be Considered	The Effects Range-low benchmark values indicate the concentrations below which adverse effects to the benthic organisms rarely occur. They serve as non-enforceable ecological toxicity screening levels for use in determining ecological PRGs.	These values will be considered in the development of ecological PRGs for the Sauer Dump Site.

Table 2.1 (continued)
Applicable or Relevant and Appropriate Requirements (ARARs) and To Be Considered Material (TBCs)
for Sauer Dump Site

ARAR or TBC	Citation	ARAR Class	Requirement Synopsis	Applicability to Proposed Remedies
EPA Region III Freshwater Sediment Screening Values		To be Considered	These values provide conservative benchmarks for the protection of benthic organisms	These values will be considered in the development of ecological PRGs for the Sauer Dump Site
II. LOCATION SPECIFIC				
Coastal Zone Management Act of 1972; Coastal Zone Act Reauthorization Amendments of 1990.	16 USC 1451 et seq.; 15 CFR Part 930	Applicable	Requires that activities directly affecting the coastal zone that are conducted or supported by federal agencies are conducted in a manner that is consistent with the approved State coastal zone management program.	Because the Sauer Dump Site is located in the Maryland coastal zone, both the Act and the related Amendments are applicable to the Site. Removal action activities will be consistent, to the maximum extent practicable, with Maryland's coastal zone management program.
Maryland Nontidal Wetlands and Tidal Wetlands	COMAR 26.23.02	Applicable	Provides for a comprehensive watershed plan to protect from an individual or cumulative effect that degrades the sensitive nature of the aquatic ecosystem.	Removal activities to address sediment contamination would likely affect wetlands.
III. ACTION SPECIFIC				
Resource Conservation and Recovery Act	40 U.S.C. §§ 6901 et seq.	See below	See below	RCRA could be applicable to various activities that could be part of a selected remedy for the Site because Site soils might be hazardous. These regulations are applicable to contaminated Site materials as well as wastes generated during the implementation of the selected remedy. The following parts of the RCRA regulations are considered applicable to the activities at the Site if the soils and sediments and debris meet the definition of hazardous waste.

Table 2.1 (continued)
Applicable or Relevant and Appropriate Requirements (ARARs) and To Be Considered Material (TBCs)
for Sauer Dump Site

ARAR or TBC	Citation	ARAR Class	Requirement Synopsis	Applicability to Proposed Remedies
a. Standards Applicable to Generators of Hazardous Waste	40 CFR §§ 262.10-58	Applicable	Establishes standards for generators of hazardous wastes including waste determination manifests and pre-transport requirements.	Applicable to contaminated Site materials and wastes generated during the implementation of the selected remedy.
b. Standards for closure and post-closure of hazardous waste sites	40 CFR §§ 264.111-120	Applicable	Establish standards for the closure of, and post-closure care for, sites containing hazardous wastes.	Applicable to Alternatives 2 and 3.
c. Standards for owners and operators of facilities that store or dispose of hazardous waste in landfills	40 CFR §§ 264.300-310	Applicable	Requirements for storage or disposal of hazardous waste in landfills.	Applicable to on-site or off-site landfilling of soils and sediments.
d. Standards for owners and operators of facilities that store or treat hazardous waste in incinerators	40 CFR §§ 264.340-351	Applicable	Requirements for storage or treatment of hazardous waste in incinerators.	Applicable to low temperature thermal desorption and/or incineration of soils and sediments.
e. The Hazardous Waste Permit Program	40 CFR Part 270	Applicable	Requires a permit for the treatment, storage or disposal of any hazardous waste as identified or listed in Part 261.	Any substantive requirement would be met, but no permit would be required for on-site activities. Any off-site treatment and/or disposal options proposed as part of a removal alternative must include use of a RCRA-permitted treatment, storage or disposal facility for materials determined to be hazardous.
f. Standards Applicable to Transporters of Hazardous Wastes	40 CFR §§ 263.10-31	Applicable	Establishes standards applicable to transporters of hazardous waste.	Applicable to any hazardous wastes (soils, sediments, spent media, etc.) transported off-site.

Table 2.1 (continued)
Applicable or Relevant and Appropriate Requirements (ARARs) and To Be Considered Material (TBCs)
for Sauer Dump Site

ARAR or TBC	Citation	ARAR Class	Requirement Synopsis	Applicability to Proposed Remedies
g. Identification and Listing of Hazardous Wastes	40 CFR Part 261	Applicable	Defines hazardous waste and identifies characteristic and listed wastes that would be considered hazardous.	Would be used to make waste determinations.
Occupational Safety and Health Administration (OSHA) Hazardous Waste Operator (HAZWOPER) Regulations	29 CFR Parts 1904, 1910, and 1926	Not and ARAR but must be complied with.	Establishes worker training and safety requirements for projects involving the handling of hazardous materials.	All work on the Site would be done in accordance with these regulations. All workers with a potential to be exposed to hazardous substances as a result of their work on Site activities must be properly trained and certified as required under these regulations.
U.S. Department of Transportation (DOT) Hazardous Material Regulations	49 CFR Parts 171-174, 177, 178, and 180	Applicable	Establishes requirements for labeling, packaging, and transporting hazardous materials.	Any hazardous materials/wastes that are shipped off-site would be handled in accordance with DOT regulations.
Clean Water Act (CWA) and National Pollutant Discharge Elimination System Requirements	33 U.S.C. §§ 1251 et seq. 40 CFR Part 122	Applicable	Address all pollutant discharges into the nation's waters	Wastewater generated during construction activities or as part of a selected treatment option would be managed in accordance with CWA.
Maryland Regulations governing Occupational, Industrial, and Residential Hazards	COMAR 26.02	Applicable	Provides limits on maximum noise levels allowed during site remediation work.	Applicable to any potential soil or sediment remedies involving construction or other noisy equipment.
Maryland Regulation of Water Supply, Sewage Disposal, and Solid Waste	COMAR 26.04	Applicable	Regulates the construction and operation of solid waste landfills, and the construction and abandonment of wells.	Potentially applies to remedies that involve off-site disposal or on-site containment of solid wastes. Applies to construction or abandonment of groundwater wells, and releases to groundwater or surface water.

Table 2.1 (continued)
Applicable or Relevant and Appropriate Requirements (ARARs) and To Be Considered Material (TBCs)
for Sauer Dump Site

ARAR or TBC	Citation	ARAR Class	Requirement Synopsis	Applicability to Proposed Remedies
Maryland Disposal of Controlled Hazardous Substances	COMAR 26.13	Applicable	Establishes standards for generators of hazardous waste; and provides regulation for the transport and disposal of hazardous waste.	Some of the soils and sediments on-site may be characterized as hazardous waste. Transportation and disposal of these wastes would comply with the substantive requirements of these regulations.
Maryland Water Management	COMAR 26.17	Applicable	Requires that any land clearing, grading, or other earth disturbances that covers over 5,000 sq. ft. and over 100 CY of soil have an erosion and sediment control plan	Potentially applicable to remedies with large area/volume of soil disturbance, such as soil removal or surface cap construction

Table 2.2
Preliminary Remediation Goals
for Sauer Dump Site

Chemical	PRG	Basis of PRG
<i>Soil</i>		
Total PCBs	1 ppm	TSCA Cleanup Levels for High Occupancy Areas and Accepted Region III Practice
Lead	400 mg/kg	EPA Residential Soil Screening Levels for Lead (EPA, 1994) and Accepted Region III Practice
<i>Sediments</i>		
Total PCBs	1 ppm	Practical engineering limitations of dredging technologies and Accepted Region III Practice
Lead	130 mg/kg	Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems (MacDonald, <i>et al</i> , 2000),
<i>Surface Water/Groundwater</i>		
Total PCBs	0.000064 ug/l	NRWQC, Human Health for Consumption of Organism Only
Lead	8.1 ug/l	NRWQC, Criterion Continuous Concentration

mg/kg = milligrams per kilogram

NRWQC = National Recommended Water Quality Criteria, 2006.

ppm = parts per million

ug/l micrograms per liter

TSCA = Toxic Substances Control Act

Table 2.3
Estimated Extent of Site Contamination for Sauer Dump Site

Region of Contamination	Area (square feet)	Depth¹⁾ (feet)	Volume (cubic yards)
Soils			
Parcel 464 and 503	10,810	8	3,200
Parcel 295	1,010	8	300
Parcel 137	7,480	4	1,110
Northern Portion of Parcel 425	34,220	8	10,140
Southern Portion of Parcel 425	15,540	3.5	2,010
Parcel 574 ²⁾	0	0	0
Total	69,060	-	16,760
Sediments			
Total	52,240	4	7,740

- (1) Depths based on available subsurface soil analytical data and depth to groundwater. The depth in the wetland areas was assumed to be 4 ft.
- (2) No soil data was available for Parcel 574. Only contaminated sediments were detected on this parcel. As a result, all excavation volumes related to this parcel are included in the sediment area and volume numbers only.

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3.0 IDENTIFICATION AND SCREENING OF TECHNOLOGY TYPES AND PROCESS OPTIONS

General Response Actions (GRAs), and specific technology types and Technology Process Options (TPOs) within each GRA type are defined in this section. The phrase “technology process options” refers to specific processes within each of the general technology types. For example, TPOs within the “treatment” GRA include chemical oxidation and soil washing.

GRAs are introduced in Section 3.1. In Section 3.2, potential remedial technologies are identified within each of the General Response Actions. The identified TPOs are first pre-screened based on technical feasibility for the Site. In Section 3.3, TPOs retained from the initial pre-screening are screened for effectiveness, implementability, and cost. The TPOs that remain after the latter screening are summarized in Section 3.4. These remaining TPOs will be used in assembling removal alternatives for the Site.

3.1 GENERAL RESPONSE ACTIONS (GRAS)

GRAs are medium-specific generic types of remedial actions that can, alone or in combination, achieve the RAOs established for the Site. GRAs proposed for the Site include the following:

- **No Action** - No action GRA implies that the Site is left in its present condition. This response action provides a background against which all other remedies can be compared. A no action alternative is required for consideration by the NCP.
- **Institutional Controls** - Institutional controls (ICs) can reduce human health risks from Site contaminants by restricting land use or activities at the Site. ICs will not reduce ecological risks. ICs contribute to the effectiveness of remedial systems through preventing activities or land uses which may interfere with the system’s operation.
- **Containment** - Containment refers to physical processes that would restrict contaminant mobility without changing their concentration or toxicity. Containment protects human health and minimizes ecological risk by controlling the routes of exposure.
- **Treatment** - Treatment may include any physical, chemical, or biological processes that would lower human health or ecological risk from the contaminants by their destruction or conversion into less hazardous forms.
- **Removal** - Removal includes physically removing contaminated soils as an initial step for treatment and/or disposal.
- **Disposal** - Disposal involves methods to discard the treatment by-product or removed soils off-site in accordance with all applicable regulations.

Applicable technologies associated with each of the above GRAs are discussed below.

3.2 IDENTIFICATION AND SCREENING OF POTENTIALLY APPLICABLE TECHNOLOGIES

A range of technology types and process options was identified and pre-screened according to their overall applicability to the primary contaminants and conditions present at the Site. For each GRA, one or more technology types and associated TPOs were identified. The initial screening results are summarized in Tables 3.1 and 3.2. Some of the sources consulted during the identification of technologies include reference documents published by EPA, feasibility studies for similar sites, standard engineering texts, and professional experience.

3.3 EVALUATION OF POTENTIAL REMEDIAL TECHNOLOGIES

In this subsection, each of the technologies retained in Tables 3.1 and 3.2 is described and evaluated in greater detail based on its effectiveness, implementability and cost. Based on this evaluation, the technology is either retained for further evaluation or eliminated. Each of the three criteria is briefly defined below:

- **Effectiveness** – The ability of a technology to meet the removal objectives for protection of human health and the environment.
- **Implementability** – Technical and administrative feasibility of implementing the technology. TPOs that are not technically feasible at the Site were eliminated during the pre-screening step in Section 3.2. During this evaluation, the remaining TPOs are compared based on such considerations as the availability of treatment, storage, and disposal services, and the necessary equipment and skilled workers to implement the technology.
- **Cost** – A relative estimate of the cost of implementing the technology. This is based on engineering judgment and available reference sources. Cost are given as very low, low, moderate, or high relative to other process options.

3.3.1 No Action

Description – The no-action option consists of leaving the Site as it is, without any removal activities.

Effectiveness – This response does not meet the removal objectives and would not be protective of human health or the environment.

Implementability – No actions are required to implement this option.

Cost – No costs are associated with this option.

Recommendation – The No Action option was **retained** to provide a baseline for the comparison of other removal alternatives.

3.3.2 Institutional Controls

ICs do not reduce contaminant toxicity, mobility, or mass. They do reduce or eliminate the potential for human exposure and can help protect existing and future remedial measures. Because the PRGs are based on non-residential Site use, all remedial alternatives must include ICs to prevent future development of the Site for residential purposes. The proposed ICs include deed notices/restrictions, public information/awareness programs, security fencing, and monitoring of Site conditions.

3.3.2.1 Deed Notices/Restrictions

Description – Deed notices/restrictions may be used to provide potential future purchasers of affected properties with notice of the need for continued maintenance of the TSCA cover and fence and the cleanup levels left at the Site, to define acceptable land use, to prevent specific activities, and to require specific engineering controls in order to eliminate or minimize human exposure to Site-related contaminants. Deed notices/restrictions may also be used to protect the integrity of removal systems.

Effectiveness – Deed notices/restrictions defining acceptable land uses(s) and placing limits on excavation or intrusive activities would be effective in minimizing human exposure to the contaminants in soils and sediments at the Site. Additional restrictions could be enacted to protect existing and future remedial systems. Deed notices/restrictions would not reduce potential environmental risks nor would they decrease contaminant toxicity, mobility, or volume. This option would be more effective in combination with other removal options.

Implementability – Deed notices/restrictions could be easily implemented at the Site. Legal involvement would be needed for preparation of the deed notices/restrictions. It would also be necessary to obtain agreement from the owners of the affected properties to allow deed notices/restrictions to be filed with the Recorder of Deeds for Baltimore County or other office where land ownership and transfer records are maintained.

Cost – Costs associated with implementing deed notices/restrictions would be very low.

Recommendation – This option was **retained** for use in conjunction with other removal measures.

3.3.2.2 Access Agreements

Description – Access agreements are used to ensure continued Site access for monitoring Site conditions and operating or maintaining removal systems. Because of the need to implement ICs to maintain non-residential land use, continued access for Site monitoring will be required. Depending on the removal alternative selected for implementation, additional access may be required for system operation and maintenance.

Effectiveness – Access agreements for monitoring and maintenance activities would not reduce the toxicity, mobility, or volume of the contaminants at the Site, but they are necessary for successful implementation of other removal options at the Site.

Implementability – Access agreements can be easily implemented at the Site.

Cost – The cost of securing access agreements for the Site would be very low.

Recommendation - Access agreements were **retained** for further consideration in combination with other removal options.

3.3.2.3 Monitoring of Site Conditions

Description – Monitoring includes Site inspection and collection of environmental samples. Because Alternatives 2 and 3 would include ICs to restrict land use to non-residential purposes, Site inspections would be required to confirm IC implementation. Depending on the removal alternative, additional monitoring, such as sample collection, may be required to assess remedial system performance.

Effectiveness – While monitoring activities would not reduce the risks associated with the contaminants, or the toxicity, mobility, or volume of the contaminants at the Site, these activities are necessary for successful implementation of other removal options and for demonstrating attainment of removal objectives. Monitoring would be more effective in combination with other removal options.

Implementability – Monitoring can be easily implemented.

Cost – The cost of monitoring Site conditions would be very low to low.

Recommendation – Monitoring of Site conditions was **retained** for further consideration in combination with other removal options.

3.3.2.4 Security Fencing

Description – The Site has a chain link security fence around the perimeter of the former operational area (Parcel 425). This option would involve either maintenance of the existing fence or construction of a new fence should implementation of the removal alternative require dismantling of the current fence or if additional areas need to be included within the fence.

Effectiveness – A security fence can be an effective means of decreasing the potential for human contact with the contamination on Parcel 425. The security fence would not effectively protect ecological receptors, nor would the fence decrease contaminant mobility, toxicity, or volume.

Implementability – Maintenance of the current fence or replacement of the fence following removal action implementation would be easy to implement.

Cost – The cost of security fencing at the Site would be very low to low.

Recommendation - Security fencing was **retained** for further consideration in combination with other removal options.

3.3.2.5 Public Awareness and Information Programs

Description – Public meetings would be held to inform the public of risks associated with the Site contamination. Fact sheets would be used to disseminate information about the Site. In addition, warning signs would be used to warn potential trespassers of Site dangers.

Effectiveness – The public meetings and fact sheets may be an effective method for decreasing the potential for local residents to contact the contaminated soils or sediments, but would not be effective for potential receptors that do not live near the Site. The warning signs would be an effective means of decreasing the potential for humans to contact the contaminated soils and sediments on Parcel 425. These measures would not reduce environmental risks or the toxicity, mobility, or volume of the Site contaminants.

Implementability – Public awareness levels are fairly high in the area. Presentation of Site updates via additional public meetings and fact sheets would be easily implemented. Additional signage for the Site could be easily obtained and installed.

Cost – The cost of public awareness and information programs would be very low.

Recommendation - Public awareness and information programs were **retained** for further consideration in combination with other removal options.

3.3.3 Containment

Containment involves installation of physical barriers to prevent further migration of contaminants in the soils and sediments and to eliminate the routes of exposure to humans and ecological receptors. Only surface horizontal barriers (covers) were retained by the initial screening in Section 3.2. Surface caps were not retained for sediments because the capping process would destroy the wetlands, necessitating construction of replacement wetlands as a mitigation measure. The covers retained by the initial screening are described below.

3.3.3.1 Multi-Layer Cover

Description – A multi-layer surface cover, such as a RCRA Subtitle C cap, is appropriate for hazardous waste applications. This type of cap generally includes an upper vegetative (topsoil) layer, a drainage layer, a synthetic membrane, and a low permeability barrier layer placed over a foundation layer of sand or native soils. The barrier layer can be constructed with low-

permeability soil (clay) and/or geosynthetic clay liners. RCRA Subtitle C caps are typically six foot or more in thickness (Air Force Center for Environmental Excellence, 1999).

Effectiveness – A multi-layer surface cover could achieve the removal objectives by limiting contact of human and ecological receptors with contaminated soils and by preventing contaminant migration through leaching and erosion. Because a bottom liner would not be placed beneath the contaminated soils, this approach would not prevent tidal influences from raising groundwater into the contaminated subsurface soils. The extent to which this process would result in contaminant leaching to groundwater would depend on the contamination depth relative to the potential range of groundwater elevations.

If the sediments were excavated, dewatered, and placed beneath the cover, this technology could provide an effective means of eliminating the direct contact risks and migration potential associated with the sediment contaminants.

To ensure continued protection of human health and the environment, the cover would require long-term maintenance. Because the Site is adjacent to tidally-influenced surface water, the cover would be subjected to storm events and flooding which could increase the maintenance requirements and the potential for the cover to be breached or damaged. If the cover were breached at some point, it would be relatively difficult to reseal.

From a regulatory perspective, a RCRA Subtitle C cap exceeds the requirements of 40 CFR § 761.61 for capping of bulk PCB remediation wastes.

Implementability – A multi-layer surface cover could be implemented with readily available technology and materials. This technology is harder to implement than other covers such as asphalt or concrete. Maintenance of a multilayer cap would include erosion repair, vegetation trimming or removal, and possibly animal control/removal.

Cost – Moderate: unit costs of between \$500,000 and \$650,000 per acre are typical for multi-layer cover construction. Removal of Site debris and consolidation of the contaminated sediments and off-site (non-Parcel 425) soils beneath the cover would increase construction costs.

Recommendation - This approach was **not retained** for further analysis because, while it would be effective and implementable, it exceeds the regulatory requirements for capping of bulk PCB remediation wastes on sites that are being remediated in accordance with 40 CFR § 761.61 and is more expensive than a TSCA cap that would meet the requirements of these regulations.

3.3.3.2 TSCA Compacted Soil Cover

Description – A single layer compacted soil cover with a minimum thickness of ten inches. The soil must meet minimum specifications outlined in 40 CFR § 761.61(a)(7).

Effectiveness – A compacted soil cover could achieve the removal objectives by limiting contact of human and ecological receptors with contaminated soils and by preventing contaminant migration through leaching and erosion. As with the multi-layer cover, a compacted soil cover would not prevent tidally-influenced groundwater from rising into the contaminated soil zone and would require long-term maintenance.

Because of the presence of burrowing animals and the proximity to residences, it would be beneficial to include a burrowing barrier to the cap to limit breaching of the cover by animals or children.

Implementability – A compacted soil cover could be implemented with readily available technology and materials. Maintenance of the cap would include erosion repair, vegetation trimming or removal, and possibly animal control/removal.

Cost – Low to Moderate: unit costs of between \$150,000 and \$250,000 per acre are typical for compacted soil cover construction. Removal of Site debris and consolidation of the contaminated sediments and off-site (non-Parcel 425) soils beneath the cover would increase construction costs.

Recommendation - This approach was **retained** for further analysis.

3.3.3.3 Asphalt or Concrete Cover

Description – Asphalt and concrete covers consist of an asphalt or concrete layer over the contaminated soils. These covers are designed to minimize contact with soils and to limit infiltration of stormwater and surface erosion. According to TSCA regulations, an asphalt or concrete cover must have a minimum thickness of six inches.

Effectiveness – Concrete and asphalt covers can effectively control erosion, reduce soil exposure, and minimize precipitation infiltration. As with the multi-layer cover, a concrete or asphalt cover would not prevent tidally-influenced groundwater from rising into the contaminated soil zone.

Asphalt and concrete covers are more resistant to erosion and require less maintenance than multi-layer covers (Air Force Center for Environmental Excellence, 1999). It would be relatively simple to reseal a concrete or asphalt cap if it were to be breached. However, the covers would still have the potential for damage due to storm events and flooding.

Implementability – Concrete or asphalt caps could be easily implemented for the on-site soil contamination. Maintenance of these caps typically involves the periodic application of sealers and repair of cracks. The appearance of these caps can be considered a draw-back and the impact to wildlife would be significant due to loss of habitat.

Cost – Low to Moderate: unit costs of between \$300,000 and \$550,000 per acre are typical for asphalt or concrete cap construction. Removal of Site debris and consolidation of

contaminated sediments and off-site (Parcels adjacent to Parcel 425) soils beneath the cover would increase construction costs.

Recommendation – Due to the significant impact on wildlife, this treatment option was **not retained** for further consideration.

3.3.4 Soils and Sediments Treatment

Soil treatment methods can be subdivided into two general categories: in situ and ex situ. Ex situ methods involve excavation of the soils before treatment, while in situ treatment is performed in place. In situ and ex situ treatment methods can rely on chemical, physical, or biological processes, as well as combinations of these. All ex situ treatment considerations must take into account the costs for excavation and, for some alternatives, transportation of soils.

The treatment processes retained by the initial screening in Section 3.2 are evaluated below.

3.3.4.1 In Situ Soil Flushing

Description – Soil flushing involves flooding contaminated soils with water or a solution to mobilize contaminants. The water or liquid solution is injected or infiltrated into the area of contamination. The contaminants leach into the water/solution, which is then recovered and treated before being re-injected or discharged.

Effectiveness – Even though some of the Site contaminants may be amenable to soil flushing, it is unlikely that a single wash fluid would be able to remove all of these chemicals due to their differing physico-chemical characteristics as well as the type of soils (high amounts of fines). Thus, application of multiple flush solutions would likely be required. Without bench scale or pilot testing, it is not known if this technique could achieve all the PRGs for soil contaminants. To be effective, it is necessary for the flush solution to be distributed throughout the entire treatment zone. The potential for the injected fluid to short-circuit the contaminated soils, particularly if it is necessary to inject multiple solutions, decreases the effectiveness of this TPO. Additionally, soil flushing would mobilize many of the contaminants in question, allowing those contaminants that are not recovered to further impact the groundwater.

Implementability – In situ flushing is well-suited for treatment of contaminants in sandy soils but not for soils with a high amount of fines (i.e. silts and clays). The surface soils (based on the 2002 geotechnical testing summarized in the August 2005 RI by ENSAT) would be amenable to the flushing as they are 50 to 70 percent sand. The subsurface soils, however, are mainly clays and silts and would require greater volumes of liquid injection. In addition, the depth to groundwater at the Site is shallow (less than 10 feet below ground surface) and discharges directly to the Back River. With the large area requiring treatment, it would be difficult to install a fluid injection/capture system that would allow treatment of the entire soil volume while ensuring that the wash solution and mobilized contaminants are captured before

they reach the groundwater and the Back River. The greater liquid injection volume would have the effect of increasing the groundwater elevation, and thereby increasing the hydraulic gradient between the groundwater and the surface water in the Back River, promoting groundwater flux to the Back River.

Cost – High: Published costs for large scale projects using soil flushing range from \$65 to \$200 per cubic yard of treated soil (Interstate Technology and Regulatory Council (ITRC), 2003).

Recommendation - In situ soil flushing was **not retained** for further consideration because of the subsurface soil composition, the commingled contamination, and the potential to discharge contamination into the Back River.

3.3.4.2 Ex Situ Soil Washing

Description – Ex situ soil washing applies the soil flushing concept to excavated soils. The technique could also be applied to excavated sediments.

Effectiveness – Ex situ soil washing would eliminate the concerns over the potential for increased contamination of the groundwater and, subsequently, the Back River, associated with the in situ flushing technique. Multiple wash fluids, however, would be required because of the commingled contamination. Without bench scale/pilot testing, it is not known if the PRGs for all soil and sediment contaminants could be achieved.

Implementability – This treatment process would require a large area for implementation. The commingled contamination at the Site would require sequential washing steps using different wash formulations and/or different soil-to-wash-fluid ratios. Treatability studies would be required to determine what combination of washing steps and solutions would be needed to treat the Site soils to the PRGs. Additionally, because this technology only separates the contamination from the soils, a treatment system would need to be constructed for the wash water or the wash water would have to be containerized and transported to an off-site disposal facility.

Cost – Moderate to High: Costs for this technology have been reported to range between \$50 and \$200 per cubic yard (Federal Remediation Technologies Roundtable (FRTR), 2002; ITRC, 1997), but the nature of the wastes at the Site could push the costs of implementation to (or possibly above) the high end of this range.

Recommendation - Because of the complexity of the technology and space requirements, ex situ soil washing was **not retained**.

3.3.4.3 Ex Situ Thermal Desorption

Description – Ex Situ Thermal Desorption (ESTD) can be used to remove organic compounds, including PCBs, from soils and sediments. Soils/sediments are heated to volatilize organic

contaminants and a carrier gas or vacuum system transports volatilized water and organics to the gas treatment system.

Effectiveness – Thermal desorbers with temperatures in the range of 200°F to 600°F are able to achieve 95 percent contaminant destruction efficiency for treating VOCs and SVOCs while the decontaminated soils retain their physical properties. Thermal desorbers with temperatures in the thermal range 600°F to 1,000°F can produce final contaminant concentrations below 5 mg/kg and are effective for treating PAHs, PCBs, pesticides, SVOCs, and VOCs. ESTD would not address the metals contamination.

Implementability – This option can be implemented with specialized but commercially available equipment. However, there may be public opposition to the process because of the associated air emissions, noise, and the proximity to residential areas. Implementation would require an open area to place the system and stage the treated and untreated soils/sediments, space for sediments dewatering, and a significant supply of energy.

Cost – Moderate to High: Literature sources list approximate costs for treating Site soils using ESTD in the range of \$40 to \$232 per cubic yard of soil (<http://www.frtr.gov/matrix2/section4/4-26.html>, 2008). In addition, the costs associated with the remediation of the sediments would be higher due to dewatering of the sediments prior to ESTD.

Recommendation – ESTD was **not retained** as a possible pre-treatment option for excavated sediments and soils slated for off-site disposal due to the associated air emissions, noise, and the proximity to residential areas.

3.3.4.4 Ex Situ Thermal Destruction (Incineration)

Description – During the incineration process, the soils are heated above the combustion temperature of most organic contaminants (1,600°F to 2,200°F) in the presence of oxygen. Available incineration processes include rotary kiln, fluidized-bed, and infrared options.

Effectiveness – High temperatures employed during the incineration process result in the destruction of most organic compounds, with treatment efficiencies commonly exceeding 99.99 percent. Generated off gases and combustion residuals generally require treatment.

Implementability – Mobile incinerator units are commercially available, but there may be public opposition to the on-site use of an incinerator. Off-site incineration is possible, but transportation of the quantities of soils and sediments requiring remediation over the distances to the closest acceptable incinerator would increase the potential to spread Site contamination, and would substantially increase cost. Only three incinerators in the country can accept the Site's heavily contaminated PCB soils because of the elevated metals concentrations. These incinerators are: 1) the Veolia facility in Port Arthur, Texas; 2) the Clean Harbor facility in Deer Park, Texas; and 3) the Clean Harbor facility in Aragonite, Utah. Other regulatory concerns associated with incineration include generation of toxic air pollutants and disposal of

ash residue. An incineration facility must submit to a full-scale evaluation, including a trial burn monitored by regulatory agencies, to demonstrate its ability to meet performance criteria for various materials.

Cost – High: Incineration is a very expensive process with costs ranging from approximately \$585 to \$1,171 per cubic yard of soils (FRTR, 2002).

Recommendation – Because of this technology’s ability to destroy the PCBs, incineration was **retained** for further analysis.

3.3.5 Groundwater Collection/Treatment

Groundwater collection and treatment methods can be used to control off-site migration of groundwater contaminants or to capture and treat groundwater containing residual contaminants from the capped or remediated areas. The collection/treatment methods retained by the initial screening are described below.

3.3.5.1 Interceptor Trench

Description – Interceptor trenches collect and allow extraction of groundwater before it migrates off-site. The trench would consist of groundwater extraction sumps, with submersible groundwater extraction pumps, and piping to transfer extracted groundwater to an on-site treatment facility.

Effectiveness – To be effective, the interceptor trench must be combined with a treatment and/or disposal option.

Implementability – Installation and construction of the trench could be readily implemented with standard construction equipment and engineering controls. A power supply would be required to operate the extraction system. Long-term O&M would be required.

Cost – Moderate to High: Costs can range from approximately \$200 to \$300 per linear foot of trench, depending on Site conditions. These costs include sumps and pumps. Long-term O&M costs would also have to be included.

Recommendation – Groundwater collection through an interceptor trench was **retained** for further consideration.

3.3.5.2 Extraction Wells

Description – Collection of groundwater would be accomplished through one or more point extraction wells that would be used to induce a cone (or cones) of depression to capture contaminated water from the Site before it discharges into the river.

Effectiveness – To be effective, the extraction well(s) must be combined with a treatment and/or disposal option. Because each well would generate a cone of depression, it is likely that a substantial volume of river water would also be extracted for treatment. The relatively low permeability soils of the Site would limit the effective radius of influence (ROI) of each well.

Implementability – Installation and construction of the well(s) could be readily implemented with standard construction equipment and engineering controls. A power supply would be required to operate the extraction system. Long-term O&M would be required.

Cost – Low to Moderate depending on geology, well depth, and required well casing material. Long-term O&M costs would also have to be included.

Recommendation – Because of the limited ROI for each well and the high potential to extract river water in addition to contaminated groundwater, collection of groundwater using extraction wells was **not retained** for further consideration.

3.3.5.3 Granular Activated Carbon Adsorption

Description – Granular Activated Carbon (GAC) is a highly porous and adsorbent material, which is able to remove organic contaminants from water. Collected groundwater would be filtered through the GAC to attain the PRGs before discharge of the treated groundwater.

Effectiveness – To be effective, the treatment must be combined with a collection and discharge system. PCBs can be removed through activated carbon adsorption. Pre-filtration prior to activated carbon treatment can remove suspended particulates, and multi-stage carbon adsorption can effectively remove heavy metals, such as lead.

Implementability – Installation and construction of the GAC system could be readily implemented with standard construction equipment and engineering controls. The activated carbon must be replaced periodically. A power supply would likely be required to operate the treatment system and long-term O&M would be required.

Cost – Moderate to High: PCB contamination limits treatment options. Average cost for a GAC system of the size needed to achieve the PRGs required for this Site would be approximately \$100,000. Long-term O&M costs would also have to be included.

Recommendation – Groundwater treatment using GAC was **retained** for further consideration.

3.3.5.4 Monitored Natural Attenuation

Description – Natural attenuation are processes that may render the contaminants less toxic, reduce concentrations, reduce mobility, and/or alter bio-availability so that potential risks are reduced.

Effectiveness – Contaminant concentrations in Site groundwater are expected to be reduced through natural physical, chemical, and biological processes. Until complete degradation is complete, exposure risks from contaminated groundwater could exist.

Implementability – This process option could be readily implemented with standard construction equipment and engineering controls. Long-term monitoring would be required.

Cost – Low: The primary cost for this process option includes labor and equipment costs for installation of the monitoring wells, if necessary, and long-term sampling and analytical testing. These costs are expected to be significantly lower than most other process option O&M costs.

Recommendation – Based on its low cost and eventual effectiveness, this process option was **retained** for possible incorporation into the removal action alternatives.

3.3.6 Removal and Disposal TPOs

Excavated soils and sediments can be disposed in an on-site or off-site landfill, either directly or after they have undergone ex situ treatment. Some of the excavated material would likely be classified as hazardous waste under RCRA. This waste classification could result in additional disposal restrictions. The presence of PCBs at concentrations greater than LDR limits would require that the soils be treated prior to disposal.

3.3.6.1 Excavation

Description – Soils and sediments characterized by contaminant concentrations greater than PRGs would be excavated.

Effectiveness – To be effective, excavation must be combined with a treatment and/or disposal option.

Implementability – Excavation could be readily implemented with standard construction equipment and engineering controls. The excavated sediments would require decanting and possibly dewatering prior to treatment and/or disposal. The water removed from the sediments would require treatment prior to discharge or would require off-site disposal.

Cost – Low to High: Excavation costs must be considered as a part of any alternative involving soils/sediments removal.

Recommendation – Excavation was **retained** for further consideration.

3.3.6.2 Off-Site Landfill

Description – Excavated soils and sediments would be disposed in an off-site landfill with or without treatment. Surface debris would be disposed off-site. Some of the Site soils/sediments

may be characterized as hazardous wastes and would require disposal at a properly permitted, hazardous waste facility. Soils, sediments, and debris characterized as non-hazardous would be transported to a properly permitted, non-hazardous waste landfill.

Effectiveness – Disposal of debris, soils, and sediments in an off-site landfill would effectively achieve the removal objectives. Placement of the contaminated material in a properly engineered, constructed, and operated landfill would eliminate risks to human health and the environment, and would prevent contaminant migration.

Implementability – A detailed waste characterization analysis would be required before an off-site treatment/disposal facility would accept materials. The data indicate that a substantial portion of the soils and sediments would be classified as hazardous waste. Because of the comingled PCB and metals waste, it might be difficult to identify a facility with the ability to accept the waste. The Waste Management facility in Emelle, Alabama, was the closest identified facility that has the ability to accept hazardous (metals) waste provided that the PCB concentration is less than 500 mg/kg. Hazardous soils and sediments with a PCB concentration greater than 500 mg/kg must be treated to remove the PCBs prior to acceptance by a hazardous waste landfill facility. Based on the available data, it is estimated that approximately 7,540 cubic yards of soil would require treatment prior to off-site disposal. The PCB concentrations of the contaminated sediments do not appear to meet this threshold value for treatment.

Transportation to an off-site disposal facility would require truck shipments. Depending on the volume of soils/sediments to be disposed off-site, there could be substantial short-term impacts to the local traffic patterns. In addition to creating inconvenience for local residents, multiple truck shipments would increase the potential to spread contamination through off-site spills or accidents.

Cost – High: Cost estimates for excavation and disposal of contaminated soils and sediments range from \$210 - \$350 per cubic yard (FRTR, 2002). The costs for the Site are expected to be toward the high end of these estimates because of the highly contaminated nature of the waste and the distance to an appropriate landfill. The cited costs do not include the pre-treatment required for soils with PCB concentrations greater than 500 mg/kg. Disposal of non-hazardous demolition debris and certain soils (those that pass the toxicity characteristic leaching procedure and have less than 50 mg/kg of PCBs) would incur lower costs because these materials could be disposed of in municipal or industrial landfills located closer to the Site.

Recommendation - Because of the ability of this TPO to achieve the removal objectives, it was **retained** for further evaluation.

3.4 SUMMARY OF TREATMENT TECHNOLOGIES AND SELECTION OF REPRESENTATIVE PROCESS OPTIONS

The process options that were retained for further consideration will be used as components of the potential removal alternatives developed and evaluated in Section 4. Results of the TPO evaluation are summarized in Tables 3.3 and 3.4.

TABLES

Table 3.1
Identification and Preliminary Screening of Soil and Sediment Technologies
for Sauer Dump Site

General Response Action	Technology Type	Technology Process Options	Description of Process Option	Pre-screening Conclusion
No Action	None	None	Take no remedial action. Contaminated soils and sediments would be subject to natural conditions and processes.	Required for consideration by NCP. Retained.
Institutional Controls	Institutional Actions	Zoning Ordinances	Restrict uses of the property and/or limit Site access to minimize exposure and protect Site features	Zoning ordinances can be changed. Not retained because does not provide a permanent means of land use control.
		Deed Notices/Restrictions	Restrict future use of Parcel 425 to non-residential purposes. PRGs are based on non-residential use.	Retained.
		Access Agreements	Provide agreements to ensure access for monitoring of Site use, inspection, and operation and maintenance of removal system(s).	Retained.
		Public Awareness and Information Programs	Public meetings held to inform public of risks associated with the Site. Installation/maintenance of warning signs.	Retained.
		Monitoring of Site Conditions	Inspect Site to ensure non-residential land use. Collect environmental samples.	Retained.
		Security Fencing	Maintenance of existing perimeter fence. Installation of a new security fence should implementation of the removal alternative require dismantling of the current fence or if additional areas need to be included within the fence.	Retained.
Containment	Surface Cover	TSCA Compacted Soil Cover	Construct compacted clay cover over contaminated soils and sediments.	Retained.
		Surface Cover - Multilayer	Install impermeable multilayered surface cover (such as RCRA Subtitle C cover).	Not Retained.
		Surface Cover - Asphalt or Concrete	Install low permeability asphalt or concrete cover.	Not Retained.

Table 3.1 (continued)
Identification and Preliminary Screening of Soil and Sediment Technologies for Sauer Dump Site

General Response Action	Technology Type	Technology Process Options	Description of Process Option	Pre-screening Conclusion
Treatment	Chemical/ Physical Treatment	In Situ Soil Flushing	Contaminants are extracted from the soils with an aqueous medium; the injected fluid is recovered for treatment and discharge.	Not retained because of the subsurface soil composition, the commingled contamination, and the potential to discharge contamination into the Back River.
		Ex Situ Soil Washing	Excavated soils are suspended in washing solution to concentrate and extract contaminants.	Not retained because of the complexity of the technology and space requirements.
	Thermal Treatment	Ex Situ Thermal Desorption	Excavated soils or sediments (after dewatering) are run through a thermal desorber for removal/destruction of organic compounds.	Not retained due to associated air emissions, noise, and the proximity to residential areas.
		Ex Situ Thermal Destruction (Incineration)	Excavated soils or sediments (after dewatering) are combusted at high temperatures in the presence of oxygen to thermally destroy organic contaminants.	Retained due the technology's ability to destroy PCBs.
Removal	Excavation	Excavation	Soils and/or sediments are excavated for further treatment or disposal	Retained.
Disposal	Landfill	Off-Site Landfill	Excavated soils and sediments are transported to an off-site landfill for proper disposal.	Retained.

Table 3.2
Identification and Preliminary Screening of Groundwater Technologies for Sauer Dump Site

General Response Action	Technology Type	Technology Process Options	Description of Process Option	Pre-screening Conclusion
No Action	None	None	Take no remedial action. Contaminated groundwater would be subject to natural conditions and processes.	Required for consideration by NCP. Retained.
Institutional Controls	Institutional Actions	Zoning Ordinances	Restrict uses of the property and/or limit Site access to minimize exposure and protect Site features	Zoning ordinances can be changed. Not retained because does not provide a permanent means groundwater control.
		Deed Notices/Restrictions	Restrict future groundwater use.	Retained.
		Access Agreements	Provide agreements to ensure access for monitoring of Site use, inspection, and operation and maintenance of removal system(s).	Retained.
		Public Awareness and Information Programs	Public meetings held to inform public of risks associated with the Site. Installation/maintenance of warning signs.	Retained.
		Monitoring of Site Conditions	Inspect Site to ensure non-residential land use. Collect environmental samples.	Retained.
		Security Fencing	Maintenance of existing perimeter fence. Installation of a new security fence should implementation of the removal alternative require dismantling of the current fence or if additional areas need to be included within the fence.	Retained.
Containment	Hydraulic Control	Extraction	Hydraulic gradient is controlled by pumping groundwater from a strategically placed well network.	Not effective because of low permeability soils and potential to extract large volumes of river water. Not retained.
	Capping	Surface Cap	Install a horizontal barrier to prevent infiltration of precipitation and subsequent mobilization of contaminants to groundwater.	Retained.
Collection/Treatment	Extraction	Interceptor Trench	Construction of a trench to collect groundwater before it enters the wetlands.	Retained.

Table 3.2 (continued)
Identification and Preliminary Screening of Groundwater Technologies for Sauer Dump Site

General Response Action	Technology Type	Technology Process Options	Description of Process Option	Pre-screening Conclusion
	Chemical/ Physical Treatment	Granulated Activated Carbon	Collected groundwater would be filtered through granular activated carbon before discharge to remove organic contaminants.	Retained.
	Monitored Natural Attenuation	Natural Attenuation	Natural attenuation of organic contaminants is achieved via native subsurface microorganisms and naturally occurring physical processes in the subsurface.	Retained.

Table 3.3
Evaluation and Screening of Soil and Sediment Technology Process Options (TPOs) for Sauer Dump Site

General Response Action	Technology Process Options	Description of Process Option	Effectiveness⁽¹⁾	Implementability⁽¹⁾	Cost	Screening Conclusion
No Action	None	Take no remedial action. Contaminated soils and sediments will be subject to natural conditions and processes.	Rank = 5 Does not address risks from Site soils or sediments.	Rank = 1	No cost. No O&M.	Retained as baseline comparison.
Institutional Controls	Deed Notices/ Restrictions	Restrict use of Parcel 425 to non-residential purposes.	Rank = 4 Reduces but does not eliminate human health risks from the Site. Does not address ecological risks. Does not prevent further contaminant migration.	Rank = 1 Can be easily implemented	Very Low cost. Low O&M.	Required for all alternatives because PRGs based on non-residential use.
	Access Agreements	Provide agreements to ensure access for monitoring of Site conditions and operation/maintenance of removal system(s).	Rank = 4 Does not address human health or ecological risks. Does not affect contaminant migration. Allows for effective implementation of other technologies.	Rank = 1 Can be easily implemented	Very Low cost. Low O&M.	Retained for development of alternatives.
	Monitoring of Site Conditions	Monitor Site to confirm implementation of land use controls. Monitor operation of any removal system(s).	Rank = 4 Provides information of the implementation/operation of the removal alternative.	Rank = 1 Can be easily implemented	Very Low to Low Cost.	Retained for development of alternatives.
	Security Fencing	Maintain existing Site fence. Re-install Site fence if current one torn down during removal action implementation or if additional areas need to be included within the fence.	Rank = 4 Decreases exposure potential for humans. Does not address ecological risks or contaminant migration.	Rank = 1 Can be easily implemented	Very Low cost. Minimal O&M required.	Retained for development of alternatives.

Table 3.3 (continued)
Evaluation and Screening of Soil and Sediment Technology Process Options (TPOs) for Sauer Dump Site

General Response Action	Technology Process Options	Description of Process Option	Effectiveness⁽¹⁾	Implementability⁽¹⁾	Cost	Screening Conclusion
	Public Awareness Programs	Conduct Public Meeting and issue fact sheets to educate citizens about risks of Site contamination. Post warning signs at Site to alert people of associated risks.	Rank = 4 Decreases exposure potential for humans. Does not address ecological risks or contaminant migration.	Rank = 1 Can be easily implemented	Very Low cost.	Retained for development of alternatives.
Containment	Surface Cover – Multilayer (RCRA Subtitle C cap)	Install impermeable multi-layered surface cover over contaminated areas on Site	Rank = 2 Limits exposure and transport of contaminants. Does not treat or remove contamination. Limits allowable future uses of the Site. Resealing of cap difficult if breached. Exceeds requirements of 40 CFR § 761.61.	Rank = 2 Can be readily implemented. Maintenance in perpetuity.	Low to Moderate Cost. Moderate O&M required.	Not retained due to more difficult implementability and higher cost than TSCA cap.
	Compacted Soil Cover (TSCA cap)	Install impermeable compacted soil cover over contaminated areas on Site	Rank = 2 Limits exposure and transport of contaminants. Does not treat or remove contamination. Limits allowable future uses of the Site. Resealing of cap relatively simple if cap is breached. Meets requirements of 40 CFR § 761.61.	Rank = 1 Can be readily implemented. Maintenance in perpetuity.	Low to Moderate Cost. Moderate O&M required	Retained for development of alternatives

Table 3.3 (continued)
Evaluation and Screening of Soil and Sediment Technology Process Options (TPOs) for Sauer Dump Site

General Response Action	Technology Process Options	Description of Process Option	Effectiveness⁽¹⁾	Implementability⁽¹⁾	Cost	Screening Conclusion
Containment	Surface Cover – Asphalt or Concrete	Install asphalt or concrete cap over contaminated areas on-site.	Rank = 2 As effective as multilayered cap in controlling exposure and spread of contamination. Decreased O&M requirements as compared to multi-layer cap. Does not allow for Site re-vegetation. Visually unappealing. Resealing of cap relatively simple if cap is breached. Meets the requirements of 40 CFR § 761.61.	Rank = 2 Equipment/skilled workers would be readily available. Asphalt/concrete cover would reduce available habitat. Maintenance in perpetuity.	Low to moderate cost with lower O&M than multi-layer cap.	Not retained due to significant impacts to wildlife.
Treatment	In Situ Soil Flushing	Contaminants are extracted from the soils with an aqueous medium; the injected fluid is recovered for treatment and discharge.	Rank = 4 Could increase groundwater contaminant levels and the discharge of groundwater contaminants to the adjacent surface water. Limited effectiveness in fine-textured soils. Not known if technology can attain the PRGs for all of the soil contaminants.	Rank = 4 Complicated washing solution regimen needed to treat all contaminants. Requires bench-scale and pilot-scale testing to identify optimum wash solutions and injection/capture systems. Requires treatment and disposal/discharge of wash fluid.	High cost.	Not retained because of soil composition, commingled contamination and contaminant migration potential.

Table 3.3 (continued)
Evaluation and Screening of Soil and Sediment Technology Process Options (TPOs) for Sauer Dump Site

General Response Action	Technology Process Options	Description of Process Option	Effectiveness ⁽¹⁾	Implementability ⁽¹⁾	Cost	Screening Conclusion
Treatment	Ex Situ Soil Washing	Excavated soils are suspended in washing solution to concentrate and extract contaminants. Could be applied to excavated sediments.	Rank = 3 Eliminates contaminant migration concerns associated with in-situ soil flushing. Not known if technology can attain the PRGs for all of the soil/sediment contaminants.	Rank = 4 Would require bench-scale and pilot-scale testing. Wash solution would require treatment and disposal or discharge. May not be enough room on-site to hold required system infrastructure and allow for excavation.	High cost.	Not retained due to uncertainty over effectiveness and the difficulty of implementation.
	Ex Situ Thermal Desorption	Excavated soils and sediments (after dewatering) are run through a thermal desorber for removal/destruction of organic compounds.	Rank = 3 Excellent organic contaminant removal. No inorganic treatment. Higher temperatures are required to desorb PCBs	Rank = 4 Specialized equipment. Potential for public opposition to air emissions. Extensive space requirements for the sediment dewatering, staging of untreated and treated soils/sediments, and desorption unit. Requires a significant energy source.	Moderate to high cost. Pilot study required.	Not retained due to associated air emissions, noise, and the proximity to residential areas.

Table 3.3 (continued)
Evaluation and Screening of Soil and Sediment Technology Process Options (TPOs) for Sauer Dump Site

General Response Action	Technology Process Options	Description of Process Option	Effectiveness⁽¹⁾	Implementability⁽¹⁾	Cost	Screening Conclusion
Treatment	Ex Situ Thermal Destruction (Incineration)	Excavated soils are combusted at high temperatures in the presence of oxygen to thermally destroy organic contaminants.	Rank = 3 Effective for organic contaminants. Not effective for metals.	Rank = 5 Mobile units are available, but could be subject to a high degree of public opposition. Mobile unit would require extensive start-up testing (trial burns) to demonstrate compliance of off-gas treatment system with substantive requirements of air quality regulations. Limited availability of off-site incinerators.	Very high cost.	Retained for use as pre-treatment method for off-site disposal due to technology's ability to destroy PCBs.
Removal/ Disposal	Excavation	Soils and sediments are excavated for further treatment or disposal.	Rank = 1 Could achieve all removal objectives if contaminated soils and sediments are removed for treatment or proper off-site disposal.	Rank = 2 Can be implemented with readily available construction techniques and equipment. Would require space for staging of excavated material and sediments dewatering.	Low to high cost No operation and maintenance.	Retained for development of alternatives.

Table 3.3 (continued)
Evaluation and Screening of Soil and Sediment Technology Process Options (TPOs) for Sauer Dump Site

General Response Action	Technology Process Options	Description of Process Option	Effectiveness⁽¹⁾	Implementability⁽¹⁾	Cost	Screening Conclusion
	Off-Site Landfill	Excavated soils and sediments are transported to an off-site landfill.	Rank = 1 Would achieve all removal objectives.	Rank = 4 Soils/sediments characterized as hazardous waste would require truck transport to a hazardous waste facility. The most contaminated soils would require pre-treatment prior to acceptance by a hazardous waste facility. There may be public opposition to significant levels of off-site truck traffic.	Moderate to high cost. No operation and maintenance.	Retained for development of removal alternatives.

NOTES:

⁽¹⁾TPOs are ranked qualitatively for effectiveness and implementability, with 1 representing the most effective/easiest to implement and 5 representing the ineffective/impossible to implement

Table 3.4
Evaluation and Screening of Groundwater Technology Process Options (TPOs) for Sauer Dump Site

General Response Action	Technology Process Options	Description of Process Option	Effectiveness⁽¹⁾	Implementability⁽¹⁾	Cost	Screening Conclusion
No Action	None	Take no remedial action. Contaminated groundwater will be subject to natural conditions and processes.	Rank = 5 Does not address risks from Site soils or sediments.	Rank = 1	No cost. No O&M.	Retained as baseline comparison.
Institutional Controls	Deed Notices/ Restrictions	Restrict future groundwater use.	Rank = 4 Reduces but does not eliminate human health or ecological risks. Does not prevent further contaminant migration.	Rank = 1 Can be easily implemented	Very Low cost. Low O&M.	Retained for development of alternatives.
	Access Agreements	Provide agreements to ensure access for monitoring of Site conditions and operation/maintenance of removal system(s).	Rank = 4 Does not address human health or ecological risks. Does not affect contaminant migration. Allows for effective implementation of other technologies.	Rank = 1 Can be easily implemented	Very Low cost. Low O&M.	Retained for development of alternatives.
	Monitoring of Site Conditions	Monitor operation of any removal system(s).	Rank = 4 Provides information of the implementation/operation of the removal alternative.	Rank = 1 Can be easily implemented	Very Low to Low Cost.	Retained for development of alternatives.
	Public Awareness Programs	Conduct Public Meeting and issue fact sheets to educate citizens about risks of Site contamination. Post warning signs at Site to alert people of associated risks.	Rank = 4 Decreases exposure potential for humans. Does not address ecological risks or contaminant migration.	Rank = 1 Can be easily implemented	Very Low cost.	Retained for development of alternatives.

Table 3.4 (continued)
Evaluation and Screening of Groundwater Technology Process Options (TPOs) for Sauer Dump Site

General Response Action	Technology Process Options	Description of Process Option	Effectiveness ⁽¹⁾	Implementability ⁽¹⁾	Cost	Screening Conclusion
Containment	Compacted Soil Cover	Install impermeable compacted soil cover over contaminated areas on site	Rank = 3 Limits exposure and transport of contaminants. Does not treat or remove contamination. Allows groundwater contact with residual contaminants.	Rank = 1 Can be readily implemented. Maintenance in perpetuity.	Low to Moderate Cost. Moderate O&M required	Retained for development of alternatives
Collection/ Treatment	Interceptor Trench	Groundwater is collected in an interceptor trench before it enters the wetland areas	Rank = 2 Limits transport of contaminants. Does not treat or remove contamination. Limits allowable future uses of the Site.	Rank = 2 Can be readily implemented. Maintenance in perpetuity.	Moderate to High Cost. Moderate O&M required	Retained for development of alternatives
	Extraction Wells	Groundwater is extracted with individual extraction wells	Rank = 4 Site soil type would limit effective radii of influence of wells. Wells would also draw in river water into treatment system.	Rank = 2 Can be readily implemented. Maintenance in perpetuity.	Low to Moderate Cost. Moderate O&M required	Not retained because of ROI issues and potential for river water withdrawal.
	GAC	Groundwater is treated with GAC	Rank = 4 Not known if technology can attain the PRGs for groundwater contaminants.	Rank = 2 Would require an on-site treatment system.	Moderate to High Cost. Moderate O&M required	Retained for development of alternatives.
	Monitored Natural Attenuation	Natural Attenuation	Rank = 4 Reduces but does not eliminate human health or ecological risks. Does not prevent further contaminant migration.	Rank = 1 Can be easily implemented	Very Low cost. Low O&M.	Retained for development of alternatives.

NOTES:

⁽¹⁾TPOs are ranked qualitatively for effectiveness and implementability, with 1 representing the most effective/easiest to implement and 5 representing the ineffective/impossible to implement

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4.0 DEVELOPMENT AND DETAILED ANALYSIS OF REMOVAL ALTERNATIVES

The retained TPOs have been assembled into removal alternatives that could potentially meet the removal objectives for the Site. In some cases, several technologies were combined to provide an efficient and protective approach. The removal alternatives include a “no action” alternative as well as combinations of the TPOs retained in Section 3.3. The proposed alternatives are defined in Section 4.1 and summarized in Table 4.1. Section 4.2 describes the evaluation criteria used to assess the different removal alternatives. A detailed evaluation of each alternative is provided in Section 4.3, and a comparative analysis is provided in Section 4.4.

4.1 DEVELOPMENT OF ALTERNATIVES

4.1.1 Alternative 1: No Action

The no action alternative serves as a basis against which the effectiveness of all the other proposed removal alternatives can be compared. Under this alternative, the Site would remain in its present condition, and the soil and sediment contamination would be subject to natural processes only. No monitoring would take place to keep track of any changes.

4.1.2 Alternative 2: Surface Cap, Excavation, and Off-Site Disposal

Alternative 2 consists of the following components:

- Removal and off-site disposal of surface debris;
- Clearing and grubbing of Parcel 425 and removal and disposal of materials;
- Confirmation sampling would proceed concurrently with all excavation to ensure that removal requirements are met.
- Excavation of contaminated soils from Parcels 425 and 574. All contaminated soils with PCBs greater than 100 ppm regardless of depth and lead greater than 1,000 ppm in the upper 2 feet would be excavated for proper off-site disposal;
- Excavation of the contaminated sediments from the affected wetlands. All sediments with PCBs greater than 1 part per million (ppm) and lead greater than 130 ppm in the upper 4 feet and any PCBs that exceed 100 ppm below that depth would be excavated;
- Verification sampling of sediments along the Back River shoreline to determine the extent of sediments requiring excavation. Based on the results, sediments with PCBs greater than 1 ppm and lead greater than 130 ppm in the upper 4 feet and any PCBs that exceed 100 ppm below that depth would be excavated;
- Excavation of all contaminated soils with PCBs greater than 1 ppm and lead greater than 400 ppm from the residential properties (Parcels 137, 295, 464, 503, and portions of 574) adjacent to Parcel 425;
- Excavated soils and sediments would be temporarily stockpiled in a staging area established on Parcel 425. Confirmation sampling from the stockpile would be

performed to verify that PCB concentrations are less than 100 ppm and lead concentrations are less than 1,000 ppm. Soils and sediments meeting these criteria would be placed across the upland portions of Parcel 425. Soils and sediments exceeding these criteria would be transported off-site for proper disposal.

- After completion of excavation and confirmation sampling, all excavated areas, with the exception of Parcel 425, would be restored by backfilling and re-vegetation;
- Parcel 425 would be re-graded and compacted after placement of the excavated soils and sediments and backfilled as required to maintain proper grade and drainage in preparation for construction of a TSCA soil cover.
- Construction of a TSCA compacted soil cover over the contaminated soils and sediments which exceed 1 ppm PCBs on Parcel 425³;
- Installation of replacement monitoring wells, if necessary, and a monitoring program to monitor the effectiveness of the remediation effort and groundwater quality. Groundwater monitoring would be conducted on a semi-annual basis for a four-year period beginning after construction activities are complete. Constituents to be monitored include lead and PCBs; and
- Implementation of ICs to ensure that future land use remains non-residential on Parcel 425; to provide long-term Site access for monitoring and maintenance of TSCA cover; installation and maintenance of fence around capped area of Site; recordation of deed notices to notify any future purchasers of the property of the need for continued maintenance of the TSCA cover and fence and the cleanup levels left at the Site.

Prior to the sediment and soil excavation, any surface debris on Parcel 425 that could not be placed beneath the cap would be removed and disposed off-site. The vegetation within the limits of disturbance for the excavation areas and cover foot print would be cleared, grubbed, and disposed off-site. For costing purposes in the EE/CA, it was assumed that a portion of the surface debris and grubbed material would be hazardous. Any monitoring wells located inside the footprint of the cover would be abandoned.

The contaminated sediments in the affected wetlands would be excavated and placed in lined berms to allow the water to drain. After the sediments are decanted, they would be dewatered. The water removed from the sediments through decanting and dewatering would be treated on-site prior to discharge to the Back River. After completion of confirmation sampling and placement of the cover, the wetland areas would be restored to their original grade and re-vegetated with native species.

Submerged sediment samples have been collected 14 times from within the Back River at locations adjacent to the Sauer Dump Site. In only one instance (in 1999) were the PCB concentrations in one of these samples (2.1 ppm) greater than the PRG of 1 ppm. Its location is shown on Figure 1.5. Given the time span since this sample was collected (over nine years),

³ For costing purposes, the TSCA cap in Alternatives 2 and 3 was assumed to cover the entire extent of Parcel 425. This was done to account for the excavated soils and sediments (approximately 12,600 cubic yards total) being brought back onto this parcel from the wetlands and other contaminate areas, and to improve constructability of the cap by having a single continuous cap rather than multiple smaller caps.

the mobile nature of river sediments (especially in a tidal location), and natural attenuation, the area is currently assumed to meet the PRGs. A total of 20 samples would be collected on a 10 foot grid to determine the extent, if any, of the area to be excavated. Areas with PCBs and/or lead concentrations exceeding the Site PRGs would be excavated and handled in the same manner as wetlands sediments.

Contaminated soils on Parcels 425 and 574 with PCB concentrations greater than 100 ppm and lead concentrations greater than 1,000 mg/kg would be excavated and properly disposed at an appropriately permitted landfill. The lateral extent of the excavation was estimated from soil analytical data and is shown on Figure 4.1. Confirmation sampling would proceed concurrently with excavation to ensure that removal requirements are met.

Contaminated soils on the adjacent Parcels 503, 464, 295, 137, and 574 would be excavated. Confirmation sampling would proceed concurrently with excavation to ensure that removal requirements are met. Prior to excavation, access agreements would need to be obtained from the affected property owners. The lateral extent of soil contamination in these areas was estimated from surface soil data and is shown on Figure 4.1. The actual area requiring excavation might be smaller or larger than shown. After the completion of the excavation and confirmation sampling, the excavated areas on Parcels 503, 464, 295, 137, and 574 would be backfilled to the original grade with clean fill and re-vegetated.

Excavated soils and sediments with PCB concentrations greater than 100 ppm and less than 500 ppm would be properly disposed at an appropriately permitted RCRA or TSCA landfill. The Waste Management facility in Emelle, Alabama, was the closest identified facility that has the ability to accept hazardous (metals) waste, provided that the PCB concentrations in the waste are less than 500 mg/kg. Soils with PCB concentrations greater than 500 ppm would require incineration and disposal at one of the facilities mentioned in Section 3.3.4.4. To ensure selection of the proper off-site disposal facility, extensive waste characterization sampling would be required. For costing purposes, it was assumed that all soils and sediments classified as hazardous waste would be transported to the Waste Management facility in Emelle, Alabama with the exception of approximately 7542 cubic feet of soils/sediments which would require incineration. Estimated volumes for Alternative 2 are contained in Appendix B-1.

The excavated sediments and the soils that do not require off-site disposal would be placed across the upland portions of Parcel 425. In order to prevent direct contact, protect from erosion, and prevent migration of hazardous substances, Site topography would be contoured and a TSCA compacted soil cover would be continuously installed over the area of Parcel 425 with concentrations of PCBs over 1 ppm⁴. A network of monitoring wells would be installed to assess the effectiveness of the removal action with respect to decreasing contaminant

⁴ For costing purposes, the TSCA cap in Alternatives 2 and 3 was assumed to cover the entire extent of Parcel 425. This was done to account for the excavated soils and sediments (approximately 12,600 cubic yards total) being brought back onto this parcel from the wetlands and other contaminate areas, and to improve constructability of the cap by having a single continuous cap rather than multiple smaller caps.

migration via the soil-to-groundwater pathway. For costing purposes it was assumed that the monitoring well network would consist of seven wells.

After installation of the cover, deed notices/restrictions would be applied to Parcel 425 to maintain the future land use as non-residential and to prevent activities which could damage the compacted soil cover. A security fence would be installed around the cover, and warning signs posted along the fence. Access agreements would be obtained from the current property owners to allow for land use monitoring and cover maintenance.

This alternative requires long-term maintenance of the cover and monitoring of the Site conditions. Cover maintenance includes periodic inspections and the repair of any damage to the cover. Long-term monitoring would include land use monitoring, groundwater monitoring, and surface water monitoring. The purpose of the groundwater and surface water monitoring would be to assess the effectiveness of the action with respect to contaminant migration.

4.1.3 Alternative 3: Surface Cap, Excavation, Off-Site Disposal and Groundwater Collection and Treatment

This alternative includes the same elements as Alternative 2, with the following exceptions:

- All contaminated soils (regardless of depth) with PCBs greater than 10 ppm and/or lead greater than 400 ppm from Parcels 425 and 574 would be excavated for proper off-site disposal;
- All of the contaminated sediments with PCBs greater than 1 ppm and/or lead greater than 130 ppm from the affected wetlands and along the Back River shoreline would be excavated regardless of depth;
- Excavated soils and sediments with PCB concentrations less than 10 ppm and lead concentrations less than 400 ppm would be placed across the upland portions of Parcel 425 for capping. Soils and sediments exceeding these criteria would be transported off-site for proper disposal;
- Installation of a groundwater collection system to control off-site migration of groundwater from the former dump area;
- Installation of a groundwater treatment system to remove lead and PCBs from the captured groundwater and discharge the water to the Back River;
- Implementation of long-term operation, maintenance, and monitoring for the groundwater collection and treatment system; and
- Implementation of Institutional Controls to ensure that future land use remains non-residential on Parcel 425; to provide long-term Site access for monitoring and maintenance of TSCA cover; installation and maintenance of fence around capped area of the Site; recordation of deed notices to notify any future purchasers of the property of the need for continued maintenance of the TSCA cover and fence and the cleanup levels left at the Site.

The lateral extent of the excavation required under this alternative was estimated from soil analytical data and is shown on Figure 4.3.

The available data indicate that much of the soils to be excavated could meet the definition of a non-hazardous waste. These soils could be disposed at a local non-hazardous waste landfill. As in Alternative 2, soils with PCB concentrations greater than 500 ppm would require incineration and proper disposal at one of the three facilities mentioned in Section 3.3.4.4. To ensure selection of the proper off-site disposal facility, extensive waste characterization sampling would be required. For costing purposes, it was assumed that all soils and sediments classified as hazardous waste would be transported to the Waste Management facility in Emelle, Alabama with the exception of approximately 7542 cubic feet of soils/sediments which would require incineration. Estimated volumes for Alternative 3 are contained in Appendix B-2.

The groundwater collection and treatment system would consist of the following major components:

- Three (3) groundwater interceptor trench segments, located along the south, east and west portions of Parcel 425 (Figure 4.4). Each trench would contain groundwater extraction sumps, with submersible groundwater extraction pumps, and piping to transfer extracted groundwater to an on-site treatment facility. Two groundwater extraction sumps and pumps would be sufficient to provide hydraulic control.
- A groundwater treatment building constructed on the southern portion of Parcel 425. The treatment building would house a groundwater treatment process consisting of temporary storage of extracted groundwater (surge tank); a pre-filtration system consisting of two basket strainers connected in series; two granular activated carbon adsorbers, connected in series; and all associated process piping, controls, and transfer pumps.
- A treated groundwater discharge line to transfer treated water to an outfall at the southern boundary of Parcel 425, discharging to the Back River in compliance with the substantive requirements of a NPDES permit.

Groundwater flows from north to south across the Site, discharging into the Back River. The south interceptor trench would be located and installed at the location shown on Figure 4.4 to hydraulically control groundwater flow into the river. Groundwater would be extracted from the interceptor trench at a rate suitable to maintain a slight (0.5 feet) hydraulic gradient toward the trench and away from the river.

The interceptor trench segments along the sides of Parcel 425 would be installed to hydraulically control groundwater flow that could otherwise migrate off-site toward residential areas (Parcels 503 and 464) and the wetlands areas to the west and southeast. Groundwater would be extracted from the interceptor trench at a rate suitable to maintain a slight (0.5 feet) hydraulic gradient toward the trench and away from off-site areas.

The interceptor trenches would extend to approximately three (3) feet below mean sea level to allow for an adequate collection sump depth. The trenches would be filled with clean gravel to

a depth approximately three (3) feet above mean sea level. A filter fabric would be installed above the gravel zone to minimize silting, and the remaining trench depth would be backfilled with native soils. Three (3) perforated vertical collection sumps would be installed along the length of each trench and submersible groundwater extraction pumps with level control floats would be installed within each sump. Based on permeability and other data provided in the RI and Extent of Contamination Study reports, a design flow rate of four (4) gallons per minute would be used.

Extracted groundwater would be transferred to the treatment building and into two (2) 2,500 gallon holding tanks. A transfer pump would transfer the groundwater from the holding tank through the two (2) basket strainers, through the two (2) GAC absorbers, through a recording totalizing flow meter, and out to the treated water outfall. Spent basket filter bags and GAC would be contained and disposed of or regenerated off-site on an as needed basis.

For the purposes of the cost estimate, it is assumed that the system would be checked by a part-time operator weekly. The system would be inspected and repaired as necessary by the operator. Quarterly NPDES sampling and analysis and annual reporting would also be performed. Quarterly inspections by a process engineer are also included in the cost estimate. Detailed cost calculations are presented in Appendix B-2.

Alternative 3 requires long-term maintenance of the cover, groundwater treatment system, and monitoring of the Site conditions. Cover maintenance includes periodic inspections and the repair of any damage to the cover. Long-term maintenance of the groundwater treatment system would include regularly scheduled monitoring, maintenance, replacement, and disposal of spent basket filters bags, and periodic replacement of the GAC. Long-term monitoring would include both groundwater and surface water monitoring.

4.1.4 Alternative 4: Excavation, Off-Site Disposal and Groundwater Collection and Treatment

This alternative consists of the elements of Alternative 2 with the following additional components:

- Excavation of contaminated soils with PCBs greater than 1 ppm and/or lead greater than 400 ppm regardless of depth from all parcels for proper off-site disposal;
- Excavation of the contaminated sediments from the affected wetlands regardless of depth. All sediments with PCBs greater than 1 ppm and/or lead greater than 130 ppm would be excavated for proper off-site disposal;
- Proper off-site landfilling of excavated soils with greater than 1 ppm and less than 500 ppm of PCBs;
- After completion of excavation and confirmation sampling, all excavated areas would be restored;
- Installation of a groundwater collection and treatment system and associated long-term monitoring and maintenance, as described for Alternative 3; and
- Recordation of deed notices to ensure that groundwater use is restricted, if necessary.

The estimated lateral extent of the excavation required under this alternative was estimated from soil analytical data and is shown on Figure 4.5.

Excavated soils with PCB concentrations greater than 50 ppm and less than 500 ppm would be excavated and disposed at a RCRA or TSCA-licensed landfill. The Waste Management facility in Emelle, Alabama, was the closest identified facility that has the ability to accept hazardous (metals) waste, provided that the PCB concentrations in the waste are less than 500 ppm. Soils with PCB concentrations greater than 500 ppm would require incineration and disposal at one of the three facilities mentioned in Section 3.3.4.4. Excavated soils and sediments that meet the definition of a non-hazardous waste would be disposed at a local non-hazardous waste landfill. To ensure selection of the proper off-site disposal facility, extensive waste characterization sampling would be required. For costing purposes, it was assumed that all soils and sediments classified as hazardous waste would be transported to the Waste Management facility in Emelle, Alabama with the exception of approximately 7542 cubic feet of soils/sediments which would require incineration. Estimated volumes for Alternative 4 are contained in Appendix B-3.

Under Alternative 4, no compacted soil cover is required because the remaining soils would meet the PRGs as well as the PCB cleanup standards for a “High Occupancy Area” under TSCA. Soil removal to residential based PRGs would also eliminate the need for future land use controls and long-term monitoring. The groundwater collection and treatment systems would be the same as for Alternative 3.

4.2 EVALUATION CRITERIA

According to the guidance document *Conducting Non-Time-Critical Removal Actions Under CERCLA* (EPA, 1993), removal alternatives should be evaluated based on effectiveness, implementability, and cost.

Effectiveness can be evaluated in terms of protectiveness and ability to achieve removal objectives. The protectiveness evaluation should consider public health and the environment, impacts on the community, impacts to workers involved with removal action implementation, and compliance with ARARs.

Implementability addresses the technical and administrative feasibility of implementing an alternative, including the availability of services and materials required for its implementation, the ease of construction and operation, monitoring considerations, the historical reliability of selected technologies, and the ease with which the alternative can be integrated with other actions that might be necessary at the Site.

The total cost for the removal action includes capital and O&M costs, both direct and indirect. Capital costs consist of the direct costs for items such as labor, materials, equipment, and services plus the indirect costs for remedial design, management, and contingencies. A 15% contingency was utilized in all capital cost estimates for all alternatives. O&M costs are the

annual post-construction costs necessary to maintain the treatment or containment system. O&M costs include such items as operating labor, maintenance, auxiliary materials, and energy.

A present worth analysis is used to evaluate expenditures that occur over different time periods by discounting all future costs to a common base year. In accordance with EPA guidance, present worth estimates are calculated using a 7% discount rate over 30 years (EPA, 2000), with 2009 as a base year.

The cost estimates in this report are order-of-magnitude level estimates based on a variety of information including quotes from suppliers, generic unit costs, vendor information, conventional cost estimating guides, and professional judgment.

4.3 DETAILED ANALYSIS OF ALTERNATIVES

In this section all the alternatives retained for detailed analysis are evaluated based on the evaluation criteria described in Section 4.2.

4.3.1 Alternative 1: No Action

4.3.1.1 Effectiveness

Because no action would be performed, this alternative would not protect human health or the environment. Current and future risks from soil and sediment contamination at the Site would not be significantly different from those identified in the baseline risk assessment. ARARs would not be met. Because no action would be taken, this alternative does not pose any risks associated with implementation.

4.3.1.2 Implementability

Because no action would be taken, this alternative would be implemented easily.

4.3.1.3 Cost

There are no costs associated with Alternative 1.

4.3.2 Alternative 2: Surface Cap, Excavation, and Off-Site Disposal

4.3.2.1 Effectiveness

This alternative would effectively prevent human and ecological receptors from contacting the contaminated soils and sediments as long as the TSCA cover portion of the remedy is maintained. In addition, an intact cover would effectively prevent soil and sediment contaminant migration via erosion and overland flow. Due to its ability to substantially reduce precipitation infiltration, the TSCA soil cover would decrease the potential for soil contaminants to leach to the underlying groundwater. However, this Site is adjacent to surface

water or wetlands on three of four sides, has subsurface soil contamination present at depths that are close to the water table, and has groundwater that is tidally influenced. It might be possible for tidal influences and/or severe storms to cause the groundwater surface beneath the cover to increase to such an extent that the groundwater would be in contact with the contaminated soils. In this situation, contaminant migration via the soil-to-groundwater pathway could occur. While Alternative 2 does not initially provide for groundwater treatment, if the monitoring program implemented as part of this alternative indicates that unacceptable levels of Site contaminants are impacting the groundwater and/or the Back River, a groundwater capture and treatment system could be put in place to address the problem.

Continued maintenance of the cover is required to ensure long-term protection of human health and the environment. If the cover were damaged or breached, then people or animals could come in contact with the contaminated soils/sediments, and contaminant migration could occur. The Site is next to a tidally-influenced area and is located within the floodplain. Storm events and flooding could increase the potential for the cover to be damaged and breached, and would increase long-term maintenance requirements. Long-term monitoring is required to ensure that future land use remains consistent with the PRGs.

This alternative would comply with ARARs provided the entire Site is classified as a single Area of Concern (AOC) to meet the land disposal restriction (LDR) criteria in the TSCA and RCRA. According to the Superfund LDR Guide #5 (EPA, 1989), “placement does not occur when wastes are left in place, or moved within a single Area of Contamination”. The zones of contamination at the Site are contiguous, found in adjacent parcels, and consistent with the AOC concept. The Site cleanup will also meet the risk-based criteria of the TSCA regulations at 40 CFR § 761.61(c).

There is potential for short-term impacts during excavation and construction, but these impacts can be mitigated through the use of standard engineering controls. Short-term impacts to the adjacent wetlands would be addressed by restoring the wetlands to the original grade and re-vegetating. Truck shipments required for off-site disposal of the soils could increase the potential for traffic accidents, and could disturb the traffic patterns in the local community. However, these impacts would be short term and maintaining open communication with residents of the community could mitigate these concerns.

Alternative 2 would decrease soil and sediment contaminant mobility, toxicity, and volume. It would decrease contaminant mobility, toxicity, and volume in groundwater but would not completely prevent off-site groundwater migration.

4.3.2.2 Implementability

This alternative could be implemented with standard construction equipment and readily available materials and labor. No major technical difficulties are anticipated in implementing this alternative. However, there are only three facilities capable of incinerating the Site soils/sediments with PCB concentrations greater than 500 ppm. These facilities are in Texas

and Utah, necessitating the use of long distance truck and/or rail transportation. This off-site transport has the potential to result in off-site contamination through spills or accidents.

Access agreements and schedule coordination with the owners of Parcels 503, 464, 295, 137, and 574 would be required. Construction of a compacted soil cover would limit future uses of Parcel 425. Long-term administrative resources would be required to ensure compliance with the ICs and maintenance of the cover.

4.3.2.3 Cost

This section presents the present worth analysis for the compacted soil cover. Uncertainties that could impact the total cost of this alternative include the extent of surficial debris which would require removal and off-site disposal, and the volume of sediments and soils to be excavated and disposed off-site.

Cost: The cost calculations for Alternative 2 are presented in Appendix B-1.

- The capital cost for Alternative 2 is estimated to be \$ 5.31 Million
- The present worth O&M cost is approximately \$ 729,000
- The total project cost (present worth) is estimated to be \$ 6.04 Million

4.3.3 Alternative 3: Surface Cap, Excavation, Off-Site Disposal and Groundwater Collection and Treatment

4.3.3.1 Effectiveness

Alternative 3 would be more effective at reducing risks related to Site contamination than Alternative 2 because soils with PCB concentrations greater than 10 ppm (instead of 100 ppm) or lead concentrations greater than 400 ppm (instead of 1,000 ppm) would be removed from the Site. Additionally, Alternative 3 would provide controls to prevent off-site migration of groundwater from beneath the compacted soil cap because it would provide for collection and treatment of groundwater. The excavation and off-site disposal of additional contaminated soils and sediments and the construction of a groundwater collection and treatment system would increase short-term impacts including increased excavation and construction activities as well as increased truck traffic. Alternative 3 would comply with ARARs if the Site is considered to be a single AOC with respect to LDR compliance as in Alternative 2. However, because no soils with PCB concentrations greater than 10 ppm would be left on Site (under the TSCA cover), this alternative would meet the cleanup requirements for a High Occupancy Area under 40 CFR § 761.61 if the self-implementing cleanup provisions were applicable to CERCLA cleanups. The groundwater collection and treatment system would have the added benefit of preventing the potential migration of contaminated groundwater to the wetland areas

and surface waters. Alternative 3 would decrease contaminant mobility, toxicity, and volume in soils, sediments, and groundwater.

4.3.3.2 Implementability

Alternative 3 would be somewhat more difficult to implement than Alternative 2 because of the additional volume of soils and sediments to be excavated for off-site disposal and the construction of a groundwater collection, treatment, and discharge system. The additional volume of soils and sediments excavated for off-site disposal would lead to an increase in truck traffic with the resultant impacts to the community and increased risk of accidents and spills. While a NPDES permit would not be required to discharge the treated groundwater to the Back River, compliance with the substantive provisions of 40 CFR Part 122 would be necessary. For groundwater, the treatment requirements for lead and PCBs are 8.1 ug/l and 0.000064 ug/l, respectively. It would be difficult or impossible to achieve the required PCB levels.

Additional long-term administrative resources would be required to ensure maintenance and monitoring of the groundwater collection and treatment systems. This would include weekly treatment system checks; quarterly NPDES sampling, analysis, and annual reporting; quarterly inspections by a process engineer; replacement and disposal of spent basket filters bags; and periodic regeneration and replacement of GAC. Spent basket filter bags would be contained and disposed of as needed.

4.3.3.3 Cost

This section presents the present worth analysis for construction of a surface cap, excavation, off-site disposal of the soils and sediments, and groundwater treatment. Uncertainties that could impact the total cost of this alternative include the extent of surficial debris which would require removal and off-site disposal and the volume of sediments and soils to be excavated and disposed off-site.

The cost calculations for Alternative 3 are presented in Appendix B-2.

- The capital cost for Alternative 3 is estimated to be \$ 7.77 Million
- The present worth O&M cost is approximately \$ 1.63 Million
- The total project cost (present worth) is estimated to be \$ 9.39 Million

4.3.4 Alternative 4: Excavation, Off-Site Disposal and Groundwater Collection and Treatment

4.3.4.1 Effectiveness

Because all soils and sediments with contamination concentrations above the PRGs would be removed from the Site, Alternative 4 would provide the greatest long-term protection to human

health and the environment and more effective control of contaminant migration relative to the other alternatives. As with Alternative 3, the groundwater collection and treatment system would prevent the potential migration of residual contaminated groundwater to the wetland areas and surface waters. Alternative 4 shares the same short-term excavation, construction, and transportation impacts identified for Alternative 3; however, truck traffic would be greatly increased. This alternative would decrease contaminant mobility, toxicity, and volume in soils, sediments, and groundwater.

4.3.4.2 Implementability

Because all soils and sediments would be disposed off-site, there would be a significant increase in truck traffic relative to the other alternatives. Public opposition to the traffic impacts from the extensive off-site transportation requirements of this alternative could potentially make implementability more difficult than for Alternative 3. Off-site transport has the potential to result in off-site contamination through spills or accidents. Although an NPDES permit would not be required to discharge the treated groundwater from the groundwater management system to the Back River, compliance with the substantive provisions of 40 CFR Part 122 would be necessary. The groundwater treatment requirements for lead and PCBs are 8.1 ug/l and 0.000064 ug/l, respectively. It would be difficult or impossible to achieve the required PCB treatment levels. Long-term administrative resources would be required to ensure maintenance and monitoring of the collection and treatment systems.

4.3.4.3 Cost

This section presents the present worth analysis for excavation, off-site disposal of the soils and sediments, and groundwater treatment. Uncertainties that could impact the total cost of this alternative include the quantity of soils and sediments that would be required to be disposed off-site.

Cost: The cost calculations for Alternative 4 are presented in Appendix B-3.

- The capital cost for Alternative 4 is estimated to be
\$ 11.41 Million
- The present worth O&M cost is approximately
\$ 1.32 Million
- The total project cost (present worth) is estimated to be
\$ 12.72 Million

4.4 COMPARATIVE ANALYSIS OF ALTERNATIVES

In this subsection, the removal alternatives are compared to each other based on the three evaluation criteria.

4.4.1 Effectiveness

Alternative 1, No Action, would not provide long-term protection of human health or the environment, nor would it decrease contaminant migration. Alternative 2 (Surface Cap, Excavation, and Off-Site Disposal), Alternative 3 (Surface Cap, Excavation, Off-Site Disposal, and Groundwater Collection and Treatment), and Alternative 4 (Excavation, Off-Site Disposal, and Groundwater Collection and Treatment) would reduce human health and ecological risks from soil and sediment contamination by eliminating or reducing the potential for contact with the contaminated soils and sediments and by reducing the volume of contamination in soils and sediments.

Alternatives 2, 3, and 4 would decrease migration of soil and sediment contaminants to other media by requiring installation of a cap over the contaminants left on-site (Alternatives 2 and 3) or by removing the contamination (Alternative 4). Under Alternatives 2 and 3, there would be the long-term potential for groundwater to contact the contaminated soils and for storms and flood events to damage the containment system, but because Alternative 3 removes contaminants down to a lower concentration, the potential for groundwater impacts is reduced. Both alternatives would require long-term maintenance to ensure the integrity of the compacted soil cover. Alternatives 3 and 4 include a groundwater collection and treatment system that would reduce the spread of Site contaminants by preventing or limiting the migration of groundwater to the wetlands areas and the Back River. For these reasons, Alternative 2 would provide less long-term protection than Alternatives 3 or 4. Alternative 4 would provide the highest degree of long-term protection to human health and the environment and would prevent future migration of contaminants.

Alternative 1 would not comply with ARARs. Alternatives 2, 3, and 4 would comply with all potential ARARs, although Alternatives 2 and 3 would require that the entire Site be considered a single Area of Concern for purposes of meeting LDR requirements. Although Alternative 2 would not meet the PCB cleanup levels (<10 ppm left on-site under a TSCA cap) in the self-implementing provisions of 40 CFR § 761.61(a)(4)(i)(A) for High Occupancy Areas, the self-implementing cleanup provisions are not binding upon cleanups conducted under CERCLA and this alternative would meet the risk-based criteria of 40 CFR § 761.61(c).

Alternatives 2, 3, and 4 would reduce the mobility, toxicity, and volume of the contaminants in the soils and sediments, with Alternative 4 having the greatest reduction, followed by Alternative 3 and Alternative 2. Alternative 1 would not affect contaminant mobility, toxicity, or volume.

The implementation of Alternative 1 would not pose any additional short-term risks to the ones currently posed by the Site contamination. Short-term risks to construction workers, surrounding communities, and the environment are expected to occur from the implementation of Alternatives 2, 3, and 4. These risks include exposure to dust and vapor during excavation and construction activities, as well as continued risks from the current Site conditions before the alternatives are fully implemented. Alternatives 3 and 4 pose greater short-term impacts as compared to Alternative 2 due to more extensive excavation and off-site transportation of

contaminated materials and additional construction activity associated with the groundwater collection and treatment system. Engineering controls, personal protective equipment, and vapor and dust suppression measures can be used to mitigate the potential risks associated with the excavation and construction activities.

4.4.2 Implementability

Alternative 1 requires no action and is therefore the most easily implemented.

For Alternatives 2, 3, and 4, there is the possibility that the owners of Parcels 503, 464, 295, 137, and 574 would not provide access to allow excavation of the contaminated soils on their properties. However, since all the property owners have granted access for sampling activities, it is assumed that access would be granted to allow cleanup of their properties. Alternatives 2, 3, and 4 would require limiting the future use of Parcel 425 because of the need to protect, monitor, and maintain the compacted soil cover and/or the groundwater collection and treatment system. All three alternatives require long-term maintenance. The long-term maintenance requirements of Alternative 3 would require additional resources as compared to Alternatives 2 and 4. Alternative 2 would require the fewest additional resources of the three alternatives.

There could be public opposition to alternatives 2 and 3 as they would leave hazardous substances in place at the Site. There could also be public opposition to the excavation activities and increased traffic impacts associated with the off-site transportation of the excavated soils and sediments as part of all three alternatives; however, Alternatives 3 and 4 would have a significantly greater traffic impact due to the increased volumes of contaminated soils and sediments that would be disposed off-site as well as increased excavation and construction activities.

4.4.3 Cost

Alternative 1 has the least cost, \$0.

Alternative 2 has the next lowest cost, \$ 6.04 million.

Of the removal alternatives which provide some measure of groundwater control in addition to soil and sediment remediation, Alternative 3, with a \$ 9.39 million present worth, is the least expensive and Alternative 4, with a \$ 12.72 million present worth, is the most expensive alternative.

TABLE

Table 4.1
Individual Evaluation of Remedial Alternatives for Sauer Dump Site

Criteria	Alternative 1: No Action	Alternative 2 : Surface Cap, Excavation, and Off-Site Disposal	Alternative 3: Surface Cap, Excavation, Off-Site Disposal and Groundwater Collection and Treatment	Alternative 4: Excavation, Off-Site Disposal and Groundwater Collection and Treatment
1. EFFECTIVENESS				
Long-term protection of human health and the environment	No significant reduction in risk. Not protective of human health or the environment.	Would provide long-term protection of human health and the environment provided that the cover is maintained properly.	Would provide long-term protection of human health and the environment provided that the cover and groundwater treatment system are maintained properly.	Would provide long-term protection of human health and the environment provided that the groundwater treatment system is maintained properly.
Long-term prevention of contaminant migration	No reduction in contaminant migration potential.	Migration of soil and sediment contaminants would be significantly decreased. There would be potential for groundwater contaminants to increase if groundwater comes into direct contact with contaminated subsurface soils.	Migration of soil/sediment and groundwater contaminants would be significantly decreased. Although the potential would exist (as in Alternative 2) for GW to come into contact with residual contamination, there would be lower concentrations of contamination than in Alternative 2.	Because contaminated materials would be removed from Site down to the PRGs of 1 ppm PCBs and 400 ppm of lead, migration of groundwater contaminants would be significantly decreased.
Compliance with ARARs	Would not comply with ARARs.	Would comply with potential ARARs as long as the entire Site is considered a single Area of Concern.	Would comply with potential ARARs as long as the entire Site is considered a single Area of Concern.	Would comply with potential ARARs.
Short-term protection of human health and the environment	No short-term impacts.	Impacts from excavation and construction activities could be mitigated with engineering controls, personal protective equipment, and vapor/dust suppression measures.	See Alternative 2. Alternative 3 would pose increased potential for traffic accidents and off-site spills due to off-site transportation of additional excavated soils and sediments.	See Alternative 2. Alternative 4 would pose increased potential for traffic accidents and off-site spills due to off-site transportation of all excavated soils and sediments.

Table 4.1 (continued)
Individual Evaluation of Remedial Alternatives for Sauer Dump Site

Criteria	Alternative 1: No Action	Alternative 2 : Surface Cap, Excavation, and Off-Site Disposal	Alternative 3: Surface Cap, Excavation, Off-Site Disposal and Groundwater Collection and Treatment	Alternative 4: Excavation, Off-Site Disposal and Groundwater Collection and Treatment
Decrease in contaminant mobility, toxicity, and volume	No change in contaminant mobility, toxicity, or volume.	Contaminant mobility, toxicity, and volume would be decreased in soils and sediments. Because of the proximity of contaminated materials to groundwater and the tidal influence on the local groundwater, it is possible that contaminants would continue to spread to the groundwater.	Contaminant mobility, toxicity, and volume would be decreased to a greater degree than Alternative 2. It is possible that contaminants would continue to spread to the groundwater but the groundwater management system would reduce the mobility of these contaminants.	Contaminant mobility, toxicity, and volume would be decreased to a greater degree than Alternative 3.
2. IMPLEMENTABILITY				
Potential Implementability Issues	None	Owners might not grant access to allow excavation of contaminated soils and/or sediments. Parcel 425 would require limited future land use options associated with compacted soil cover. There could be local opposition to the capping of hazardous substances in place at the Site.	See Alternative 2. It is unknown if technology can attain the PRGs for PCBs.	Owners might not grant access to allow excavation of contaminated soils and/or sediments. Parcel 425 would require limited future land use options associated with the groundwater collection and treatment system. There could be public opposition to the extensive truck traffic required for off-site transportation of the contaminated soils and sediments. It is unknown if technology can attain the PRGs for PCBs
3. COST				
Total Project Cost	\$0	\$ 6.04 Million	\$ 9.39 Million	\$ 12.72 Million

FIGURES

Figure 4.1
Alternative 2
Proposed Limits of
Soil Excavation

Legend

- ▲ Surface Soil Sample Exceeding Alternative 2 Concentration Requiring Excavation
- ▼ Subsurface Soil Sample Exceeding Alternative 2 Concentration Requiring Excavation
- ◆ Surface and Subsurface Soil Sample Exceeding Alternative 2 Concentration Requiring Excavation
- · — Proposed Limits of Excavation
- Parcel Boundary
- Grid Soil Samples
- Surveyed Wetlands (ENSAT, 2005)

Note:
The proposed surface cap under Alternative 2 will extend over the entire area of Parcel 425.
The proposed limits of sediment excavation are shown on Figure 1.5

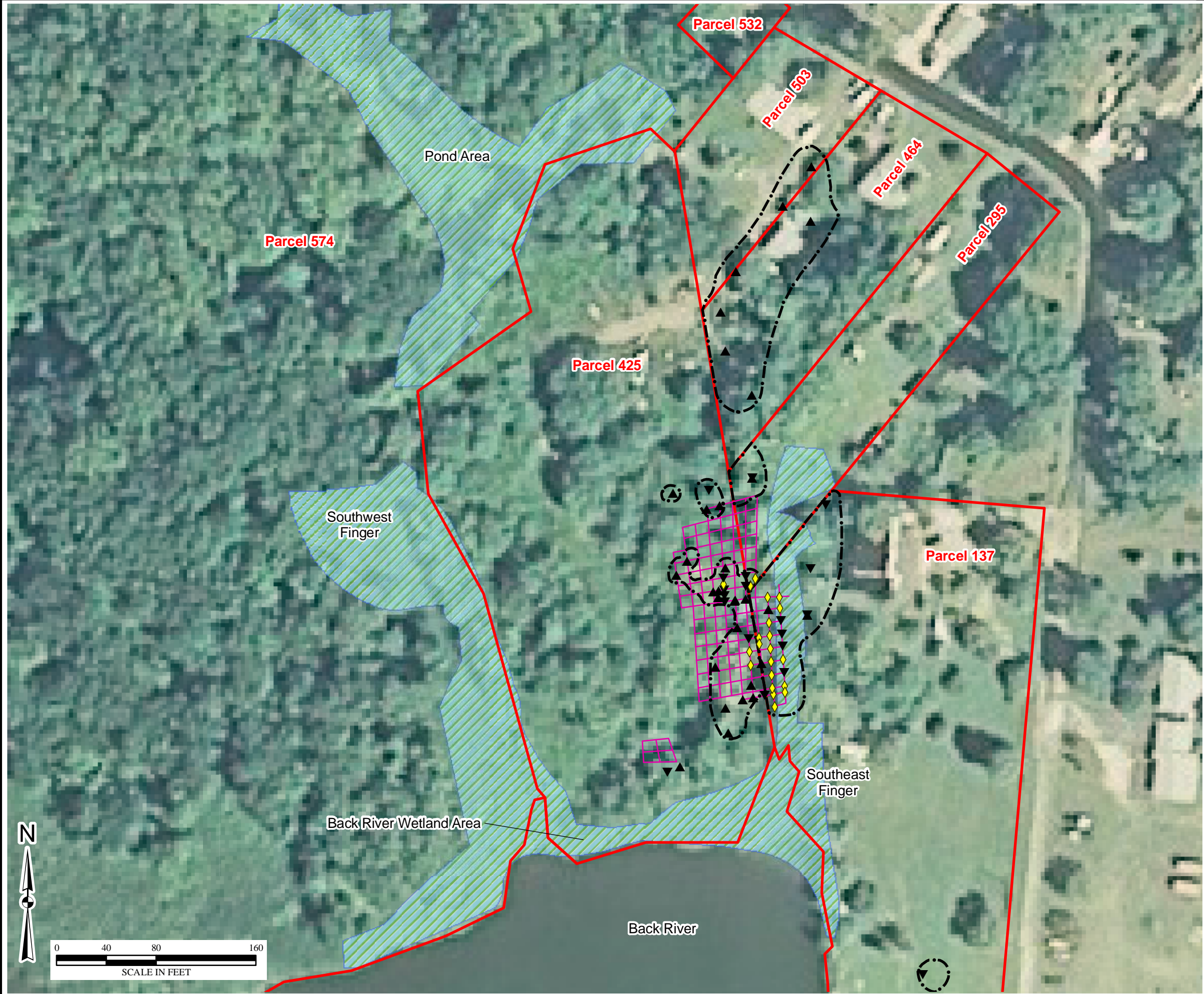
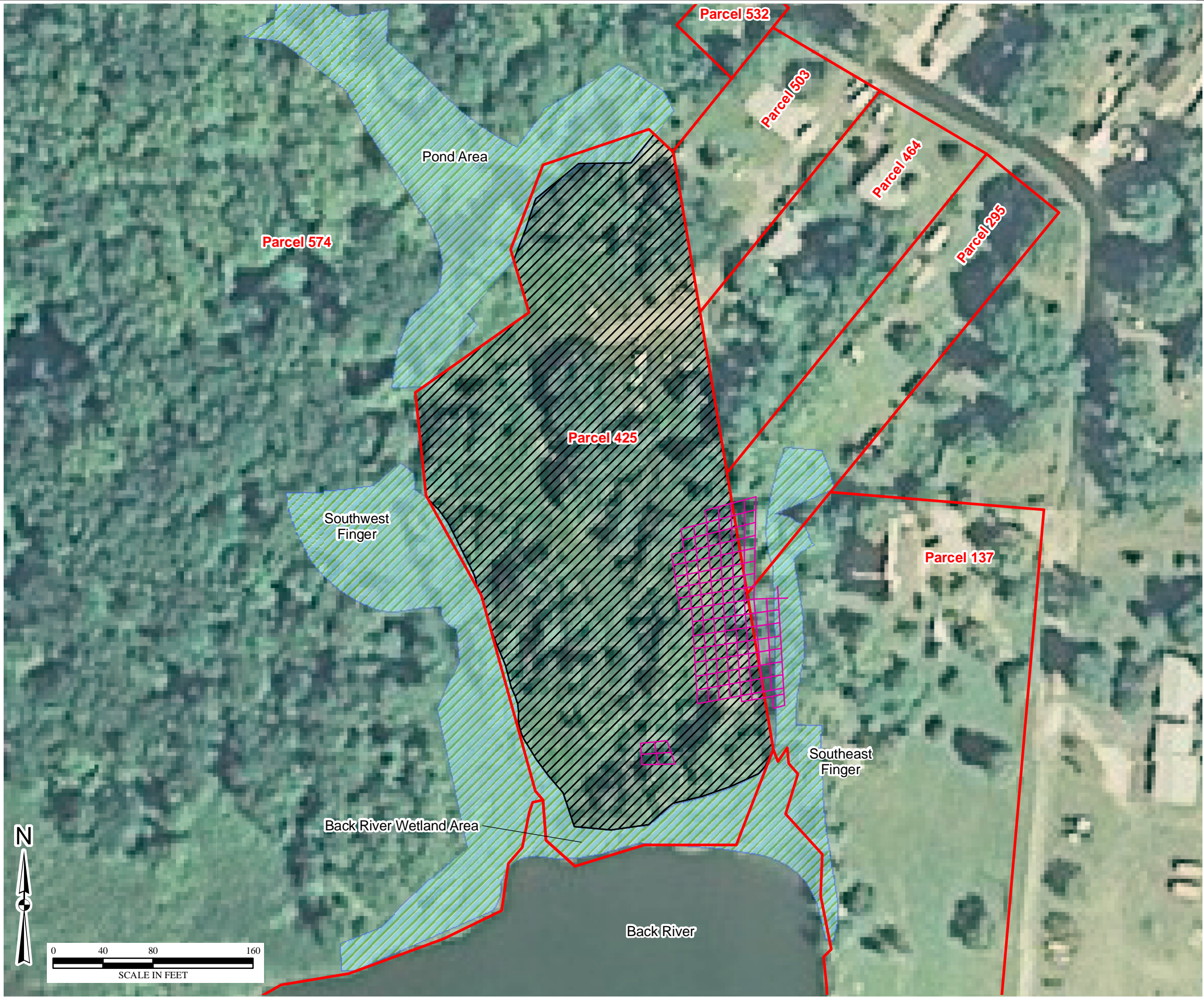


Figure 4.2
Alternatives 2 and 3
Proposed Extent
of TSCA Cap

Legend

- Parcel Boundary
- Grid Soil Samples
- Proposed Extent of TSCA Cap
- Surveyed Wetlands (ENSAT, 2005)



X:/EPA010/Sauer/Cost_Analysis_Draft/
Compacted_Soil_Alt2-3.mxd
Map Source: NAIP,
Middle River, MD 2007
04/24/09 TB

Figure 4.3
Alternative 3
Proposed Limits of
Soil Excavation

Legend

- ▲ Surface Soil Sample Exceeding Alternative 3 Concentration Requiring Excavation
- ▼ Subsurface Soil Sample Exceeding Alternative 3 Concentration Requiring Excavation
- ◆ Surface and Subsurface Soil Sample Exceeding Alternative 3 Concentration Requiring Excavation
- · — Proposed Limits of Excavation
- Parcel Boundary
- Grid Soil Samples
- Surveyed Wetlands (ENSAT, 2005)

Note:
The proposed surface cap under Alternative 3 will extend over the entire area of Parcel 425.
The proposed limits of sediment excavation are shown on Figure 1.5

X:/EPA010/Sauer/Cost_Analysis_Draft/
Exc_Limits_Alt3.mxd
Map Source: NAIP,
Middle River, MD 2007
04/24/09 TB

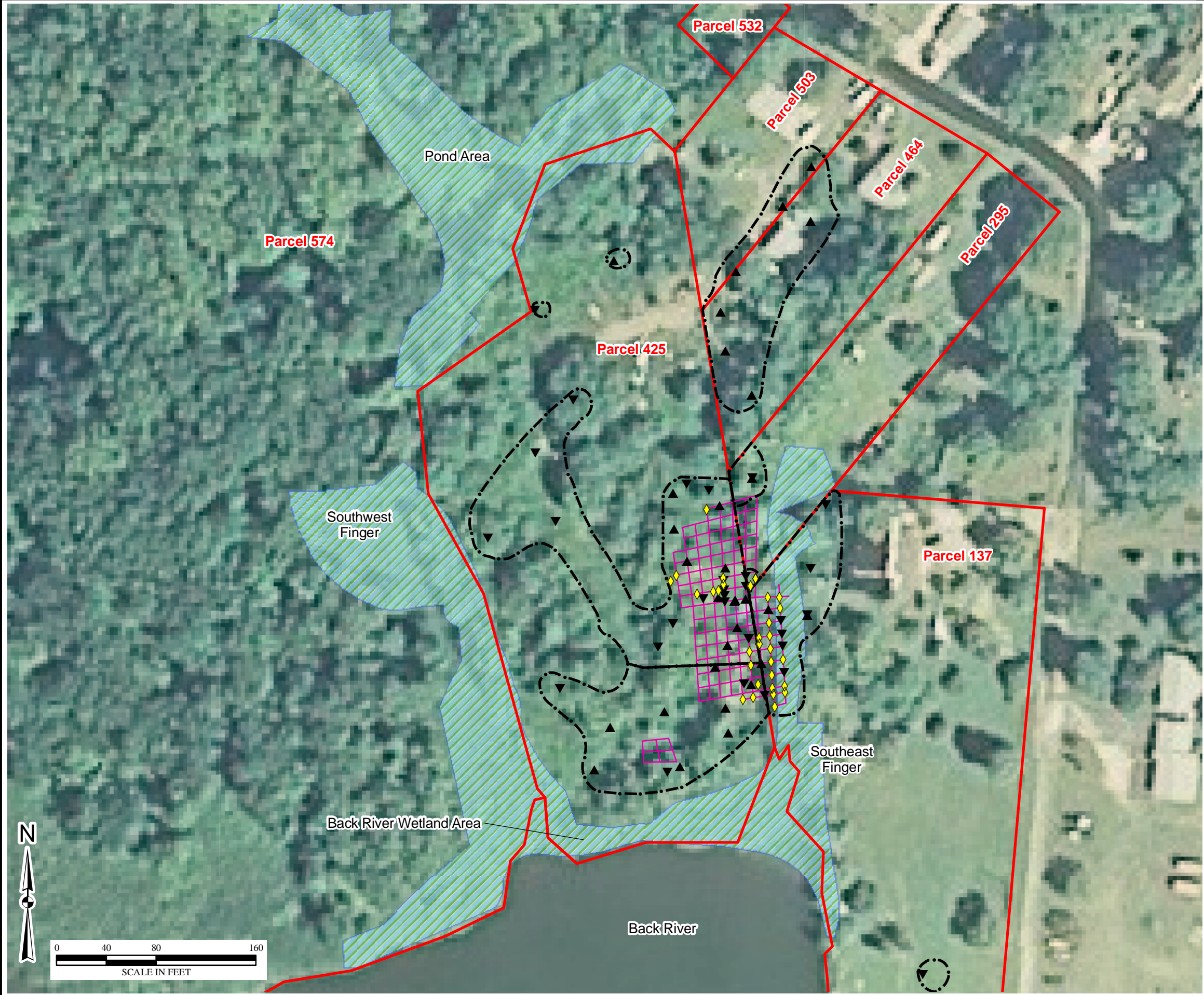





Figure 4.4
Alternatives 3 and 4
Proposed Groundwater
Interceptor Trench Locations

Legend

-  Groundwater Interceptor Trench
-  Parcel Boundary
-  Surveyed Wetlands (ENSAT, 2005)

Notes:

1. All soil samples shown on figure contained one or more PRG exceedances.
2. All grid soil samples collected exceeded PRGs.

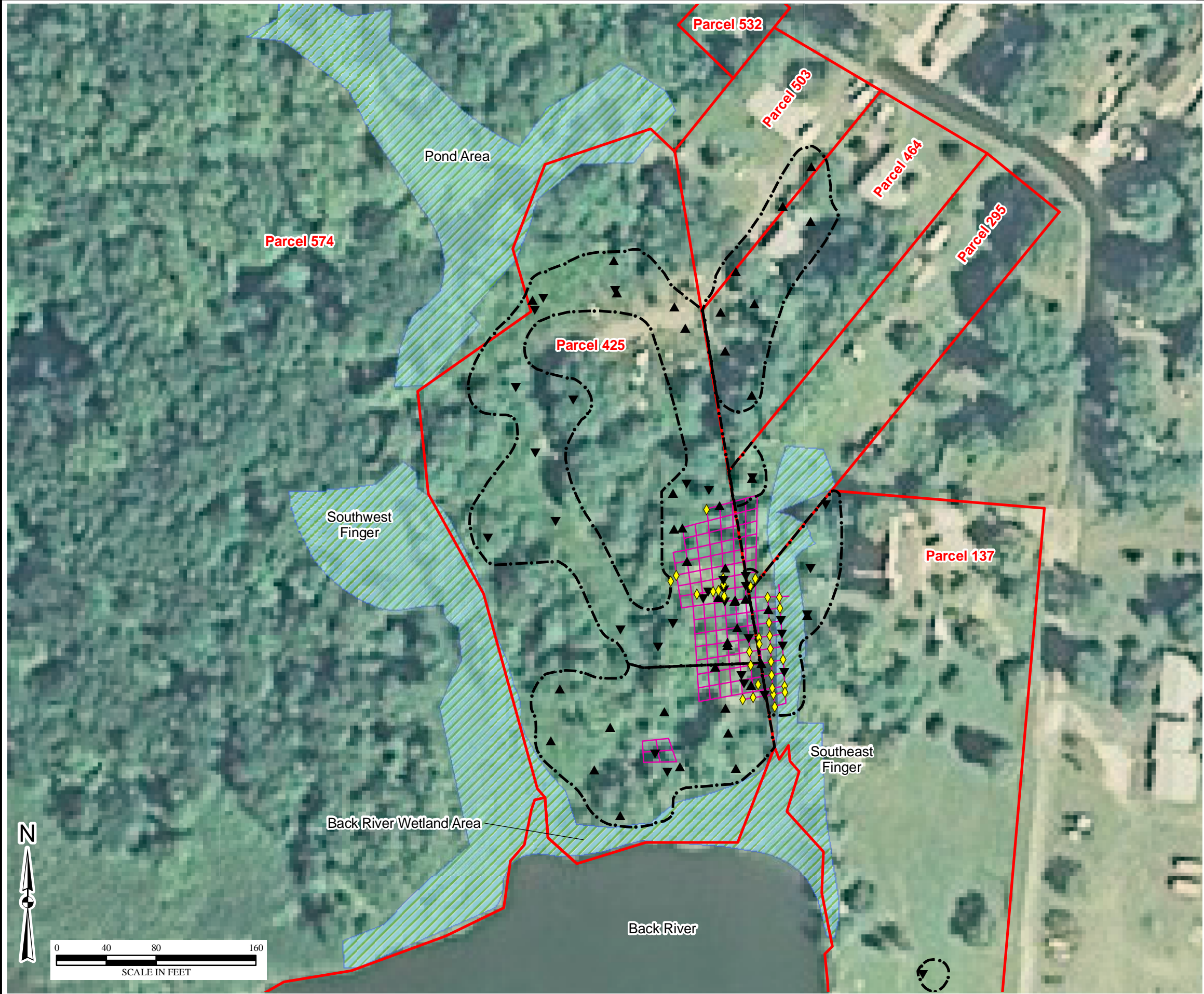


Figure 4.5
Alternative 4
Proposed Limits of
Soil Excavation

Legend

- ▲ Surface Soil Sample Exceeding Alternative 4 Concentration Requiring Excavation
- ▼ Subsurface Soil Sample Exceeding Alternative 4 Concentration Requiring Excavation
- ◆ Surface and Subsurface Soil Sample Exceeding Alternative 4 Concentration Requiring Excavation
- · — Proposed Limits of Excavation
- Parcel Boundary
- Grid Soil Samples
- Surveyed Wetlands (ENSAT, 2005)

Note:
The proposed limits of sediment excavation are shown on Figure 1.5



5.0 SUMMARY

Based on the potential ARARs and PRGs presented in Section 2, four removal alternatives were developed. These alternatives were: 1) No Action; 2) Surface Cap, Excavation, and Off-Site Disposal; 3) Surface Cap, Excavation, Off-Site Disposal, and Groundwater Collection and Treatment; and 4) Excavation, Off-Site Disposal, and Groundwater Collection and Treatment. Each alternative was evaluated with respect to effectiveness, implementability, and cost.

Alternative 1, No Action, would not be an effective alternative. This alternative would not protect human health or the environment, would not prevent contaminant migration, and would not comply with ARARs.

Alternatives 2, 3, and 4 generally provide effective approaches to the protection of human health and the environment. All three alternatives would comply with ARARs, although Alternatives 2 and 3 rely on the classification of the entire Site as a single Area of Concern. Alternatives 2, 3, and 4 would decrease migration of soil and sediment contaminants to other media. Under Alternatives 2 and 3, there is the long-term potential for groundwater to contact the contaminated soils and for storms and flood events to damage the containment system, but because Alternative 3 removes contaminants down to a lower concentration, the potential for groundwater impacts is reduced. Both alternatives would require long-term maintenance to ensure the integrity of the compacted soil cover. Alternatives 3 and 4 include a groundwater collection and treatment system that reduces the spread of Site contaminants by preventing or limiting the migration of groundwater to the wetlands areas and the Back River. For these reasons, Alternative 2 would provide less long-term protection than Alternatives 3 or 4. Alternative 4 would provide the highest degree of long-term protection to human health and the environment, and would prevent future migration of contaminants. All alternatives would prevent continued migration of soil and sediment contaminants.

Alternatives 2, 3, and 4 each would pose short-term risks to workers and the community. These risks, however, could be mitigated through use of engineering controls, personal protective equipment, and vapor/dust suppression measures. Alternative 4 would pose the greatest short-term risks because of the significant increase in truck traffic required. Alternative 2 should pose the lowest level of short-term risks.

Alternatives 2, 3, and 4 would all decrease contaminant mobility and would reduce contaminant toxicity and volume. The reduction in contaminant toxicity, mobility, and volume achieved with Alternative 4 would be the greatest, followed those seen with Alternative 3.

The implementability evaluation indicated that Alternative 4 would likely be the most difficult to implement because of the need for the groundwater management system and the off-site disposal of all contaminated soils and sediments. Alternatives 3 and 4 may be difficult to implement because of the PRGs for groundwater. Aside from the No Action Alternative, Alternative 2 would be the easiest to implement.

Alternative 2, at a total present worth of \$ 6.04 million, would be less expensive than Alternatives 3 and 4. Alternative 4 has the both the highest degree of protectiveness and the greatest estimated cost, \$ 12.72 million. Alternative 3 would provide a high degree of protection at a cost of \$ 9.39 million.

The comparison performed as part of this evaluation indicates that, while Alternative 4 appears to be the most protective, Alternatives 2 through 4 are all generally protective. The incremental cost increases (approximately 55% between Alternatives 2 and 3, and 35% between Alternatives 3 and 4) are accompanied by increases in overall protectiveness that are difficult to quantify accurately and, in the case of the groundwater pathway, may be difficult or impossible to achieve in practice. Alternative 2 appears to be the most easily implemented and least costly protective approach for this Site.

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APPENDICES

APPENDIX A

HISTORIC ANALYTICAL DATA TABLES

Table A.1a-b – Surface Soil Analytical Data

Table A.2a-c – Subsurface Soil Analytical Data

Table A.3 – Sediment Analytical Data

Table A.4 – Surface Water Analytical Data

Table A.5 – Groundwater Analytical Data

Table A.1a Surface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																											
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump S-5 S-5 Drum Area Surface CA 886 MCB981 06/27/85 NUS Surficial Soil Solid	Sauer Dump S-7 S-7 Burn Area Surface CA 888 MCB983 06/27/85 NUS Surficial Soil Solid	Sauer Dump S-8 S-8 Drum Area Surface CA 889 MCB984 06/27/85 NUS Surficial Soil Solid Duplicate of S-5	Sauer Dump S-1 10/24/90 MDE Surficial Soil Solid	Sauer Dump S-2 10/24/90 MDE Surficial Soil Solid	Sauer Dump S-01 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-02 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-05 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-06 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-07 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-08 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-09 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-10 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-11 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-12 12/08/92 HNUS Surficial Soil Solid Background												
VOCs SVOCs Inorganics/Total Metals Dissolved Metals PCBs/Pesticides Other Analytes	yes yes yes no yes no	yes yes yes no yes no	yes yes yes no yes no	yes no yes no yes no	yes no yes no yes no	yes yes yes no yes no	yes yes yes no yes no	yes yes yes no yes no	yes yes yes no yes no	yes yes yes no yes no	yes yes yes no yes no	yes yes yes no yes no	yes yes yes no yes no	yes yes yes no yes no	yes yes yes no yes no												
VOCs																											
Analytical Method Dilution Factor % Moisture Units	not reported 1 16.1 mg/Kg	not reported 1 18 mg/Kg	not reported 1 9.3 mg/Kg	not reported mg/Kg	not reported mg/Kg	1 9 mg/Kg	1 16 mg/Kg	1 13 mg/Kg	1 9 mg/Kg	1 24 mg/Kg	1 34 mg/Kg	1 14 mg/Kg	1 9 mg/Kg	1 9 mg/Kg	1 30 mg/Kg												
Notes				holding time exceeded, detection limits very high or mis-reported	holding time exceeded, detection limits very high or mis-reported																						
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag											
Acetone	0.011	B	0.25		0.01	U	1	U	1	U	0.044	B	0.056	B	0.036	B											
Acetonitrile	nr		nr		nr		5	U	5	U	nr		nr		nr												
Acrolein	nr		nr		nr		1	U	1	U	nr		nr		nr												
Acrylonitrile	nr		nr		nr		5	U	5	U	nr		nr		nr												
Allyl Alcohol	nr		nr		nr		5	U	5	U	nr		nr		nr												
Allyl Chloride	nr		nr		nr		5	U	5	U	nr		nr		nr												
Benzene	0.005	U	0.005	U	0.005	U	5	U	5	U	0.011	U	0.012	U	0.011	U											
Benzene (2-Methyl-1-Propeny	nr		nr		nr		nr		nr		nr		nr		nr												
Benzyl Chloride	nr		nr		nr		1	U	1	U	nr		nr		nr												
Bromoacetone	nr		nr		nr		5	U	5	U	nr		nr		nr												
Bromobenzene	nr		nr		nr		nr		nr		nr		nr		nr												
Bromochloromethane/Chlorobromomethane	nr		nr		nr		nr		nr		nr		nr		nr												
Bromodichloromethane	0.005	U	0.005	U	0.005	U	5	U	5	U	0.011	U	0.012	U	0.011	U											
Bromoform	0.005	U	0.005	U	0.005	U	1	U	1	U	0.011	U	0.012	U	0.011	U											
Bromomethane/Methyl bromide	0.01	U	0.01	U	0.01	U	5	U	5	U	0.011	U	0.012	U	0.011	U											
2-Butanone (Methyl Ethyl Ketone)	0.01	U	0.01	U	0.01	U	5	U	5	U	0.011	U	0.012	U	0.011	U											
n-Butylbenzene	nr		nr		nr		nr		nr		nr		nr		nr												
sec-Butylbenzene	nr		nr		nr		nr		nr		nr		nr		nr												
tert-Butylbenzene	nr		nr		nr		nr		nr		nr		nr		nr												
Camphene	nr		nr		nr		nr		nr		nr		nr		nr												
Carbon Disulfide	0.005	U	0.005	U	0.005	U	5	U	5	U	0.011	U	0.012	U	0.011	U											
Carbon Tetrachloride	0.005	U	0.005	U	0.005	U	5	U	5	U	0.011	U	0.012	U	0.011	U											
Chlorobenzene	0.005	U	0.005	U	0.005	U	1	U	1	U	0.011	U	0.012	U	0.011	U											
Chloroethane/Ethyl chloride	0.01	U	0.01	U	0.01	U	5	U	5	U	0.011	U	0.012	U	0.011	U											
2-Chloroethanol/Ethylene chlorohydrin	nr		nr		nr		5	U	5	U	nr		nr		nr												
2-Chloroethylvinyl Ether	0.01	U	0.01	U	0.01	U	50	U	50	U	nr		nr		nr												
Chloroform	0.005	U	0.005	U	0.005	U	5	U	5	U	0.011	U	0.002	J.B	0.011	U											
Chloromethane/Methyl chloride	0.01	U	0.01	U	0.01	U	25	U	25	U	0.011	U	0.012	U	0.011	U											
Chloroprene	nr		nr		nr		5	U	5	U	nr		nr		nr												
2-Chlorotoluene	nr		nr		nr		nr		nr		nr		nr		nr												
4-Chlorotoluene	nr		nr		nr		nr		nr		nr		nr		nr												
Cyclohexane	nr		nr		nr		nr		nr		nr		nr		nr												
Cyclohexane, Butyl-	nr		nr		nr		nr		nr		nr		nr		nr												
1,3-Cyclopentadiene	nr		nr		nr		nr		nr		nr		nr		nr												
Decahydro-naphthalene	nr		nr		nr		nr		nr		nr		nr		nr												
Dibromochloromethane/Chlorodibromomethane	0.005	U	0.005	U	0.005	U	1	U	1	U	0.011	U	0.012	U	0.011	U											
trans-1,4-Dichloro-2-butene	nr		nr		nr		nr		nr		nr		nr		nr												
1,4-Dichloro-2-butene	nr		nr		nr		1	U	1	U	nr		nr		nr												
1,2-Dibromo-3-chloropropane	nr		nr		nr		1	U	1	U	nr		nr		nr												
1,2-Dibromoethane	nr		nr		nr		nr		nr		nr		nr		nr												
1,2-Dichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr												
1,3-Dichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr												
1,4-Dichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr												
Dichlorodifluoromethane	nr		nr		nr		5	U	5	U	nr		nr		nr												
1,1-Dichloroethane	0.005	U	0.005	U	0.005	U	5	U	5	U	0.011	U	0.012	U	0.011	U											
1,2-Dichloroethane	0.005	U	0.005	U	0.005	U	5	U	5	U	0.011	U	0.012	U	0.011	U											
1,1-Dichloroethene	0.005	U	0.005	U	0.005	U	1	U	1	U	0.011	U	0.012	U	0.011	U											
cis-1,2-Dichloroethene	nr		nr		nr		nr		nr		nr		nr		nr												
trans-1,2-Dichloroethene	0.005	U	0.005	U	0.005	U	5	U	5	U	nr		nr		nr												
1,2-Dichloroethene (Total)	nr		nr		nr		nr		0.011	U	0.012	U	0.011	U	0.011	U											
Dichloromethane	nr		nr		nr		nr		nr		nr		nr		nr												
1,2-Dichloropropane	0.005	U	0.005	U	0.005	U	5	U	5	U	0.011	U	0.012	U	0.011	U											
1,3-Dichloropropane	nr		nr		nr		nr		nr		nr		nr		nr												
2,2-Dichloropropane	nr		nr		nr		nr		nr		nr		nr		nr												
1,3-Dichloro-2-Propanol	nr		nr																								

Table A.1a Surface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																											
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump S-5 S-5 Drum Area Surface CA 886 MCB981	Sauer Dump S-7 S-7 Burn Area Surface CA 888 MCB983	Sauer Dump S-8 S-8 Drum Area Surface CA 889 MCB984	Sauer Dump S-1	Sauer Dump S-2	Sauer Dump S-01 CHH34 MCGX32	Sauer Dump S-02 CHH35 MCGX33	Sauer Dump S-05 CHH36 MCGX34	Sauer Dump S-06 CHH37 MCGX35	Sauer Dump S-07 CHH38 MCGX36	Sauer Dump S-08 CHH39 MCGX37	Sauer Dump S-09 CHH40 MCGX38	Sauer Dump S-10 CHH41 MCGX39	Sauer Dump S-11 CHH42 MCGX40	Sauer Dump S-12 CHH43 MCGX41												
	06/27/85 NUS Surficial Soil Solid	06/27/85 NUS Surficial Soil Solid	06/27/85 NUS Surficial Soil Solid Duplicate of S-5	10/24/90 MDE Surficial Soil Solid	10/24/90 MDE Surficial Soil Solid	12/08/92 HNUS Surficial Soil Solid	12/08/92 HNUS Surficial Soil Solid	12/08/92 HNUS Surficial Soil Solid	12/08/92 HNUS Surficial Soil Solid	12/08/92 HNUS Surficial Soil Solid	12/08/92 HNUS Surficial Soil Solid	12/08/92 HNUS Surficial Soil Solid	12/08/92 HNUS Surficial Soil Solid	12/08/92 HNUS Surficial Soil Solid	12/08/92 HNUS Surficial Soil Solid Background												
VOCs (cont.)																											
Analytical Method Dilution Factor % Moisture Units	not reported 1 16.1 mg/Kg	not reported 1 18 mg/Kg	not reported 1 9.3 mg/Kg	not reported mg/Kg	not reported mg/Kg	1 9 mg/Kg	1 16 mg/Kg	1 13 mg/Kg	1 9 mg/Kg	1 24 mg/Kg	1 34 mg/Kg	1 14 mg/Kg	1 9 mg/Kg	1 9 mg/Kg	1 30 mg/Kg												
Notes				holding time exceeded, detection limits very high or mis-reported	holding time exceeded, detection limits very high or mis-reported																						
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag											
1,4-Dioxane	nr		nr		nr		5	U	5	U	nr		nr		nr												
Dodecane, 6-Methyl-	nr		nr		nr		nr		nr		nr		nr		nr												
Ethanol	nr		nr		nr		1	U	1	U	nr		nr		nr												
Ethylbenzene	0.005	U	0.005	U	0.005	U	1	U	1	U	0.011	U	0.012	U	0.011	U											
1-Ethyl-2,3-Dimethyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr												
4-Ethyl-1,2-Dimethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr												
1-Ethyl-2-Methyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr												
1-Ethyl-3-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr												
1-Ethyl-4-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr												
Ethylene Oxide	nr		nr		nr		5	U	5	U	nr		nr		nr												
Ethylmethacrylate	nr		nr		nr		1	U	1	U	nr		nr		nr												
Epichlorohydrin	nr		nr		nr		5	U	5	U	nr		nr		nr												
Hexachlorobutadiene	nr		nr		nr		nr		nr		nr		nr		nr												
Hexane	nr		nr		nr		nr		nr		nr		nr		nr												
2-Hexanone	0.01	U	0.01	U	0.01	U	1	U	1	U	0.011	U	0.012	U	0.011	U											
2-Hydroxypropionitrile	nr		nr		nr		1	U	1	U	nr		nr		nr												
Isobutyl alcohol	nr		nr		nr		5	U	5	U	nr		nr		nr												
Isopropylbenzene	nr		nr		nr		nr		nr		nr		nr		nr												
p-Isopropyl Toluene	nr		nr		nr		nr		nr		nr		nr		nr												
Malononitrile	nr		nr		nr		1	U	1	U	nr		nr		nr												
Methacrylonitrile	nr		nr		nr		5	U	5	U	nr		nr		nr												
Methyl Acetate	nr		nr		nr		nr		nr		nr		nr		nr												
Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr												
1-Methyl-2- Benzene (1 Methy	nr		nr		nr		nr		nr		nr		nr		nr												
1-Methyl-3- Benzene (1 Methy	nr		nr		nr		nr		nr		nr		nr		nr												
1-Methyl-4- Benzene (1 Methy	nr		nr		nr		nr		nr		nr		nr		nr												
Methylene Bromide	nr		nr		nr		nr		nr		nr		nr		nr												
Methylene Chloride	0.0073	B	0.0071	B	0.011	B	20		9		0.035	B	0.086	B	0.03	B											
1-Methyl-indan	nr		nr		nr		nr		nr		nr		nr		nr												
Methyl Iodide/Iodomethane	nr		nr		nr		5	U	5	U	nr		nr		nr												
Methylmethacrylate	nr		nr		nr		1	U	1	U	nr		nr		nr												
2-Methyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr												
4-Methyl-Nonane	nr		nr		nr		nr		nr		nr		nr		nr												
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.01	U	0.01	U	0.01	U	1	U	1	U	0.011	U	0.012	U	0.011	U											
O-(2-Methyl Propyl Hydroxylamine	nr		nr		nr		nr		nr		nr		nr		nr												
Methyl-t-Butyl Ether	nr		nr		nr		nr		nr		nr		nr		nr												
Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr												
Naphthalene, decahydro-, trans-	nr		nr		nr		nr		nr		nr		nr		nr												
Pentachloroethane	nr		nr		nr		1	U	1	U	nr		nr		nr												
Propargyl Alcohol	nr		nr		nr		5	U	5	U	nr		nr		nr												
Propiolactone	nr		nr		nr		5	U	5	U	nr		nr		nr												
Propionitrile	nr		nr		nr		5	U	5	U	nr		nr		nr												
Propylamine	nr		nr		nr		1	U	1	U	nr		nr		nr												
n-Propylbenzene	nr		nr		nr		nr		nr		nr		nr		nr												
Styrene	0.005	U	0.005	U	0.005	U	1	U	1	U	0.011	U	0.012	U	0.011	U											
1,1,1,2-Tetrachloroethane	nr		nr		nr		1	U	1	U	nr		nr		nr												
1,1,2,2-Tetrachloroethane	0.005	U	0.005	U	0.005	U	1	U	1	U	0.011	U	0.012	U	0.011	U											
Tetrachloroethene	0.005	U	0.005	U	0.005	U	1	U	1	U	0.011	U	0.013	U	0.015	U											
1,2,4,5-Tetramethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr												
Toluene	0.005	U	0.0067		0.005	U	1	U	1	U	0.011	U	0.012	U	0.011	U											
1,2,3-Trichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr												
1,2,4-Trichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr												
1,1,1-Trichloroethane	0.014		0.005	U	0.005	U	5	U	5	U	0.011	U	0.012	U	0.011	U											
1,1,2-Trichloroethane	0.005	U	0.005	U	0.005	U	1	U	1	U	0.011	U	0.013	U	0.015	U											
Trichloroethene	0.005	U	0.005	U	0.005	U	5	U	5	U	0.011	U	0.013	U	0.015	U											
1,1, 2 - Trichloro -1, 2, 2 -trifluoroethane	nr		nr		nr		nr		nr		nr		nr		nr												
Trichlorofluoromethane	nr		nr		nr		5	U	5	U	nr		nr		nr												
1,2,3-Trichloropropane	nr		nr		nr		1	U	1	U	nr		nr		nr												
Tridecane	nr		nr		nr		nr		nr		nr		nr		nr												
1,2,4-Trimethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr												
1,2,3-Trimethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr												
1,3,5-Trimethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr												
2,3,4-Trimethylhexane	nr		nr		nr		nr		nr		nr		nr		nr												
Vinyl Acetate	0.01	U	0.01	U	0.01	U	1	U	1	U	nr		nr		nr												
Vinyl Chloride	0.01	U	0.01	U	0.01	U	5	U	5	U	0.011	U	0.012	U	0.011	U											
m+p-Xylenes	nr		nr		nr		nr		nr		nr		nr		nr												
o-Xylene	nr		nr		nr		nr		nr		nr		nr		nr												
Xylenes (Total)	0.005	U	0.005	U	0.005	U	10	U	10	U	0.011	U	0.012	U	0.011	U											

Table A.1a
Surface Soil Analytical Data - 1985 to 2004
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump S-5 S-5 Drum Area Surface CA 886 MCB981 06/27/85 NUS Surficial Soil Solid	Sauer Dump S-7 S-7 Burn Area Surface CA 888 MCB983 06/27/85 NUS Surficial Soil Solid	Sauer Dump S-8 S-8 Drum Area Surface CA 889 MCB984 06/27/85 NUS Surficial Soil Solid Duplicate of S-5	Sauer Dump S-1 10/24/90 MDE Surficial Soil Solid	Sauer Dump S-2 10/24/90 MDE Surficial Soil Solid	Sauer Dump S-01 CHH34 MCGX32 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-02 CHH35 MCGX33 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-05 CHH36 MCGX34 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-06 CHH37 MCGX35 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-07 CHH38 MCGX36 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-08 CHH39 MCGX37 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-09 CHH40 MCGX38 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-10 CHH41 MCGX39 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-11 CHH42 MCGX40 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-12 CHH43 MCGX41 12/08/92 HNUS Surficial Soil Solid Background	
SVOCs																
Analytical Method Dilution Factor % Moisture Units	5 Not reported mg/Kg	5 Not Reported mg/Kg	5 Not Reported mg/Kg			1 9 mg/Kg	30 16 mg/Kg	1 13 mg/Kg	1 9 mg/Kg	3 24 mg/Kg	3 34 mg/Kg	1 14 mg/Kg	10 9 mg/Kg	3 9 mg/Kg	1 30 mg/Kg	
Notes	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Acenaphthene	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
Acenaphthylene	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
Acetophenone	nr		nr		nr		nr		nr		nr		nr		nr	
Anthracene	2.2	U	2.2	U	2.2	U	nr		nr		0.077	J	12	U	0.37	U
Atrazine	nr		nr		nr			U	nr		nr		nr		nr	
Benzaldehyde	nr		nr		nr		nr		nr		nr		nr		nr	
Benzo(a)Anthracene	2.2	U	2.2	U	2.2	U	nr		nr		0.46		2	J	0.12	J
Benzo(a)Pyrene	2.2	U	2.2	U	2.2	U	nr		nr		0.53		3.2	J	0.16	J
Benzo(b)fluoranthene	1.8	J	2.2	U	2.2	U	nr		nr		1.2	J	4.7	J	0.47	J
Benzo(g,h,i)Perylene	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	1.9	J	0.37	U
Benzo(k)fluoranthene	2.2	U	2.2	U	2.2	U	nr		nr		1.2	J	4.7	J	0.47	J
Benzylbutylphthalate/Butylbenzylphthalate	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
1,1'-Biphenyl	nr		nr		nr		nr		nr		nr		nr		nr	
4-Bromophenyl-phenylether	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
Caprolactam	nr		nr		nr		nr		nr		nr		nr		nr	
Carbazole	nr		nr		nr		nr		nr		0.047	J	12	U	0.37	U
4-Chloroaniline	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
bis(2-Chloroethoxy)Methane	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
bis(2-Chloroethyl)Ether	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
bis(2-Chloroisopropyl)Ether	2.2	U	2.2	U	2.2	U	nr		nr		nr	U	nr	U	nr	U
4-Chloro-3-Methylphenol	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
2-Chloronaphthalene	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
2-Chlorophenol	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
4-Chlorophenyl-phenylether	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
Chrysene	1.2	J	2.2	U	2.2	U	nr		nr		0.54		2.2	J	0.16	J
Dibenzo(a,h)Anthracene	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
Dibenzofuran	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
1,2-Dichlorobenzene	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
1,3-Dichlorobenzene	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
1,4-Dichlorobenzene	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
3,3'-Dichlorobenzidine	4.6	U	4.4	U	4.6	U	nr		nr		0.36	U	12	U	0.37	U
2,4-Dichlorophenol	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
Diethylphthalate	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
2,4-Dimethylphenol	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
Dimethyl Phthalate	2.2	U	2.2	U	2.2	U	nr		nr		0.048	J	12	U	0.37	U
Di-n-Butylphthalate	7.8		1.9	J,B	1.8	J,B	nr		nr		0.045	J,B	12	U	0.04	J,B
4,6-Dinitro-2-Methylphenol	11.2	U	11.2	U	11.4	U	nr		nr		0.87	U	30	U	0.91	U
2,4-Dinitrophenol	11.2	U	11.2	U	11.4	U	nr		nr		0.87	U	30	U	0.91	U
2,4-Dinitrotoluene	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
2,6-Dinitrotoluene	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
Di-n-Octyl Phthalate	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
bis(2-Ethylhexyl)Phthalate	2.2		1.5	J	3.4		nr		nr		0.45	B	12	U	0.22	J,B
Fluoranthene	1.5	J	2.2	U	2.5		nr		nr		0.93		2	J	0.31	J
Fluorene	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
Hexachlorobenzene	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
Hexachlorobutadiene	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
Hexachlorocyclopentadiene	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
Hexachloroethane	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
Indeno(1,2,3-cd)Pyrene	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	1.9	J	0.37	U
Isophorone	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
2-Methylnaphthalene	2.2	U	2.2	U	2.2	U	nr		nr		0.041	J	12	U	0.37	U
2-Methylphenol	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
4-Methylphenol	2.2	U	2.2	U	2.2	U	nr		nr		0.36	U	12	U	0.37	U
MethylMercury	nr		nr		nr		nr		nr		nr	U	nr	U	nr	U
Naphthalene	2.2	U	2.2	U	2.2	U	nr		nr		0.04	J	12	U	0.37	U
2-Nitroaniline	11.2	U	11.2	U	11.4	U	nr		nr		0.87	U	30	U	0.91	U
3-Nitroaniline	11.2	U	11.2	U	11.4	U	nr		nr		0.87	U	30	U	0.91	U
4-Nitroaniline	11.2	U														

Table A.1a Surface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																														
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump S-5 S-5 Drum Area Surface CA 886 MCB981 06/27/85 NUS Surficial Soil Solid	Sauer Dump S-7 S-7 Burn Area Surface CA 888 MCB983 06/27/85 NUS Surficial Soil Solid	Sauer Dump S-8 S-8 Drum Area Surface CA 889 MCB984 06/27/85 NUS Surficial Soil Solid Duplicate of S-5	Sauer Dump S-1 10/24/90 MDE Surficial Soil Solid	Sauer Dump S-2 10/24/90 MDE Surficial Soil Solid	Sauer Dump S-01 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-02 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-05 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-06 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-07 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-08 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-09 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-10 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-11 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-12 12/08/92 HNUS Surficial Soil Solid Background															
Inorganics/Total Metals																														
Analytical Method Dilution Factor % Moisture Units	Not Reported 12.9 mg/Kg	Not Reported 17.8 mg/Kg	Not Reported 12 mg/Kg	17 mg/Kg	19.7 mg/Kg	1 11.7 mg/Kg	1 11.4 mg/Kg	1 13.1 mg/Kg	1 22.9 mg/Kg	1 19.5 mg/Kg	1 22.4 mg/Kg	1 24.7 mg/Kg	1 23.2 mg/Kg	1 24.4 mg/Kg	1 29.2 mg/Kg															
Notes	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag														
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag														
Aluminum	15,590		13,830		10,510		nr		6,840		4,820		4,670		7,220		7,360		9,850		16,400		1,460		8,820		8,850			
Antimony	31	U	29	U	31	U	21		5	U	3.6	U	3.7	U	4	U	3.5	U	8.8	B	21.7		56.3		3.5	U	4.1	U		
Arsenic	14	J	24.3	J	23.8	J	13.3		17.9		6.8		2	B	2.2	B	2.3	B	3.9		15.6		29.6		2.3	B	2.8		3.3	
Barium	237		176		215		nr		nr		75.8		64.4		28.3	B	62.5		42.5	B	271		728		35.8	B	61.8		70.9	
Beryllium	3	U	3	U	3	U	0.5	U	0.5	U	0.59	B	0.3	B	0.53	B	0.38	B	0.45	B	0.69	B	0.59	B	0.13	B	0.58	B	0.58	B
Cadmium	2.77		3	U	3.46		4.73		5.39		0.72	B	0.21	U	0.22	U	0.24	U	0.35	U	4.1		18.6		1.1	B	0.36	U	0.42	U
Calcium	89,630		106,980		67,360		nr		nr		52,400		46,900		14,300		59,200		61,100		30,500		26,500		6,660		20,200		1,860	
Chromium	34.6		16.3		35.6		130		107		36.1		24.1		10.9		27		39.2		134		645		24.2		31.3		14.3	
Chromium III	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium VI	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	24	U	27	U	25	U	nr		nr		3.9	B	3.2	B	2.4	B	6.2	B	7.8	B	14.7		19.6		8.5	B	6.5	B	13.5	B
Copper	381		323		377		756		573		42.9		33.5		16.8		27.9		27.5		1,540		1,070		92.8		36.2		16.8	
Iron	31,440		15,280		22,600		nr		nr		12,500		8,490		9,260		13,500		14,700		59,600		85,600		9,680		21,200		9,790	
Lead	371	J	209	J	827	J	1,489		2,542		67.2		90.3		25.1		94.6		48.8		1,170		3,160		600		87.5		53.2	
Magnesium	25,940		20,550		15,590		nr		nr		19,800		17,200		3,360		10,100		11,800		24,000		6,380		2,740		8,610		1,040	B
Manganese	1,060	J	809	J	731	J	nr		nr		525		197		86.4		386		185		2,910		1,440		195		382		511	
Mercury	0.62		0.3		0.49		7.7		7.5		0.27		8.1		0.31		0.32		0.06	U	3.1		5.6		1.6		0.28		0.09	B
Nickel	19.9		22	U	169		64.1		77.3		60.8		9.2		4.9	B	19		22.6		88.2		304		44.9		46		11.2	
Potassium	2,630		1,790	J	2,380	J	nr		nr		1,020	B	855	B	482	B	1,140	B	1,210		731	B	572	B	166	B	693	B	405	B
Selenium	10.1		3	U	3	U	4.2		0.16		2.1		0.95	B	0.82	B	1.5		1.7		8		18.2		2.1		0.97	U	1.4	
Silver	5	U	6	U	5	U	1.69		1.45		1.7	B	0.54	U	0.54	U	0.59	U	1.4	B	8.6		11.6		1.7	B	1.7	B	1.9	B
Sodium	693	J	738	J	594	J	nr		nr		187	B	135	B	69.4	B	297	B	198	B	327	B	338	B	70.4	B	130	B	50.9	B
Thallium	6	U	5	U	6	U	12		5	U	0.26	U	0.29	U	0.28	U	0.32	U	0.92	U	0.92	U	0.93	U	0.95	U	0.95	U	1	U
Tin	19	U	22	U	20	U	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vanadium	24	U	27	U	25	U	nr		nr		77.9		23.7		19.7		48.6		39.4		119		55.1		7.3	B	31.8		24.7	
Zinc	543		497		540		2,920		2,609		109		163		48		263		109		1,910		4,790		420		108		75.5	
Cyanide	1.2	U	1.3	U	1.2	U	nr		nr		0.55	U	0.54	U	0.54	U	0.61	U	0.61	U	0.61	U	0.65	U	0.65	U	0.62	U	0.71	U
Dissolved Metals																														
Analytical Method Dilution Factor % Moisture Units																														
Notes																														
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag		
Aluminum	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Antimony	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Arsenic	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Barium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Beryllium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cadmium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Calcium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Copper	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Iron	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Lead	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Magnesium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Manganese	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Mercury	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Nickel	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Potassium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									

Table A.1a Surface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																															
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump S-5 S-5 Drum Area Surface CA 886 MCB981 06/27/85 NUS Surficial Soil Solid	Sauer Dump S-7 S-7 Burn Area Surface CA 888 MCB983 06/27/85 NUS Surficial Soil Solid	Sauer Dump S-8 S-8 Drum Area Surface CA 889 MCB984 06/27/85 NUS Surficial Soil Solid Duplicate of S-5	Sauer Dump S-1 10/24/90 MDE Surficial Soil Solid	Sauer Dump S-2 10/24/90 MDE Surficial Soil Solid	Sauer Dump S-01 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-02 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-05 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-06 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-07 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-08 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-09 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-10 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-11 12/08/92 HNUS Surficial Soil Solid	Sauer Dump S-12 12/08/92 HNUS Surficial Soil Solid Background																
Pesticides/PCBs					Not Reported 10 Not Reported mg/Kg		Not Reported		Not Reported		1 9 mg/Kg		1 16 mg/Kg		1 13 mg/Kg		1 9 mg/Kg		1 24 mg/Kg		10 34 mg/Kg		100 14 mg/Kg		2 9 mg/Kg		1 and 5 9 mg/Kg		1 30 mg/Kg		
Analytical Method Dilution Factor % Moisture Units	10 Not Reported mg/Kg		10 Not Reported mg/Kg		Not Reported 10 Not Reported mg/Kg		Not Reported		Not Reported		1 9 mg/Kg		1 16 mg/Kg		1 13 mg/Kg		1 9 mg/Kg		1 24 mg/Kg		10 34 mg/Kg		100 14 mg/Kg		2 9 mg/Kg		1 and 5 9 mg/Kg		1 30 mg/Kg		
Notes							Incomplete lab report: "No Other Pesticides or PCBs detected"		Incomplete lab report: "No Other Pesticides or PCBs detected"																						
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	
Aldrin	0.039	U	0.041	U	0.036	U		U		U	0.0018	U	0.0037		0.002	U	0.0019	U	0.0032		0.026	U	0.2	U	0.0037	U	0.01		0.0024	U	
alpha-BHC	0.039	U	0.041	U	0.036	U		U		U	0.0018	U	0.00012	J	0.002	U	0.0019	U	0.00024	J	0.00068	J	0.2	U	0.0037	U	0.0019	U	0.0024	U	
beta-BHC	0.039	U	0.041	U	0.036	U		U		U	0.0018	U	0.002	U	0.002	U	0.0019	U	0.0022	U	0.026	U	0.2	U	0.0037	U	0.0019	U	0.00051	J	
delta-BHC	0.039	U	0.041	U	0.036	U		U		U	0.0018	U	0.002	U	0.00022	J	0.0019	U	0.0022	U	0.026	U	0.2	U	0.0037	U	0.002		0.0024	U	
gamma-BHC (Lindane)	0.039	U	0.041	U	0.036	U		U		U	0.0018	U	0.002	U	0.002	U	0.0019	U	0.0022	U	0.026	U	0.2	U	0.0037	U	0.0019	U	0.0024	U	
alpha-Chlordane	nr		nr		nr			U		U	0.0018	U	0.002	U	0.003		0.0019	U	0.017		0.026	U	0.2	U	0.0037	U	0.026		0.00045	J	
gamma-Chlordane	nr		nr		nr			U		U	0.0018	U	0.0042		0.0027		0.0019	U	0.03		0.026	U	0.2	U	0.0011	J	0.05		0.0024	U	
Chlordane, total	0.385	U	0.405	U	0.36	U		U		U	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		
4,4'-DDD	0.077	U	0.081	U	0.072	U		U		U	0.0036	U	0.0039	U	0.0038	U	0.0036	U	0.0043	U	0.05	U	0.38	U	0.0073	U	0.0036	U	0.0047	U	
4,4'-DDE	0.077	U	0.081	U	0.072	U		U		U	0.0036	U	0.0039	U	0.0038	U	0.0036	U	0.0043	U	0.05	U	0.38	U	0.0073	U	0.0036	U	0.0047	U	
4,4'-DDT	0.077	U	0.081	U	0.072	U		U		U	0.0036	U	0.0039	U	0.0038	U	0.0036	U	0.0028	J	0.05	U	0.38	U	0.0073	U	0.0036	U	0.00033	J	
Dieldrin	0.077	U	0.081	U	0.072	U		U		U	0.0036	U	0.0088		0.0038	U	0.0036	U	0.017		0.05	U	0.38	U	0.0073	U	0.0036	U	0.00023	J	
Endosulfan I	0.039	U	0.041	U	0.036	U		U		U	0.0018	U	0.002	U	0.002	U	0.0019	U	0.0022	U	0.026	U	0.2	U	0.0037	U	0.0019	U	0.0024	U	
Endosulfan II	0.077	U	0.081	U	0.072	U		U		U	0.0036	U	0.00033	J	0.0038	U	0.0036	U	0.0043	U	0.05	U	0.38	U	0.0073	U	0.0036	U	0.01		
Endosulfan sulfate	0.077	U	0.081	U	0.072	U		U		U	0.0036	U	0.00049	J	0.000096	J	0.0036	U	0.00046	J	0.019	J	0.2	J	0.0073	U	0.0036	U	0.0047	U	
Endrin	0.077	U	0.081	U	0.072	U		U		U	0.0036	U	0.0083		0.0038	U	0.0036	U	0.01		0.05	U	0.38	U	0.0073	U	0.0036	U	0.0011	J	
Endrin aldehyde	0.077	U	0.081	U	0.072	U		U		U	0.0036	U	0.0039	U	0.00024	J	0.0036	U	0.0043	U	0.05	U	0.38	U	0.0073	U	0.0024	J	0.0047	U	
Endrin ketone	0.077	U	0.081	U	0.072	U		U		U	0.00009	J	0.0042	J	0.0038	U	0.0036	U	0.0043	U	0.05	U	0.38	U	0.0073	U	0.0036	U	0.0047	U	
Heptachlor	0.039	U	0.041	U	0.036	U		U		U	0.0018	U	0.00069	J,B	0.002	U	0.0019	U	0.0022	U	0.026	U	0.2	U	0.0037	U	0.0019	U	0.0024	U	
Heptachlor epoxide	0.039	U	0.041	U	0.244	N		U		U	0.0018	U	0.002	U	0.002	U	0.0019	U	0.00022	J	0.026	U	0.2	U	0.0037	U	0.0019	U	0.0024	U	
Methoxychlor	0.077	U	0.081	U	0.072	U		U		U	0.018	U	0.02	U	0.02	U	0.019	U	0.023	B	0.035	J,B	2	U	0.0054	J,B	0.0013	J,B	0.00071	J,B	
Toxaphene	0.77	U	0.81	U	0.72	U		U		U	0.18	U	0.2	U	0.2	U	0.19	U	0.22	U	2.6	U	20	U	0.37	U	0.19	U	0.24	U	
Aroclor-1016	0.385	U	0.405	U	0.36	U		U		U	0.036	U	0.039	U	0.038	U	0.036	U	0.043	U	0.5	U	3.8	U	0.073	U	0.036	U	0.047	U	
Aroclor-1221	0.385	U	0.405	U	0.36	U		U		U	0.073	U	0.078	U	0.078	U	0.073	U	0.088	U	1	U	7.7	U	0.15	U	0.074	U	0.094	U	
Aroclor-1232	0.385	U	0.405	U	0.36	U		U		U	0.036	U	0.039	U	0.038	U	0.036	U	0.043	U	0.5	U	3.8	U	0.073	U	0.036	U	0.047	U	
Aroclor-1242	0.385	U	0.405	U	0.36	U		U		U	0.036	U	0.039	U	0.038	U	0.036	U	0.043	U	0.5	U	3.8	U	0.073	U	0.036	U	0.047	U	
Aroclor-1248	0.385	U	0.405	U	0.36	U		U		U	0.036	U	0.039	U	0.038	U	0.036	U	0.043	U	0.5	U	3.8	U	0.073	U	0.036	U	0.047	U	
Aroclor-1254	4.557		3.305		6.565		62			110		0.16		0.039	U	0.12		0.32		0.043	U	2.9		150		1.1		0.48		0.047	U
Aroclor-1260	0.77	U	0.81	U	0.72	U		U		U	0.036	U	0.039	U	0.038	U	0.036	U	0.043	U	0.5	U	3.8	U	0.073	U	0.036	U	0.047	U	
Total PCBs	4.557		3.305		6.565		62			110		0.16		0.12		0.32		2.9		150		1.1		0.48		0.48					
Other Analytes																															
Analytical Method Dilution Factor % Moisture Units																															
Notes																															
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	

Table A.1a Surface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																														
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump S-1 A964249 761258 04/04/96 MDE Surficial Soil Solid	Sauer Dump S-2 A964250 761259 04/04/96 MDE Surficial Soil Solid	Sauer Dump S-3 A964251 761260 04/04/96 MDE Surficial Soil Solid	Sauer Dump S-4 A964252 761261 04/04/96 MDE Surficial Soil Solid	Sauer Dump S-5 A964253 761262 04/04/96 MDE Surficial Soil Solid	Sauer Dump S-6 A964254 761263 04/04/96 MDE Surficial Soil Solid	Sauer Dump S-01 A900918/940 M700305 A900940 09/29/99 MDE Surficial Soil Solid	Sauer Dump S-02 A900919 M700306 A900941 09/29/99 MDE Surficial Soil Solid	Sauer Dump S-03 A900920 M700307 A900942 09/29/99 MDE Surficial Soil Solid	Sauer Dump S-04 A900921 M700308 A900943 09/29/99 MDE Surficial Soil Solid	Sauer Dump S-05 A900922 M700309 A900944 09/29/99 MDE Surficial Soil Solid	Sauer Dump S-06 A900923 M700310 A900945 09/29/99 MDE Surficial Soil Solid	Sauer Dump S-07 A900924 M700311 A900946 09/29/99 MDE Surficial Soil Solid	Sauer Dump S-08 A900925 E400069 A900947 09/29/99 MDE Surficial Soil Solid	Sauer Dump S-09 A900926 E400070 A900948 09/29/99 MDE Surficial Soil Solid Background															
VOCs	no	no	no	no	no	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes														
SVOCs	no	no	no	no	no	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes														
Inorganics/Total Metals	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes														
Dissolved Metals	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no														
PCBs/Pesticides	PCBs	PCBs	PCBs	PCBs	PCBs	PCBs	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes														
Other Analytes	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no														
VOCs																														
Analytical Method																														
Dilution Factor																														
% Moisture																														
Units																														
Notes													Holding time exceeded		Holding time exceeded		Holding time exceeded		Holding time exceeded		Holding time exceeded		Holding time exceeded		Holding time exceeded					
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag				
Acetone	nr		nr		nr		nr		nr		nr		0.4198	U	0.4287		0.3753	U	0.3703	U	0.363	U	0.3745	U	0.3583	U	0.4443	U	0.3592	
Acetonitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Acrolein	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Acrylonitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Allyl Alcohol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Allyl Chloride	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Benzene	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
Benzene (2-Methyl-1-Propeny	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Benzyl Chloride	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Bromoacetone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Bromobenzene	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
Bromochloromethane/Chlorobromomethane	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
Bromodichloromethane	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
Bromoform	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
Bromomethane/Methyl bromide	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
2-Butanone (Methyl Ethyl Ketone)	nr		nr		nr		nr		nr		nr		0.2793		0.2106		0.2093		0.1892		0.1624		0.1727		0.0878		0.1865		0.141	
n-Butylbenzene	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
sec-Butylbenzene	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
tert-Butylbenzene	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
Camphene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Carbon Disulfide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Carbon Tetrachloride	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
Chlorobenzene	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
Chloroethane/Ethyl chloride	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
2-Chloroethanol/Ethylene chlorohydrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2-Chloroethylvinyl Ether	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
Chloroform	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
Chloromethane/Methyl chloride	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
Chloroprene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2-Chlorotoluene	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
4-Chlorotoluene	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.07517													

Table A.1a Surface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																														
Site Sample Identification	Sauer Dump S-1		Sauer Dump S-2		Sauer Dump S-3		Sauer Dump S-4		Sauer Dump S-5		Sauer Dump S-6		Sauer Dump S-01		Sauer Dump S-02		Sauer Dump S-03		Sauer Dump S-04		Sauer Dump S-05		Sauer Dump S-06		Sauer Dump S-07		Sauer Dump S-08		Sauer Dump S-09	
Alt. Sample Identification																														
Alt. Sample Identification/VOCs and SVOCs	A964249		A964250		A964251		A964252		A964253		A964254		A900918/940		A900919		A900920		A900921		A900922		A900923		A900924		A900925		A900926	
Alt. Sample Identification/Inorg.	761258		761259		761260		761261		761262		761263		M700305		M700306		M700307		M700308		M700309		M700310		M700311		E400069		E400070	
Alt. Sample Identification/PCB's													A900940		A900941		A900942		A900943		A900944		A900945		A900946		A900947		A900948	
Date of Sample Collection	04/04/96		04/04/96		04/04/96		04/04/96		04/04/96		04/04/96		09/29/99		09/29/99		09/29/99		09/29/99		09/29/99		09/29/99		09/29/99		09/29/99		09/29/99	
Sampler	MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE	
Sample Type	Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil	
Matrix	Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid	
Field QC																													Background	
VOCs (cont.)																														
Analytical Method													EPA 8260		EPA 8260		EPA 8260		EPA 8260		EPA 8260		EPA 8260		EPA 8260		EPA 8260		EPA 8260	
Dilution Factor													Not Reported		Not Reported		Not Reported		Not Reported		Not Reported		Not Reported		Not Reported		Not Reported		Not Reported	
% Moisture													NA		NA		NA		NA		NA		NA		NA		NA		NA	
Units													mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Notes													Holding time exceeded		Holding time exceeded		Holding time exceeded		Holding time exceeded		Holding time exceeded		Holding time exceeded		Holding time exceeded		Holding time exceeded		Holding time exceeded	
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,4-Dioxane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dodecane, 6-Methyl-	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethanol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethylbenzene	nr		nr		nr		nr		nr		nr		0.0933		0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
1-Ethyl-2,3-Dimethyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Ethyl-1,2-Dimethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-2-Methyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-3-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-4-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethylene Oxide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethylmethacrylate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Epichlorohydrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Hexachlorobutadiene	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
Hexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2-Hexanone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2-Hydroxypropionitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Isobutyl alcohol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Isopropylbenzene	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
p-Isopropyl Toluene	nr		nr		nr		nr		nr		nr		0.084	U	0.0721	U	0.0751	U	0.0741	U	0.0726	U	0.0749	U	0.0717	U	0.0889	U	0.0678	U
Malononitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methacrylonitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methyl Acetate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Methyl-2- Benzene (1 Methy	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Methyl-3- Benzene (1 Methy	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Methyl-4- Benzene (1 Methy	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylene Bromide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylene Chloride	nr		nr		nr		nr		nr		nr		0.0912		0.0832		0.0751	U	0.0741	U	0.0726	U	0.0754		0.0717	U	0.0988		0.0705	
1-Methyl-indan	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methyl Iodide/Iodomethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylmethacrylate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2-Methyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Methyl-Nonane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	nr		nr		nr		nr		nr		nr		0.084	U	0.0721															

Table A.1a Surface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																												
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump S-1 A964249 761258 04/04/96 MDE Surficial Soil Solid	Sauer Dump S-2 A964250 761259 04/04/96 MDE Surficial Soil Solid	Sauer Dump S-3 A964251 761260 04/04/96 MDE Surficial Soil Solid	Sauer Dump S-4 A964252 761261 04/04/96 MDE Surficial Soil Solid	Sauer Dump S-5 A964253 761262 04/04/96 MDE Surficial Soil Solid	Sauer Dump S-6 A964254 761263 04/04/96 MDE Surficial Soil Solid	Sauer Dump S-01 A900918/940 M700305 A900940 09/29/99 MDE Surficial Soil Solid	Sauer Dump S-02 A900919 M700306 A900941 09/29/99 MDE Surficial Soil Solid	Sauer Dump S-03 A900920 M700307 A900942 09/29/99 MDE Surficial Soil Solid	Sauer Dump S-04 A900921 M700308 A900943 09/29/99 MDE Surficial Soil Solid	Sauer Dump S-05 A900922 M700309 A900944 09/29/99 MDE Surficial Soil Solid	Sauer Dump S-06 A900923 M700310 A900945 09/29/99 MDE Surficial Soil Solid	Sauer Dump S-07 A900924 M700311 A900946 09/29/99 MDE Surficial Soil Solid	Sauer Dump S-08 A900925 E400069 A900947 09/29/99 MDE Surficial Soil Solid	Sauer Dump S-09 A900926 E400070 A900948 09/29/99 MDE Surficial Soil Solid Background													
SVOCs																												
Analytical Method Dilution Factor % Moisture Units Notes											EPA 625 NA mg/Kg Incomplete lab report: "No SVOCs detected"		EPA 625 NA mg/Kg Incomplete lab report: "No SVOCs detected"		EPA 625 NA mg/Kg Incomplete lab report: "No other SVOCs detected"		EPA 625 NA mg/Kg Incomplete lab report: "No other SVOCs detected"		EPA 625 Not Reported mg/Kg Incomplete lab report: "No SVOCs detected"		EPA 625 Not reported mg/Kg Incomplete lab report: "No SVOCs detected"		EPA 625 Not reported mg/Kg Incomplete lab report: "No SVOCs detected"		EPA 625 Not reported mg/Kg Incomplete lab report: "No SVOCs detected"			
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Acenaphthene	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Acenaphthylene	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Acetophenone	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Anthracene	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Atrazine	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Benzaldehyde	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Benzo(a)Anthracene	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Benzo(a)Pyrene	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Benzo(b)fluoranthene	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Benzo(g,h,i)Perylene	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Benzo(k)fluoranthene	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		J	
Benzylobutylphthalate/Butylbenzylphthalate	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
1,1'-Biphenyl	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
4-Bromophenyl-phenylether	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Caprolactam	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Carbazole	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
4-Chloroaniline	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
bis(2-Chloroethoxy)Methane	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
bis(2-Chloroethyl)Ether	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
bis(2-Chloroisopropyl)Ether	nr		nr		nr		nr		nr		nr																	
4-Chloro-3-Methylphenol	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
2-Chloronaphthalene	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
2-Chlorophenol	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
4-Chlorophenyl-phenylether	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Chrysene	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Dibenzo(a,h)Anthracene	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Dibenzofuran	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
1,2-Dichlorobenzene	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
1,3-Dichlorobenzene	nr		nr		nr		nr		nr		nr		U		U		U		U		U			J		U		
1,4-Dichlorobenzene	nr		nr		nr		nr		nr		nr		U		U		U		U		U			U		U		
3,3'-Dichlorobenzidine	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
2,4-Dichlorophenol	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Diethylphthalate	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
2,4-Dimethylphenol	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Dimethyl Phthalate	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Di-n-Butylphthalate	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
4,6-Dinitro-2-Methylphenol	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
2,4-Dinitrophenol	nr		nr		nr		nr		nr		nr		U		U		U		U		U				U		U	
2,4-Dinitrotoluene	nr		nr		nr		nr		nr		nr		U		U		U		U		U				U		U	
2,6-Dinitrotoluene	nr		nr		nr		nr		nr		nr		J		J		J		U		B		B		B		B	
Di-n-Octyl Phthalate	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
bis(2-Ethylhexyl)Phthalate	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Fluoranthene	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Fluorene	nr		nr		nr		nr		nr		nr		U		U		U		U		U		U		U		U	
Hexachlorobenzene	nr		nr		nr		nr		nr		nr		U		U		U		U				U		U		U	
Hexachlorobutadiene	nr		nr		nr		nr		nr		nr		U></															

Table A.1a
Surface Soil Analytical Data - 1985 to 2004
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

	Sauer Dump S-1	Sauer Dump S-2	Sauer Dump S-3	Sauer Dump S-4	Sauer Dump S-5	Sauer Dump S-6	Sauer Dump S-01	Sauer Dump S-02	Sauer Dump S-03	Sauer Dump S-04	Sauer Dump S-05	Sauer Dump S-06	Sauer Dump S-07	Sauer Dump S-08	Sauer Dump S-09
Sample Identification															
Alt. Sample Identification															
Alt. Sample Identification/VOCs and SVOCs	A964249	A964250	A964251	A964252	A964253	A964254	A900918/940	A900919	A900920	A900921	A900922	A900923	A900924	A900925	A900926
Alt. Sample Identification/Inorg.	761258	761259	761260	761261	761262	761263	M700305	M700306	M700307	M700308	M700309	M700310	M700311	E400069	E400070
Alt. Sample Identification/PCB's							A900940	A900941	A900942	A900943	A900944	A900945	A900946	A900947	A900948
Date of Sample Collection	04/04/96	04/04/96	04/04/96	04/04/96	04/04/96	04/04/96	09/29/99	09/29/99	09/29/99	09/29/99	09/29/99	09/29/99	09/29/99	09/29/99	09/29/99
Sampler	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE
Sample Type	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil
Matrix	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid
Field QC															Background
Inorganics/Total Metals															
Analytical Method															
Dilution Factor															
% Moisture															
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	Not Reported	Not Reported	Not Reported	Not Reported	Not Reported	Not Reported	Not Reported	Not Reported	Not Reported
Notes															
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result
Aluminum	3,475		8,270		6,484		6,817		14,611		10,768		8,812		9,560
Antimony	10	U	10	U	10	U	10	U	10	U	5.66		2.5	U	12
Arsenic	13.7		16.2		12.2		26.2		0.5	U	14.1		12.9		33.1
Barium	103		199		122.5		43.5		57.7		113.2		166		396
Beryllium	0.25	U	0.47		0.25		0.28		2.38		1.12		2.5	U	2.5
Cadmium	17.8		18		10.4		7.35		4.69		2.84		22.3		50.4
Calcium	27,585		26,998		37,572		14,720		22,380		100,550		15,935		12,179
Chromium	46.8		108		54		23		29.1		12.4		130		378
Chromium III	nr	U	nr	U	nr	U	nr	U	nr	U	nr	U	nr		nr
Chromium VI	nr	U	nr	U	nr	U	nr	U	nr	U	nr	U	nr		nr
Cobalt	7.7		7.2		5		4.1		2.9		12.4		13.5		22.9
Copper	216		449		25.5		97		123.6		21.7		394		3,303
Iron	8,047		67,528		18,682		31,513		8,983		2,677		83,701		95,937
Lead	504		1,274		544		432		365		76		1,409		2,232
Magnesium	7,829		8,548		9,922		4,548		3,700		3,558		6,192		4,581
Manganese	75.8		906		619		545		220		960		385		2,183
Mercury	1.69		2.42		1.51		1.49		0.32		0.29		3.33		0.98
Nickel	47.2		68.5		36.8		12		19.6		9		87		285
Potassium	838		556		706		651		638		1,842		738		565
Selenium	1.25	U	1.25	U	1.25	U	1.25	U	1.25	U	1.25	U	1.6		9.26
Silver	1.3		1.34		1.4		1.7		1.1		0.5	U	2.5	U	3.89
Sodium	143		206		134		102		85.3		556		986		2,262
Thallium	10	U	10	U	10	U	10	U	10	U	10	U	1.25	U	1.25
Tin	nr	U	nr	U	nr	U	nr	U	nr	U	nr	U	nr	U	nr
Vanadium	21.2		10.7		14.2		1.7		14.6		36		31.6		35.7
Zinc	113		1,462		1,160		1,169		332		198		1,525		4,775
Cyanide	nr	U	nr	U	nr	U	nr	U	nr	U	nr	U	0.179	U	0.19
								</							

Table A.1a Surface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																										
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump S-1	Sauer Dump S-2	Sauer Dump S-3	Sauer Dump S-4	Sauer Dump S-5	Sauer Dump S-6	Sauer Dump S-01	Sauer Dump S-02	Sauer Dump S-03	Sauer Dump S-04	Sauer Dump S-05	Sauer Dump S-06	Sauer Dump S-07	Sauer Dump S-08	Sauer Dump S-09											
	A964249 761258	A964250 761259	A964251 761260	A964252 761261	A964253 761262	A964254 761263	A900918/940 M700305 A900941	A900919 M700306 A900941	A900920 M700307 A900942	A900921 M700308 A900943	A900922 M700309 A900944	A900923 M700310 A900945	A900924 M700311 A900947	A900925 E400069 A900947	A900926 E400070 A900948											
	04/04/96	04/04/96	04/04/96	04/04/96	04/04/96	04/04/96	09/29/99	09/29/99	09/29/99	09/29/99	09/29/99	09/29/99	09/29/99	09/29/99	09/29/99											
	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE											
	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil											
	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid											

Table A.1a Surface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																												
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump S-10	Sauer Dump S-13	Sauer Dump S-14	Sauer Dump SS-1 1123108	Sauer Dump SS-2 1123109	Sauer Dump SS-3 1123110	Sauer Dump SS-4 1123111	Sauer Dump SS-5 1123112	Sauer Dump SS-A 1123113	Sauer Dump I-12 (0-2')	Sauer Dump I-13 (0-2')	Sauer Dump J-13 (0-2')	Sauer Dump S-1	Sauer Dump S-2	Sauer Dump D-1 (0-2')													
CTD93	99121534	99121535	99121535	82073 000010	82073 000011	82073 000012	82073 000013	82073 000014	82073 000015	2061013 06/05/02	2061031 06/05/02	2061006 06/05/02	2061036 06/05/02	2061037 06/05/02	2061030 06/06/02													
MDE	MDE	MDE	MDE	ENSAT	ENSAT	ENSAT	ENSAT	ENSAT	ENSAT	ENSAT	ENSAT	ENSAT	ENSAT	ENSAT	ENSAT													
Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil	Surficial Soil													
Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid													
Duplicate of S-3									Dup. Of SS-3				Dup. Of J-13 (0-2')	Dup. Of I-12 (0-2')														
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no	no	no	no	no													
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no	no	no	no	no													
Inorganics/Total Metals	yes	Metals only	Metals only	yes	yes	yes	yes	yes	yes	no	no	no	no	no	no													
Dissolved Metals	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no													
PCBs/Pesticides	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes													
Other Analytes	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no													
VOCs																												
Analytical Method	1	EPA 8260	EPA 8260	EPA 8260	EPA 8260	EPA 8260	EPA 8260	EPA 8260	EPA 8260					EPA 8260	EPA 8260													
Dilution Factor	1	1	1	1	1	1	1	1	1					1	1													
% Moisture	15	10	13	52	82	17								21	20													
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
Notes																												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Acetone	0.007	J,B	0.011	U	0.011	U	0.018	U	0.06	U	0.013	U	0.011	U	0.004	J	0.003	J	nr		nr		nr		nr		nr	
Acetonitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Acrolein	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Acrylonitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Allyl Alcohol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Allyl Chloride	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Benzene	0.012	U	0.0056	U	0.0057	U	0.018	U	0.06	U	0.013	U	0.011	U	0.013	U	0.013	U	nr		nr		nr		nr		nr	
Benzene (2-Methyl-1-Propeny	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Benzyl Chloride	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Bromoacetone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Bromobenzene	nr		0.0056	U	0.0057	U	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Bromochloromethane/Chlorobromomethane	nr		0.0056	U	0.0057	U	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Bromodichloromethane	0.012	U	0.0056	U	0.0057	U	0.018	U	0.06	U	0.013	U	0.011	U	0.013	U	0.013	U	nr		nr		nr		nr		nr	
Bromoform	0.012	U	0.0056	U	0.0057	U	0.018	U	0.06	U	0.013	U	0.011	U	0.013	U	0.013	U	nr		nr		nr		nr		nr	
Bromomethane/Methyl bromide	0.012	U	0.011	U	0.011	U	0.018	U	0.06	U	0.013	U	0.011	U	0.013	U	0.013	U	nr		nr		nr		nr		nr	
2-Butanone (Methyl Ethyl Ketone)	0.012	U	0.011	U	0.011	U	0.018	U	0.06	U	0.013	U	0.011	U	0.013	U	0.013	U	nr		nr		nr		nr		nr	
n-Butylbenzene	nr		0.0056	U	0.0057	U	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
sec-Butylbenzene	nr		0.0056	U	0.0057	U	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
tert-Butylbenzene	nr		0.0056	U	0.0057	U	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Camphene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Carbon Disulfide	0.002	J	0.0056	U	0.0057	U	0.018	U	0.06	U	0.013	U	0.011	U	0.013	U	0.013	U	nr		nr		nr		nr		nr	
Carbon Tetrachloride	0.012	U	0.0056	U	0.0057	U	0.018	U	0.06	U	0.013	U	0.011	U	0.013	U	0.013	U	nr		nr		nr		nr		nr	
Chlorobenzene	0.012	U	0.0056	U	0.0057	U	0.018	U	0.06	U	0.013	U	0.011	U	0.013	U	0.013	U	nr		nr		nr		nr		nr	
Chloroethane/Ethyl chloride	0.012	U	0.011	U	0.011	U	0.018	U	0.06	U	0.013	U	0.011	U	0.013	U	0.013	U	nr		nr		nr		nr		nr	
2-Chloroethanol/Ethylene chlorohydrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2-Chloroethylvinyl Ether	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chloroform	0.012	U	0.0056	U	0.0057	U	0.018	U	0.06	U	0.013	U	0.011	U	0.013	U	0.013	U	nr									

Table A.1a Surface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																														
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump S-10 CTD93 09/29/99 MDE Surficial Soil Solid Duplicate of S-3		Sauer Dump S-13 99121534 12/15/99 MDE Surficial Soil Soil		Sauer Dump S-14 99121535 12/15/99 MDE Surficial Soil Soil		Sauer Dump SS-1 1123108 82073 000010 12/12/01 ENSAT Surficial Soil Solid		Sauer Dump SS-2 1123109 82073 000011 12/12/01 ENSAT Surficial Soil Solid		Sauer Dump SS-3 1123110 82073 000012 12/12/01 ENSAT Surficial Soil Solid		Sauer Dump SS-4 1123111 82073 000013 12/12/01 ENSAT Surficial Soil Solid		Sauer Dump SS-5 1123112 82073 000014 12/12/01 ENSAT Surficial Soil Solid		Sauer Dump SS-A 1123113 82073 000015 12/12/01 ENSAT Surficial Soil Solid Dup. Of SS-3		Sauer Dump I-12 (0-2') 2061013 06/05/02 ENSAT Surficial Soil Solid		Sauer Dump I-13 (0-2') 2061031 06/05/02 ENSAT Surficial Soil Solid		Sauer Dump J-13 (0-2') 2061006 06/05/02 ENSAT Surficial Soil Solid		Sauer Dump S-1 2061036 06/05/02 ENSAT Surficial Soil Solid Dup. Of J-13 (0-2')		Sauer Dump S-2 2061037 06/05/02 ENSAT Surficial Soil Solid Dup. Of I-12 (0-2')		Sauer Dump D-1 (0-2') 2061030 06/06/02 ENSAT Surficial Soil Solid	
VOCs (cont.)			EPA 8260 1 15 mg/Kg		EPA 8260 1 13 mg/Kg		EPA 8260 1 52 mg/Kg		EPA 8260 1 82 mg/Kg		EPA 8260 1 17 mg/Kg		EPA 8260 mg/Kg		EPA 8260 1 21 mg/Kg		EPA 8260 1 20 mg/Kg													
Units			mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg													
Notes																														
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag		
1,4-Dioxane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Dodecane, 6-Methyl-	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Ethanol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Ethylbenzene	0.012	U	0.0056	U	0.0057	U	0.018	U	0.06	U	0.013	U	0.011	U	0.013	U	0.013	U	nr		nr		nr		nr		nr			
1-Ethyl-2,3-Dimethyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
4-Ethyl-1,2-Dimethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1-Ethyl-2-Methyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1-Ethyl-3-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1-Ethyl-4-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Ethylene Oxide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Ethylene Oxide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Ethylmethacrylate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Epichlorohydrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Hexachlorobutadiene	nr		0.0056	U	0.0057	U	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Hexane	nr		nr		nr		nr		nr		nr		0.024	J	nr		nr		nr		nr		nr		nr		nr			
2-Hexanone	0.012	U	0.011	U	0.011	U	0.018	U	0.06	U	0.013	U	0.011	U	0.013	U	0.013	U	nr		nr		nr		nr		nr			
2-Hydroxypropionitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Isobutyl alcohol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Isopropylbenzene	0.012	U	0.0056	U	0.0057	U	0.018	U	0.06	U	0.013	U	0.011	U	0.013	U	0.013	U	nr		nr		nr		nr		nr			
p-Isopropyl Toluene	nr		0.0056	U	0.0057	U	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Malononitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methacrylonitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methyl Acetate	nr		nr		nr		0.018	U	0.06	U	0.013	U	0.011	U	0.013	U	0.013	U	nr		nr		nr		nr		nr			
Methylcyclohexane	nr		nr		nr		0.018	U	0.06	U	0.013	U	0.011	U	0.013	U	0.013	U	nr		nr		nr		nr		nr			
1-Methyl-2- Benzene (1 Methy	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1-Methyl-3- Benzene (1 Methy	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1-Methyl-4- Benzene (1 Methy	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methylene Bromide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methylene Chloride	0.006	J,B	0.0056	U	0.0057	U	0.002	J,B	0.009	J,B	0.002	J,B	0.003	J,B	0.002	J,B	0.002	J,B	nr		nr		nr		nr		nr			
1-Methyl-indan	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methyl Iodide/Iodomethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methylmethacrylate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
2-Methyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
4-Methyl-Nonane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.012	U	0.011	U	0.011	U	0.018	U	0.06	U	0.013	U	0.011	U	0.013	U	0.013	U	nr		nr		nr		nr		nr			
O-(2-Methyl Propyl Hydroxylamine	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methyl-t-Butyl Ether	0.012	U	0.0056	U	0.0																									

Table A.1a
Surface Soil Analytical Data - 1985 to 2004
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

	Sauer Dump S-10 Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump S-13 99121534 12/15/99 MDE Surficial Soil Soil Duplicate of S-3	Sauer Dump S-14 99121535 12/15/99 MDE Surficial Soil Soil	Sauer Dump SS-1 1123108 82073 000010 12/12/01 ENSAT Surficial Soil Solid	Sauer Dump SS-2 1123109 82073 000011 12/12/01 ENSAT Surficial Soil Solid	Sauer Dump SS-3 1123110 82073 000012 12/12/01 ENSAT Surficial Soil Solid	Sauer Dump SS-4 1123111 82073 000013 12/12/01 ENSAT Surficial Soil Solid	Sauer Dump SS-5 1123112 82073 000014 12/12/01 ENSAT Surficial Soil Solid	Sauer Dump SS-A 1123113 82073 000015 12/12/01 ENSAT Surficial Soil Solid Dup. Of SS-3	Sauer Dump I-12 (0-2') 2061013 06/05/02 ENSAT Surficial Soil Solid	Sauer Dump I-13 (0-2') 2061031 06/05/02 ENSAT Surficial Soil Solid	Sauer Dump J-13 (0-2') 2061006 06/05/02 ENSAT Surficial Soil Solid	Sauer Dump S-1 2061036 06/05/02 ENSAT Surficial Soil Solid Dup. Of J-13 (0-2')	Sauer Dump S-2 2061037 06/05/02 ENSAT Surficial Soil Solid Dup. Of I-12 (0-2')	Sauer Dump D-1 (0-2') 2061030 06/06/02 ENSAT Surficial Soil Solid											
SVOCs																										
Analytical Method Dilution Factor % Moisture Units		EPA 8270 5 10 mg/Kg	EPA 8270 5 13 mg/Kg	EPA 8070 1 52 mg/Kg	EPA 8070 1 82 mg/Kg	EPA 8070 1 17 mg/Kg	EPA 8070 1 17 mg/Kg	EPA 8070 1 21 mg/Kg	EPA 8070 1 20 mg/Kg																	
Notes																										
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag										
Acenaphthene	0.1	J	1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
Acenaphthylene	0.097	J	1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
Acetophenone	0.069	J	nr		nr		0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
Anthracene	0.21	J	1.83	U	1.9	U	0.098	J	1.8	U	0.4	U	0.4	U	0.049	J	0.41	U	nr		nr		nr		nr	
Atrazine	0.48	U	nr		nr		nr	U	nr	U	nr	U	nr	U	nr	U	nr	U	nr		nr		nr		nr	
Benzaldehyde	0.066	J	nr		nr		0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
Benzo(a)Anthracene	1.2		1.83	U	1.9	U	0.57	J	0.38	J	0.14	J	0.15	J	0.19	J	0.19	J	nr		nr		nr		nr	
Benzo(a)Pyrene	1.4		1.83	U	1.9	U	0.59	J	0.41	J	0.15	J	0.16	J	0.24	J	0.17	J	nr		nr		nr		nr	
Benzo(b)fluoranthene	1.5		1.83	U	1.9	U	1		0.64	J	0.15	J	0.17	J	0.23	J	0.18	J	nr		nr		nr		nr	
Benzo(g,h,i)Perylene	1.4		1.83	U	1.9	U	0.18	J	1.8	U	0.053	J	0.26	J	0.33	J	0.41	U	nr		nr		nr		nr	
Benzo(k)fluoranthene	1.3		1.83	U	1.9	U	0.56	J	0.48	J	0.13	J	0.12	J	0.16	J	0.18	J	nr		nr		nr		nr	
Benzylbutylphthalate/Butylbenzylphthalate	1.8		1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.12	J	0.25	J	0.69		nr		nr		nr		nr	
1,1'-Biphenyl	0.056	J	nr		nr		0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
4-Bromophenyl-phenylether	0.48	U	1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
Caprolactam	0.48	J	nr		nr		0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
Carbazole	0.12	J	1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
4-Chloroaniline	0.48	U	1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
bis(2-Chloroethoxy)Methane	0.48	U	1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
bis(2-Chloroethyl)Ether	0.48	U	1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
bis(2-Chloroisopropyl)Ether	nr	U	1.83	U	1.9	U	nr	U	nr	U	nr	U	nr	U	nr	U	nr		nr		nr		nr		nr	
4-Chloro-3-Methylphenol	0.48	U	1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
2-Chloronaphthalene	0.48	U	1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
2-Chlorophenol	0.48	U	1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
4-Chlorophenyl-phenylether	0.48	U	1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
Chrysene	1.5		1.83	U	1.9	U	0.81		0.57	J	0.15	J	0.18	J	0.21	J	0.2	J	nr		nr		nr		nr	
Dibenzo(a,h)Anthracene	0.41	J	1.83	U	1.9	U	0.12	J	1.8	U	0.4	U	0.4	U	0.057	J	0.41	U	nr		nr		nr		nr	
Dibenzofuran	0.13	J	1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
1,2-Dichlorobenzene	nr	U	1.83	U	1.9	U	nr	U	nr	U	nr	U	nr	U	nr	U	nr	U	nr		nr		nr		nr	
1,3-Dichlorobenzene	nr	U	1.83	U	1.9	U	nr	U	nr	U	nr	U	nr	U	nr	U	nr	U	nr		nr		nr		nr	
1,4-Dichlorobenzene	nr	U	1.83	U	1.9	U	nr	U	nr	U	nr	U	nr	U	nr	U	nr	U	nr		nr		nr		nr	
3,3'-Dichlorobenzidine	0.48	U	3.76	U	3.79	U	0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
2,4-Dichlorophenol	0.48	U	1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
Diethylphthalate	0.033	J	1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
2,4-Dimethylphenol	0.48	U	1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
Dimethyl Phthalate	0.048	J	1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.4	U	0.41	U	nr		nr		nr		nr		nr	
Di-n-Butylphthalate	0.34	J	1.83	U	1.9	U	0.69	U	1.8	U	0.4	U	0.4	U	0.1	J	0.41	U	nr		nr		nr		nr	
4,6-Dinitro-2-Methylphenol	1.2	U	8.89	U	9.2	U	1.7	U	4.6	U	1	U	1	U	1.1	U	1	U	nr		nr		nr		nr	
2,4-Dinitrophenol	1.2	U	8.89	U	9.2	U	1.7	U	4.6	U	1	U	1	U	1.1	U	1	U	nr		nr		nr		nr	
2,4-Dinitrotoluene	0.48	U	1.83	U	1.9	U																				

Table A.1a																														
Surface Soil Analytical Data - 1985 to 2004																														
Former Sauer Dump and Salvage Yard																														
Dundalk, Baltimore County, Maryland																														
Site Sample Identification	Sauer Dump S-10		Sauer Dump S-13		Sauer Dump S-14		Sauer Dump SS-1 1123108		Sauer Dump SS-2 1123109		Sauer Dump SS-3 1123110		Sauer Dump SS-4 1123111		Sauer Dump SS-5 1123112		Sauer Dump SS-A 1123113		Sauer Dump I-12 (0-2')		Sauer Dump I-13 (0-2')		Sauer Dump J-13 (0-2')		Sauer Dump S-1		Sauer Dump S-2		Sauer Dump D-1 (0-2')	
Alt. Sample Identification	CTD93		99121534		99121535		82073 000010		82073 000011		82073 000012		82073 000013		82073 000014		82073 000015		2061013		2061031		2061006		2061036		2061037		2061030	
Alt. Sample Identification/VOCs and SVOCs																														
Alt. Sample Identification/Inorg.							82073 000010		82073 000011		82073 000012		82073 000013		82073 000014		82073 000015													
Alt. Sample Identification/PCB's																														
Date of Sample Collection	09/29/99		12/15/99		12/15/99		12/12/01		12/12/01		12/12/01		12/12/01		12/12/01		12/12/01		06/05/02		06/05/02		06/05/02		06/05/02		06/05/02		06/06/02	
Sampler	MDE		MDE		MDE		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT	
Sample Type	Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil		Surficial Soil	
Matrix	Solid		Soil		Soil		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid	
Field QC	Duplicate of S-3																Dup. Of SS-3								Dup. Of J-13 (0-2')		Dup. Of I-12 (0-2')			
Pesticides/PCBs																														
Analytical Method	10 and 100		EPA 8081/8082		EPA 8081/8082		EPA 8081/8082		EPA 8081/8082		EPA 8081/8082		EPA 8081/8082		EPA 8081/8082		EPA 8081/8082		8082		8082		8082		8082		8082		8082	
Dilution Factor	31		1		1		5		1		1 and 5		1		1 and 5		1 and 10		5000		2500		200		200		10000		50	
% Moisture			10		13		52		82		17		17		21		20		5		5		5		5		5		5	
Units	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Notes																														
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	0.39		0.0037	U	0.0038	U	0.018	U	0.0094	U	0.002	U	0.002	U	0.0022	U	0.0021	U	nr		nr		nr		nr		nr		nr	
alpha-BHC	0.025	U	0.0037	U	0.0038	U	0.018	U	0.0094	U	0.002	U	0.002	U	0.0022	U	0.0021	U	nr		nr		nr		nr		nr		nr	
beta-BHC	0.025	U	0.0037	U	0.0038	U	0.018	U	0.0094	U	0.002	U	0.002	U	0.0022	U	0.0021	U	nr		nr		nr		nr		nr		nr	
delta-BHC	0.025	U	0.0037	U	0.0038	U	0.018	U	0.0094	U	0.002	U	0.002	U	0.0022	U	0.0021	U	nr		nr		nr		nr		nr		nr	
gamma-BHC (Lindane)	0.025	U	0.0037	U	0.0038	U	0.018	U	0.0094	U	0.002	U	0.002	U	0.0022	U	0.0021	U	nr		nr		nr		nr		nr		nr	
alpha-Chlordane	0.025	U	0.0037	U	0.0038	U	0.018	U	0.0094	U	0.002	U	0.002	U	0.0022	U	0.0021	U	nr		nr		nr		nr		nr		nr	
gamma-Chlordane	0.025	U	0.0037	U	0.0038	U	0.018	U	0.022	P	0.002	U	0.002	U	0.0022	U	0.0021	U	nr		nr		nr		nr		nr		nr	
Chlordane, total	nr		nr		nr		nr	U	nr	U	nr	U	nr	U	nr	U	nr	U	nr		nr		nr		nr		nr		nr	
4,4'-DDD	0.048	U	0.0074	U	0.0077	U	0.034	U	0.018	U	0.004	U	0.004	U	0.0042	U	0.0041	U	nr		nr		nr		nr		nr		nr	
4,4'-DDE	0.048	U	0.0074	U	0.0077	U	0.034	U	0.018	U	0.004	U	0.004	U	0.0042	U	0.0041	U	nr		nr		nr		nr		nr		nr	
4,4'-DDT	0.048	U	0.0074	U	0.0077	U	0.23	PD	0.19	P	0.004	U	0.047	P	0.27	D	0.0041	U	nr		nr		nr		nr		nr		nr	
Dieldrin	0.048	U	0.0074	U	0.0077	U	0.034	U	0.018	U	0.004	U	0.004	U	0.0042	U	0.0041	U	nr		nr		nr		nr		nr		nr	
Endosulfan I	0.018	J	0.0037	U	0.0038	U	0.018	U	0.0094	U	0.002	U	0.002	U	0.0022	U	0.0021	U	nr		nr		nr		nr		nr		nr	
Endosulfan II	0.11	J	0.0074	U	0.0077	U	0.034	U	0.018	U	0.004	U	0.004	U	0.0042	U	0.0041	U	nr		nr		nr		nr		nr		nr	
Endosulfan sulfate	0.048	U	0.0074	U	0.0077	U	0.034	U	0.018	U	0.004	U	0.004	U	0.0042	U	0.0041	U	nr		nr		nr		nr		nr		nr	
Endrin	0.048	U	0.0074	U	0.0077	U	0.034	U	0.018	U	0.004	U	0.004	U	0.0042	U	0.0041	U	nr		nr		nr		nr		nr		nr	
Endrin aldehyde	0.048	U	0.0074	U	0.0077	U	0.034	U	0.095	P	0.004	U	0.004	U	0.0042	U	0.0041	U	nr		nr		nr		nr		nr		nr	
Endrin ketone	0.16	J	0.0074	U	0.0077	U	0.034	U	0.018	U	0.004	U	0.004	U	0.0042	U	0.0041	U	nr		nr		nr		nr		nr		nr	
Heptachlor	0.025	U	0.0037	U	0.0038	U	0.018	U	0.0094	U	0.002	U	0.002	U	0.0022	U	0.0021	U	nr		nr		nr		nr		nr		nr	
Heptachlor epoxide	0.025	U	0.0037	U	0.0038	U	0.018	U	0.0094	U	0.002	U	0.002	U	0.0022	U	0.0021	U	nr		nr		nr		nr		nr		nr	
Methoxychlor	0.066	J	0.037	U	0.038	U	0.18	U	0.094	U	0.02	U	0.02	U	0.022	U	0.021	U	nr		nr		nr		nr		nr		nr	
Toxaphene	2.5	U	0.074	U	0.077	U	1.8	U	0.94	U	0.2	U	0.2	U	0.22	U	0.21	U	nr		nr		nr		nr		nr		nr	
Aroclor-1016	0.48	U	0.037	U	0.038	U	0.34	U	0.18	U	0.04	U	0.04	U	0.042	U	0.041	U	175	U	88	U	7	U	350	U	2.5	U	D	
Aroclor-1221	0.97	U	0.037	U	0.038	U	0.7	U	0.37	U	0.081	U	0.081	U	0.085	U	0.084	U	350	U	180	U	14	U	700	U	3.5	U		
Aroclor-1232	0.48	U	0.037	U	0.038	U	0.34	U	0.18	U	0.04	U	0.04	U	0.042	U	0.041	U	175	U	88	U	7	U	350	U	1.8	U		
Aroclor-1242	0.48	U	0.037	U	0.038	U	0.34	U	0.18	U	0.04	U	0.04	U	0.042	U	0.041	U	175	U	88	U	7	U	350	U	1.8	U		
Aroclor-1248	6.3	J	0.037	U	0.038	U	0.34	U	0.18	U	0.04	U	0.04	U	0.042	U	0.041	U	175	U	88	U	7.1	U	350	U	1.8	U		
Aroclor-1254	32	J	0.074	U	0.077	U	1.9	D	0.18	U	4.8	D	0.04	U	0.042	U	6.2	D	4,600	D	1,300	D.B	105	D	97	D.B	4,600	D.B	7.6	D.B
Aroclor-1260	6.4	J	0.074	U	0.077	U	0.68	PD	0.18	U	0.04	U	0.14	U	0.85		0.041	U	175	U	88	U	7	U	350	U	1.8	U		
Total PCBs	44.7						2.58				4.8		0.14		0.85		6.2		4,600		1,300		105		97		4,600		7.6	
Other Analytes																														
Analytical Method																														
Dilution Factor																														
% Moisture																														
Units																														
Notes																														
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag

Table A.1a Surface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																												
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump F-1 (0-2')	Sauer Dump J-11 (0-2')	Sauer Dump G-11 (0-2')	Sauer Dump S-3	Sauer Dump D-4 (0-2')	Sauer Dump E-8II (0-2')	Sauer Dump F-7 (0-2')	Sauer Dump G-6 (0-2)	Sauer Dump H-10 (0-2')	Sauer Dump H-8 (0-2')	Sauer Dump I-8 (0-2')	Sauer Dump F-0 0-2	Sauer Dump G-0 0-2	Sauer Dump H-16 0-2	Sauer Dump I-16 0-2													
	2061027 06/06/02 ENSAT Surficial Soil Solid	2061033 06/06/02 ENSAT Surficial Soil Solid	2061017 06/07/02 ENSAT Surficial Soil Solid	2061036 06/07/02 ENSAT Surficial Soil Solid Dup. Of G-11 (0-2')	2061012 06/10/02 ENSAT Surficial Soil Solid	2061019 06/11/02 ENSAT Surficial Soil Solid	2061018 06/11/02 ENSAT Surficial Soil Solid	2061020 06/11/02 ENSAT Surficial Soil Solid	2061021 06/11/02 ENSAT Surficial Soil Solid	2061034 06/11/02 ENSAT Surficial Soil Solid	2061022 06/11/02 ENSAT Surficial Soil Solid	01/22/04 ENSAT Surficial Soil Solid	01/23/04 ENSAT Surficial Soil Solid	01/27/04 ENSAT Surficial Soil Solid	01/27/04 ENSAT Surficial Soil Solid													
Inorganics/Total Metals																												
Analytical Method Dilution Factor % Moisture Units Notes																					EPA 7420		EPA 7420		EPA 7420		EPA 7420	
																					mg/kg		mg/kg		mg/kg		mg/kg	
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Antimony	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Arsenic	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Barium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Beryllium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cadmium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Calcium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium III	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium VI	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Copper	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Iron	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Lead	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		2,200		1,200		1,500		1,900	
Magnesium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Manganese	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Mercury	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Nickel	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Potassium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Selenium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Silver	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Sodium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Thallium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Tin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vanadium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Zinc	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cyanide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dissolved Metals																												
Analytical Method Dilution Factor % Moisture Units Notes																												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Antimony	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Arsenic	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Barium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Beryllium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Cadmium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Calcium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Chromium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Cobalt	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Copper	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Iron	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Lead	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Magnesium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Manganese	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Mercury	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Nickel	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Potassium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Selenium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Silver	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Sodium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Thallium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Vanadium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Zinc	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									

Table A.1a Surface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																														
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump F-1 (0-2')		Sauer Dump J-11 (0-2')		Sauer Dump G-11 (0-2')		Sauer Dump S-3		Sauer Dump D-4 (0-2')		Sauer Dump E-8II (0-2')		Sauer Dump F-7 (0-2')		Sauer Dump G-6 (0-2)		Sauer Dump H-10 (0-2')		Sauer Dump H-8 (0-2')		Sauer Dump I-8 (0-2')		Sauer Dump F-0 0-2		Sauer Dump G-0 0-2		Sauer Dump H-16 0-2		Sauer Dump I-16 0-2	
	2061027 06/06/02 ENSAT Surficial Soil Solid		2061033 06/06/02 ENSAT Surficial Soil Solid		2061017 06/07/02 ENSAT Surficial Soil Solid		2061036 06/07/02 ENSAT Surficial Soil Solid Dup. Of G-11 (0-2')		2061012 06/10/02 ENSAT Surficial Soil Solid		2061019 06/11/02 ENSAT Surficial Soil Solid		2061018 06/11/02 ENSAT Surficial Soil Solid		2061020 06/11/02 ENSAT Surficial Soil Solid		2061021 06/11/02 ENSAT Surficial Soil Solid		2061034 06/11/02 ENSAT Surficial Soil Solid		2061022 06/11/02 ENSAT Surficial Soil Solid		01/22/04 ENSAT Surficial Soil Solid		01/23/04 ENSAT Surficial Soil Solid		01/27/04 ENSAT Surficial Soil Solid		01/27/04 ENSAT Surficial Soil Solid	
Pesticides/PCBs	8082 25 5 mg/Kg		8082 4000 5 mg/Kg		8082 25 5 mg/Kg		8082 25 5 mg/Kg		8082 500 6 mg/Kg		8082 1000 5 mg/Kg		8082 1000 5 mg/Kg		8082 200 5 mg/Kg		8082 1000 5 mg/Kg		8082 5000 5 mg/Kg		8082 1000 5 mg/Kg									
Analytical Method Dilution Factor % Moisture Units																														
Notes																														
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
alpha-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
beta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
delta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
gamma-BHC (Lindane)	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
alpha-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
4,4'-DDD	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
4,4'-DDE	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
4,4'-DDT	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Dieldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Endosulfan I	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Endosulfan II	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Endosulfan sulfate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Endrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Endrin aldehyde	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Endrin ketone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Heptachlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Heptachlor epoxide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Methoxychlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Toxaphene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr									
Aroclor-1016	5.1	D	140	U	0.88	U	0.88	U	18	U	35	U	35	U	7	U	35	U	180	U	35	U								
Aroclor-1221	1.8	U	280	U	1.8	U	1.8	U	35	U	70	U	70	U	14	U	70	U	350	U	70	U								
Aroclor-1232	0.88	U	140	U	0.88	U	0.88	U	18	U	35	U	35	U	7	U	35	U	180	U	35	U								
Aroclor-1242	0.88	U	140	U	0.88	U	0.88	U	18	U	35	U	35	U	7	U	35	U	180	U	35	U								
Aroclor-1248	0.88	U	140	U	0.88	U	0.88	U	18	U	35	U	35	U	7	U	35	U	180	U	35	U								
Aroclor-1254	2.4	D,B	1,400	D,B	3.2	D	3.5	D,B	330	D	420	D	410	D	97	D	390	D	3,800	D,B	580	D								
Aroclor-1260	0.88	U	140	U	2.7	D	5.1		18	U	35	U	35	U	7	U	35	U	180	U	35	U								
Total PCBs	7.5		1,400		5.9		8.6		330		420		410		97		390		3,800		580									
Other Analytes																														
Analytical Method Dilution Factor % Moisture Units																														
Notes																														
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag

Table A.1a
Surface Soil Analytical Data - 1985 to 2004
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump Z-05 0-2 01/27/04 ENSAT Surficial Soil Solid	Sauer Dump 1.5-14.5 0-2 01/28/04 ENSAT Surficial Soil Solid	Sauer Dump K-12 0-2 01/28/04 ENSAT Surficial Soil Solid	Sauer Dump K-13 0-2 01/28/04 ENSAT Surficial Soil Solid	Sauer Dump K-14 0-2 01/28/04 ENSAT Surficial Soil Solid	Sauer Dump K-15 0-2 01/28/04 ENSAT Surficial Soil Solid	Sauer Dump K-16 0-2 01/28/04 ENSAT Surficial Soil Solid	Sauer Dump S1 (2004) K-16 0-2 dup 01/28/04 ENSAT Surficial Soil Solid Duplicate	Sauer Dump S2 (2004) K-15 0-2 dup 01/28/04 ENSAT Surficial Soil Solid Duplicate	Sauer Dump S3 (2004) K-14 0-2 dup 01/28/04 ENSAT Surficial Soil Solid Duplicate	Sauer Dump G-07.5 0-2 01/29/04 ENSAT Surficial Soil Solid	Sauer Dump 1.5-07 0-2 1.5-7.0 0-2' 01/29/04 ENSAT Surficial Soil Solid	Sauer Dump J-11.5 0-2 J0 11.5 0-2' 01/29/04 ENSAT Surficial Soil Solid	Sauer Dump K-08 0-2 01/29/04 ENSAT Surficial Soil Solid	Sauer Dump K-09 0-2 01/29/04 ENSAT Surficial Soil Solid											
Inorganics/Total Metals Analytical Method Dilution Factor % Moisture Units Notes	EPA 7420 mg/kg				EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg															EPA 7420 mg/kg	EPA 7420 mg/kg		
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	nr						nr		nr		nr		nr											nr		nr
Antimony	nr						nr		nr		nr													nr		nr
Arsenic	nr						nr		nr		nr		nr											nr		nr
Barium	nr						nr		nr		nr		nr											nr		nr
Beryllium	nr						nr		nr		nr		nr											nr		nr
Cadmium	nr						nr		nr		nr		nr											nr		nr
Calcium	nr						nr		nr		nr		nr											nr		nr
Chromium	nr						nr		nr		nr		nr											nr		nr
Chromium III	nr						nr		nr		nr		nr											nr		nr
Chromium VI	nr						nr		nr		nr		nr											nr		nr
Cobalt	nr						nr		nr		nr		nr											nr		nr
Copper	nr						nr		nr		nr		nr											nr		nr
Iron	nr						nr		nr		nr		nr											nr		nr
Lead	10,000						5,600		1,900		3,800		3,200											3,400		3,600
Magnesium	nr						nr		nr		nr		nr											nr		nr
Manganese	nr						nr		nr		nr		nr											nr		nr
Mercury	nr						nr		nr		nr		nr											nr		nr
Nickel	nr						nr		nr		nr		nr											nr		nr
Potassium	nr						nr		nr		nr		nr											nr		nr
Selenium	nr						nr		nr		nr		nr											nr		nr
Silver	nr						nr		nr		nr		nr											nr		nr
Sodium	nr						nr		nr		nr		nr											nr		nr
Thallium	nr						nr		nr		nr		nr											nr		nr
Tin	nr						nr		nr		nr		nr											nr		nr
Vanadium	nr						nr		nr		nr		nr											nr		nr
Zinc	nr						nr		nr		nr		nr											nr		nr
Cyanide	nr						nr		nr		nr		nr											nr		nr
Dissolved Metals Analytical Method Dilution Factor % Moisture Units Notes																										
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum																										
Antimony																										
Arsenic																										
Barium																										
Beryllium																										
Cadmium																										
Calcium																										
Chromium																										
Cobalt																										
Copper																										
Iron																										
Lead																										
Magnesium																										
Manganese																										
Mercury																										
Nickel																										
Potassium																										
Selenium																										
Silver																										
Sodium																										
Thallium																										
Vanadium																										
Zinc																										

Table A.1a Surface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																														
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump Z-05 0-2		Sauer Dump L5-14.5 0-2		Sauer Dump K-12 0-2		Sauer Dump K-13 0-2		Sauer Dump K-14 0-2		Sauer Dump K-15 0-2		Sauer Dump K-16 0-2		Sauer Dump S1 (2004) K-16 0-2 dup		Sauer Dump S2 (2004) K-15 0-2 dup		Sauer Dump S3 (2004) K-14 0-2 dup		Sauer Dump G-07.5 0-2		Sauer Dump L5-07 0-2 L5-7.0 0-2'		Sauer Dump J-11.5 0-2 J0 11.5 0-2'		Sauer Dump K-08 0-2		Sauer Dump K-09 0-2	
	01/27/04 ENSAT Surficial Soil Solid		01/28/04 ENSAT Surficial Soil Solid		01/28/04 ENSAT Surficial Soil Solid		01/28/04 ENSAT Surficial Soil Solid		01/28/04 ENSAT Surficial Soil Solid		01/28/04 ENSAT Surficial Soil Solid		01/28/04 ENSAT Surficial Soil Solid		01/28/04 ENSAT Surficial Soil Solid Duplicate		01/28/04 ENSAT Surficial Soil Solid Duplicate		01/28/04 ENSAT Surficial Soil Solid Duplicate		01/29/04 ENSAT Surficial Soil Solid		01/29/04 ENSAT Surficial Soil Solid		01/29/04 ENSAT Surficial Soil Solid		01/29/04 ENSAT Surficial Soil Solid		01/29/04 ENSAT Surficial Soil Solid	
Pesticides/PCBs																														
Analytical Method			EPA 8082		EPA 8082				EPA 8082		EPA 8082		EPA 8082		EPA 8082		EPA 8082		EPA 8082		EPA 8082		EPA 8082		EPA 8082		EPA 8082			
Dilution Factor			100		1000				500		1000		1000		1000		1000		1000		1		25		2000		100			
% Moisture			21		20				13		19		18		21		12		16		15		19		23		14			
Units			mg/kg		mg/kg				mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg			
Notes																														
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
alpha-BHC			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
beta-BHC			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
delta-BHC			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
gamma-BHC (Lindane)			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
alpha-Chlordane			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
gamma-Chlordane			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Chlordane, total			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
4,4'-DDD			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
4,4'-DDE			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
4,4'-DDT			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Dieldrin			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Endosulfan I			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Endosulfan II			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Endosulfan sulfate			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Endrin			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Endrin aldehyde			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Endrin ketone			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Heptachlor			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Heptachlor epoxide			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methoxychlor			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Toxaphene			nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Aroclor-1016			4.2	U	41	U			19	U	41	U	40	U	42	U	37	U	39	U	0.58	U	15	U	86	U	58	U		
Aroclor-1221			8.5	U	84	U			39	U	83	U	82	U	85	U	76	U	80	U	1.2	U	31	U	170	U	120	U		
Aroclor-1232			4.2	U	41	U			19	U	41	U	40	U	42	U	37	U	39	U	0.58	U	15	U	86	U	58	U		
Aroclor-1242			4.2	U	41	U			19	U	41	U	40	U	42	U	37	U	39	U	0.58	U	15	U	86	U	58	U		
Aroclor-1248			4.2	U	41	U			19	U	41	U	40	U	42	U	37	U	39	U	0.58	U	15	U	86	U	58	U		
Aroclor-1254			60		620				270		580		500		490		540		470		9.2		210		970		430			
Aroclor-1260			8.4		41	U			19	U	41	U	40	U	42	U	37	U	39	U	0.58	U	15	U	86	U	58	U		
Total PCBs			68.4		620				270		580		500		490		540		470		9.2		210		970		430			
Other Analytes																														
Analytical Method																														
Dilution Factor																														
% Moisture																														
Units																														
Notes																														
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag

Table A.1a
Surface Soil Analytical Data - 1985 to 2004
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump K-10 0-2	Sauer Dump K-10 0-2	Sauer Dump K-11 0-2	Sauer Dump K-11 0-2	Sauer Dump S4 (2004) J-11.5 0-2 dup	Sauer Dump S6 (2004) G-07.5 0-2 dup	Sauer Dump D.5-07 0-2	Sauer Dump F.5-07 0-2	Sauer Dump G-06.5 0-2	Sauer Dump TP 3B <1'									
	01/29/04 ENSAT Surficial Soil Solid	01/29/04 ENSAT Surficial Soil Solid	01/29/04 ENSAT Surficial Soil Solid	01/29/04 ENSAT Surficial Soil Solid	01/29/04 ENSAT Surficial Soil Solid Duplicate	01/29/04 ENSAT Surficial Soil Solid Duplicate	01/30/04 ENSAT Surficial Soil Solid	01/30/04 ENSAT Surficial Soil Solid	01/30/04 ENSAT Surficial Soil Solid	02/02/04 ENSAT Surficial Soil Solid									
Inorganics/Total Metals																			
Analytical Method	EPA 7420		EPA 7420		EPA 7420		EPA 7420										EPA 6020		
Dilution Factor																			
% Moisture																			
Units	mg/kg		mg/kg		mg/kg		mg/kg										mg/kg		
Notes																			
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	
Aluminum	nr		nr		nr		nr										6,600		
Antimony	nr		nr		nr		nr										2.8	U	
Arsenic	nr		nr		nr		nr										12		
Barium	nr		nr		nr		nr										99		
Beryllium	nr		nr		nr		nr										2.8	U	
Cadmium	nr		nr		nr		nr										5.3		
Calcium	nr		nr		nr		nr										55,000		
Chromium	nr		nr		nr		nr										74		
Chromium III	nr		nr		nr		nr										nr		
Chromium VI	nr		nr		nr		nr										nr		
Cobalt	nr		nr		nr		nr										6.8		
Copper	nr		nr		nr		nr										420		
Iron	nr		nr		nr		nr										53,000		
Lead	1,600		1,600		540		540										400		
Magnesium	nr		nr		nr		nr										6,900		
Manganese	nr		nr		nr		nr										410		
Mercury	nr		nr		nr		nr										0.64		
Nickel	nr		nr		nr		nr										51		
Potassium	nr		nr		nr		nr										570	U	
Selenium	nr		nr		nr		nr										6.8		
Silver	nr		nr		nr		nr										2.8	U	
Sodium	nr		nr		nr		nr										570	U	
Thallium	nr		nr		nr		nr										2.3	U	
Tin	nr		nr		nr		nr										nr		
Vanadium	nr		nr		nr		nr										25		
Zinc	nr		nr		nr		nr										1,500		
Cyanide	nr		nr		nr		nr										nr		
Dissolved Metals																			
Analytical Method																			
Dilution Factor																			
% Moisture																			
Units																			
Notes																			
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	
Aluminum																			
Antimony																			
Arsenic																			
Barium																			
Beryllium																			
Cadmium																			
Calcium																			
Chromium																			
Cobalt																			
Copper																			
Iron																			
Lead																			
Magnesium																			
Manganese																			
Mercury																			
Nickel																			
Potassium																			
Selenium																			
Silver																			
Sodium																			
Thallium																			
Vanadium																			
Zinc																			

Table A.1a
Surface Soil Analytical Data - 1985 to 2004
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump K-10 0-2	Sauer Dump K-10 0-2	Sauer Dump K-11 0-2	Sauer Dump K-11 0-2	Sauer Dump S4 (2004) J-11.5 0-2 dup	Sauer Dump S6 (2004) G-07.5 0-2 dup	Sauer Dump D.5-07 0-2	Sauer Dump F.5-07 0-2	Sauer Dump G-06.5 0-2	Sauer Dump TP 3B <1'
	01/29/04 ENSAT Surficial Soil Solid	01/29/04 ENSAT Surficial Soil Solid	01/29/04 ENSAT Surficial Soil Solid	01/29/04 ENSAT Surficial Soil Solid	01/29/04 ENSAT Surficial Soil Solid Duplicate	01/29/04 ENSAT Surficial Soil Solid Duplicate	01/30/04 ENSAT Surficial Soil Solid	01/30/04 ENSAT Surficial Soil Solid	01/30/04 ENSAT Surficial Soil Solid	02/02/04 ENSAT Surficial Soil Solid
Pesticides/PCBs										
Analytical Method	EPA 8082		EPA 8082		EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082
Dilution Factor	50		200		2000	100	10	20	20	
% Moisture	19		21		25	17	23	16	20	
Units	mg/kg		mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Notes										
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	nr				nr		nr		nr	
alpha-BHC	nr				nr		nr		nr	
beta-BHC	nr				nr		nr		nr	
delta-BHC	nr				nr		nr		nr	
gamma-BHC (Lindane)	nr				nr		nr		nr	
alpha-Chlordane	nr				nr		nr		nr	
gamma-Chlordane	nr				nr		nr		nr	
Chlordane, total	nr				nr		nr		nr	
4,4'-DDD	nr				nr		nr		nr	
4,4'-DDE	nr				nr		nr		nr	
4,4'-DDT	nr				nr		nr		nr	
Dieldrin	nr				nr		nr		nr	
Endosulfan I	nr				nr		nr		nr	
Endosulfan II	nr				nr		nr		nr	
Endosulfan sulfate	nr				nr		nr		nr	
Endrin	nr				nr		nr		nr	
Endrin aldehyde	nr				nr		nr		nr	
Endrin ketone	nr				nr		nr		nr	
Heptachlor	nr				nr		nr		nr	
Heptachlor epoxide	nr				nr		nr		nr	
Methoxychlor	nr				nr		nr		nr	
Toxaphene	nr				nr		nr		nr	
Aroclor-1016	31	U			8.4	U	88	U	4	U
Aroclor-1221	62	U			17	U	180	U	8.1	U
Aroclor-1232	31	U			8.4	U	88	U	4	U
Aroclor-1242	31	U			8.4	U	88	U	4	U
Aroclor-1248	31	U			8.4	U	88	U	4	U
Aroclor-1254	270				150		1,500		64	
Aroclor-1260	31	U			8.4	U	88	U	4	U
Total PCBs	270				150		1,500		68	
Other Analytes										
Analytical Method										
Dilution Factor										
% Moisture										
Units										
Notes										
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag

Table A.1b
Surface Soil Analytical Results - 2005 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump Y-05.5 0-2 02/02/05 ENSAT Surficial Soil Solid	Sauer Dump K-17 0-2 02/04/05 ENSAT Surficial Soil Solid	Sauer Dump L-10 0-2 02/07/05 ENSAT Surficial Soil Solid	Sauer Dump L-11 0-2 02/07/05 ENSAT Surficial Soil Solid	Sauer Dump L-12 0-2 02/07/05 ENSAT Surficial Soil Solid	Sauer Dump L-13 0-2 02/07/05 ENSAT Surficial Soil Solid	Sauer Dump L-14 0-2 02/07/05 ENSAT Surficial Soil Solid	Sauer Dump L-15 0-2 02/07/05 ENSAT Surficial Soil Solid	Sauer Dump L-16 0-2 02/07/05 ENSAT Surficial Soil Solid	Sauer Dump L-17 0-2 02/07/05 ENSAT Surficial Soil Solid	Sauer Dump L-09 0-2 L-9 0-2' 02/08/05 ENSAT Surficial Soil Solid	Sauer Dump S-5-2005 L-09 0-2 dup 02/08/05 ENSAT Surficial Soil Solid Duplicate	Sauer Dump L-07 0-2 02/09/05 ENSAT Surficial Soil Solid	Sauer Dump L-08 0-2 02/09/05 ENSAT Surficial Soil Solid	Sauer Dump M-08 0-2 03/09/05 ENSAT Surficial Soil Solid	Sauer Dump DG-SS01-0 C7A110281001 01/08/07 Malcolm Pirnie Surface Soil Solid	
Inorganics/Total Metals Analytical Method Dilution Factor % Moisture Units Notes Analyte																	SW846 6010B 1 not reported mg/kg Result Flag
Aluminum																	nr
Antimony																	nr
Arsenic																	nr
Barium																	nr
Beryllium																	nr
Cadmium																	nr
Calcium																	nr
Chromium																	nr
Chromium III																	nr
Chromium VI																	nr
Cobalt																	nr
Copper																	nr
Iron																	nr
Lead																	73.2
Magnesium																	nr
Manganese																	nr
Mercury																	nr
Nickel																	nr
Potassium																	nr
Selenium																	nr
Silver																	nr
Sodium																	nr
Thallium																	nr
Tin																	nr
Vanadium																	nr
Zinc																	nr
Cyanide																	nr
Dissolved Metals Analytical Method Dilution Factor % Moisture Units Notes Analyte																	
Aluminum																	
Antimony																	
Arsenic																	
Barium																	
Beryllium																	
Cadmium																	
Calcium																	
Chromium																	
Cobalt																	
Copper																	
Iron																	
Lead																	
Magnesium																	
Manganese																	
Mercury																	
Nickel																	
Potassium																	
Selenium																	
Silver																	
Sodium																	
Thallium																	
Vanadium																	
Zinc																	

Table A.1b
Surface Soil Analytical Results - 2005 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump Y-05.5 0-2	Sauer Dump K-17 0-2	Sauer Dump L-10 0-2	Sauer Dump L-11 0-2	Sauer Dump L-12 0-2	Sauer Dump L-13 0-2	Sauer Dump L-14 0-2	Sauer Dump L-15 0-2	Sauer Dump L-16 0-2	Sauer Dump L-17 0-2	Sauer Dump S-5-2005 L-9 0-2'	Sauer Dump L-09 0-2 dup	Sauer Dump L-07 0-2	Sauer Dump L-08 0-2	Sauer Dump M-08 0-2	Sauer Dump DG-SS01-0 C7A110281001
	02/02/05 ENSAT Surficial Soil Solid	02/04/05 ENSAT Surficial Soil Solid	02/07/05 ENSAT Surficial Soil Solid	02/07/05 ENSAT Surficial Soil Solid	02/07/05 ENSAT Surficial Soil Solid	02/07/05 ENSAT Surficial Soil Solid	02/07/05 ENSAT Surficial Soil Solid	02/07/05 ENSAT Surficial Soil Solid	02/07/05 ENSAT Surficial Soil Solid	02/07/05 ENSAT Surficial Soil Solid	02/08/05 ENSAT Surficial Soil Solid	02/08/05 ENSAT Surficial Soil Duplicate	02/09/05 ENSAT Surficial Soil Solid	02/09/05 ENSAT Surficial Soil Solid	03/09/05 ENSAT Surficial Soil Solid	01/08/07 Malcolm Pirnie Surface Soil Solid
Pesticides/PCBs																
Analytical Method Dilution Factor % Moisture Units	EPA 8082 18 mg/kg	EPA 8082 18 mg/kg	EPA 8082 77 mg/kg	EPA 8082 80 mg/kg	EPA 8082 62 mg/kg	EPA 8082 66 mg/kg	EPA 8082 34 mg/kg	EPA 8082 64 mg/kg	EPA 8082 47 mg/kg	EPA 8082 86 mg/kg	EPA 8082 1 60 mg/kg	EPA 8082 1 61 mg/kg	EPA 8082 1 75 mg/kg	EPA 8082 100 41 mg/kg	EPA 8082 41 mg/kg	SW846 8082 1 not reported mg/kg
Notes																
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	nr		nr		nr		nr		nr		nr		nr		nr	
alpha-BHC	nr		nr		nr		nr		nr		nr		nr		nr	
beta-BHC	nr		nr		nr		nr		nr		nr		nr		nr	
delta-BHC	nr		nr		nr		nr		nr		nr		nr		nr	
gamma-BHC (Lindane)	nr		nr		nr		nr		nr		nr		nr		nr	
alpha-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr	
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr	
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDE	nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDT	nr		nr		nr		nr		nr		nr		nr		nr	
Dieldrin	nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan I	nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan II	nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan sulfate	nr		nr		nr		nr		nr		nr		nr		nr	
Endrin	nr		nr		nr		nr		nr		nr		nr		nr	
Endrin aldehyde	nr		nr		nr		nr		nr		nr		nr		nr	
Endrin ketone	nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor	nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor epoxide	nr		nr		nr		nr		nr		nr		nr		nr	
Methoxychlor	nr		nr		nr		nr		nr		nr		nr		nr	
Toxaphene	nr		nr		nr		nr		nr		nr		nr		nr	
Aroclor-1016	15	U	1.5	U	1	U	1.2	U	0.64	U	0.72	U	6.8	U	23	U
Aroclor-1221	15	U	1.5	U	1	U	1.2	U	0.64	U	0.72	U	6.8	U	23	U
Aroclor-1232	15	U	1.5	U	1	U	1.2	U	0.64	U	0.72	U	6.8	U	23	U
Aroclor-1242	15	U	1.5	U	1	U	1.2	U	0.64	U	0.72	U	6.8	U	23	U
Aroclor-1248	15	U	1.5	U	1	U	1.2	U	0.64	U	0.72	U	6.8	U	23	U
Aroclor-1254	23		2.9		1	U	1.2	U	0.84	U	2.0		13		37	
Aroclor-1260	15	U	1.5	U	1	U	1.2	U	0.64	U	0.72	U	6.8	U	23	U
Total PCBs	23		2.9		ND		ND		ND		2.0		13		37	
Other Analytes																
Analytical Method Dilution Factor % Moisture Units																
Notes																
Analyte																

Table A.1b
Surface Soil Analytical Results - 2005 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Sauer Dump DG-SS02-0 C7A130135001 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS03-0 C7A110281002 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS04-0 C7A110281003 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS05-0 C7A130135002 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS06-0 C7A110281004 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS07-0 C7A110281005 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS08-0 C7A110281006 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS09-0 C7A130135003 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS10-0 C7A110281007 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS11-0 C7A110281009 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS12-0 C7A110281010 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS13-0 C7A130135004 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS14-0 C7A110281011 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS15-0 C7A130135005 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS16-0 C7A130135006 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS17-0 C7A130135007 01/08/07 Malcolm Pirnie Surface Soil Solid																	
Inorganics/Total Metals																																
Analytical Method Dilution Factor % Moisture Units	SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 5 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg					
Notes																																
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag		
Aluminum	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Antimony	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Arsenic	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Barium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Beryllium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Cadmium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Calcium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Chromium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Chromium III	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Chromium VI	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Cobalt	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Copper	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Iron	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Lead	260	J	66.1		321		269	J	295		153		269		116	J	69.9		55.6		106		64.7	J	55.8		170	J	440	J	198	J
Magnesium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Manganese	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Mercury	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Nickel	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Potassium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Selenium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Silver	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Sodium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Thallium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Tin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Vanadium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Zinc	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Cyanide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Dissolved Metals																																
Analytical Method Dilution Factor % Moisture Units																																
Notes																																
Analyte																																
Aluminum																																
Antimony																																
Arsenic																																
Barium																																
Beryllium																																
Cadmium																																
Calcium																																
Chromium																																
Cobalt																																
Copper																																
Iron																																
Lead																																
Magnesium																																
Manganese																																
Mercury																																
Nickel																																
Potassium																																
Selenium																																
Silver																																
Sodium																																
Thallium																																
Vanadium																																
Zinc																																

Table A.1b
Surface Soil Analytical Results - 2005 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump DG-SS02-0 C7A130135001	Sauer Dump DG-SS03-0 C7A110281002	Sauer Dump DG-SS04-0 C7A110281003	Sauer Dump DG-SS05-0 C7A130135002	Sauer Dump DG-SS06-0 C7A110281004	Sauer Dump DG-SS07-0 C7A110281005	Sauer Dump DG-SS08-0 C7A110281006	Sauer Dump DG-SS09-0 C7A130135003	Sauer Dump DG-SS10-0 C7A110281007	Sauer Dump DG-SS11-0 C7A110281009	Sauer Dump DG-SS12-0 C7A110281010	Sauer Dump DG-SS13-0 C7A130135004	Sauer Dump DG-SS14-0 C7A110281011	Sauer Dump DG-SS15-0 C7A130135005	Sauer Dump DG-SS16-0 C7A130135006	Sauer Dump DG-SS17-0 C7A130135007
	01/08/07 Malcolm Pirnie Surface Soil Solid	01/08/07 Malcolm Pirnie Surface Soil Solid	01/08/07 Malcolm Pirnie Surface Soil Solid	01/08/07 Malcolm Pirnie Surface Soil Solid	01/08/07 Malcolm Pirnie Surface Soil Solid	01/08/07 Malcolm Pirnie Surface Soil Solid	01/08/07 Malcolm Pirnie Surface Soil Solid	01/08/07 Malcolm Pirnie Surface Soil Solid	01/08/07 Malcolm Pirnie Surface Soil Solid	01/08/07 Malcolm Pirnie Surface Soil Solid	01/08/07 Malcolm Pirnie Surface Soil Solid	01/08/07 Malcolm Pirnie Surface Soil Solid	01/08/07 Malcolm Pirnie Surface Soil Solid	01/08/07 Malcolm Pirnie Surface Soil Solid	01/08/07 Malcolm Pirnie Surface Soil Solid	01/08/07 Malcolm Pirnie Surface Soil Solid
Pesticides/PCBs																
Analytical Method Dilution Factor % Moisture Units	SW846 8082 1 not reported mg/kg	SW846 8082 10 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 3 not reported mg/kg	SW846 8082 1 not reported mg/kg
Notes																
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	nr		nr		nr		nr		nr		nr		nr		nr	
alpha-BHC	nr		nr		nr		nr		nr		nr		nr		nr	
beta-BHC	nr		nr		nr		nr		nr		nr		nr		nr	
delta-BHC	nr		nr		nr		nr		nr		nr		nr		nr	
gamma-BHC (Lindane)	nr		nr		nr		nr		nr		nr		nr		nr	
alpha-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr	
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr	
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDE	nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDT	nr		nr		nr		nr		nr		nr		nr		nr	
Dieldrin	nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan I	nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan II	nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan sulfate	nr		nr		nr		nr		nr		nr		nr		nr	
Endrin	nr		nr		nr		nr		nr		nr		nr		nr	
Endrin aldehyde	nr		nr		nr		nr		nr		nr		nr		nr	
Endrin ketone	nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor	nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor epoxide	nr		nr		nr		nr		nr		nr		nr		nr	
Methoxychlor	nr		nr		nr		nr		nr		nr		nr		nr	
Toxaphene	nr		nr		nr		nr		nr		nr		nr		nr	
Aroclor-1016	0.041	U	0.41	U	0.039	U	0.043	U	0.038	U	0.044	U	0.043	U	0.042	U
Aroclor-1221	0.041	U	0.41	U	0.039	U	0.043	U	0.038	U	0.044	U	0.043	U	0.042	U
Aroclor-1232	0.041	U	0.41	U	0.039	U	0.043	U	0.038	U	0.044	U	0.043	U	0.042	U
Aroclor-1242	0.041	U	0.41	U	0.039	U	0.043	U	0.038	U	0.044	U	0.043	U	0.042	U
Aroclor-1248	0.041	U	0.41	U	0.039	U	0.043	U	0.038	U	0.044	U	0.043	U	0.042	U
Aroclor-1254	0.59		7.7		1.4		0.043	U	0.62		0.72		0.068	J	0.12	
Aroclor-1260	0.74		0.41	U	0.72		1.2		0.38		0.36		0.37		0.28	
Total PCBs	1.33		7.7		2.12		1.2		1		1.08		1.117		0.28	
Other Analytes																
Analytical Method Dilution Factor % Moisture Units																
Notes																
Analyte																

Table A.1b
Surface Soil Analytical Results - 2005 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOC's Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump DG-SS18-0 C7A130135008 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS19-0 C7A130135010 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS20-0 C7A130135011 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS21-0 C7A130135012 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS22-0 C7A130135013 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS23-0 C7A130135014 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS24-0 C7A240133001 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS25-0 C7A240133002 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS26-0 C7A240133003 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS27-0 C7A240133004 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS28-0 C7A240133006 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS29-0 C7A240133007 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS30-0 C7A240133008 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS31-0 C7A250145001 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS32-0 C7A250145002 01/08/07 Malcolm Pirnie Surface Soil Solid													
Inorganics/Total Metals																												
Analytical Method Dilution Factor % Moisture Units Notes	SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 5 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg		SW846 6010B 1 not reported mg/kg	
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Antimony	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Arsenic	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Barium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Beryllium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cadmium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Calcium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium III	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium VI	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Copper	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Iron	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Lead	363	J	114	J	130	J	324	J	140	J	205	J	2720		415		188		58.6		24.2		28.1		22.1		137	
Magnesium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Manganese	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Mercury	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Nickel	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Potassium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Selenium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Silver	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Sodium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Thallium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Tin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vanadium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Zinc	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cyanide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dissolved Metals																												
Analytical Method Dilution Factor % Moisture Units Notes																												
Analyte																												
Aluminum																												
Antimony																												
Arsenic																												
Barium																												
Beryllium																												
Cadmium																												
Calcium																												
Chromium																												
Cobalt																												
Copper																												
Iron																												
Lead																												
Magnesium																												
Manganese																												
Mercury																												
Nickel																												
Potassium																												
Selenium																												</

Table A.1b
Surface Soil Analytical Results - 2005 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump DG-SS18-0 C7A130135008 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS19-0 C7A130135010 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS20-0 C7A130135011 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS21-0 C7A130135012 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS22-0 C7A130135013 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS23-0 C7A130135014 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS24-0 C7A240133001 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS25-0 C7A240133002 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS26-0 C7A240133003 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS27-0 C7A240133004 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS28-0 C7A240133006 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS29-0 C7A240133007 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS30-0 C7A240133008 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS31-0 C7A250145001 01/08/07 Malcolm Pirnie Surface Soil Solid	Sauer Dump DG-SS32-0 C7A250145002 01/08/07 Malcolm Pirnie Surface Soil Solid									
Pesticides/PCBs																								
Analytical Method Dilution Factor % Moisture Units	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 100 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg	SW846 8082 1 not reported mg/kg									
Notes																								
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
alpha-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
beta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
delta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
gamma-BHC (Lindane)	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
alpha-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDE	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDT	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dieldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan I	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan II	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan sulfate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin aldehyde	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin ketone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor epoxide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methoxychlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Toxaphene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Aroclor-1016	0.049	U	0.037	U	0.043	U	0.056	U	0.059	U	0.053	U	4.8	U	0.058	U	0.052	U	0.037	U	0.038	U	0.046	U
Aroclor-1221	0.049	U	0.037	U	0.043	U	0.056	U	0.059	U	0.053	U	4.8	U	0.058	U	0.052	U	0.037	U	0.038	U	0.046	U
Aroclor-1232	0.049	U	0.037	U	0.043	U	0.056	U	0.059	U	0.053	U	4.8	U	0.058	U	0.052	U	0.037	U	0.038	U	0.046	U
Aroclor-1242	0.049	U	0.037	U	0.043	U	0.056	U	0.059	U	0.053	U	4.8	U	0.058	U	0.052	U	0.037	U	0.038	U	0.046	U
Aroclor-1248	0.049	U	0.037	U	0.043	U	0.056	U	0.059	U	0.053	U	4.8	U	0.058	U	0.052	U	0.037	U	0.038	U	0.046	U
Aroclor-1254	0.91		0.037	U	0.043	U	0.056	U	0.059	U	0.051	J	48		0.091		0.052	U	0.037	U	0.14		0.046	U
Aroclor-1260	1.5		0.041		0.036	J	0.26		0.14		0.12		4.8	U	0.058	U	0.052	U	0.037	UJ	0.038	U	0.015	J
Total PCBs	2.41		0.041		0.036		0.26		0.14		0.171		48		0.091		0.052		0.037		0.14		0.015	
Other Analytes																								
Analytical Method Dilution Factor % Moisture Units																								
Notes																								
Analyte																								

Table A.2a
Subsurface Soil Analytical Data - 1985 to 2004
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump S-4 S-4 Drum Area Auger CA 885 MCB980 06/27/85 NUS Subsurface Soil Solid	Sauer Dump S-6 S-6 Burn Area Auger CA 887 MCB982 06/27/85 NUS Subsurface Soil Solid	Sauer Dump S-11 A900927 E400071 A900949 09/29/99 MDE Subsurface Soil Solid GW-1 loc./subsurface	Sauer Dump S-12 A900928 E400072 A900950 09/29/99 MDE Subsurface Soil Solid GW-2 loc./subsurface	Sauer Dump S-11a 99121532 12/15/99 MDE Subsurface Soil Soil Resampling of S-11	Sauer Dump S-12a 99121533 12/15/99 MDE Subsurface Soil Soil Resampling of S-12	Sauer Dump TP-1 (3.5') 1123099 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-2 (4') 1123100 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-3 (6.75') 1123101 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-4 (11.5') 1123102 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-9 (10') 1123106 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-5 (7') 1123103 12/12/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-6 (7.5') 1123104 12/12/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-7 (5') 1123105 12/12/01 ENSAT Subsurface Soil Solid
VOCs (cont.)														
Analytical Method Dilution Factor % Moisture Units	not reported 1 13.3 mg/Kg	not reported 1 16.3 mg/Kg	EPA 8260 Not Reported NA mg/Kg	EPA 8260 Not Reported mg/Kg	EPA 8260 1 29 mg/Kg	EPA 8260 1 18 mg/Kg	EPA 8260 1 29 mg/Kg	EPA 8260 1 51 mg/Kg	EPA 8260 1 19 mg/Kg	EPA 8260 1 and 1.7 19 mg/Kg	EPA 8260 1 44 mg/Kg	EPA 8260 1 22 mg/Kg	EPA 8260 1 23 mg/Kg	EPA 8260 1 19 mg/Kg
Notes			Holding time exceeded		Holding time exceeded									
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,4-Dioxane	nr		nr		nr		nr		nr		nr		nr	
Dodecane, 6-Methyl-	nr		nr		nr		nr		0.019	J	nr		nr	
Ethanol	nr		nr		nr		nr		nr		nr		nr	
Ethylbenzene	0.005	U	0.005	U	0.1001	U	0.0682	U	0.007	U	0.0061	U	0.009	J
1-Ethyl-2,3-Dimethyl-Benzene	nr		nr		nr		nr		nr		nr	nr	0.012	U
4-Ethyl-1,2-Dimethylbenzene	nr		nr		nr		nr		nr		nr	nr	0.008	J
1-Ethyl-2-Methyl-Benzene	nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-3-Methylcyclohexane	nr		nr		nr		nr		nr		nr		0.027	J
1-Ethyl-4-Methylcyclohexane	nr		nr		nr		nr		nr		nr		0.032	J
Ethylene Oxide	nr		nr		nr		nr		nr		nr		nr	
Ethylmethacrylate	nr		nr		nr		nr		nr		nr		nr	
Epichlorohydrin	nr		nr		nr		nr		nr		nr		nr	
Hexachlorobutadiene	nr		nr		0.1001	U	0.0682	U	0.007	U	0.0061	U	nr	
Hexane	nr		nr		nr		nr		nr		nr		nr	
2-Hexanone	0.01	U	0.01	U	nr		nr		0.014	U	0.012	U	0.014	U
2-Hydroxypropionitrile	nr		nr		nr		nr		nr		nr		nr	
Isobutyl alcohol	nr		nr		nr		nr		nr		nr		nr	
Isopropylbenzene	nr		nr		0.1001	U	0.0682	U	0.007	U	0.0061	U	0.014	U
p-Isopropyl Toluene	nr		nr		0.1001	U	0.0682	U	0.005	J	0.0061	U	nr	
Malononitrile	nr		nr		nr		nr		nr		nr		nr	
Methacrylonitrile	nr		nr		nr		nr		nr		nr		nr	
Methyl Acetate	nr		nr		nr		nr		0.014	U	0.019	U	0.013	U
Methylcyclohexane	nr		nr		nr		nr		0.002	J	0.019	U	0.013	U
1-Methyl-2- Benzene (1 Methyl)	nr		nr		nr		nr		nr		nr		0.008	J
1-Methyl-3- Benzene (1 Methyl)	nr		nr		nr		nr		nr		nr		0.014	J
1-Methyl-4- Benzene (1 Methyl)	nr		nr		nr		nr		nr		nr		nr	
Methylene Bromide	nr		nr		nr	nr	nr		nr		nr		nr	
Methylene Chloride	0.005	U	0.0061	B	0.103		0.0682	U	0.007	U	0.0061	U	0.003	J,B
1-Methyl-indan	nr		nr		nr		nr		nr		nr		nr	
Methyl Iodide/Iodomethane	nr		nr		nr		nr		nr		nr		nr	
Methylmethacrylate	nr		nr		nr		nr		nr		nr		nr	
2-Methyl-Naphthalene	nr		nr		nr		nr		nr		nr		0.033	J
4-Methyl-Nonane	nr		nr		nr		nr		nr		nr		nr	
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.01	U	0.01	U	0.1001	U	0.0682	U	0.014	U	0.012	U	0.013	U
O-(2-Methyl Propyl Hydroxylamine	nr		nr		nr		nr		nr		nr		nr	
Methyl-t-Butyl Ether	nr		nr		0.1001	U	0.0682	U	0.007	U	0.0061	U	0.014	U
Naphthalene	nr		nr		0.1001	U	0.0682	U	0.007	U	0.0061	U	nr	
Naphthalene, decahydro-, trans-	nr		nr		nr		nr		nr		0.008	J	nr	
Pentachloroethane	nr		nr		nr		nr		nr		nr		nr	
Propargyl Alcohol	nr		nr		nr		nr		nr		nr		nr	
Propiolactone	nr		nr		nr		nr		nr		nr		nr	
Propionitrile	nr		nr		nr		nr		nr		nr		nr	
Propylamine	nr		nr		nr		nr		nr		nr		nr	
n-Propylbenzene	nr		nr		0.1001	U	0.0682	U	0.007	U	0.0061	U	0.007	J
Styrene	0.005	U	0.005	U	0.1001	U	0.0682	U	0.007	U	0.0061	U	0.002	J
1,1,1,2-Tetrachloroethane	nr		nr		0.1001	U	0.0682	U	0.007	U	0.0061	U	nr	
1,1,2,2-Tetrachloroethane	0.005	U	0.005	U	0.1001	U	0.0682	U	0.007	U	0.0061	U	0.014	U
Tetrachloroethene	0.005	U	0.005	U	nr		nr		0.007	U	0.0061	U	0.014	U
1,2,4,5-Tetramethylbenzene	nr		nr		nr		nr		nr		nr		nr	
Toluene	0.005	U	0.005	U	0.1001	U	0.0682	U	0.007	U	0.0061	U	0.002	J
1,2,3-Trichlorobenzene	nr		nr		0.1001	U	0.0682	U	0.007	U	0.0061	U	nr	
1,2,4-Trichlorobenzene	nr		nr		0.1001	U	0.0682	U	0.007	U	0.0061	U	0.014	U
1,1,1-Trichloroethane	0.022		0.005	U	0.1001	U	0.0682	U	0.007	U	0.0061	U	0.014	U
1,1,2-Trichloroethane	0.005	U	0.005	U	0.1001	U	0.0682	U	0.007	U	0.0061	U	0.014	U
Trichloroethene	0.005	U	0.005	U	nr		nr		0.007	U	0.0061	U	0.014	U
1,1, 2 - Trichloro -1, 2, 2 -trifluoroethane	nr		nr		nr		nr		0.014	U	0.019	U	0.013	U
Trichlorofluoromethane	nr		nr		0.1001	U	0.0682	U	0.007	U	0.0061	U	0.014	U
1,2,3-Trichloropropane	nr		nr		0.1001	U	0.0682	U	0.007	U	0.0061	U	nr	
Tridecane	nr		nr		nr		nr		nr		nr		nr	
1,2,4-Trimethylbenzene	nr		nr		nr		nr		nr		nr		0.021	J
1,2,3-Trimethylbenzene	nr		nr		0.1001	U	0.0682	U	0.0065	J	0.0061	U	nr	
1,3,5-Trimethylbenzene	nr		nr		0.1001	U	0.3444		0.003	J	0.0061	U	nr	
2,3,4-Trimethylhexane	nr		nr		nr		nr		nr		nr		nr	
Vinyl Acetate	0.01	U	0.01	U	nr		nr		nr		nr		nr	
Vinyl chloride	0.01	U	0.01	U	0.1001	U	0.0682	U	0.014	U	0.012	U	0.013	U
m+p-Xylenes	nr		nr		nr		0.007	U	0.0061	U	nr		nr	
o-Xylene	nr		nr		nr		0.007	U	0.0061	U	nr		nr	
Xylenes (Total)	0.005	U	0.005	U	0.2003	U	0.1364	U	nr		0.006	J	0.019	U

Table A.2a
Subsurface Soil Analytical Data - 1985 to 2004
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

	Sauer Dump S-4 S-4 Drum Area Auger CA 885 MCB980 06/27/85 NUS Subsurface Soil Solid	Sauer Dump S-6 S-6 Burn Area Auger CA 887 MCB982 06/27/85 NUS Subsurface Soil Solid	Sauer Dump S-11 A900927 E400071 A900949 09/29/99 MDE Subsurface Soil Solid GW-1 loc./subsurface	Sauer Dump S-12 A900928 E400072 A900950 09/29/99 MDE Subsurface Soil Solid GW-2 loc./subsurface	Sauer Dump S-11a 99121532 12/15/99 MDE Subsurface Soil Soil Resampling of S-11	Sauer Dump S-12a 99121533 12/15/99 MDE Subsurface Soil Soil Resampling of S-12	Sauer Dump TP-1 (3.5') 1123099 82073 000001 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-2 (4') 1123100 82073 000002 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-3 (6.75') 1123101 82073 000003 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-4 (11.5') 1123102 82073 000004 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-9 (10') 1123106 82073 000008 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-5 (7') 1123103 82073 000005 12/12/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-6 (7.5') 1123104 82073 000006 12/12/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-7 (5') 1123105 82073 000007 12/12/01 ENSAT Subsurface Soil Solid																
SVOCs																														
Analytical Method Dilution Factor % Moisture Units	5 Not reported mg/Kg		5 Not Reported mg/Kg		EPA 625 Not Reported mg/Kg		EPA 625 Not Reported mg/Kg						EPA 8070 1 & 10 29 mg/Kg		EPA 8070 1 51 mg/Kg		EPA 8070 1 19 mg/Kg		EPA 8070 1 19 mg/Kg		EPA 8070 1 44 mg/Kg		EPA 8070 1 22 mg/Kg		EPA 8070 1 23 mg/Kg		EPA 8070 1 19 mg/Kg			
Notes					Incomplete lab report: "No other SVOCs detected"		Incomplete lab report: "No SVOCs detected"																							
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag		
Acenaphthene	2.2	U	2.2	U		U		U	nr			nr		J	0.35	J	0.18	J	0.13	J	0.41	U	0.59	U	0.42	U	0.43	U	0.41	U
Acenaphthylene	2.2	U	2.2	U		U		U	nr			nr		J	0.21	J	0.67	U	0.41	U	0.41	U	0.59	U	0.42	U	0.43	U	0.41	U
Acetophenone	nr		nr			U		U	nr			nr		J	0.18	J	0.67	U	0.41	U	0.084	J	0.09	J	0.42	U	0.46		0.073	J
Anthracene	2.2	U	2.2	U	10.519	J		U	nr			nr		J	0.64		0.41	J	0.21	J	0.082	J	0.59	U	0.42	U	0.43	U	0.06	J
Atrazine	nr		nr		nr		nr		nr			nr			nr		nr		nr		nr		nr		nr		nr		nr	
Benzaldehyde	nr		nr			U		U	nr			nr		U	0.46	U	0.67	U	0.41	U	0.41	U	0.59	U	0.42	U	0.43	U	0.41	U
Benzo(a)Anthracene	2.2	U	2.2	U	7.323	J		U	nr			nr			3.4		1.5		0.99		0.32	J	0.61		0.044	J	0.31	J	0.2	J
Benzo(a)Pyrene	2.2	U	2.2	U	7.246	J		U	nr			nr			3.7		1.3		0.82		0.35	J	0.38	J	0.42	U	0.2	J	0.21	J
Benzo(b)fluoranthene	1.2	J	2.2	U		J		U	nr			nr			3.3		1.7		0.91		0.31	J	0.53	J	0.047	J	0.22	J	0.24	J
Benzo(g,h,i)Perylene	2.2	U	2.2	U		U		U	nr			nr			2.3		1.3		0.83		0.41	U	0.59	U	0.42	U	0.12	J	0.24	J
Benzo(k)fluoranthene	2.2	U	2.2	U		U		U	nr			nr			2.7		0.97		0.73		0.21	J	0.36	J	0.051	J	0.23	J	0.14	J
Benzylbutylphthalate/Butylbenzylphthalate	2.2	U	2.2	U		U		U	nr			nr		D	39	D	4.2		0.41	U	0.16	J	0.59	U	0.082	J	0.43	U	0.41	U
1,1'-Biphenyl	nr		nr			U		U	nr			nr			0.099	J	0.67	U	0.058	J	0.41	U	0.59	U	0.42	U	0.43	U	0.14	J
4-Bromophenyl-phenylether	2.2	U	2.2	U		U		U	nr			nr			0.46	U	0.67	U	0.41	U	0.41	U	0.59	U	0.42	U	0.43	U	0.41	U
Caprolactam	nr		nr			U		U	nr			nr			0.46	U	0.67	U	0.41	U	0.41	U	0.59	U	0.42	U	0.43	U	0.41	U
Carbazole	nr		nr			U		U	nr			nr			0.37	J	0.67	U	0.13	J	0.41	U	0.59	U	0.42	U	0.43	U	0.41	U
4-Chloroaniline	2.2	U	2.2	U		U		U	nr			nr			0.46	U	0.67	U	0.41	U	0.41	U	0.59	U	0.42	U	0.43	U	0.41	U
bis(2-Chloroethoxy)Methane	2.2	U	2.2	U		U		U	nr			nr			0.46	U	0.67	U	0.41	U	0.41	U	0.59	U	0.42	U	0.43	U	0.41	U
bis(2-Chloroethyl)Ether	2.2	U	2.2	U		U		U	nr			nr			0.46	U	0.67	U	0.41	U	0.41	U	0.59	U	0.42	U	0.43	U	0.41	U
bis(2-Chloroisopropyl)Ether	2.2	U	2.2	U					nr			nr			nr		nr		nr		nr		nr		nr		nr		nr	
4-Chloro-3-Methylphenol	2.2	U	2.2	U		U		U	nr			nr			0.46	U	0.67	U	0.41	U	0.41	U	0.59	U	0.42	U	0.43	U	0.41	U
2-Chloronaphthalene	2.2	U	2.2	U		U		U	nr			nr			0.46	U	0.67	U	0.41	U	0.41	U	0.59	U	0.42	U	0.43	U	0.41	U
2-Chlorophenol	2.2	U	2.2	U		U		U	nr			nr			0.46	U	0.67	U	0.41	U	0.41	U	0.59	U	0.42	U	0.43	U	0.41	U
4-Chlorophenyl-phenylether	2.2	U	2.2	U		U		U	nr			nr			0.46	U	0.67	U	0.41	U	0.41	U	0.59	U	0.42	U	0.43	U	0.41	U
Chrysene	2.2	U	2.2	U		U		U	nr			nr			4.1	DJ	1.6		1.1		0.42		0.64		0.056	J	0.36	J	0.22	J
Dibenzo(a,h)Anthracene	2.2	U	2.2	U		U		U	nr			nr			1.5		0.38	J	0.25	J	0.16	J	0.59	U	0.42	U	0.43	U	0.41	U
Dibenzofuran	2.2	U	2.2	U		U		U	nr			nr		J	0.22	J	0.13	J	0.17	J	0.41	U	0.59	U	0.42	U	0.43	U	0.07	J
1,2-Dichlorobenzene	2.2	U	2.2	U		U		U	nr			nr			nr		nr		nr		nr		nr		nr		nr		nr	
1,3-Dichlorobenzene	2.2	U	2.2	U		U		U	nr			nr			nr		nr		nr		nr		nr		nr		nr		nr	
1,4-Dichlorobenzene	2.2	U	2.2	U		U		U	nr			nr			nr		nr		nr		nr		nr		nr		nr		nr	
3,3'-Dichlorobenzidine	4.6	U	4.6	U		U		U	nr			nr			0.46	U	0.67	U	0.41	U	0.41	U	0.59	U	0.42	U	0.43	U	0.41	U
2,4-Dichlorophenol	2.2	U	2.2	U		U		U	nr			nr			0.46	U	0.67	U	0.41	U	0.41	U	0.59	U	0.42	U	0.43	U	0.41	U
Diethylphthalate	2.2	U	2.2	U		U		U	nr			nr			0.46	U	0.67	U	0.41	U	0.41	U	0.59	U	0.42	U	0.43	U	0.41	U
2,4-Dimethylphenol	2.2	U	2.2	U		U		U	nr			nr																		

Table A.2a
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Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump S-4 S-4 Drum Area Auger CA 885 MCB980 06/27/85 NUS Subsurface Soil Solid	Sauer Dump S-6 S-6 Burn Area Auger CA 887 MCB982 06/27/85 NUS Subsurface Soil Solid	Sauer Dump S-11 A900927 E400071 A900949 09/29/99 MDE Subsurface Soil Solid GW-1 loc./subsurface	Sauer Dump S-12 A900928 E400072 A900950 09/29/99 MDE Subsurface Soil Solid GW-2 loc./subsurface	Sauer Dump S-11a 99121532 12/15/99 MDE Subsurface Soil Soil Resampling of S-11	Sauer Dump S-12a 99121533 12/15/99 MDE Subsurface Soil Soil Resampling of S-12	Sauer Dump TP-1 (3.5') 1123099 82073 000001 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-2 (4') 1123100 82073 000002 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-3 (6.75') 1123101 82073 000003 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-4 (11.5') 1123102 82073 000004 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-9 (10') 1123106 82073 000008 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-5 (7') 1123103 82073 000005 12/12/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-6 (7.5') 1123104 82073 000006 12/12/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-7 (5') 1123105 82073 000007 12/12/01 ENSAT Subsurface Soil Solid														
Inorganics/Total Metals																												
Analytical Method Dilution Factor % Moisture Units Notes	Not Reported 17.2 mg/Kg		Not Reported 19.4 mg/Kg		Not Reported Not Reported mg/Kg		Not Reported Not Reported mg/Kg						Various Not Reported 31 mg/Kg		Various Not Reported 37 mg/Kg		Various Not Reported 20 mg/Kg		Various Not Reported 20 mg/Kg		Various Not Reported 54 mg/Kg		Various Not Reported 23 mg/Kg		Various Not Reported 25 mg/Kg		Various Not Reported 20 mg/Kg	
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	9,850		14,030		15,719		8,105		nr		nr		16,000		49,000		12,000		9,900		17,000		9,900		8,500		2,300	
Antimony	29	U	29	U	7.11		9.44		nr		nr		90		63		10	U	12	U	80	U	22		48		10	U
Arsenic	25.5	J	11.3	J	3.574		11.788		nr		nr		43		300		16		6.5		11		6.2		25		5	U
Barium	217		221		234		738		nr		nr		800		800		190		580		140		82		100		26	
Beryllium	3	U	3	U	2.5	U	2.5	U	nr		nr		1.4		1		1.4		1.4		1.6		0.58		0.73		0.39	
Cadmium	3.79		3.01		22.8		21.5		nr		nr		14		19		4.4		1.4		2.8		1.2		1.6		0.5	U
Calcium	63,550		86,300		32,542		26,434		nr		nr		28,000		25,000		22,000		21,000		190,000		5,100		37,000		2,000	
Chromium	26.6		25.1		3,803		215		nr		nr		450		1,300		66		650		67		27		120		33	
Chromium III	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium VI	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	28	U	26	U	49.7		12.3		nr		nr		30		21		7		18		8		4.6		13		1.2	
Copper	364		160		2,894		1,300		nr		nr		3,300		3,200		350		280		150		390		190		19	
Iron	25,480		15,660		84,124		58,149		nr		nr		140,000		95,000		36,000		36,000		30,000		14,000		84,000		9,100	
Lead	508	J	222	J	831		2,283		nr		nr		3,000		4,100		420		940		430		210		110		40	
Magnesium	11,910		19,410		17,207		5,350		nr		nr		9,700		8,100		7,100		8,100		83,000		2,200		5,200		840	
Manganese	699	J	596	J	4,898		609		nr		nr		2,500		1,500		620		380		520		160		8,900		150	
Mercury	0.32		0.16		1.17		1.83		nr		nr		14		22		0.1	U	0.09	U	0.18	U	0.1	U	0.21		0.18	
Nickel	22	U	20	U	7,229		237		nr		nr		230		510		49		25	U	37		44		160		16	
Potassium	1,630	J	1,600	J	818		809		nr		nr		570	U	700		880		6,200	U	4,100	U	700		2,100		500	U
Selenium	3	U	3	U	3.64		1.25	U	nr		nr		22		57		7.5		3		0.5	U	13		4.6		0.5	U
Silver	6	U	5	U	2.5	U	2.5	U	nr		nr		1	U	2.7		1	U	12	U	8	U	1	U	1	U	1	U
Sodium	2,800	U	2,660		2,028		3,585		nr		nr		610		410		160		625	U	400	U	190		840		160	
Thallium	5	U	5	U	1.25	U	1.25	U	nr		nr		0.94		1.7		0.56	U	0.58	U	0.65	U	0.95		2.9		0.4	U
Tin	22	U	20	U	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vanadium	28	U	26	U	91		23.6		nr		nr		55		980		30		46		46		18		1	U	2.8	
Zinc	545		458		1,584		1,922		nr		nr		6,400		5,400		1,000		110,000		540		880		370		58	
Cyanide	1.2	U	1.3	U	0.187	U	0.127	U	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dissolved Metals																												
Analytical Method Dilution Factor % Moisture Units Notes																												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Antimony	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Arsenic	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Barium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Beryllium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cadmium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Calcium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Copper	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Iron	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Lead	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Magnesium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Manganese	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Mercury	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Nickel	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Potassium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Selenium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Silver	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Sodium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Thallium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vanadium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Zinc	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	

Table A.2a
Subsurface Soil Analytical Data - 1985 to 2004
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

	Sauer Dump S-4 S-4 Drum Area Auger CA 885 MCB980 06/27/85 NUS Subsurface Soil Solid	Sauer Dump S-6 S-6 Burn Area Auger CA 887 MCB982 06/27/85 NUS Subsurface Soil Solid	Sauer Dump S-11 A900927 E400071 A900949 09/29/99 MDE Subsurface Soil Solid GW-1 loc./subsurface	Sauer Dump S-12 A900928 E400072 A900950 09/29/99 MDE Subsurface Soil Solid GW-2 loc./subsurface	Sauer Dump S-11a 99121532 12/15/99 MDE Subsurface Soil Soil Resampling of S-11	Sauer Dump S-12a 99121533 12/15/99 MDE Subsurface Soil Soil Resampling of S-12	Sauer Dump TP-1 (3.5') 1123099 82073 000001 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-2 (4') 1123100 82073 000002 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-3 (6.75') 1123101 82073 000003 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-4 (11.5') 1123102 82073 000004 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-9 (10') 1123106 82073 000008 12/11/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-5 (7') 1123103 82073 000005 12/12/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-6 (7.5') 1123104 82073 000006 12/12/01 ENSAT Subsurface Soil Solid	Sauer Dump TP-7 (5') 1123105 82073 000007 12/12/01 ENSAT Subsurface Soil Solid														
Pesticides/PCBs																												
Analytical Method Dilution Factor % Moisture Units	10 Not Reported mg/Kg		10 Not Reported mg/Kg		EPA 8081 Not Reported Not Reported mg/Kg		EPA 8081 Not Reported Not Reported mg/Kg						EPA 8081/8082 10 and 100 29 mg/Kg		EPA 8081/8082 1 and 40 51 mg/Kg		EPA 8081/8082 200 and 600 19 mg/Kg		EPA 8081/8082 1 and 40 19 mg/Kg		EPA 8081/8082 1 and 5 44 mg/Kg		EPA 8081/8082 5 and 40 22 mg/Kg		EPA 8081/8082 1 and 20 22 mg/Kg		EPA 8081/8082 1 and 2 19 mg/Kg	
Notes																												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	0.038	U	0.039	U	0.5	U	0.5	U	nr		nr		0.024	U	0.0035	U	0.42	U	0.0021	U	0.003	U	0.011	U	0.0022	U	0.0021	U
alpha-BHC	0.038	U	0.039	U	0.5	U	0.5	U	nr		nr		0.024	U	0.0035	U	0.42	U	0.0021	U	0.003	U	0.011	U	0.0022	U	0.0021	U
beta-BHC	0.038	U	0.039	U	0.5	U	0.5	U	nr		nr		0.024	U	0.0035	U	0.42	U	0.0021	U	0.003	U	0.011	U	0.0022	U	0.0021	U
delta-BHC	0.038	U	0.039	U	0.5	U	0.5	U					0.024	U	0.0035	U	0.42	U	0.0021	U	0.003	U	0.011	U	0.0022	U	0.0021	U
gamma-BHC (Lindane)	0.038	U	0.039	U	0.5	U	0.5	U	nr		nr		0.024	U	0.0035	U	0.42	U	0.0021	U	0.003	U	0.011	U	0.0022	U	0.0021	U
alpha-Chlordane	nr		nr		nr		nr		nr		nr		0.024	U	0.0035	U	0.42	U	0.0021	U	0.003	U	0.011	U	0.0022	U	0.0021	U
gamma-Chlordane	nr		nr		nr		nr		nr		nr		0.024	U	0.0035	U	0.42	U	0.0021	U	0.003	U	0.011	U	0.0022	U	0.0021	U
Chlordane, total	0.38	U	0.39	U	0.25	U	0.25	U	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	0.076	U	0.078	U	0.5	U	0.5	U	nr		nr		0.046	U	0.0067	U	0.81	U	0.0041	U	0.0059	U	0.021	U	0.0042	U	0.0041	U
4,4'-DDE	0.076	U	0.078	U	0.5	U	0.5	U	nr		nr		0.046	U	0.0067	U	0.81	U	0.0041	U	0.0059	U	0.021	U	0.0042	U	0.0041	U
4,4'-DDT	0.076	U	0.078	U	0.5	U	0.5	U	nr		nr		0.046	U	0.0067	U	0.81	U	0.0041	U	0.0059	U	0.96	PD	0.0042	U	0.0041	U
Dieldrin	0.076	U	0.085		0.5	U	0.5	U	nr		nr		0.046	U	0.0067	U	0.81	U	0.0041	U	0.0059	U	0.021	U	0.0042	U	0.0041	U
Endosulfan I	0.038	U	0.039	U	0.5	U	0.5	U	nr		nr		0.024	U	0.0035	U	0.42	U	0.0021	U	0.003	U	0.011	U	0.0022	U	0.0021	U
Endosulfan II	0.076	U	0.078	U	0.5	U	0.5	U	nr		nr		0.046	U	0.0067	U	0.81	U	0.0041	U	0.0059	U	0.021	U	0.0042	U	0.0041	U
Endosulfan sulfate	0.076	U	0.078	U	0.5	U	0.5	U	nr		nr		0.046	U	0.0067	U	0.81	U	0.0041	U	0.0059	U	0.021	U	0.0042	U	0.0041	U
Endrin	0.076	U	0.078	U	0.5	U	0.5	U	nr		nr		0.046	U	0.0067	U	0.81	U	0.0041	U	0.0059	U	0.021	U	0.0042	U	0.0041	U
Endrin aldehyde	0.076	U	0.078	U	0.5	U	0.5	U	nr		nr		0.046	U	0.0067	U	0.81	U	0.0041	U	0.0059	U	0.021	U	0.0042	U	0.0041	U
Endrin ketone	0.076	U	0.078	U	0.5	U	0.5	U	nr		nr		0.046	U	0.0067	U	0.81	U	0.0041	U	0.0059	U	0.021	U	0.0042	U	0.0041	U
Heptachlor	0.038	U	0.039	U	0.5	U	0.5	U	nr		nr		0.024	U	0.0035	U	0.42	U	0.0021	U	0.003	U	0.011	U	0.0022	U	0.0021	U
Heptachlor epoxide	0.038	U	0.039	U	0.5	U	0.5	U	nr		nr		0.024	U	0.0035	U	0.42	U	0.0021	U	0.003	U	0.011	U	0.0022	U	0.0021	U
Methoxychlor	0.076	U	0.078	U	0.5	U	0.5	U	nr		nr		0.24	U	0.035	U	4.2	U	0.021	U	0.03	U	0.11	U	0.022	U	0.021	U
Toxaphene	0.76	U	0.78	U	2.5	U	2.5	U	nr		nr		2.4	U	0.35	U	42	U	0.21	U	0.3	U	1.1	U	0.22	U	0.21	U
Aroclor-1016	0.38	U	0.39	U	0.25	U	0.25	U	nr		nr		0.46	U	0.067	U	8.1	U	0.041	U	0.059	U	0.21	U	0.042	U	0.041	U
Aroclor-1221	0.38	U	0.39	U	0.25	U	0.25	U	nr		nr		0.94	U	0.14	U	17	U	0.083	U	0.12	U	0.43	U	0.086	U	0.083	U
Aroclor-1232	0.38	U	0.39	U	0.25	U	0.25	U	nr		nr		0.46	U	0.067	U	8.1	U	0.041	U	0.059	U	0.21	U	0.042	U	0.041	U
Aroclor-1242	0.38	U	0.39	U	0.25	U	0.25	U	nr		nr		0.46	U	0.067	U	8.1	U	0.041	U	0.059	U	0.21	U	8.8	D	0.041	U
Aroclor-1248	0.38	U	0.39	U			nr		nr		nr		0.46	U	0.067	U	8.1	U	3.1	PD	2.1	PD	1.7	PD	9.1	D	1.3	D
Aroclor-1254	1.452		2.056		17.7	J	7.9		nr		nr		72	D	84	D	800	D	5.6	PD	3.7	D	0.21	U	0.042	U	1	P
Aroclor-1260	0.76	U	0.78	U	11.13	J	0.25	U	nr		nr		43	D	0.067	U	8.1	U	0.041	U	0.059	U	2.6	PD	0.042	U	0.041	U
Total PCBs	1.452		2.056		28.83		7.9						115		84		800		8.7		5.8		4.3		17.9		2.3	
Other Analytes																												
Analytical Method Dilution Factor % Moisture Units																												
Notes																												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag

Table A.2a Subsurface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																												
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump TP-A (5') 1123107 82073 000009 12/12/01 ENSAT Subsurface Soil Solid Dup. Of TP-7	Sauer Dump MW-2 (9'-11')	Sauer Dump MW-4 (11'-12')	Sauer Dump MW-5 (12'-13.5')	Sauer Dump MW-1 (8'-12')	Sauer Dump MW-3 (13.5'-15')	Sauer Dump MW-A (8'-12')	Sauer Dump A-3 (2-3')	Sauer Dump I-12 (2-4')	Sauer Dump I-13 (2-4')	Sauer Dump I-11 (2-4')	Sauer Dump J-11 (2-4')	Sauer Dump D-8 (2-4')	Sauer Dump D-7 (4-9')	Sauer Dump D-8II (4-6')													
VOCs (cont.)																												
Analytical Method Dilution Factor % Moisture Units Notes	EPA 8260 1 18 mg/Kg	EPA 8260 1 69 mg/Kg	EPA 8260 1 30 mg/Kg	EPA 8260 1 35 mg/Kg	EPA 8260 1 59 mg/Kg	EPA 8260 1 32 mg/Kg	EPA 8260 1 62 mg/Kg																					
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,4-Dioxane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dodecane, 6-Methyl-	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethanol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethylbenzene	0.012	U	0.002	J	0.014	U	0.015	U	0.024	U	0.015	U	0.026	U	nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-2,3-Dimethyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Ethyl-1,2-Dimethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-2-Methyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-3-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-4-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethylene Oxide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethylmethacrylate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Epichlorohydrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Hexachlorobutadiene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Hexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2-Hexanone	0.012	U	0.032	U	0.014	U	0.015	U	0.024	U	0.015	U	0.026	U	nr		nr		nr		nr		nr		nr		nr	
2-Hydroxypropionitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Isobutyl alcohol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Isopropylbenzene	0.012	U	0.005	J	0.014	U	0.015	U	0.024	U	0.015	U	0.026	U	nr		nr		nr		nr		nr		nr		nr	
p-Isopropyl Toluene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Malononitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methacrylonitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methyl Acetate	0.012	U	0.032	U	0.014	U	0.015	U	0.024	U	0.015	U	0.026	U	nr		nr		nr		nr		nr		nr		nr	
Methylcyclohexane	0.012	U	0.006	J	0.014	U	0.015	U	0.024	U	0.015	U	0.026	U	nr		nr		nr		nr		nr		nr		nr	
1-Methyl-2- Benzene (1 Methyl	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Methyl-3- Benzene (1 Methyl	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Methyl-4- Benzene (1 Methyl	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylene Bromide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylene Chloride	0.003	J,B	0.032	U	0.014	U	0.068		0.024	U	0.015	U	0.026	U	nr		nr		nr		nr		nr		nr		nr	
1-Methyl-indan	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methyl Iodide/Iodomethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylmethacrylate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2-Methyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Methyl-Nonane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.012	U	0.032	U	0.014	U	0.015	U	0.024	U	0.015	U	0.026	U	nr		nr		nr		nr		nr		nr		nr	
O-(2-Methyl Propyl Hydroxylamine	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methyl-t-Butyl Ether	0.012	U	0.032	U	0.014	U	0.015	U	0.024	U	0.015	U	0.026	U	nr		nr		nr		nr		nr		nr		nr	
Naphthalene	0.007	J	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Naphthalene, decahydro-, trans-	nr		0.11		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Pentachloroethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Propargyl Alcohol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Propiolactone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Propionitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Propylamine	nr																											

Table A.2a Subsurface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																												
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump TP-A (5') 1123107 82073 000009 12/12/01 ENSAT Subsurface Soil Solid Dup. Of TP-7	Sauer Dump MW-2 (9'-11') 12/19/01 ENSAT Subsurface Soil Solid	Sauer Dump MW-4 (11'-12') 12/19/01 ENSAT Subsurface Soil Solid	Sauer Dump MW-5 (12'-13.5') 12/19/01 ENSAT Subsurface Soil Solid	Sauer Dump MW-1 (8'-12') 12/20/01 ENSAT Subsurface Soil Solid	Sauer Dump MW-3 (13.5'-15') 12/20/01 ENSAT Subsurface Soil Solid	Sauer Dump MW-A (8'-12') 12/20/01 ENSAT Subsurface Soil Solid Dup. Of MW-1	Sauer Dump A-3 (2-3') 2061011 06/05/02 ENSAT Subsurface Soil Solid	Sauer Dump I-12 (2-4') 2061014 06/05/02 ENSAT Subsurface Soil Solid	Sauer Dump I-13 (2-4') 2061016 06/05/02 ENSAT Subsurface Soil Solid	Sauer Dump I-11 (2-4') 2061009 06/06/02 ENSAT Subsurface Soil Solid	Sauer Dump J-11 (2-4') 2061028 06/06/02 ENSAT Subsurface Soil Solid	Sauer Dump D-8 (2-4') 2061024 06/07/02 ENSAT Subsurface Soil Solid	Sauer Dump D-7 (4-9') 2061029 06/11/02 ENSAT Subsurface Soil Solid	Sauer Dump D-8II (4-6') 2061025 06/11/02 ENSAT Subsurface Soil Solid													
SVOCs																												
Analytical Method Dilution Factor % Moisture Units	EPA 8070 1 18 mg/Kg	EPA 8070 1 69 mg/Kg	EPA 8070 1 30 mg/Kg	EPA 8070 1 58 mg/Kg	EPA 8070 1 66 mg/Kg	EPA 8070 1 32 mg/Kg	EPA 8070 1 58 mg/Kg																					
Notes																												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Acenaphthene	0.4	U	0.17	J	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
Acenaphthylene	0.4	U	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
Acetophenone	0.042	J	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
Anthracene	0.4	U	0.13	J	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
Atrazine	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Benzaldehyde	0.4	U	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
Benzo(a)Anthracene	0.095	J	1.1	U	0.47	U	0.19	J	0.15	J	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
Benzo(a)Pyrene	0.065	J	1.1	U	0.47	U	0.17	J	0.11	J	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
Benzo(b)fluoranthene	0.089	J	1.1	U	0.47	U	0.2	J	0.14	J	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
Benzo(g,h,i)Perylene	0.4	U	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
Benzo(k)fluoranthene	0.067	J	1.1	U	0.47	U	0.15	J	0.11	J	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
BenzyIbutylphthalate/Butylbenzylphthalate	0.057	J	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
1,1'-Biphenyl	0.096	J	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
4-Bromophenyl-phenylether	0.4	U	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
Caprolactam	0.4	U	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
Carbazole	0.4	U	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
4-Chloroaniline	0.4	U	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
bis(2-Chloroethoxy)Methane	0.4	U	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
bis(2-Chloroethyl)Ether	0.4	U	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
bis(2-Chloroisopropyl)Ether	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Chloro-3-Methylphenol	0.4	U	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
2-Chloronaphthalene	0.4	U	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
2-Chlorophenol	0.4	U	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
4-Chlorophenyl-phenylether	0.4	U	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
Chrysene	0.1	J	1.1	U	0.47	U	0.23	J	0.19	J	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
Dibenzo(a,h)Anthracene	0.4	U	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
Dibenzofuran	0.053	J	0.15	J	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
1,2-Dichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,3-Dichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,4-Dichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
3,3'-Dichlorobenzidine	0.4	U	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
2,4-Dichlorophenol	0.4	U	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
Diethylphthalate	0.4	U	1.1	U	0.47	U	0.79	U	0.97	U	0.49	U	0.87	U	nr		nr		nr		nr		nr		nr		nr	
2,4-Dimethylphenol	0.066	J	1.1	U	0.47	U	0.79	U																				

Table A.2a Subsurface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																											
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump TP-A (5') 1123107 82073 000009 12/12/01 ENSAT Subsurface Soil Solid Dup. Of TP-7	Sauer Dump MW-2 (9'-11')	Sauer Dump MW-4 (11'-12')	Sauer Dump MW-5 (12'-13.5')	Sauer Dump MW-1 (8'-12')	Sauer Dump MW-3 (13.5'-15')	Sauer Dump MW-A (8'-12')	Sauer Dump A-3 (2-3')	Sauer Dump I-12 (2-4')	Sauer Dump I-13 (2-4')	Sauer Dump I-11 (2-4')	Sauer Dump J-11 (2-4')	Sauer Dump D-8 (2-4')	Sauer Dump D-7 (4-9')	Sauer Dump D-8II (4-6')												
Pesticides/PCBs	EPA 8081/8082 1 18 mg/Kg	EPA 8081/8082 1 69 mg/Kg	EPA 8081/8082 1 30 mg/Kg	EPA 8081/8082 1 58 mg/Kg	EPA 8081/8082 1 66 mg/Kg	EPA 8081/8082 1 32 mg/Kg	EPA 8081/8082 1 62 mg/Kg	8082 10 5 mg/Kg	8082 2000 5 mg/Kg	8082 500 5 mg/Kg	8082 500 5 mg/Kg	8082 400 5 mg/Kg	8082 50 5 mg/Kg	8082 800 5 mg/Kg	8082 100 5 mg/Kg												
Notes	Result		Result		Result		Result		Result		Result		Result		Result		Result		Result		Result		Result		Result		
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	
Aldrin	0.0021	U	0.0055	U	0.0024	U	0.004	U	0.005	U	0.0025	U	0.0045	U	nr		nr		nr		nr		nr		nr		
alpha-BHC	0.0021	U	0.0055	U	0.0024	U	0.004	U	0.005	U	0.0025	U	0.0045	U	nr		nr		nr		nr		nr		nr		
beta-BHC	0.0021	U	0.0055	U	0.0024	U	0.004	U	0.005	U	0.0025	U	0.0045	U	nr		nr		nr		nr		nr		nr		
delta-BHC	0.0021	U	0.0055	U	0.0024	U	0.004	U	0.005	U	0.0025	U	0.0045	U	nr		nr		nr		nr		nr		nr		
gamma-BHC (Lindane)	0.0021	U	0.0055	U	0.0024	U	0.004	U	0.005	U	0.0025	U	0.0045	U	nr		nr		nr		nr		nr		nr		
alpha-Chlordane	0.0021	U	0.0055	U	0.0024	U	0.004	U	0.005	U	0.0025	U	0.0045	U	nr		nr		nr		nr		nr		nr		
gamma-Chlordane	0.0021	U	0.0055	U	0.0024	U	0.004	U	0.005	U	0.0025	U	0.0045	U	nr		nr		nr		nr		nr		nr		
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		
4,4'-DDD	0.004	U	0.011	U	0.0047	U	0.0079	U	0.0097	U	0.0049	U	0.0087	U	nr		nr		nr		nr		nr		nr		
4,4'-DDE	0.004	U	0.011	U	0.0047	U	0.0079	U	0.0097	U	0.0049	U	0.0087	U	nr		nr		nr		nr		nr		nr		
4,4'-DDT	0.004	U	0.011	U	0.0047	U	0.0079	U	0.0097	U	0.0049	U	0.0087	U	nr		nr		nr		nr		nr		nr		
Dieldrin	0.004	U	0.011	U	0.0047	U	0.0079	U	0.0097	U	0.0049	U	0.0087	U	nr		nr		nr		nr		nr		nr		
Endosulfan I	0.0021	U	0.0055	U	0.0024	U	0.004	U	0.005	U	0.0025	U	0.0045	U	nr		nr		nr		nr		nr		nr		
Endosulfan II	0.004	U	0.011	U	0.0047	U	0.0079	U	0.0097	U	0.0049	U	0.0087	U	nr		nr		nr		nr		nr		nr		
Endosulfan sulfate	0.004	U	0.011	U	0.0047	U	0.0079	U	0.0097	U	0.0049	U	0.0087	U	nr		nr		nr		nr		nr		nr		
Endrin	0.004	U	0.011	U	0.0047	U	0.0079	U	0.0097	U	0.0049	U	0.0087	U	nr		nr		nr		nr		nr		nr		
Endrin aldehyde	0.004	U	0.011	U	0.0047	U	0.0079	U	0.0097	U	0.0049	U	0.0087	U	nr		nr		nr		nr		nr		nr		
Endrin ketone	0.004	U	0.011	U	0.0047	U	0.0079	U	0.0097	U	0.0049	U	0.0087	U	nr		nr		nr		nr		nr		nr		
Heptachlor	0.0021	U	0.0055	U	0.0024	U	0.004	U	0.005	U	0.0025	U	0.0045	U	nr		nr		nr		nr		nr		nr		
Heptachlor epoxide	0.0021	U	0.0055	U	0.0024	U	0.004	U	0.005	U	0.0025	U	0.0045	U	nr		nr		nr		nr		nr		nr		
Methoxychlor	0.021	U	0.055	U	0.024	U	0.04	U	0.05	U	0.025	U	0.045	U	nr		nr		nr		nr		nr		nr		
Toxaphene	0.21	U	0.55	U	0.24	U	0.4	U	0.5	U	0.25	U	0.45	U	nr		nr		nr		nr		nr		nr		
Aroclor-1016	0.04	U	0.11	U	0.047	U	0.079	U	0.097	U	0.049	U	0.087	U	0.35	U	70	U	18	U	14	U	1.8	U	28	U	
Aroclor-1221	0.082	U	0.22	U	0.096	U	0.16	U	0.2	U	0.099	U	0.18	U	0.7	U	140	U	35	U	35	U	3.5	U	56	U	
Aroclor-1232	0.04	U	0.11	U	0.047	U	0.079	U	0.097	U	0.049	U	0.087	U	0.35	U	70	U	18	U	14	U	1.8	U	28	U	
Aroclor-1242	0.04	U	0.11	U	0.19	U	0.079	U	0.097	U	0.049	U	0.087	U	0.35	U	70	U	18	U	14	U	1.8	U	28	U	
Aroclor-1248	0.8		0.11	U	0.047	U	0.079	U	0.097	U	0.049	U	0.087	U	0.35	U	70	U	18	U	14	U	1.8	U	28	U	
Aroclor-1254	0.84	P	0.11	U	0.047	U	0.079	U	0.6		0.049	U	0.11		1.2	D	1500	D	240	D	400	D	160	D,B	13	D	
Aroclor-1260	0.31	P	0.11	U	0.047	U	0.32	P	0.45	P	0.049	U	0.087	U	2.4	D	70	U	18	U	14	U	5.9	D	28	U	
Total PCBs	1.95				0.19		0.32		1.05			0.11		3.6		1500		240		400		160		18.9		320	
Other Analytes																											
Analytical Method Dilution Factor % Moisture Units Notes																											
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	

Table A.2a Subsurface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																												
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump E-8II (2-4')	Sauer Dump F-7 (4-6')	Sauer Dump G-6 (4-5')	Sauer Dump G-6 (4-7')	Sauer Dump G-7 (2-4')	Sauer Dump G-7 (4-6')	Sauer Dump G-8 (2-4')	Sauer Dump I-7 (6-8')	Sauer Dump E.5-07 6-8	Sauer Dump F-0 2-4	Sauer Dump H-0 2-4	Sauer Dump I-0 4-6	Sauer Dump Z-06 2-4	Sauer Dump Z-06 4-6	Sauer Dump Z-06 6-8													
	2061023 06/11/02 ENSAT Subsurface Soil Solid	2061015 06/11/02 ENSAT Subsurface Soil Solid	2061035 06/11/02 ENSAT Subsurface Soil Solid	2061007 06/11/02 ENSAT Subsurface Soil Solid	2061010 06/11/02 ENSAT Subsurface Soil Solid	2061008 06/11/02 ENSAT Subsurface Soil Solid	2061026 06/11/02 ENSAT Subsurface Soil Solid	2061032 06/11/02 ENSAT Subsurface Soil Solid	01/22/04 ENSAT Subsurface Soil Solid	01/22/04 ENSAT Subsurface Soil Solid	01/22/04 ENSAT Subsurface Soil Solid	01/23/04 ENSAT Subsurface Soil Solid	01/23/04 ENSAT Subsurface Soil Solid	01/23/04 ENSAT Subsurface Soil Solid	01/23/04 ENSAT Subsurface Soil Solid													
Inorganics/Total Metals																												
Analytical Method Dilution Factor % Moisture Units Notes																	EPA 7420		EPA 7420		EPA 7420		EPA 7420		EPA 7420		EPA 7420	
																	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag			Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Antimony	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Arsenic	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Barium	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Beryllium	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Cadmium	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Calcium	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Chromium	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Chromium III	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Chromium VI	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Cobalt	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Copper	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Iron	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Lead	nr		nr		nr		nr		nr		nr		nr		nr				1,500		670		1,600		960		23,000	
Magnesium	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Manganese	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Mercury	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Nickel	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Potassium	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Selenium	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Silver	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Sodium	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Thallium	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Tin	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Vanadium	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Zinc	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Cyanide	nr		nr		nr		nr		nr		nr		nr		nr				nr		nr		nr		nr		nr	
Dissolved Metals																												
Analytical Method Dilution Factor % Moisture Units Notes																												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag												
Aluminum	nr		nr		nr		nr		nr		nr		nr		nr													
Antimony	nr		nr		nr		nr		nr		nr		nr		nr													
Arsenic	nr		nr		nr		nr		nr		nr		nr		nr													
Barium	nr		nr		nr		nr		nr		nr		nr		nr													
Beryllium	nr		nr		nr		nr		nr		nr		nr		nr													
Cadmium	nr		nr		nr		nr		nr		nr		nr		nr													
Calcium	nr		nr		nr		nr		nr		nr		nr		nr													
Chromium	nr		nr		nr		nr		nr		nr		nr		nr													
Cobalt	nr		nr		nr		nr		nr		nr		nr		nr													
Copper	nr		nr		nr		nr		nr		nr		nr		nr													
Iron	nr		nr		nr		nr		nr		nr		nr		nr													
Lead	nr		nr		nr		nr		nr		nr		nr		nr													
Magnesium	nr		nr		nr		nr		nr		nr		nr		nr													
Manganese	nr		nr		nr		nr		nr		nr		nr		nr													
Mercury	nr		nr		nr		nr		nr		nr		nr		nr													
Nickel	nr		nr		nr		nr		nr		nr		nr		nr													
Potassium	nr		nr		nr		nr		nr		nr		nr		nr													
Selenium	nr		nr		nr		nr		nr		nr		nr		nr													
Silver	nr		nr		nr		nr		nr		nr		nr		nr													
Sodium	nr		nr		nr		nr		nr		nr		nr		nr													
Thallium	nr		nr		nr		nr		nr		nr		nr		nr													
Vanadium	nr		nr		nr		nr		nr		nr		nr		nr													
Zinc	nr		nr		nr		nr		nr		nr		nr		nr													

Table A.2a Subsurface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																										
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump E-8II (2-4')	Sauer Dump F-7 (4-6')	Sauer Dump G-6 (4-5')	Sauer Dump G-6 (4-7')	Sauer Dump G-7 (2-4')	Sauer Dump G-7 (4-6')	Sauer Dump G-8 (2-4')	Sauer Dump I-7 (6-8')	Sauer Dump E.5-07 6-8	Sauer Dump F-0 2-4	Sauer Dump H-0 2-4	Sauer Dump I-0 4-6	Sauer Dump Z-06 2-4	Sauer Dump Z-06 4-6	Sauer Dump Z-06 6-8											
	2061023 06/11/02 ENSAT Subsurface Soil Solid	2061015 06/11/02 ENSAT Subsurface Soil Solid	2061035 06/11/02 ENSAT Subsurface Soil Solid	2061007 06/11/02 ENSAT Subsurface Soil Solid	2061010 06/11/02 ENSAT Subsurface Soil Solid	2061008 06/11/02 ENSAT Subsurface Soil Solid	2061026 06/11/02 ENSAT Subsurface Soil Solid	2061032 06/11/02 ENSAT Subsurface Soil Solid	01/22/04 ENSAT Subsurface Soil Solid	01/22/04 ENSAT Subsurface Soil Solid	01/22/04 ENSAT Subsurface Soil Solid	01/23/04 ENSAT Subsurface Soil Solid	01/23/04 ENSAT Subsurface Soil Solid	01/23/04 ENSAT Subsurface Soil Solid												
Pesticides/PCBs																										
Analytical Method Dilution Factor % Moisture Units	8082 800 5 mg/Kg	8082 100 5 mg/Kg	8082 50000 5 mg/Kg	8082 5000 5 mg/Kg	8082 500 5 mg/Kg	8082 200 5 mg/Kg	8082 400 5 mg/Kg	8082 4000 5 mg/Kg	EPA 8082 1 16 mg/kg				EPA 8082 200 18 mg/kg	EPA 8082 500 17 mg/kg	EPA 8082 200 15 mg/kg											
Notes																										
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag		
Aldrin	nr		nr		nr		nr		nr		nr		nr								nr		nr			
alpha-BHC	nr		nr		nr		nr		nr		nr		nr								nr		nr			
beta-BHC	nr		nr		nr		nr		nr		nr		nr								nr		nr			
delta-BHC	nr		nr		nr		nr		nr		nr		nr								nr		nr			
gamma-BHC (Lindane)	nr		nr		nr		nr		nr		nr		nr								nr		nr			
alpha-Chlordane	nr		nr		nr		nr		nr		nr		nr								nr		nr			
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr								nr		nr			
Chlordane, total	nr		nr		nr		nr		nr		nr		nr								nr		nr			
4,4'-DDD	nr		nr		nr		nr		nr		nr		nr								nr		nr			
4,4'-DDE	nr		nr		nr		nr		nr		nr		nr								nr		nr			
4,4'-DDT	nr		nr		nr		nr		nr		nr		nr								nr		nr			
Dieldrin	nr		nr		nr		nr		nr		nr		nr								nr		nr			
Endosulfan I	nr		nr		nr		nr		nr		nr		nr								nr		nr			
Endosulfan II	nr		nr		nr		nr		nr		nr		nr								nr		nr			
Endosulfan sulfate	nr		nr		nr		nr		nr		nr		nr								nr		nr			
Endrin	nr		nr		nr		nr		nr		nr		nr								nr		nr			
Endrin aldehyde	nr		nr		nr		nr		nr		nr		nr								nr		nr			
Endrin ketone	nr		nr		nr		nr		nr		nr		nr								nr		nr			
Heptachlor	nr		nr		nr		nr		nr		nr		nr								nr		nr			
Heptachlor epoxide	nr		nr		nr		nr		nr		nr		nr								nr		nr			
Methoxychlor	nr		nr		nr		nr		nr		nr		nr								nr		nr			
Toxaphene	nr		nr		nr		nr		nr		nr		nr								nr		nr			
Aroclor-1016	28	U	3.5	U	1800	U	180	U	18	U	7	U	14	U	2000	D	0.039	U			8	U	20	U	7.8	U
Aroclor-1221	56	U	7	U	3500	U	350	U	35	U	14	U	28	U	280	U	0.08	U			16	U	40	U	16	U
Aroclor-1232	28	U	3.5	U	1800	U	180	U	18	U	7	U	14	U	140	U	0.039	U			8	U	20	U	7.8	U
Aroclor-1242	28	U	3.5	U	1800	U	180	U	18	U	7	U	14	U	140	U	0.36				8	U	160		7.8	U
Aroclor-1248	28	U	3.5	U	1800	U	180	U	18	U	7	U	14	U	140	U	0.039	U			8	U	20	U	7.8	U
Aroclor-1254	310	D	39	D	33000	D,B	3900	D	370	D	100	D	190	D,B	670	D,B	0.67				110		110		110	
Aroclor-1260	28	U	12	D	1800	U	180	U	18	U	7	U	14	U	140	U	0.35				8	U	20	U	7.8	U
Total PCBs	310		51		33000		3900		370		100		190		2670		1.38				110		270		110	
Other Analytes																										
Analytical Method Dilution Factor % Moisture Units																										
Notes																										
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag										

Table A.2a Subsurface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																														
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump Z-06 8-10 01/23/04 ENSAT Subsurface Soil Solid	Sauer Dump H-16 6-8 01/27/04 ENSAT Subsurface Soil Solid	Sauer Dump I-16 4-6 01/27/04 ENSAT Subsurface Soil Solid	Sauer Dump I-16 6-8 01/27/04 ENSAT Subsurface Soil Solid	Sauer Dump Z-03 6-8 01/27/04 ENSAT Subsurface Soil Solid	Sauer Dump Z-03 8-10 01/27/04 ENSAT Subsurface Soil Solid	Sauer Dump Z-04 8-10 01/27/04 ENSAT Subsurface Soil Solid	Sauer Dump Z-05 2-4 01/27/04 ENSAT Subsurface Soil Solid	Sauer Dump Z-05 6-8 01/27/04 ENSAT Subsurface Soil Solid	Sauer Dump Z-07 6-8 01/27/04 ENSAT Subsurface Soil Solid	Sauer Dump Z-07 8-10 01/27/04 ENSAT Subsurface Soil Solid	Sauer Dump Z-08 6-8 01/27/04 ENSAT Subsurface Soil Solid	Sauer Dump Background 000047 K-16 4-6 dup 01/28/04 ENSAT Subsurface Soil Solid Duplicate	Sauer Dump Background 000048 I.5-14.5 2-4 dup 01/28/04 ENSAT Subsurface Soil Solid Duplicate	Sauer Dump Background 000049 K-12 2-4 dup 01/28/04 ENSAT Subsurface Soil Solid Duplicate															
Inorganics/Total Metals																														
Analytical Method Dilution Factor % Moisture Units	EPA 7420 mg/kg	EPA 7420 mg/kg		EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg	EPA 7420 mg/kg				
Notes																														
Analyte	Result	Flag	Result	Flag			Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag		
Aluminum	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Antimony	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Arsenic	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Barium	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Beryllium	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Cadmium	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Calcium	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Chromium	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Chromium III	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Chromium VI	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Cobalt	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Copper	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Iron	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Lead	4,000		740				700		1,600		1,200		2,700		3,200		1,100		1,900		3,900		700		27,000		4,600		23,000	
Magnesium	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Manganese	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Mercury	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Nickel	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Potassium	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Selenium	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Silver	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Sodium	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Thallium	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Tin	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Vanadium	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Zinc	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Cyanide	nr		nr				nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Dissolved Metals																														
Analytical Method Dilution Factor % Moisture Units																														
Notes																														
Analyte																														
Aluminum																														
Antimony																														
Arsenic																														
Barium																														
Beryllium																														
Cadmium																														
Calcium																														
Chromium																														
Cobalt																														
Copper																														
Iron																														
Lead																														
Magnesium																														
Manganese																														
Mercury																														
Nickel																														
Potassium																														
Selenium																														
Silver																														
Sodium																														
Thallium																														
Vanadium																														
Zinc																														

Table A.2a Subsurface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																								
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump Z-06 8-10	Sauer Dump H-16 6-8	Sauer Dump I-16 4-6	Sauer Dump I-16 6-8	Sauer Dump Z-03 6-8	Sauer Dump Z-03 8-10	Sauer Dump Z-04 8-10	Sauer Dump Z-05 2-4	Sauer Dump Z-05 6-8	Sauer Dump Z-07 6-8	Sauer Dump Z-07 8-10	Sauer Dump Z-08 6-8	Sauer Dump Background 000047 K-16 4-6 dup	Sauer Dump Background 000048 I.5-14.5 2-4 dup	Sauer Dump Background 000049 K-12 2-4 dup									
	01/23/04 ENSAT Subsurface Soil Solid	01/27/04 ENSAT Subsurface Soil Solid	01/27/04 ENSAT Subsurface Soil Solid	01/27/04 ENSAT Subsurface Soil Solid	01/27/04 ENSAT Subsurface Soil Solid	01/27/04 ENSAT Subsurface Soil Solid	01/27/04 ENSAT Subsurface Soil Solid	01/27/04 ENSAT Subsurface Soil Solid	01/27/04 ENSAT Subsurface Soil Solid	01/27/04 ENSAT Subsurface Soil Solid	01/27/04 ENSAT Subsurface Soil Solid	01/27/04 ENSAT Subsurface Soil Solid	01/28/04 ENSAT Subsurface Soil Solid Duplicate	01/28/04 ENSAT Subsurface Soil Solid Duplicate	01/28/04 ENSAT Subsurface Soil Solid Duplicate									
Pesticides/PCBs																								
Analytical Method					EPA 8082																			
Dilution Factor					20																			
% Moisture					28																			
Units					mg/kg																			
Notes																								
Analyte				Result	Flag					Result	Flag	Result	Flag											
Aldrin				nr						nr		nr												
alpha-BHC				nr						nr		nr												
beta-BHC				nr						nr		nr												
delta-BHC				nr						nr		nr												
gamma-BHC (Lindane)				nr						nr		nr												
alpha-Chlordane				nr						nr		nr												
gamma-Chlordane				nr						nr		nr												
Chlordane, total				nr						nr		nr												
4,4'-DDD				nr						nr		nr												
4,4'-DDE				nr						nr		nr												
4,4'-DDT				nr						nr		nr												
Dieldrin				nr						nr		nr												
Endosulfan I				nr						nr		nr												
Endosulfan II				nr						nr		nr												
Endosulfan sulfate				nr						nr		nr												
Endrin				nr						nr		nr												
Endrin aldehyde				nr						nr		nr												
Endrin ketone				nr						nr		nr												
Heptachlor				nr						nr		nr												
Heptachlor epoxide				nr						nr		nr												
Methoxychlor				nr						nr		nr												
Toxaphene				nr						nr		nr												
Aroclor-1016				0.92	U					1.9	U	8.1	U											
Aroclor-1221				1.9	U					3.9	U	17	U											
Aroclor-1232				0.92	U					1.9	U	8.1	U											
Aroclor-1242				0.92	U					1.9	U	8.1	U											
Aroclor-1248				0.92	U					1.9	U	8.1	U											
Aroclor-1254				9.3						19		87												
Aroclor-1260				0.92	U					1.9	U	8.1	U											
Total PCBs				9.3						19		87												
Other Analytes																								
Analytical Method																								
Dilution Factor																								
% Moisture																								
Units																								
Notes																								
Analyte																								

Table A.2a Subsurface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																											
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump L5-14.5 2-4	Sauer Dump L5-14.5 4-6	Sauer Dump J-16 2-4	Sauer Dump J-16 4-6	Sauer Dump J-16 6-8	Sauer Dump K-12 2-4	Sauer Dump K-12 4-6	Sauer Dump K-13 2-4	Sauer Dump K-13 4-6	Sauer Dump K-13 6-8	Sauer Dump K-14 2-4	Sauer Dump K-14 4-6	Sauer Dump K-14 6-8	Sauer Dump K-15 2-4	Sauer Dump K-15 4-6												
01/28/04 ENSAT Subsurface Soil Solid	01/28/04 ENSAT Subsurface Soil Solid	01/28/04 ENSAT Subsurface Soil Solid	01/28/04 ENSAT Subsurface Soil Solid	01/28/04 ENSAT Subsurface Soil Solid	01/28/04 ENSAT Subsurface Soil Solid	01/28/04 ENSAT Subsurface Soil Solid	01/28/04 ENSAT Subsurface Soil Solid	01/28/04 ENSAT Subsurface Soil Solid	01/28/04 ENSAT Subsurface Soil Solid	01/28/04 ENSAT Subsurface Soil Solid	01/28/04 ENSAT Subsurface Soil Solid	01/28/04 ENSAT Subsurface Soil Solid	01/28/04 ENSAT Subsurface Soil Solid	01/28/04 ENSAT Subsurface Soil Solid	01/28/04 ENSAT Subsurface Soil Solid												
Inorganics/Total Metals	EPA 7420		EPA 7420	EPA 7420	EPA 7420	EPA 7420	EPA 7420						EPA 7420	EPA 7420	EPA 7420												
Analytical Method																											
Dilution Factor																											
% Moisture																											
Units	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg						mg/kg	mg/kg	mg/kg												
Notes																											
Analyte	Result	Flag		Result	Flag	Result	Flag	Result	Flag	Result	Flag					Result	Flag	Result	Flag	Result	Flag						
Aluminum	nr			nr		nr		nr		nr						nr		nr		nr							
Antimony	nr			nr		nr		nr		nr						nr		nr		nr							
Arsenic	nr			nr		nr		nr		nr						nr		nr		nr							
Barium	nr			nr		nr		nr		nr						nr		nr		nr							
Beryllium	nr			nr		nr		nr		nr						nr		nr		nr							
Cadmium	nr			nr		nr		nr		nr						nr		nr		nr							
Calcium	nr			nr		nr		nr		nr						nr		nr		nr							
Chromium	nr			nr		nr		nr		nr						nr		nr		nr							
Chromium III	nr			nr		nr		nr		nr						nr		nr		nr							
Chromium VI	nr			nr		nr		nr		nr						nr		nr		nr							
Cobalt	nr			nr		nr		nr		nr						nr		nr		nr							
Copper	nr			nr		nr		nr		nr						nr		nr		nr							
Iron	nr			nr		nr		nr		nr						nr		nr		nr							
Lead	7,100			2,600		25,000		1,600		2,800						2,800		2,100		900							
Magnesium	nr			nr		nr		nr		nr						nr		nr		nr							
Manganese	nr			nr		nr		nr		nr						nr		nr		nr							
Mercury	nr			nr		nr		nr		nr						nr		nr		nr							
Nickel	nr			nr		nr		nr		nr						nr		nr		nr							
Potassium	nr			nr		nr		nr		nr						nr		nr		nr							
Selenium	nr			nr		nr		nr		nr						nr		nr		nr							
Silver	nr			nr		nr		nr		nr						nr		nr		nr							
Sodium	nr			nr		nr		nr		nr						nr		nr		nr							
Thallium	nr			nr		nr		nr		nr						nr		nr		nr							
Tin	nr			nr		nr		nr		nr						nr		nr		nr							
Vanadium	nr			nr		nr		nr		nr						nr		nr		nr							
Zinc	nr			nr		nr		nr		nr						nr		nr		nr							
Cyanide	nr			nr		nr		nr		nr						nr		nr		nr							
Dissolved Metals																											
Analytical Method																											
Dilution Factor																											
% Moisture																											
Units																											
Notes																											
Analyte																											
Aluminum																											
Antimony																											
Arsenic																											
Barium																											
Beryllium																											
Cadmium																											
Calcium																											
Chromium																											
Cobalt																											
Copper																											
Iron																											
Lead																											
Magnesium																											
Manganese																											
Mercury																											
Nickel																											
Potassium																											
Selenium																											
Silver																											
Sodium																											
Thallium																											
Vanadium																											
Zinc																											

Table A.2a Subsurface Soil Analytical Data - 1985 to 2004 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump L5-14.5 2-4			Sauer Dump L5-14.5 4-6			Sauer Dump J-16 2-4			Sauer Dump J-16 4-6			Sauer Dump J-16 6-8			Sauer Dump K-12 2-4			Sauer Dump K-12 4-6			Sauer Dump K-13 2-4			Sauer Dump K-13 4-6			Sauer Dump K-13 6-8			Sauer Dump K-14 2-4			Sauer Dump K-14 4-6			Sauer Dump K-14 6-8			Sauer Dump K-15 2-4			Sauer Dump K-15 4-6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	01/28/04 ENSAT Subsurface Soil Solid			01/28/04 ENSAT Subsurface Soil Solid			01/28/04 ENSAT Subsurface Soil Solid			01/28/04 ENSAT Subsurface Soil Solid			01/28/04 ENSAT Subsurface Soil Solid			01/28/04 ENSAT Subsurface Soil Solid			01/28/04 ENSAT Subsurface Soil Solid			01/28/04 ENSAT Subsurface Soil Solid			01/28/04 ENSAT Subsurface Soil Solid			01/28/04 ENSAT Subsurface Soil Solid			01/28/04 ENSAT Subsurface Soil Solid			01/28/04 ENSAT Subsurface Soil Solid			01/28/04 ENSAT Subsurface Soil Solid																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Pesticides/PCBs																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Analytical Method				EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082						EPA 8082					

Table A.2a
Subsurface Soil Analytical Data - 1985 to 2004
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump K-15 6-8 01/28/04 ENSAT Subsurface Soil Solid	Sauer Dump K-16 2-4 01/28/04 ENSAT Subsurface Soil Solid	Sauer Dump K-16 4-6 01/28/04 ENSAT Subsurface Soil Solid	Sauer Dump K-16 6-8 01/28/04 ENSAT Subsurface Soil Solid	Sauer Dump Background 000050 K-10 8-10 dup 01/29/04 ENSAT Subsurface Soil Solid Duplicate	Sauer Dump G-07.5 2-4 01/29/04 ENSAT Subsurface Soil Solid	Sauer Dump G-07.5 4-6 01/29/04 ENSAT Subsurface Soil Solid	Sauer Dump G-07.5 6-8 01/29/04 ENSAT Subsurface Soil Solid	Sauer Dump G-07.5 8-10 01/29/04 ENSAT Subsurface Soil Solid	Sauer Dump I.5-07 2-4 I.5-7.0 2-4' 01/29/04 ENSAT Subsurface Soil Solid	Sauer Dump I.5-07 4-6 I.5-7.0 4-6' 01/29/04 ENSAT Subsurface Soil Solid	Sauer Dump I.5-07 6-8 I.5-7.0 6-8' 01/29/04 ENSAT Subsurface Soil Solid	Sauer Dump J-11.5 2-4 J0 11.5 2-4' 01/29/04 ENSAT Subsurface Soil Solid	Sauer Dump J-11.5 4-6 J0 11.5 4-6' 01/29/04 ENSAT Subsurface Soil Solid
Inorganics/Total Metals														
Analytical Method	EPA 7420		EPA 7420	EPA 7420	EPA 7420									
Dilution Factor														
% Moisture														
Units	mg/kg		mg/kg	mg/kg	mg/kg									
Notes														
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag						
Aluminum	nr		nr		nr		nr							
Antimony	nr		nr		nr		nr							
Arsenic	nr		nr		nr		nr							
Barium	nr		nr		nr		nr							
Beryllium	nr		nr		nr		nr							
Cadmium	nr		nr		nr		nr							
Calcium	nr		nr		nr		nr							
Chromium	nr		nr		nr		nr							
Chromium III	nr		nr		nr		nr							
Chromium VI	nr		nr		nr		nr							
Cobalt	nr		nr		nr		nr							
Copper	nr		nr		nr		nr							
Iron	nr		nr		nr		nr							
Lead	1,500		3,200		860		810							
Magnesium	nr		nr		nr		nr							
Manganese	nr		nr		nr		nr							
Mercury	nr		nr		nr		nr							
Nickel	nr		nr		nr		nr							
Potassium	nr		nr		nr		nr							
Selenium	nr		nr		nr		nr							
Silver	nr		nr		nr		nr							
Sodium	nr		nr		nr		nr							
Thallium	nr		nr		nr		nr							
Tin	nr		nr		nr		nr							
Vanadium	nr		nr		nr		nr							
Zinc	nr		nr		nr		nr							
Cyanide	nr		nr		nr		nr							
Dissolved Metals														
Analytical Method														
Dilution Factor														
% Moisture														
Units														
Notes														
Analyte														
Aluminum														
Antimony														
Arsenic														
Barium														
Beryllium														
Cadmium														
Calcium														
Chromium														
Cobalt														
Copper														
Iron														
Lead														
Magnesium														
Manganese														
Mercury														
Nickel														
Potassium														
Selenium														
Silver														
Sodium														
Thallium														
Vanadium														
Zinc														

Table A.2a
Subsurface Soil Analytical Data - 1985 to 2004
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump K-15 6-8 01/28/04 ENSAT Subsurface Soil Solid	Sauer Dump K-16 2-4 01/28/04 ENSAT Subsurface Soil Solid	Sauer Dump K-16 4-6 01/28/04 ENSAT Subsurface Soil Solid	Sauer Dump K-16 6-8 01/28/04 ENSAT Subsurface Soil Solid	Sauer Dump Background 000050 K-10 8-10 dup 01/29/04 ENSAT Subsurface Soil Solid Duplicate	Sauer Dump G-07.5 2-4 01/29/04 ENSAT Subsurface Soil Solid	Sauer Dump G-07.5 4-6 01/29/04 ENSAT Subsurface Soil Solid	Sauer Dump G-07.5 6-8 01/29/04 ENSAT Subsurface Soil Solid	Sauer Dump G-07.5 8-10 01/29/04 ENSAT Subsurface Soil Solid	Sauer Dump I.5-07 2-4 I.5-7.0 2-4' 01/29/04 ENSAT Subsurface Soil Solid	Sauer Dump I.5-07 4-6 I.5-7.0 4-6' 01/29/04 ENSAT Subsurface Soil Solid	Sauer Dump I.5-07 6-8 I.5-7.0 6-8' 01/29/04 ENSAT Subsurface Soil Solid	Sauer Dump J-11.5 2-4 J0 11.5 2-4' 01/29/04 ENSAT Subsurface Soil Solid	Sauer Dump J-11.5 4-6 J0 11.5 4-6' 01/29/04 ENSAT Subsurface Soil Solid												
Pesticides/PCBs	EPA 8082 200 27 mg/kg	EPA 8082 200 22 mg/kg	EPA 8082 50 23 mg/kg	EPA 8082 500 22 mg/kg		EPA 8082 100 15 mg/kg	EPA 8082 100 17 mg/kg	EPA 8082 5 16 mg/kg	EPA 8082 5 17 mg/kg	EPA 8082 100 11 mg/kg	EPA 8082 20 28 mg/kg	EPA 8082 5 15 mg/kg	EPA 8082 1000 20 mg/kg	EPA 8082 200 25 mg/kg												
Notes																										
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag						
Aldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
alpha-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
beta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
delta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
gamma-BHC (Lindane)	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
alpha-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
4,4'-DDD	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
4,4'-DDE	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
4,4'-DDT	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
Dieldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
Endosulfan I	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
Endosulfan II	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
Endosulfan sulfate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
Endrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
Endrin aldehyde	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
Endrin ketone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
Heptachlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
Heptachlor epoxide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
Methoxychlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
Toxaphene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr							
Aroclor-1016	9	U	8.5	U	2.1	U	21	U	58	U	60	U	2.9	U	3	U	56	U	14	U	2.9	U	41	U	8.8	U
Aroclor-1221	18	U	17	U	4.4	U	43	U	120	U	120	U	6	U	6.1	U	110	U	28	U	5.9	U	84	U	18	U
Aroclor-1232	9	U	8.5	U	2.1	U	21	U	58	U	60	U	2.9	U	3	U	56	U	14	U	2.9	U	41	U	8.8	U
Aroclor-1242	9	U	8.5	U	2.1	U	21	U	58	U	60	U	2.9	U	3	U	56	U	14	U	2.9	U	41	U	8.8	U
Aroclor-1248	9	U	8.5	U	2.1	U	21	U	58	U	60	U	2.9	U	3	U	56	U	14	U	2.9	U	41	U	8.8	U
Aroclor-1254	86		93		24		300		370		340		28		21		660		150		24		610		120	
Aroclor-1260	9	U	8.5	U	2.1	U	21	U	58	U	60	U	2.9	U	6.3		56	U	14	U	2.9	U	41	U	8.8	U
Total PCBs	86		93		24		300		370		340		28		27.3		660		150		24		610		120	
Other Analytes																										
Analytical Method																										
Dilution Factor																										
% Moisture																										
Units																										
Notes																										
Analyte																										

Table A.2a
Subsurface Soil Analytical Data - 1985 to 2004
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump J-11.5 6-8 J0 11.5 6-8'	Sauer Dump J-11.5 8-10 J0 1.15 8-10'	Sauer Dump K-08 2-4	Sauer Dump K-09 2-4	Sauer Dump K-10 2-4	Sauer Dump K-10 6-8	Sauer Dump K-10 8-10	Sauer Dump K-11 2-4	Sauer Dump K-11 4-6	Sauer Dump SS (2004) J-11.5 4-6 dup	Sauer Dump D.5-07 2-4	Sauer Dump D.5-07 6-8	Sauer Dump E-07.5 2-4	Sauer Dump E-07.5 6-8
	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid Duplicate	01/30/04 ENSAT Subsurface Soil Solid	01/30/04 ENSAT Subsurface Soil Solid	01/30/04 ENSAT Subsurface Soil Solid	01/30/04 ENSAT Subsurface Soil Solid
Inorganics/Total Metals														
Analytical Method			EPA 7420	EPA 7420			EPA 7420		EPA 7420					
Dilution Factor														
% Moisture														
Units			mg/kg	mg/kg			mg/kg		mg/kg					
Notes														
Analyte			Result	Flag	Result	Flag	Result	Flag	Result	Flag				
Aluminum			nr		nr		nr		nr					
Antimony			nr		nr		nr		nr					
Arsenic			nr		nr		nr		nr					
Barium			nr		nr		nr		nr					
Beryllium			nr		nr		nr		nr					
Cadmium			nr		nr		nr		nr					
Calcium			nr		nr		nr		nr					
Chromium			nr		nr		nr		nr					
Chromium III			nr		nr		nr		nr					
Chromium VI			nr		nr		nr		nr					
Cobalt			nr		nr		nr		nr					
Copper			nr		nr		nr		nr					
Iron			nr		nr		nr		nr					
Lead			2,400		340		1,200		1,300					
Magnesium			nr		nr		nr		nr					
Manganese			nr		nr		nr		nr					
Mercury			nr		nr		nr		nr					
Nickel			nr		nr		nr		nr					
Potassium			nr		nr		nr		nr					
Selenium			nr		nr		nr		nr					
Silver			nr		nr		nr		nr					
Sodium			nr		nr		nr		nr					
Thallium			nr		nr		nr		nr					
Tin			nr		nr		nr		nr					
Vanadium			nr		nr		nr		nr					
Zinc			nr		nr		nr		nr					
Cyanide			nr		nr		nr		nr					
Dissolved Metals														
Analytical Method														
Dilution Factor														
% Moisture														
Units														
Notes														
Analyte														
Aluminum														
Antimony														
Arsenic														
Barium														
Beryllium														
Cadmium														
Calcium														
Chromium														
Cobalt														
Copper														
Iron														
Lead														
Magnesium														
Manganese														
Mercury														
Nickel														
Potassium														
Selenium														
Silver														
Sodium														
Thallium														
Vanadium														
Zinc														

Table A.2a
Subsurface Soil Analytical Data - 1985 to 2004
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump J-11.5 6-8 J0 11.5 6-8'	Sauer Dump J-11.5 8-10 J0 1.15 8-10'	Sauer Dump K-08 2-4	Sauer Dump K-09 2-4	Sauer Dump K-10 2-4	Sauer Dump K-10 6-8	Sauer Dump K-10 8-10	Sauer Dump K-11 2-4	Sauer Dump K-11 4-6	Sauer Dump SS (2004) J-11.5 4-6 dup	Sauer Dump D.5-07 2-4	Sauer Dump D.5-07 6-8	Sauer Dump E-07.5 2-4	Sauer Dump E-07.5 6-8
	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid	01/29/04 ENSAT Subsurface Soil Solid Duplicate	01/30/04 ENSAT Subsurface Soil Solid	01/30/04 ENSAT Subsurface Soil Solid	01/30/04 ENSAT Subsurface Soil Solid	01/30/04 ENSAT Subsurface Soil Solid
Pesticides/PCBs	EPA 8082 200 38 mg/kg	EPA 8082 200 24 mg/kg			EPA 8082 10 22 mg/kg	EPA 8082 1 17 mg/kg		EPA 8082 200 19 mg/kg		EPA 8082 200 34 mg/kg	EPA 8082 10 16 mg/kg	EPA 8082 1 20 mg/kg	EPA 8082 10 18 mg/kg	EPA 8082 1 22 mg/kg
Notes	ResultFlag	ResultFlag			ResultFlag	ResultFlag		ResultFlag		ResultFlag	ResultFlag	ResultFlag	ResultFlag	ResultFlag
Analyte	nr		nr		nr			nr		nr		nr		nr
Aldrin	nr		nr		nr			nr		nr		nr		nr
alpha-BHC	nr		nr		nr			nr		nr		nr		nr
beta-BHC	nr		nr		nr			nr		nr		nr		nr
delta-BHC	nr		nr		nr			nr		nr		nr		nr
gamma-BHC (Lindane)	nr		nr		nr			nr		nr		nr		nr
alpha-Chlordane	nr		nr		nr			nr		nr		nr		nr
gamma-Chlordane	nr		nr		nr			nr		nr		nr		nr
Chlordane, total	nr		nr		nr			nr		nr		nr		nr
4,4'-DDD	nr		nr		nr			nr		nr		nr		nr
4,4'-DDE	nr		nr		nr			nr		nr		nr		nr
4,4'-DDT	nr		nr		nr			nr		nr		nr		nr
Dieldrin	nr		nr		nr			nr		nr		nr		nr
Endosulfan I	nr		nr		nr			nr		nr		nr		nr
Endosulfan II	nr		nr		nr			nr		nr		nr		nr
Endosulfan sulfate	nr		nr		nr			nr		nr		nr		nr
Endrin	nr		nr		nr			nr		nr		nr		nr
Endrin aldehyde	nr		nr		nr			nr		nr		nr		nr
Endrin ketone	nr		nr		nr			nr		nr		nr		nr
Heptachlor	nr		nr		nr			nr		nr		nr		nr
Heptachlor epoxide	nr		nr		nr			nr		nr		nr		nr
Methoxychlor	nr		nr		nr			nr		nr		nr		nr
Toxaphene	nr		nr		nr			nr		nr		nr		nr
Aroclor-1016	11U	8.7U			6.3U	0.6U		8.1U		10U	5.9U	0.62U		6U
Aroclor-1221	22U	18U			13U	1.2U		17U		20U	12U	1.3U		12U
Aroclor-1232	11U	8.7U			6.3U	0.6U		8.1U		10U	5.9U	0.62U		6U
Aroclor-1242	11U	8.7U			6.3U	3.1U		8.1U		10U	5.9U	0.62U		6U
Aroclor-1248	11U	8.7U			6.3U	0.6U		8.1U		10U	5.9U	0.62U		6U
Aroclor-1254	130	120			100	4.7		100		99	57	2.7		73
Aroclor-1260	11U	8.7U			6.3U	1.2		8.1U		10U	5.9U	0.94		6U
Total PCBs	130	120			100	9		100		99	57	3.64		73
Other Analytes														
Analytical Method														
Dilution Factor														
% Moisture														
Units														
Notes														
Analyte														

Table A.2a
Subsurface Soil Analytical Data - 1985 to 2004
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump F.5-07 6-8	Sauer Dump F.5-07 8-10	Sauer Dump G-06.5 2-4	Sauer Dump G-06.5 4-6	Sauer Dump G-06.5 6-8	Sauer Dump G-06.5 8-10	Sauer Dump TP 1C 9'	Sauer Dump S-7 (2004) TP 3B 5' dup	Sauer Dump TP 2B 10'	Sauer Dump TP 2D 9'	Sauer Dump TP 3B 5'	Sauer Dump TP 3C 7'	Sauer Dump TP 3D 6'	Sauer Dump TP 1B 7'
	01/30/04 ENSAT Subsurface Soil Solid	01/30/04 ENSAT Subsurface Soil Solid	01/30/04 ENSAT Subsurface Soil Solid	01/30/04 ENSAT Subsurface Soil Solid	01/30/04 ENSAT Subsurface Soil Solid	01/30/04 ENSAT Subsurface Soil Solid	01/30/04 ENSAT Subsurface Soil Solid	02/02/04 ENSAT Subsurface Soil Solid Duplicate	02/02/04 ENSAT Subsurface Soil Solid	02/02/04 ENSAT Subsurface Soil Solid	02/02/04 ENSAT Subsurface Soil Solid	02/02/04 ENSAT Subsurface Soil Solid	02/02/04 ENSAT Subsurface Soil Solid	02/03/04 ENSAT Subsurface Soil Solid
SVOCs														
Analytical Method Dilution Factor % Moisture Units							EPA 8270 15 mg/kg	EPA 8270 14 mg/kg	EPA 8270 21 mg/kg	EPA 8270 14 mg/kg	EPA 8270 14 mg/kg	EPA 8270 14 mg/kg	EPA 8270 13 mg/kg	EPA 8270 13 mg/kg
Notes														
Analyte							ResultFlag	ResultFlag	ResultFlag	ResultFlag	ResultFlag	ResultFlag	ResultFlag	ResultFlag
Acenaphthene							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Acenaphthylene							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Acetophenone							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Anthracene							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Atrazine							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Benzaldehyde							nr	nr	nr	nr		nr	nr	nr
Benzo(a)Anthracene							0.13J	3.9U	2.1U	3.9U	0.34J	0.45J	0.4J	1.9U
Benzo(a)Pyrene							0.12J	3.9U	2.1U	3.9U	0.32J	0.49J	3.8U	1.9U
Benzo(b)fluoranthene							0.15J	3.9U	2.1U	3.9U	0.37J	0.45J	3.8U	1.9U
Benzo(g,h,i)Perylene							0.076J	3.9U	2.1U	3.9U	0.22J	3.9U	3.8U	1.9U
Benzo(k)fluoranthene							0.097J	3.9U	2.1U	3.9U	0.25J	0.45J	0.39J	1.9U
Benzylbutylphthalate/Butylbenzylphthalate							0.083J	3.9U	0.27J	3.9U	1.9U	3.9U	3.8U	0.24J
1,1'-Biphenyl							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
4-Bromophenyl-phenylether							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Caprolactam							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Carbazole							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
4-Chloroaniline							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
bis(2-Chloroethoxy)Methane							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
bis(2-Chloroethyl)Ether							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
bis(2-Chloroisopropyl)Ether							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
4-Chloro-3-Methylphenol							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
2-Chloronaphthalene							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
2-Chlorophenol							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
4-Chlorophenyl-phenylether							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Chrysene							0.14J	3.9U	2.1U	0.4J	0.41J	0.58J	1.2J	1.9U
Dibenzo(a,h)Anthracene							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Dibenzofuran							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
1,2-Dichlorobenzene							nr	nr	nr	nr	nr	nr	nr	nr
1,3-Dichlorobenzene							nr	nr	nr	nr	nr	nr	nr	nr
1,4-Dichlorobenzene							nr	nr	nr	nr	nr	nr	nr	nr
3,3'-Dichlorobenzidine							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
2,4-Dichlorophenol							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Diethylphthalate							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
2,4-Dimethylphenol							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Dimethyl Phthalate							0.47U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Di-n-Butylphthalate							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
4,6-Dinitro-2-Methylphenol							0.9U	8.9U	4.8U	8.9U	4.5U	8.9U	8.8U	4.4U
2,4-Dinitrophenol							0.98U	9.7U	5.2U	9.6U	4.9U	9.7U	9.6U	4.8U
2,4-Dinitrotoluene							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
2,6-Dinitrotoluene							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Di-n-Octyl Phthalate							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
bis(2-Ethylhexyl)Phthalate							0.07J	0.68J	1.6J	0.56J	1.5J	5J	0.45J	0.2J
Fluoranthene							0.2J	3.9U	2.1U	3.9U	0.64J	0.75J	0.68J	0.28J
Fluorene							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Hexachlorobenzene							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Hexachlorobutadiene							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Hexachlorocyclopentadiene							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Hexachloroethane							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Indeno(1,2,3-cd)Pyrene							0.078J	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Isophorone							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
2-Methylnaphthalene							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
2-Methylphenol							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
4-Methylphenol							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
MethylMercury							nr	nr	nr	nr	nr	nr	nr	nr
Naphthalene							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
2-Nitroaniline							0.98U	9.7U	5.2U	9.6U	4.9U	9.7U	9.6U	4.8U
3-Nitroaniline							0.98U	9.7U	5.2U	9.6U	4.9U	9.7U	9.6U	4.8U
4-Nitroaniline							0.98U	9.7U	5.2U	9.6U	4.9U	9.7U	9.6U	4.8U
Nitrobenzene							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
2-Nitrophenol							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
4-Nitrophenol							0.98U	9.7U	5.2U	9.6U	4.9U	9.7U	9.6U	4.8U
N-Nitroso-Di-n-Propylamine							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
N-Nitrosodiphenylamine							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
2,2-Oxybis(1-Chloropropane)							nr	nr	nr	nr	nr	nr	nr	nr
Pentachlorophenol							0.98U	9.7U	5.2U	9.6U	4.9U	9.7U	9.6U	4.8U
Phenanthrene							0.066J	3.9U	2.1U	3.9U	0.56J	0.79J	3.8U	0.24J
Phenol							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U
Pyrene							0.2J	0.56J	2.1U	0.44J	0.75J	1.2J	0.79J	0.36J
1,2,4-Trichlorobenzene							nr	nr		nr			nr	nr
2,4,5-Trichlorophenol							0.98U	9.7U	5.2U	9.6U	4.9U	9.7U	9.6U	4.8U
2,4,6-Trichlorophenol							0.39U	3.9U	2.1U	3.9U	1.9U	3.9U	3.8U	1.9U

Table A.2a
Subsurface Soil Analytical Data - 1985 to 2004
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump F.5-07 6-8 01/30/04 ENSAT Subsurface Soil Solid	Sauer Dump F.5-07 8-10 01/30/04 ENSAT Subsurface Soil Solid	Sauer Dump G-06.5 2-4 01/30/04 ENSAT Subsurface Soil Solid	Sauer Dump G-06.5 4-6 01/30/04 ENSAT Subsurface Soil Solid	Sauer Dump G-06.5 6-8 01/30/04 ENSAT Subsurface Soil Solid	Sauer Dump G-06.5 8-10 01/30/04 ENSAT Subsurface Soil Solid	Sauer Dump TP 1C 9' 01/30/04 ENSAT Subsurface Soil Solid	Sauer Dump S-7 (2004) TP 3B 5' dup 02/02/04 ENSAT Subsurface Soil Solid Duplicate	Sauer Dump TP 2B 10' 02/02/04 ENSAT Subsurface Soil Solid	Sauer Dump TP 2D 9' 02/02/04 ENSAT Subsurface Soil Solid	Sauer Dump TP 3B 5' 02/02/04 ENSAT Subsurface Soil Solid	Sauer Dump TP 3C 7' 02/02/04 ENSAT Subsurface Soil Solid	Sauer Dump TP 3D 6' 02/02/04 ENSAT Subsurface Soil Solid	Sauer Dump TP 1B 7' 02/03/04 ENSAT Subsurface Soil Solid	
Inorganics/Total Metals															
Analytical Method								EPA 6020	EPA 6020	EPA 6020	EPA 6020	EPA 6020	EPA 6020	EPA 6020	
Dilution Factor															
% Moisture															
Units								mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Notes															
Analyte								Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum								4,100		9,900		7,200		16,000	
Antimony								2.9	U	2.9	U	6.7		2.9	U
Arsenic								8.3		13		11		6.2	
Barium								71		140		110		120	
Beryllium								2.9	U	2.9	U	3.1	U	2.9	U
Cadmium								2.9	U	6.9		3.1	U	2.9	U
Calcium								7,200		60,000		71,000		38,000	
Chromium								270		150		44		63	
Chromium III								nr		nr		nr		nr	
Chromium VI								nr		nr		nr		nr	
Cobalt								5.5		8.6		3.9		8.3	
Copper								230		1,200		13,000		980	
Iron								62,000		83,000		29,000		45,000	
Lead								270		550		8,700		850	
Magnesium								1,800		7,400		30,000		12,000	
Manganese								520		610		320		550	
Mercury								0.39		1.3		0.99		2.2	
Nickel								110		74		34		56	
Potassium								590	U	580	U	630	U	580	U
Selenium								2.9	U	18		4.6		2.9	U
Silver								2.9	U	2.9	U	3.1	U	2.9	U
Sodium								1,300		580	U	630	U	580	U
Thallium								2.3	U	2.3	U	2.5	U	2.3	U
Tin								nr		nr		nr		nr	
Vanadium								24		28		33		21	
Zinc								320		2,700		700		490	
Cyanide								nr		nr		nr		nr	
Dissolved Metals															
Analytical Method															
Dilution Factor															
% Moisture															
Units															
Notes															
Analyte															
Aluminum															
Antimony															
Arsenic															
Barium															
Beryllium															
Cadmium															
Calcium															
Chromium															
Cobalt															
Copper															
Iron															
Lead															
Magnesium															
Manganese															
Mercury															
Nickel															
Potassium															
Selenium															
Silver															
Sodium															
Thallium															
Vanadium															
Zinc															

Table A.2a
Subsurface Soil Analytical Data - 1985 to 2004
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Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump F.5-07 6-8 01/30/04 ENSAT Subsurface Soil Solid	Sauer Dump F.5-07 8-10 01/30/04 ENSAT Subsurface Soil Solid	Sauer Dump G-06.5 2-4 01/30/04 ENSAT Subsurface Soil Solid	Sauer Dump G-06.5 4-6 01/30/04 ENSAT Subsurface Soil Solid	Sauer Dump G-06.5 6-8 01/30/04 ENSAT Subsurface Soil Solid	Sauer Dump G-06.5 8-10 01/30/04 ENSAT Subsurface Soil Solid	Sauer Dump TP 1C 9' 01/30/04 ENSAT Subsurface Soil Solid	Sauer Dump S-7 (2004) TP 3B 5' dup 02/02/04 ENSAT Subsurface Soil Solid Duplicate	Sauer Dump TP 2B 10' 02/02/04 ENSAT Subsurface Soil Solid	Sauer Dump TP 2D 9' 02/02/04 ENSAT Subsurface Soil Solid	Sauer Dump TP 3B 5' 02/02/04 ENSAT Subsurface Soil Solid	Sauer Dump TP 3C 7' 02/02/04 ENSAT Subsurface Soil Solid	Sauer Dump TP 3D 6' 02/02/04 ENSAT Subsurface Soil Solid	Sauer Dump TP 1B 7' 02/03/04 ENSAT Subsurface Soil Solid
Pesticides/PCBs	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082
Analytical Method	1	2	20	25	20	100								
Dilution Factor	27	16	17	26	22	31								
% Moisture														
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Notes														
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	nr		nr		nr		nr		nr		nr		nr	
alpha-BHC	nr		nr		nr		nr		nr		nr		nr	
beta-BHC	nr		nr		nr		nr		nr		nr		nr	
delta-BHC	nr		nr		nr		nr		nr		nr		nr	
gamma-BHC (Lindane)	nr		nr		nr		nr		nr		nr		nr	
alpha-Chlordane	nr		nr		nr		nr		nr		nr		nr	
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr	
Chlordane, total	nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	nr		nr		nr		nr		nr		nr		nr	
4,4'-DDE	nr		nr		nr		nr		nr		nr		nr	
4,4'-DDT	nr		nr		nr		nr		nr		nr		nr	
Dieldrin	nr		nr		nr		nr		nr		nr		nr	
Endosulfan I	nr		nr		nr		nr		nr		nr		nr	
Endosulfan II	nr		nr		nr		nr		nr		nr		nr	
Endosulfan sulfate	nr		nr		nr		nr		nr		nr		nr	
Endrin	nr		nr		nr		nr		nr		nr		nr	
Endrin aldehyde	nr		nr		nr		nr		nr		nr		nr	
Endrin ketone	nr		nr		nr		nr		nr		nr		nr	
Heptachlor	nr		nr		nr		nr		nr		nr		nr	
Heptachlor epoxide	nr		nr		nr		nr		nr		nr		nr	
Methoxychlor	nr		nr		nr		nr		nr		nr		nr	
Toxaphene	nr		nr		nr		nr		nr		nr		nr	
Aroclor-1016	0.68	U	1.2	U	12	U	17	U	72	U	0.59	U	0.58	U
Aroclor-1221	1.4	U	2.4	U	24	U	34	U	150	U	0.59	U	0.58	U
Aroclor-1232	0.68	U	1.2	U	12	U	17	U	72	U	0.59	U	0.58	U
Aroclor-1242	0.68	U	1.2	U	12	U	22	U	13	U	72	U	0.63	U
Aroclor-1248	0.68	U	1.2	U	12	U	17	U	13	U	72	U	0.58	U
Aroclor-1254	6.7	U	12		150		270		110		0.59	U	1.5	U
Aroclor-1260	0.68	U	1.2	U	12	U	59		13	U	72	U	0.58	U
Total PCBs	6.7		12		150		351		110		370		ND	
Other Analytes														
Analytical Method														
Dilution Factor														
% Moisture														
Units														
Notes														
Analyte														

Table A.2b
Subsurface Soil Analytical Data - 2005
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump S-1-2005 Y-05.5 12-14 dup 02/02/05 ENSAT Subsurface Soil Solid Duplicate	Sauer Dump Y-05.5 10-12 02/02/05 ENSAT Subsurface Soil Solid	Sauer Dump Y-05.5 12-14 02/02/05 ENSAT Subsurface Soil Solid	Sauer Dump Y-05.5 14-16 02/02/05 ENSAT Subsurface Soil Solid	Sauer Dump Y-05.5 16-18 02/02/05 ENSAT Subsurface Soil Solid	Sauer Dump Y-05.5 18-20 02/02/05 ENSAT Subsurface Soil Solid	Sauer Dump Y-05.5 20-22 02/02/05 ENSAT Subsurface Soil Solid	Sauer Dump Y-05.5 2-4 02/02/05 ENSAT Subsurface Soil Solid	Sauer Dump Y-05.5 4-6 02/02/05 ENSAT Subsurface Soil Solid	Sauer Dump Y-05.5 6-8 02/02/05 ENSAT Subsurface Soil Solid	Sauer Dump Y-05.5 8-10 02/02/05 ENSAT Subsurface Soil Solid	Sauer Dump G-06.25 10-12 02/03/05 ENSAT Subsurface Soil Solid	Sauer Dump G-06.25 6-8 02/03/05 ENSAT Subsurface Soil Solid	Sauer Dump G-06.25 8-10 02/03/05 ENSAT Subsurface Soil Solid	Sauer Dump J-11.5 10-12 02/03/05 ENSAT Subsurface Soil Solid	Sauer Dump J-11.5 12-14 02/03/05 ENSAT Subsurface Soil Solid
Pesticides/PCBs																
Analytical Method Dilution Factor % Moisture Units	EPA 8082 23 mg/kg	EPA 8082 21 mg/kg	EPA 8082 28 mg/kg	EPA 8082 51 mg/kg	EPA 8082 57 mg/kg	EPA 8082 50 mg/kg	EPA 8082 23 mg/kg	EPA 8082 15 mg/kg	EPA 8082 15 mg/kg	EPA 8082 17 mg/kg	EPA 8082 22 mg/kg	EPA 8082 21 mg/kg	EPA 8082 20 mg/kg	EPA 8082 24 mg/kg	EPA 8082 60 mg/kg	EPA 8082 63 mg/kg
Notes	ResultFlag		ResultFlag		ResultFlag		ResultFlag		ResultFlag		ResultFlag		ResultFlag		ResultFlag	
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	nr		nr		nr		nr		nr		nr		nr		nr	
alpha-BHC	nr		nr		nr		nr		nr		nr		nr		nr	
beta-BHC	nr		nr		nr		nr		nr		nr		nr		nr	
delta-BHC	nr		nr		nr		nr		nr		nr		nr		nr	
gamma-BHC (Lindane)	nr		nr		nr		nr		nr		nr		nr		nr	
alpha-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr	
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr	
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDE	nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDT	nr		nr		nr		nr		nr		nr		nr		nr	
Dieldrin	nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan I	nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan II	nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan sulfate	nr		nr		nr		nr		nr		nr		nr		nr	
Endrin	nr		nr		nr		nr		nr		nr		nr		nr	
Endrin aldehyde	nr		nr		nr		nr		nr		nr		nr		nr	
Endrin ketone	nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor	nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor epoxide	nr		nr		nr		nr		nr		nr		nr		nr	
Methoxychlor	nr		nr		nr		nr		nr		nr		nr		nr	
Toxaphene	nr		nr		nr		nr		nr		nr		nr		nr	
Aroclor-1016	1.6U		1.5U		1.7U		2.5U		0.56U		0.49U		0.31U		1.5U	
Aroclor-1221	1.6U		1.5U		1.7U		2.5U		0.56U		0.49U		0.31U		1.5U	
Aroclor-1232	1.6U		1.5U		1.7U		2.5U		0.56U		0.49U		0.31U		1.5U	
Aroclor-1242	1.6U		1.5U		1.7U		2.5U		0.56U		0.49U		0.31U		1.5U	
Aroclor-1248	1.6U		1.5U		1.7U		2.5U		0.56U		0.49U		0.31U		1.5U	
Aroclor-1254	2.9		2.7		3.1		3.1		0.56U		0.49U		0.31U		20	
Aroclor-1260	1.6U		1.5U		1.7U		2.5U		0.56U		0.49U		0.31U		15U	
Total PCBs	2.9		2.7		3.1		3.1		ND		ND		ND		20	
Other Analytes																
Analytical Method Dilution Factor % Moisture Units																
Notes	ResultFlag		ResultFlag		ResultFlag		ResultFlag		ResultFlag		ResultFlag		ResultFlag		ResultFlag	
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag

Table A.2b
Subsurface Soil Analytical Data - 2005
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump J-11.5 14-16		Sauer Dump J-11.5 6-8		Sauer Dump J-11.5 8-10		Sauer Dump S-2-2005 J-11.5 10-12 dup		Sauer Dump K-16 10-12		Sauer Dump K-16 12-14		Sauer Dump K-16 14-16		Sauer Dump K-16 6-8		Sauer Dump K-16 8-10		Sauer Dump K-17 10-12		Sauer Dump K-17 2-4		Sauer Dump K-17 4-6		Sauer Dump K-17 6-8		Sauer Dump K-17 8-10		Sauer Dump L-10 2-4	
	02/03/05 ENSAT Subsurface Soil Solid		02/03/05 ENSAT Subsurface Soil Solid		02/03/05 ENSAT Subsurface Soil Solid		02/03/05 ENSAT Subsurface Soil Solid Duplicate		02/04/05 ENSAT Subsurface Soil Solid		02/04/05 ENSAT Subsurface Soil Solid		02/04/05 ENSAT Subsurface Soil Solid		02/04/05 ENSAT Subsurface Soil Solid		02/04/05 ENSAT Subsurface Soil Solid		02/04/05 ENSAT Subsurface Soil Solid		02/04/05 ENSAT Subsurface Soil Solid		02/04/05 ENSAT Subsurface Soil Solid		02/04/05 ENSAT Subsurface Soil Solid		02/07/05 ENSAT Subsurface Soil Solid			
Pesticides/PCBs																														
Analytical Method Dilution Factor % Moisture Units	EPA 8082 51 mg/kg		EPA 8082 31 mg/kg		EPA 8082 27 mg/kg		EPA 8082 59 mg/kg		EPA 8082 49 mg/kg		EPA 8082 52 mg/kg		EPA 8082 52 mg/kg		EPA 8082 32 mg/kg		EPA 8082 57 mg/kg		EPA 8082 68 mg/kg		EPA 8082 21 mg/kg		EPA 8082 33 mg/kg		EPA 8082 30 mg/kg		EPA 8082 36 mg/kg		EPA 8082 76 mg/kg	
Notes																														
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
alpha-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
beta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
delta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
gamma-BHC (Lindane)	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
alpha-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDE	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDT	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dieldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan I	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan II	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan sulfate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin aldehyde	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin ketone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor epoxide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methoxychlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Toxaphene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Aroclor-1016	0.5	U	1.8	U	3.3	U	0.6	U	0.48	U	0.51	U	0.51	U	1.8	U	2.8	U	0.75	U	3.1	U	1.8	U	1.8	U	0.38	U	0.99	U
Aroclor-1221	0.5	U	1.8	U	3.3	U	0.6	U	0.48	U	0.51	U	0.51	U	1.8	U	2.8	U	0.75	U	3.1	U	1.8	U	1.8	U	0.38	U	0.99	U
Aroclor-1232	0.5	U	1.8	U	3.3	U	0.6	U	0.48	U	0.51	U	0.51	U	1.8	U	2.8	U	0.75	U	3.1	U	1.8	U	1.8	U	0.38	U	0.99	U
Aroclor-1242	0.5	U	1.8	U	3.3	U	0.6	U	0.48	U	0.51	U	0.51	U	1.8	U	2.8	U	0.75	U	3.1	U	1.8	U	1.8	U	0.38	U	0.99	U
Aroclor-1248	0.5	U	1.8	U	3.3	U	0.6	U	0.48	U	0.51	U	0.51	U	1.8	U	2.8	U	0.75	U	3.1	U	1.8	U	1.8	U	0.38	U	0.99	U
Aroclor-1254	0.5	U	3.3		4.1		0.6	U	0.48	U	0.51	U	0.51	U	3.9		4.3		0.75	U	6.9		2.3		3.5		1.3		0.99	U
Aroclor-1260	0.5	U	1.8	U	3.3	U	0.6	U	0.48	U	0.51	U	0.51	U	1.8	U	2.8	U	0.75	U	3.9		1.8	U	1.8	U	0.38	U	0.99	U
Total PCBs	ND		3.3		4.1		ND		ND		ND		ND		3.9		4.3		ND		6.9		2.3		3.5		1.3		ND	
Other Analytes																														
Analytical Method Dilution Factor % Moisture Units																														
Notes																														
Analyte																														

Table A.2b
Subsurface Soil Analytical Data - 2005
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump L-10 4-6 02/07/05 ENSAT Subsurface Soil Solid	Sauer Dump L-12 0-2 02/07/05 ENSAT Surficial Soil Solid	Sauer Dump L-13 0-2 02/07/05 ENSAT Surficial Soil Solid	Sauer Dump L-14 0-2 02/07/05 ENSAT Surficial Soil Solid	Sauer Dump L-15 0-2 02/07/05 ENSAT Surficial Soil Solid	Sauer Dump L-16 0-2 02/07/05 ENSAT Surficial Soil Solid	Sauer Dump L-09 10-12 02/08/05 ENSAT Subsurface Soil Solid	Sauer Dump L-09 2-4 02/08/05 ENSAT Subsurface Soil Solid	Sauer Dump L-09 4-6 02/08/05 ENSAT Subsurface Soil Solid	Sauer Dump L-09 6-8 02/08/05 ENSAT Subsurface Soil Solid	Sauer Dump L-09 8-10 02/08/05 ENSAT Subsurface Soil Solid	Sauer Dump L-10 10-12 02/08/05 ENSAT Subsurface Soil Solid	Sauer Dump L-10 6-8 02/08/05 ENSAT Subsurface Soil Solid	Sauer Dump L-10 8-10 02/08/05 ENSAT Subsurface Soil Solid	Sauer Dump L-16 10-12 02/08/05 ENSAT Subsurface Soil Solid	Sauer Dump L-16 2-4 02/08/05 ENSAT Subsurface Soil Solid
Pesticides/PCBs	EPA 8082						EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082
Analytical Method							1	20	1	1	1	1	1	5	1	1
Dilution Factor							62	24	73	80	73	64	80	72	62	62
% Moisture	82						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg										
Notes																
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	nr		nr		nr		nr		nr		nr		nr		nr	
alpha-BHC	nr		nr		nr		nr		nr		nr		nr		nr	
beta-BHC	nr		nr		nr		nr		nr		nr		nr		nr	
delta-BHC	nr		nr		nr		nr		nr		nr		nr		nr	
gamma-BHC (Lindane)	nr		nr		nr		nr		nr		nr		nr		nr	
alpha-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr	
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr	
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDE	nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDT	nr		nr		nr		nr		nr		nr		nr		nr	
Dieldrin	nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan I	nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan II	nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan sulfate	nr		nr		nr		nr		nr		nr		nr		nr	
Endrin	nr		nr		nr		nr		nr		nr		nr		nr	
Endrin aldehyde	nr		nr		nr		nr		nr		nr		nr		nr	
Endrin ketone	nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor	nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor epoxide	nr		nr		nr		nr		nr		nr		nr		nr	
Methoxychlor	nr		nr		nr		nr		nr		nr		nr		nr	
Toxaphene	nr		nr		nr		nr		nr		nr		nr		nr	
Aroclor-1016	1.3	U	0.64	U	0.72	U	0.37	U	6.8	U	23	U	0.088	U	0.88	U
Aroclor-1221	1.3	U	0.64	U	0.72	U	0.37	U	6.8	U	23	U	0.088	U	0.88	U
Aroclor-1232	1.3	U	0.64	U	0.72	U	0.37	U	6.8	U	23	U	0.088	U	0.88	U
Aroclor-1242	1.3	U	0.64	U	0.72	U	0.37	U	6.8	U	23	U	0.088	U	3.3	
Aroclor-1248	1.3	U	0.64	U	0.72	U	0.37	U	6.8	U	23	U	0.088	U	0.88	U
Aroclor-1254	1.3	U	0.64	U	2		0.84		13		37		0.088	U	12	
Aroclor-1260	1.3	U	0.64	U	0.72	U	0.37	U	6.8	U	23	U	0.088	U	3.9	
Total PCBs	ND		ND		2		0.84		13		37		ND		19.2	
Other Analytes																
Analytical Method																
Dilution Factor																
% Moisture																
Units																
Notes																
Analyte																

Table A.2b
Subsurface Soil Analytical Data - 2005
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump L-16 4-6		Sauer Dump L-16 6-8		Sauer Dump L-16 8-10		Sauer Dump L-17 2-4		Sauer Dump L-17 4-6		Sauer Dump L-17 6-8		Sauer Dump L-17 8-10		Sauer Dump S-6-2005 L-09 6-8 dup		Sauer Dump S-7-2005 L-17 2-4 dup		Sauer Dump L-07 2-4		Sauer Dump L-07 4-6		Sauer Dump L-07 6-8		Sauer Dump L-08 2-4		Sauer Dump L-08 4-6		Sauer Dump L-08 6-8	
	02/08/05 ENSAT Subsurface Soil Solid		02/08/05 ENSAT Subsurface Soil Solid		02/08/05 ENSAT Subsurface Soil Solid		02/08/05 ENSAT Subsurface Soil Solid		02/08/05 ENSAT Subsurface Soil Solid		02/08/05 ENSAT Subsurface Soil Solid		02/08/05 ENSAT Subsurface Soil Solid		02/08/05 ENSAT Subsurface Soil Solid Duplicate		02/08/05 ENSAT Subsurface Soil Solid Duplicate		02/09/05 ENSAT Subsurface Soil Solid		02/09/05 ENSAT Subsurface Soil Solid		02/09/05 ENSAT Subsurface Soil Solid		02/09/05 ENSAT Subsurface Soil Solid		02/09/05 ENSAT Subsurface Soil Solid			
Pesticides/PCBs																														
Analytical Method Dilution Factor % Moisture Units	EPA 8082 1 68 mg/kg		EPA 8082 1 67 mg/kg		EPA 8082 1 59 mg/kg		EPA 8082 77 mg/kg		EPA 8082 74 mg/kg		EPA 8082 77 mg/kg		EPA 8082 67 mg/kg		EPA 8082 1 72 mg/kg		EPA 8082 1 73 mg/kg		EPA 8082 1 79 mg/kg		EPA 8082 1 79 mg/kg		EPA 8082 1 77 mg/kg		EPA 8082 10 60 mg/kg		EPA 8082 10 58 mg/kg		EPA 8082 1 81 mg/kg	
Notes																														
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
alpha-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
beta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
delta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
gamma-BHC (Lindane)	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
alpha-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDE	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDT	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dieldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan I	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan II	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan sulfate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin aldehyde	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin ketone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor epoxide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methoxychlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Toxaphene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Aroclor-1016	0.1	U	0.1	U	0.81	U	1	U	0.92	U	1.1	U	0.74	U	0.12	U	0.12	U	0.16	U	0.16	U	0.15	U	0.83	U	0.79	U	0.18	U
Aroclor-1221	0.1	U	0.1	U	0.81	U	1	U	0.92	U	1.1	U	0.74	U	0.12	U	0.12	U	0.16	U	0.16	U	0.15	U	0.83	U	0.79	U	0.18	U
Aroclor-1232	0.1	U	0.1	U	0.81	U	1	U	0.92	U	1.1	U	0.74	U	0.12	U	0.12	U	0.16	U	0.16	U	0.15	U	0.83	U	0.79	U	0.18	U
Aroclor-1242	0.33		0.1	U	0.81	U	1	U	0.92	U	1.1	U	0.74	U	0.12	U	0.34		0.16	U	0.16	U	0.15	U	8.3		4		0.18	U
Aroclor-1248	0.1	U	0.1	U	0.81	U	1	U	0.92	U	1.1	U	0.74	U	0.12	U	0.12	U	0.16	U	0.16	U	0.15	U	0.83	U	0.79	U	0.2	
Aroclor-1254	0.44		0.1	U	0.81	U	1	U	0.92	U	1.1	U	0.74	U	0.34		1.3		0.18		0.22		0.16		4		0.13		0.67	
Aroclor-1260	0.21		0.1	U	0.81	U	1	U	0.92	U	1.1	U	0.74	U	0.15		0.37		0.16	U	0.16	U	0.15	U	2.1		2.1		0.18	U
Total PCBs	0.98		ND		ND		ND		ND		ND		ND		0.49		2.01		0.18		0.22		0.16		14.4		19.1		0.87	
Other Analytes																														
Analytical Method Dilution Factor % Moisture Units																														
Notes																														
Analyte																														

Table A.2b
Subsurface Soil Analytical Data - 2005
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump L-14 2-4		Sauer Dump L-14 4-6		Sauer Dump L-14 6-8		Sauer Dump L-15 10-12		Sauer Dump L-15 2-4		Sauer Dump L-15 4-6		Sauer Dump L-15 6-8		Sauer Dump L-15 8-10		Sauer Dump S-8-2005 L-08 4-6 dup		Sauer Dump S-9-2005 L-07 2-4 dup		Sauer Dump L-11 10-12		Sauer Dump L-11 2-4		Sauer Dump L-11 4-6		Sauer Dump L-11 6-8	
	02/09/05 ENSAT Subsurface Soil Solid		02/09/05 ENSAT Subsurface Soil Solid		02/09/05 ENSAT Subsurface Soil Solid		02/09/05 ENSAT Subsurface Soil Solid		02/09/05 ENSAT Subsurface Soil Solid		02/09/05 ENSAT Subsurface Soil Solid		02/09/05 ENSAT Subsurface Soil Solid		02/09/05 ENSAT Subsurface Soil Solid		02/09/05 ENSAT Subsurface Soil Solid Duplicate		02/09/05 ENSAT Subsurface Soil Solid Duplicate		02/10/05 ENSAT Subsurface Soil Solid		02/10/05 ENSAT Subsurface Soil Solid		02/10/05 ENSAT Subsurface Soil Solid		02/10/05 ENSAT Subsurface Soil Solid	
Pesticides/PCBs																												
Analytical Method	EPA 8082		EPA 8082		EPA 8082		EPA 8082		EPA 8082		EPA 8082		EPA 8082		EPA 8082		EPA 8082		EPA 8082		EPA 8082		EPA 8082		EPA 8082		EPA 8082	
Dilution Factor	50		10		10		1		50		10		1		1		1		1		2		2		1		1	
% Moisture	33		62		74		56		41		64		69		61		58		80		68		71		74		72	
Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Notes																												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
alpha-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
beta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
delta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
gamma-BHC (Lindane)	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
alpha-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDE	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDT	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dieldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan I	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan II	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan sulfate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin aldehyde	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin ketone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor epoxide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methoxychlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Toxaphene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Aroclor-1016	2.5	U	0.88	U	1.3	U	0.076	U	2.8	U	0.93	U	0.11	U	0.085	U	0.079	U	0.17	U	0.21	U	0.23	U	0.13	U	0.12	U
Aroclor-1221	2.5	U	0.88	U	1.3	U	0.076	U	2.8	U	0.93	U	0.11	U	0.085	U	0.079	U	0.17	U	0.21	U	0.23	U	0.13	U	0.12	U
Aroclor-1232	2.5	U	0.88	U	1.3	U	0.076	U	2.8	U	0.93	U	0.11	U	0.085	U	0.079	U	0.17	U	0.21	U	0.23	U	0.13	U	0.12	U
Aroclor-1242	2.5	U	3.7		1.3	U	0.076	U	2.8	U	4.5		0.11	U	0.085	U	0.23		0.17	U	0.98		0.59		0.21		0.44	
Aroclor-1248	12		0.88	U	1.3	U	0.076	U	2.8	U	0.93	U	0.11	U	0.085	U	0.079	U	0.17	U	0.21	U	0.23	U	0.13	U	0.12	U
Aroclor-1254	24		12		17		0.076	U	38		10		0.11	U	0.085	U	0.62		0.24		2.9		2.2		0.74		1.4	
Aroclor-1260	16		4.3		2.8		0.076	U	15		4.7		0.11	U	0.085	U	0.13	U	0.17	U	0.67		0.88		0.18		0.34	
Total PCBs	52		20		19.8		ND		53		19.2		ND		ND		0.85		0.24		4.55		3.67		1.13		2.18	
Other Analytes																												
Analytical Method																												
Dilution Factor																												
% Moisture																												
Units																												
Notes																												
Analyte																												

Table A.2b
Subsurface Soil Analytical Data - 2005
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump L-11 8-10		Sauer Dump L-12 10-12		Sauer Dump L-12 2-4		Sauer Dump L-12 4-6		Sauer Dump L-12 6-8		Sauer Dump L-12 8-10		Sauer Dump L-13 2-4		Sauer Dump L-13 4-6		Sauer Dump L-13 6-8		Sauer Dump L-13 8-10		Sauer Dump S-10-2005 L-12 2-4 dup		Sauer Dump S-11-2005 L-11 4-6 dup		Sauer Dump S-12-2005 L-11 8-10 dup		Sauer Dump M-08 2-4		Sauer Dump M-08 4-6	
	02/10/05 ENSAT Subsurface Soil Solid		02/10/05 ENSAT Subsurface Soil Solid		02/10/05 ENSAT Subsurface Soil Solid		02/10/05 ENSAT Subsurface Soil Solid		02/10/05 ENSAT Subsurface Soil Solid		02/10/05 ENSAT Subsurface Soil Solid		02/10/05 ENSAT Subsurface Soil Solid		02/10/05 ENSAT Subsurface Soil Solid		02/10/05 ENSAT Subsurface Soil Solid		02/10/05 ENSAT Subsurface Soil Solid Duplicate		02/10/05 ENSAT Subsurface Soil Solid Duplicate		02/10/05 ENSAT Subsurface Soil Solid Duplicate		03/09/05 ENSAT Subsurface Soil Solid		03/09/05 ENSAT Subsurface Soil Solid			
Pesticides/PCBs																														
Analytical Method Dilution Factor % Moisture Units	EPA 8082 1 80 mg/kg		EPA 8082 5 58 mg/kg		EPA 8082 2 72 mg/kg		EPA 8082 10 72 mg/kg		EPA 8082 5 70 mg/kg		EPA 8082 2 61 mg/kg		EPA 8082 2 70 mg/kg		EPA 8082 1 70 mg/kg		EPA 8082 10 69 mg/kg		EPA 8082 10 65 mg/kg		EPA 8082 2 73 mg/kg		EPA 8082 1 73 mg/kg		EPA 8082 1 80 mg/kg		EPA 8082 57 mg/kg		EPA 8082 68 mg/kg	
Notes																														
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
alpha-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
beta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
delta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
gamma-BHC (Lindane)	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
alpha-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDE	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDT	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dieldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan I	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan II	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan sulfate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin aldehyde	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin ketone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor epoxide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methoxychlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Toxaphene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Aroclor-1016	0.17	U	0.4	U	0.24	U	1.2	U	0.56	U	0.17	U	0.22	U	0.11	U	1.1	U	0.95	U	0.25	U	0.12	U	0.17	U	0.56	U	0.76	U
Aroclor-1221	0.17	U	0.4	U	0.24	U	1.2	U	0.56	U	0.17	U	0.22	U	0.11	U	1.1	U	0.95	U	0.25	U	0.12	U	0.17	U	0.56	U	0.76	U
Aroclor-1232	0.17	U	0.4	U	0.24	U	1.2	U	0.56	U	0.17	U	0.22	U	0.11	U	1.1	U	0.95	U	0.25	U	0.12	U	0.17	U	0.56	U	0.76	U
Aroclor-1242	0.24		1		0.65		3.7		2.4		0.8		1.6		0.39		10		6.2		0.71		0.15		0.41		0.56	U	0.76	U
Aroclor-1248	0.17	U	0.4	U	0.24	U	1.2	U	0.56	U	0.17	U	0.22	U	0.11	U	1.1	U	0.95	U	0.25	U	0.12	U	0.17	U	0.56	U	0.76	U
Aroclor-1254	0.8		3.8		2.5		14		8.3		2.6		15		0.8		15		15		2.8		0.67		1.3		0.56	U	0.76	U
Aroclor-1260	0.26		1.2		0.95		5		3		1.5		1.2		1.2		13		4.3		0.84		0.22		0.33		0.56	U	0.76	U
Total PCBs	1.3		6		4.1		22.7		13.7		4.9		5.3		2.39		38		25.5		4.35		1.04		2.04		ND		ND	
Other Analytes																														
Analytical Method Dilution Factor % Moisture Units																														
Notes																														
Analyte																														

Table A.2c
Subsurface Soil Analytical Data - 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC VOCs SVOCs Inorganics/Total Metals Dissolved Metals PCBs/Pesticides Other Analytes	Sauer Dump DG-SB01-2 C7A250145003 01/24/07 Malcolm Pirnie Subsurface Soil Solid yes yes yes - lead only no yes - PCBs only no	Sauer Dump DG-SB02-2 C7A250145004 01/24/07 Malcolm Pirnie Subsurface Soil Solid yes yes yes - lead only no yes - PCBs only no	Sauer Dump DG-SB03-2 C7A250145005 01/24/07 Malcolm Pirnie Subsurface Soil Solid yes yes yes - lead only no yes - PCBs only no	Sauer Dump DG-SB04-2 C7A250145007 01/24/07 Malcolm Pirnie Subsurface Soil Solid yes yes yes - lead only no yes - PCBs only no	Sauer Dump DG-SB05-2 C7A250145008 01/24/07 Malcolm Pirnie Subsurface Soil Solid yes yes yes - lead only no yes - PCBs only no	Sauer Dump DG-SB06-2 C7A250145009 01/24/07 Malcolm Pirnie Subsurface Soil Solid yes yes yes - lead only no yes - PCBs only no	Sauer Dump DG-SB07-2 C7A250145010 01/24/07 Malcolm Pirnie Subsurface Soil Solid yes yes yes - lead only no yes - PCBs only no	Sauer Dump DG-SB08-2 C7A250145012 01/24/07 Malcolm Pirnie Subsurface Soil Solid yes yes yes - lead only no yes - PCBs only no	Sauer Dump DG-SB09-2 C7A250145013 01/24/07 Malcolm Pirnie Subsurface Soil Solid yes yes yes - lead only no yes - PCBs only no	Sauer Dump DG-SB-01-1 C7L210240024 12/19/07 Malcolm Pirnie Subsurface Soil Solid no no yes - lead only no yes - PCBs only TOC	Sauer Dump HS-SB-01-10 5241545 12/19/07 Malcolm Pirnie Subsurface Soil Solid no no yes - lead only no yes - PCBs only TOC	Sauer Dump HS-SB-02-08 5241546 12/19/07 Malcolm Pirnie Subsurface Soil Solid no no yes - lead only no yes - PCBs only TOC	Sauer Dump HS-SB-03-08 5241547 12/19/07 Malcolm Pirnie Subsurface Soil Solid no no yes - lead only no yes - PCBs only TOC	Sauer Dump HS-SB-04-11 C7L210240032 12/19/07 Malcolm Pirnie Subsurface Soil Solid no no yes - lead only no yes - PCBs only TOC	Sauer Dump HS-SB-04-4 C7L210240031 12/19/07 Malcolm Pirnie Subsurface Soil Solid no no yes - lead only no yes - PCBs only TOC					
VOCs	SW846 8260B 1	SW846 8260B 1	SW846 8260B 1	SW846 8260B 1	SW846 8260B 1	SW846 8260B 1	SW846 8260B 1	SW846 8260B 1	SW846 8260B 1	SW846 8260B 1										
Analytical Method Dilution Factor % Moisture Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg										
Notes																				
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag				
Acetone	0.023	U	0.0082	J	0.025	J	0.033	U	0.031	U	0.029	U	0.014	J	0.023	J				
Acetonitrile	nr		nr		nr		nr		nr		nr		nr		nr					
Acrolein	nr		nr		nr		nr		nr		nr		nr		nr					
Acrylonitrile	nr		nr		nr		nr		nr		nr		nr		nr					
Allyl Alcohol	nr		nr		nr		nr		nr		nr		nr		nr					
Allyl Chloride	nr		nr		nr		nr		nr		nr		nr		nr					
Benzene	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
Benzene (2-Methyl-1-Propeny	nr		nr		nr		nr		nr		nr		nr		nr					
Benzyl Chloride	nr		nr		nr		nr		nr		nr		nr		nr					
Bromoacetone	nr		nr		nr		nr		nr		nr		nr		nr					
Bromobenzene	nr		nr		nr		nr		nr		nr		nr		nr					
Bromochloromethane/Chlorobromomethane	nr		nr		nr		nr		nr		nr		nr		nr					
Bromodichloromethane	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
Bromoform	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
Bromomethane/Methyl bromide	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
2-Butanone (Methyl Ethyl Ketone)	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
n-Butylbenzene	nr		nr		nr		nr		nr		nr		nr		nr					
sec-Butylbenzene	nr		nr		nr		nr		nr		nr		nr		nr					
tert-Butylbenzene	nr		nr		nr		nr		nr		nr		nr		nr					
Camphene	nr		nr		nr		nr		nr		nr		nr		nr					
Carbon Disulfide	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
Carbon Tetrachloride	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
Chlorobenzene	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
Chloroethane/Ethyl chloride	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
2-Chloroethanol/Ethylene chlorohydrin	nr		nr		nr		nr		nr		nr		nr		nr					
2-Chloroethylvinyl Ether	nr		nr		nr		nr		nr		nr		nr		nr					
Chloroform	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
Chloromethane/Methyl chloride	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
Chloroprene	nr		nr		nr		nr		nr		nr		nr		nr					
2-Chlorotoluene	nr		nr		nr		nr		nr		nr		nr		nr					
4-Chlorotoluene	nr		nr		nr		nr		nr		nr		nr		nr					
Cyclohexane	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
Cyclohexane, Butyl-	nr		nr		nr		nr		nr		nr		nr		nr					
1,3-Cyclopentadiene	nr		nr		nr		nr		nr		nr		nr		nr					
Decahydro-naphthalene	nr		nr		nr		nr		nr		nr		nr		nr					
Dibromochloromethane/Chlorodibromomethane	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
trans-1,4-Dichloro-2-butene	nr		nr		nr		nr		nr		nr		nr		nr					
1,4-Dichloro-2-butene	nr		nr		nr		nr		nr		nr		nr		nr					
1,2-Dibromo-3-chloropropane	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
1,2-Dibromomethane	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
1,2-Dichlorobenzene	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
1,3-Dichlorobenzene	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
1,4-Dichlorobenzene	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
Dichlorodifluoromethane	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
1,1-Dichloroethane	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
1,2-Dichloroethane	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
1,1-Dichloroethene	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
cis-1,2-Dichloroethene	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
trans-1,2-Dichloroethene	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U				
1,2-Dichloroethene (Total)	nr		nr		nr		nr		nr											

Table A.2c Subsurface Soil Analytical Data - 2007 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																										
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump DG-SB01-2 C7A250145003	Sauer Dump DG-SB02-2 C7A250145004	Sauer Dump DG-SB03-2 C7A250145005	Sauer Dump DG-SB04-2 C7A250145007	Sauer Dump DG-SB05-2 C7A250145008	Sauer Dump DG-SB06-2 C7A250145009	Sauer Dump DG-SB07-2 C7A250145010	Sauer Dump DG-SB08-2 C7A250145012	Sauer Dump DG-SB09-2 C7A250145013	Sauer Dump HS-SB-01-1 C7L210240024	Sauer Dump HS-SB-01-10 5241545	Sauer Dump HS-SB-02-08 5241546	Sauer Dump HS-SB-03-08 5241547	Sauer Dump HS-SB-04-11 C7L210240032	Sauer Dump HS-SB-04-4 C7L210240031											
	01/24/07 Malcolm Pirnie Subsurface Soil Solid	01/24/07 Malcolm Pirnie Subsurface Soil Solid	01/24/07 Malcolm Pirnie Subsurface Soil Solid	01/24/07 Malcolm Pirnie Subsurface Soil Solid	01/24/07 Malcolm Pirnie Subsurface Soil Solid	01/24/07 Malcolm Pirnie Subsurface Soil Solid	01/24/07 Malcolm Pirnie Subsurface Soil Solid	01/24/07 Malcolm Pirnie Subsurface Soil Solid	01/24/07 Malcolm Pirnie Subsurface Soil Solid	12/19/07 Malcolm Pirnie Subsurface Soil Solid	12/19/07 Malcolm Pirnie Subsurface Soil Solid	12/19/07 Malcolm Pirnie Subsurface Soil Solid	12/19/07 Malcolm Pirnie Subsurface Soil Solid	12/19/07 Malcolm Pirnie Subsurface Soil Solid	12/19/07 Malcolm Pirnie Subsurface Soil Solid											
VOCs (cont.)																										
Analytical Method Dilution Factor % Moisture Units Notes	SW846 8260B 1 mg/kg		SW846 8260B 1 mg/kg		SW846 8260B 1 mg/kg		SW846 8260B 1 mg/kg		SW846 8260B 1 mg/kg		SW846 8260B 1 mg/kg		SW846 8260B 1 mg/kg		SW846 8260B 1 mg/kg											
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag										
1,4-Dioxane	nr		nr		nr		nr		nr		nr		nr		nr											
Dodecane, 6-Methyl-	nr		nr		nr		nr		nr		nr		nr		nr											
Ethanol	nr		nr		nr		nr		nr		nr		nr		nr											
Ethylbenzene	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U										
1-Ethyl-2,3-Dimethyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr											
4-Ethyl-1,2-Dimethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr											
1-Ethyl-2-Methyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr											
1-Ethyl-3-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr											
1-Ethyl-4-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr											
Ethylene Oxide	nr		nr		nr		nr		nr		nr		nr		nr											
Ethylmethacrylate	nr		nr		nr		nr		nr		nr		nr		nr											
Epichlorohydrin	nr		nr		nr		nr		nr		nr		nr		nr											
Hexachlorobutadiene	0.77	U	0.99	U	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	1.1	U	1.2	U								
Hexane	nr		nr		nr		nr		nr		nr		nr		nr											
2-Hexanone	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U	0.0073	U								
2-Hydroxypropionitrile	nr		nr		nr		nr		nr		nr		nr		nr											
Isobutyl alcohol	nr		nr		nr		nr		nr		nr		nr		nr											
Isopropylbenzene	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U	0.0073	U								
p-Isopropyl Toluene	nr		nr		nr		nr		nr		nr		nr		nr											
Malononitrile	nr		nr		nr		nr		nr		nr		nr		nr											
Methacrylonitrile	nr		nr		nr		nr		nr		nr		nr		nr											
Methyl Acetate	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U	0.0073	U								
Methylcyclohexane	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U	0.0073	U								
1-Methyl-2- Benzene (1 Methyl	nr		nr		nr		nr		nr		nr		nr		nr											
1-Methyl-3- Benzene (1 Methyl	nr		nr		nr		nr		nr		nr		nr		nr											
1-Methyl-4- Benzene (1 Methyl	nr		nr		nr		nr		nr		nr		nr		nr											
Methylene Bromide	nr		nr		nr		nr		nr		nr		nr		nr											
Methylene Chloride	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U	0.0073	U								
1-Methyl-indan	nr		nr		nr		nr		nr		nr		nr		nr											
Methyl Iodide/Iodomethane	nr		nr		nr		nr		nr		nr		nr		nr											
Methylmethacrylate	nr		nr		nr		nr		nr		nr		nr		nr											
2-Methyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr											
4-Methyl-Nonane	nr		nr		nr		nr		nr		nr		nr		nr											
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	0.0083	U	0.0073	U								
O-(2-Methyl Propyl Hydroxylamine	nr		nr		nr		nr		nr		nr		nr		nr											
Methyl-t-Butyl Ether	0.0057	U	0.0075	U	0.0011	J	0.00068	J	0.0078	U	0.0073	U	0.0061	U	0.0083	U	0.0073	U								
Naphthalene	0.039	J	0.063	J	1.4	U	0.074	J	0.37	J	1.1	U	0.83	U	1.1	U	1.2	U								
Naphthalene, decahydro-, trans-	nr		nr		nr		nr		nr		nr		nr		nr											
Pentachloroethane	nr		nr		nr		nr		nr		nr		nr		nr											
Propargyl Alcohol	nr		nr		nr		nr		nr		nr		nr		nr											
Propiolactone	nr		nr		nr		nr		nr		nr		nr		nr											
Propionitrile	nr		nr		nr		nr		nr		nr		nr		nr											
Propylamine	nr		nr		nr		nr		nr		nr		nr		nr											
n-Propylbenzene	nr		nr		nr		nr		nr		nr		nr		nr											

Table A.2c
Subsurface Soil Analytical Data - 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump DG-SB01-2 C7A250145003	Sauer Dump DG-SB02-2 C7A250145004	Sauer Dump DG-SB03-2 C7A250145005	Sauer Dump DG-SB04-2 C7A250145007	Sauer Dump DG-SB05-2 C7A250145008	Sauer Dump DG-SB06-2 C7A250145009	Sauer Dump DG-SB07-2 C7A250145010	Sauer Dump DG-SB08-2 C7A250145012	Sauer Dump DG-SB09-2 C7A250145013	Sauer Dump HS-SB-01-1 C7L210240024	Sauer Dump HS-SB-01-10 5241545	Sauer Dump HS-SB-02-08 5241546	Sauer Dump HS-SB-03-08 5241547	Sauer Dump HS-SB-04-11 C7L210240032	Sauer Dump HS-SB-04-4 C7L210240031
	01/24/07 Malcolm Pirnie Subsurface Soil Solid	01/24/07 Malcolm Pirnie Subsurface Soil Solid	01/24/07 Malcolm Pirnie Subsurface Soil Solid	01/24/07 Malcolm Pirnie Subsurface Soil Solid	01/24/07 Malcolm Pirnie Subsurface Soil Solid	01/24/07 Malcolm Pirnie Subsurface Soil Solid	01/24/07 Malcolm Pirnie Subsurface Soil Solid	01/24/07 Malcolm Pirnie Subsurface Soil Solid	01/24/07 Malcolm Pirnie Subsurface Soil Solid	12/19/07 Malcolm Pirnie Subsurface Soil Solid	12/19/07 Malcolm Pirnie Subsurface Soil Solid	12/19/07 Malcolm Pirnie Subsurface Soil Solid	12/19/07 Malcolm Pirnie Subsurface Soil Solid	12/19/07 Malcolm Pirnie Subsurface Soil Solid	12/19/07 Malcolm Pirnie Subsurface Soil Solid
SVOCs															
Analytical Method Dilution Factor % Moisture Units	SW846 8270C 2	SW846 8270C 2	SW846 8270C 2	SW846 8270C 2	SW846 8270C 2	SW846 8270C 2	SW846 8270C 2	SW846 8270C 2	SW846 8270C 2						
Notes	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg						
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	
Acenaphthene	0.045	J	0.048	J	1.4	U	0.25	J	1.5	U	0.83	U	1.1	U	
Acenaphthylene	0.079	J	0.99	UJ	1.4	U	0.028	J	0.027	J	1.1	U	0.83	U	
Acetophenone	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	0.83	U	1.1	U	
Anthracene	0.15	J	0.087	J	1.4	U	0.31	J	2.7		1.1	U	0.83	U	
Atrazine	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	0.83	U	1.1	U	
Benzaldehyde	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	0.83	U	1.1	U	
Benzo(a)Anthracene	0.45	J	0.25	J	0.077	J	0.77	J	6.3		0.033	J	0.039	J	
Benzo(a)Pyrene	0.3	J	0.17	J	1.4	U	0.49	J	7.6		1.1	U	0.025	J	
Benzo(b)fluoranthene	0.29	J	0.16	J	0.08	J	0.65	J	8.5		1.1	U	0.023	J	
Benzo(g,h,i)Perylene	0.07	J	0.061	J	1.4	U	0.19	J	1.7		0.02	J	0.025	J	
Benzo(k)fluoranthene	0.12	J	0.069	J	1.4	U	0.27	J	3		1.1	U	0.83	U	
Benzybutylphthalate/Butylbenzylphthalate	0.089	J	0.51	J	1.4	U	0.087	J	1.1	U	1.1	U	0.83	U	
1,1'-Biphenyl	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
4-Bromophenyl-phenylether	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
Caprolactam	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
Carbazole	0.056	J	0.99	UJ	1.4	U	0.19	J	1.1		1.1	U	0.83	U	
4-Chloroaniline	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
bis(2-Chloroethoxy)Methane	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
bis(2-Chloroethyl)Ether	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
bis(2-Chloroisopropyl)Ether	nr		nr		nr		nr		nr		nr		nr		
4-Chloro-3-Methylphenol	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
2-Chloronaphthalene	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
2-Chlorophenol	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
4-Chlorophenyl-phenylether	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
Chrysene	0.54	J	0.3	J	0.087	J	0.87	J	6.9		0.04	J	0.06	J	
Dibenzo(a,h)Anthracene	0.022	J	0.99	UJ	1.4	U	1.1	U	0.4	J	1.1	U	0.83	U	
Dibenzofuran	0.025	J	0.032	J	1.4	U	0.071	J	0.49	J	1.1	U	0.83	U	
1,2-Dichlorobenzene	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	
1,3-Dichlorobenzene	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	
1,4-Dichlorobenzene	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	
3,3'-Dichlorobenzidine	3.8	U	4.8	UJ	6.6	U	5.5	U	5.2	U	5.1	U	4	U	
2,4-Dichlorophenol	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
Diethylphthalate	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
2,4-Dimethylphenol	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
Dimethyl Phthalate	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
Di-n-Butylphthalate	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
4,6-Dinitro-2-Methylphenol	3.8	U	4.8	UJ	6.6	U	5.5	U	5.2	U	5.1	U	4	U	
2,4-Dinitrophenol	3.8	U	4.8	UJ	6.6	U	5.5	U	5.2	U	5.1	U	4	U	
2,4-Dinitrotoluene	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
2,6-Dinitrotoluene	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
Di-n-Octyl Phthalate	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
bis(2-Ethylhexyl)Phthalate	0.26	J	0.76	J	1.4	U	0.74	J	1.1	U	1.7	J	0.83	U	
Fluoranthene	0.58	J	0.36	J	1.4	U	1.1		nr		1.1	U	0.048	J	
Fluorene	0.045	J	0.99	UJ	1.4	U	0.13	J	0.89	J	1.1	U	0.83	U	
Hexachlorobenzene	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
Hexachlorobutadiene	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
Hexachlorocyclopentadiene	3.8	U	4.8	UJ	6.6	U	5.5	U	5.2	U	5.1	U	4	U	
Hexachloroethane	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
Indeno(1,2,3-cd)Pyrene	0.099	J	0.059	J	1.4	U	0.22	J	2.1		1.1	U	0.83	U	
Isophorone	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
2-Methylnaphthalene	0.036	J	0.058	J	1.4	U	0.032	J	0.12	J	1.1	U	0.83	U	
2-Methylphenol	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
4-Methylphenol	0.026	J	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
MethylMercury	nr		nr		nr		nr		nr		nr		nr		
Naphthalene	0.039	J	0.063	J	1.4	U	0.074	J	0.37	J	1.1	U	0.83	U	
2-Nitroaniline	3.8	U	4.8	UJ	6.6	U	5.5	U	5.2	U	5.1	U	4	U	
3-Nitroaniline	3.8	U	4.8	UJ	6.6	U	5.5	U	5.2	U	5.1	U	4	U	
4-Nitroaniline	0.025	J	4.8	UJ	6.6	U	5.5	U	5.2	U	5.1	U	4	U	
Nitrobenzene	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
2-Nitrophenol	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
4-Nitrophenol	3.8	U	4.8	UJ	6.6	U	5.5	U	5.2	U	5.1	U	4	U	
N-Nitroso-Di-n-Propylamine	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
N-Nitrosodiphenylamine	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
2,2-Oxybis(1-Chloropropane)	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
Pentachlorophenol	3.8	U	4.8	UJ	6.6	U	5.5	U	5.2	U	5.1	U	4	U	
Phenanthrene	0.54	J	0.39	J	0.083	J	1.4		nr		0.039	J	0.049	J	
Phenol	0.048	J	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
Pyrene	0.74	J	0.35	J	0.1	J	1.5		17		0.046	J	0.097	J	
1,2,4-Trichlorobenzene	0.0057	U	0.0075	U	0.01	U	0.0082	U	0.0078	U	0.0073	U	0.0061	U	
2,4,5-Trichlorophenol	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	
2,4,6-Trichlorophenol	0.77	U	0.99	UJ	1.4	U	1.1	U	1.1	U	1.1	U	0.83	U	

Table A.2c
Subsurface Soil Analytical Data - 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Sauer Dump DG-SB01-2 C7A250145003 Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC																												Sauer Dump DG-SB02-2 C7A250145004 Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC		Sauer Dump DG-SB03-2 C7A250145005 Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC		Sauer Dump DG-SB04-2 C7A250145007 Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC		Sauer Dump DG-SB05-2 C7A250145008 Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC		Sauer Dump DG-SB06-2 C7A250145009 Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC		Sauer Dump DG-SB07-2 C7A250145010 Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC		Sauer Dump DG-SB08-2 C7A250145012 Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC		Sauer Dump DG-SB09-2 C7A250145013 Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC		Sauer Dump HS-SB-01-1 C7L210240024 Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC		Sauer Dump HS-SB-01-10 5241545 Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC		Sauer Dump HS-SB-02-08 5241546 Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC		Sauer Dump HS-SB-03-08 5241547 Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC		Sauer Dump HS-SB-04-11 C7L210240032 Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC		Sauer Dump HS-SB-04-4 C7L210240031 Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	
Inorganics/Total Metals																																																							
Analytical Method		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		EPA 6010B		EPA 6010B		EPA 6010B		SW846 6010B		SW846 6010B																											
Dilution Factor		2		50		1		2		1		1		1		1		4		1		1		1		0		4																											
% Moisture																																																							
Units		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg																											
Notes																																																							
Analyte		Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag																										
Aluminum		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Antimony		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Arsenic		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Barium		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Beryllium		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Cadmium		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Calcium		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Chromium		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Chromium III		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Chromium VI		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Cobalt		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Copper		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Iron		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Lead		626		13,100		752		770		93.5		323		76		24.9		22.3		1,350		180		109		118		159																											
Magnesium		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Manganese		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Mercury		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Nickel		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Potassium		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Selenium		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Silver		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Sodium		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Thallium		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Tin		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Vanadium		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Zinc		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Cyanide		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr																											
Dissolved Metals																																																							
Analytical Method																																																							
Dilution Factor																																																							
% Moisture																																																							
Units																																																							
Notes																																																							
Analyte																																																							
Aluminum																																																							
Antimony																																																							
Arsenic																																																							
Barium																																																							
Beryllium																																																							
Cadmium																																																							
Calcium																																																							
Chromium																																																							
Cobalt																																																							
Copper																																																							
Iron																																																							
Lead																																																							
Magnesium																																																							
Manganese																																																							
Mercury																																																							
Nickel																																																							
Potassium																																																							
Selenium																																																							
Silver																																																							
Sodium																																																							
Thallium																																																							
Vanadium																																																							
Zinc																																																							

Table A.2c Subsurface Soil Analytical Data - 2007 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																																
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump DG-SB01-2 C7A250145003 01/24/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump DG-SB02-2 C7A250145004 01/24/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump DG-SB03-2 C7A250145005 01/24/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump DG-SB04-2 C7A250145007 01/24/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump DG-SB05-2 C7A250145008 01/24/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump DG-SB06-2 C7A250145009 01/24/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump DG-SB07-2 C7A250145010 01/24/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump DG-SB08-2 C7A250145012 01/24/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump DG-SB09-2 C7A250145013 01/24/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump DG-SB01-1 C7L210240024 12/19/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-01-10 5241545 12/19/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-02-08 5241546 12/19/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-03-08 5241547 12/19/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-04-11 C7L210240032 12/19/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-04-4 C7L210240031 12/19/07 Malcolm Pirnie Subsurface Soil Solid			
Pesticides/PCBs	SW846 8082 1		SW846 8082 1		SW846 8082 1		SW846 8082 1		SW846 8082 1		SW846 8082 1		SW846 8082 1		SW846 8082 1		SW846 8082 1		SW846 8082 25		SW846 8082 10		SW846 8082 5		SW846 8082 1		SW846 8082 0		SW846 8082 25			
Analytical Method Dilution Factor % Moisture Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
Notes																																
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
alpha-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
beta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
delta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
gamma-BHC (Lindane)	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
alpha-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDE	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDT	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dieldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan I	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan II	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan sulfate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin aldehyde	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin ketone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor epoxide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methoxychlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Toxaphene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Aroclor-1016	0.039	U	0.05	U	0.068	U	0.056	U	0.053	U	0.053	U	0.041	U	0.056	U	0.059	U	980	U	55	U	45	U	3.8	U	49	U	990	U	990	U
Aroclor-1221	0.039	U	0.05	U	0.068	U	0.056	U	0.053	U	0.053	U	0.041	U	0.056	U	0.059	U	980	U	86	U	70	U	6	U	49	U	990	U	990	U
Aroclor-1232	0.039	U	0.05	U	0.068	U	0.056	U	0.053	U	0.053	U	0.041	U	0.056	U	0.84		980	U	55	U	45	U	3.8	U	49	U	990	U	990	U
Aroclor-1242	0.039	U	0.05	U	0.031	J	0.056	U	0.053	U	0.053	U	0.041	U	0.034	J	0.059	U	980	U	870		1,700		120		49	U	990	U	990	U
Aroclor-1248	0.039	U	0.05	U	0.068	U	0.056	U	0.053	U	0.053	U	0.041	U	0.056	U	0.059	U	9,400		55	U	45	U	3.8	U	49	U	22,000		22,000	
Aroclor-1254	0.71		1.6		0.063	J	0.35		0.053	U	0.12		0.041	U	0.098		1.4		44,000		1,000		1,600		130		260		49,000		49,000	
Aroclor-1260	0.63		0.64		0.034	J	0.2		0.043	J	0.06		0.03	J	0.05	J	0.059	U	980	U	900		1,600		130	U	990	U	990	U	990	U
Total PCBs	1.34		2.24		0.128		0.55		0.043		0.18		0.03		0.182		2.24		53,400		2,770		4,900		380		260		71,000		71,000	
Other Analytes																																
Analytical Method Dilution Factor % Moisture Units Notes																			EPA Lloyd Kahn 2		EPA Lloyd Kahn not sampled		EPA Lloyd Kahn not sampled		EPA Lloyd Kahn 2		EPA Lloyd Kahn 9		EPA Lloyd Kahn not sampled			
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
TOC																					32,500		nr		nr		13,900		158,000		nr	

Table A.2c Subsurface Soil Analytical Data - 2007 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																										
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump HS-SB-05-16 C7L210240033 12/19/07 Malcolm Pirnie Subsurface Soil Solid	Sauer Dump HS-SB-06-14 C7L210240035 12/19/07 Malcolm Pirnie Subsurface Soil Solid	Sauer Dump HS-SB-07-09-10 C7L210240015 12/20/07 Malcolm Pirnie Subsurface Soil Solid	Sauer Dump HS-SB-07-13-15 C7L210240016 12/20/07 Malcolm Pirnie Subsurface Soil Solid	Sauer Dump HS-SB-08-09-10 C7L210240013 12/20/07 Malcolm Pirnie Subsurface Soil Solid	Sauer Dump HS-SB-09-04-05 C7L210240021 12/20/07 Malcolm Pirnie Subsurface Soil Solid	Sauer Dump HS-SB-09-08-10 C7L210240019 12/20/07 Malcolm Pirnie Subsurface Soil Solid	Sauer Dump HS-SB-09-13.5-15 C7L210240020 12/20/07 Malcolm Pirnie Subsurface Soil Solid	Sauer Dump HS-SB-10-08-10 C7L210240002 12/20/07 Malcolm Pirnie Subsurface Soil Solid	Sauer Dump HS-SB-10-11-12 C7L210240001 12/20/07 Malcolm Pirnie Subsurface Soil Solid	Sauer Dump HS-SB-11-08-09 C7L210240004 12/20/07 Malcolm Pirnie Subsurface Soil Solid	Sauer Dump HS-SB-11-09-10 C7L210240005 12/20/07 Malcolm Pirnie Subsurface Soil Solid	Sauer Dump HS-SB-12-09-10 C7L210240009 12/20/07 Malcolm Pirnie Subsurface Soil Solid	Sauer Dump HS-SB-12-14-15 C7L210240010 12/20/07 Malcolm Pirnie Subsurface Soil Solid	Sauer Dump HS-SB-12-18-20 C7L210240011 12/20/07 Malcolm Pirnie Subsurface Soil Solid											
Inorganics/Total Metals																										
Analytical Method	SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		not sampled		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B	
Dilution Factor	0				1		0		1		2		0		1		not sampled		8		0		1		6	
% Moisture																										
Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Notes																										
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Antimony	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Arsenic	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Barium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Beryllium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cadmium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Calcium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium III	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium VI	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Copper	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Iron	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Lead	44.8		647		62.1		21.7		73.6		473		178		41.8		7.6		nr		2,760		221		382	
Magnesium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Manganese	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Mercury	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Nickel	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Potassium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Selenium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Silver	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Sodium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Thallium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Tin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vanadium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Zinc	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cyanide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dissolved Metals																										
Analytical Method																										
Dilution Factor																										
% Moisture																										
Units																										
Notes																										
Analyte																										
Aluminum																										
Antimony																										
Arsenic																										
Barium																										
Beryllium																										
Cadmium																										
Calcium																										
Chromium																										
Cobalt																										
Copper																										
Iron																										
Lead																										
Magnesium																										
Manganese																										
Mercury																										
Nickel																										
Potassium																										
Selenium																										
Silver																										
Sodium																										
Thallium																										
Vanadium																										
Zinc																										

Table A.2c Subsurface Soil Analytical Data - 2007 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																														
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump HS-SB-05-16 C7L210240033 12/19/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-06-14 C7L210240035 12/19/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-07-09-10 C7L210240015 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-07-13-15 C7L210240016 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-08-09-10 C7L210240013 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-09-04-05 C7L210240021 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-09-08-10 C7L210240019 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-09-13.5-15 C7L210240020 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-10-08-10 C7L210240002 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-10-11-12 C7L210240001 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-11-08-09 C7L210240004 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-11-09-10 C7L210240005 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-12-09-10 C7L210240009 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-12-14-15 C7L210240010 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-12-18-20 C7L210240011 12/20/07 Malcolm Pirnie Subsurface Soil Solid	
Pesticides/PCBs	SW846 8082 0 ug/kg		SW846 8082 0 ug/kg		SW846 8082 5 ug/kg		SW846 8082 0 ug/kg		SW846 8082 0 ug/kg		SW846 8082 5 ug/kg		SW846 8082 10 ug/kg		SW846 8082 0 ug/kg		SW846 8082 0 ug/kg		SW846 8082 5 ug/kg		SW846 8082 0 ug/kg		SW846 8082 10 ug/kg		SW846 8082 125 ug/kg		SW846 8082 0 ug/kg			
Notes	Result		Flag		Result		Flag		Result		Flag		Result		Flag		Result		Flag		Result		Flag		Result		Flag			
Result	Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag			
Result	Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag			
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Result	Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag			
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Result	Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag			
Result	Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag			
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Result	Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag			
Result	Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag			
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Result	Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag			
Result	Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag			
Result	Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag			
Result	Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag			
Result	Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag			
Result	Flag		Flag																											

Table A.2c
Subsurface Soil Analytical Data - 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump HS-SB-13-09-10 5244089 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-13-14-15 5244090 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-13-17-18 5244091 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-13-19-20 5244092 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-14-09-10 5244093 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-14-14-15 5244095 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-14-16-17 5244096 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-14-19-20 5244094 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-15-09-10 5244097 12/21/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-15-13-15 5244098 12/21/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-15-17-18 5244099 12/21/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-15-19-20 5244100 12/21/07 Malcolm Pirnie Subsurface Soil Solid	
Inorganics/Total Metals																								
Analytical Method	EPA 6010B		EPA 6010B		EPA 6010B		EPA 6010B		EPA 6010B		EPA 6010B		EPA 6010B		EPA 6010B		EPA 6010B		EPA 6010B		EPA 6010B		EPA 6010B	
Dilution Factor	10		1		1		1		1		1		1		1		1		1		1		1	
% Moisture																								
Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Notes																								
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Antimony	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Arsenic	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Barium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Beryllium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cadmium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Calcium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium III	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium VI	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Copper	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Iron	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Lead	10,500		1,770		94		9.73		85.8		389		17.6		8.55		1,190		573		569		9.22	
Magnesium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Manganese	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Mercury	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Nickel	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Potassium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Selenium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Silver	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Sodium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Thallium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Tin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vanadium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Zinc	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cyanide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dissolved Metals																								
Analytical Method																								
Dilution Factor																								
% Moisture																								
Units																								
Notes																								
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Aluminum																								
Antimony																								
Arsenic																								
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Cadmium																								
Calcium																								
Chromium																								
Cobalt																								
Copper																								
Iron																								
Lead																								
Magnesium																								
Manganese																								
Mercury																								
Nickel																								
Potassium																								
Selenium																								
Silver																								
Sodium																								
Thallium																								
Vanadium																								
Zinc																								

Table A.2c
Subsurface Soil Analytical Data - 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOC Alt. Sample Identification/Inorg Alt. Sample Identification/PCB' Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump HS-SB-13-09-10 5244089 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-13-14-15 5244090 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-13-17-18 5244091 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-13-19-20 5244092 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-14-09-10 5244093 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-14-14-15 5244095 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-14-16-17 5244096 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-14-19-20 5244094 12/20/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-15-09-10 5244097 12/21/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-15-13-15 5244098 12/21/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-15-17-18 5244099 12/21/07 Malcolm Pirnie Subsurface Soil Solid		Sauer Dump HS-SB-15-19-20 5244100 12/21/07 Malcolm Pirnie Subsurface Soil Solid	
Pesticides/PCBs																								
Analytical Method Dilution Factor % Moisture Units Notes	SW846 8082 100 ug/kg		SW846 8082 20 ug/kg		SW846 8082 10 ug/kg		SW846 8082 1 ug/kg		SW846 8082 1 ug/kg		SW846 8082 10 ug/kg		SW846 8082 1 ug/kg		SW846 8082 1 ug/kg		SW846 8082 10 ug/kg		SW846 8082 5 ug/kg		SW846 8082 2 ug/kg		SW846 8082 1 ug/kg	
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
alpha-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
beta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
delta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
gamma-BHC (Lindane)	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
alpha-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDE	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDT	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dieldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan I	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan II	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan sulfate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin aldehyde	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin ketone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor epoxide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methoxychlor	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Toxaphene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Aroclor-1016	460	U	120	U	88	U	4.1	U	4.2	U	63	U	4.3	U	4	U	40	U	21	U	7.9	U	4	U
Aroclor-1221	720	U	190	U	140	U	6.5	U	6.6	U	100	U	6.7	U	6.4	U	62	U	33	U	12	U	6.3	U
Aroclor-1232	460	U	120	U	88	U	4.1	U	4.2	U	63	U	4.3	U	4	U	40	U	21	U	7.9	U	4	U
Aroclor-1242	460	U	11,000		88	U	4.1	U	4.2	U	4,200		4.3	U	39		40	U	21	U	7.9	U	4	U
Aroclor-1248	7,200		120	U	700		6.4	J	39		63	U	45		4	U	2,400		1,400		340		17	J
Aroclor-1254	4,900		3,800		290	J	4.1	U	66		1,600		63		9.5	J	1,700		840		410		14	J
Aroclor-1260	2,100	J	3,000		180	J	4.1	U	42		790		34		9.4	J	2,200		820		100		5.9	J
Total PCBs	14,200		17,800		1,170		6		147		6,590		142		57.9		6,300		3,060		850		36.9	
Other Analytes																								
Analytical Method Dilution Factor % Moisture Units Notes	EPA Lloyd Kahn mg/kg		EPA Lloyd Kahn mg/kg		EPA Lloyd Kahn mg/kg		EPA Lloyd Kahn mg/kg		EPA Lloyd Kahn mg/kg		EPA Lloyd Kahn mg/kg		EPA Lloyd Kahn mg/kg		EPA Lloyd Kahn mg/kg		EPA Lloyd Kahn mg/kg		EPA Lloyd Kahn mg/kg		EPA Lloyd Kahn mg/kg		EPA Lloyd Kahn mg/kg	
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
TOC	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	

Table A.4
Surface Water Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump A-1 A-1 Pond CA 876 MCC224	Sauer Dump A-2 A-2 Marsh-River-Drain CA 879 MCC225	Sauer Dump A-3 A-3 Channel CA 880 MCB975	Sauer Dump A-4 A-4 Blank CA 881 MCB976	Sauer Dump FB-1 CHH28 MCGX27	Sauer Dump SW-01 CHH04	Sauer Dump SW-02 CHH12	Sauer Dump SW-04 CHH14	Sauer Dump SW-08 CHH16 MCGX15	Sauer Dump SW-10 CHH18 MCGX17	Sauer Dump SW-15 CHH08 MCGX08	Sauer Dump SW-18 CHH20 MCGX19	Sauer Dump SW-22 CHH24 MCGX23													
VOCs	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes													
SVOCs	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes													
Inorganics/Total Metals	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes													
Dissolved Metals	no	no	no	no	no	no	no	no	no	no	no	no	no													
PCBs/Pesticides	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes													
Other Analytes	no	no	no	no	no	no	no	no	no	no	no	no	no													
VOCs																										
Analytical Method Dilution Factor % Moisture Units	not reported 1 NA mg/L	not reported 1 NA mg/L	not reported 1 NA mg/L	not reported 1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L													
Notes																										
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag												
Acetone	0.01	U	0.01	U	0.01	U	0.01	U	0.021	B	0.018	B	0.019	B	0.021	B	0.022	B	0.016	B	0.022	B	0.019	B	0.012	B
Acetonitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Acrolein	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Acrylonitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Allyl Alcohol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Allyl Chloride	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Benzene	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Benzene (2-Methyl-1-Propeny	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Benzyl Chloride	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Bromoacetone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Bromobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Bromochloromethane/Chlorobromomethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Bromodichloromethane	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Bromoform	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Bromomethane/Methyl bromide	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
2-Butanone (Methyl Ethyl Ketone)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
n-Butylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
sec-Butylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
tert-Butylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Camphene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Carbon Disulfide	0.005	U	0.005	U	0.042		0.005	U	0.01	U	0.01	U	0.001	J	0.003	J	0.01	U	0.01	U	0.01	U	0.003	J	0.01	U
Carbon Tetrachloride	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Chlorobenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Chloroethane/Ethyl chloride	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
2-Chloroethanol/Ethylene chlorohydrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2-Chloroethylvinyl Ether	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chloroform	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Chloromethane/Methyl chloride	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Chloroprene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2-Chlorotoluene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Chlorotoluene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cyclohexane, Butyl-	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,3-Cyclopentadiene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Decahydro-naphthalene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dibromochloromethane/Chlorodibromomethane	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
trans-1,4-Dichloro-2-butene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,4-Dichloro-2-butene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,2-Dibromo-3-chloropropane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,2-Dibromoethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,2-Dichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,3-Dichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,4-Dichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dichlorodifluoromethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,1-Dichloroethane	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
1,2-Dichloroethane	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
1,1-Dichloroethene	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
cis-1,2-Dichloroethene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
trans-1,2-Dichloroethene	0.005	U	0.005	U	0.005	U	0.005	U	nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,2-Dichloroethene (Total)	nr		nr		nr		nr		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Dichloromethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,2-Dichloropropane	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
1,3-Dichloropropane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2,2-Dichloropropane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,3-Dichloro-2-Propanol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,1-Dichloropropene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
cis-1,3-Dichloropropene	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
trans-1,3-Dichloropropene	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
1,3-Dichloropropylene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,2:3,4-Diepoxybutane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,2-Dimethyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,3-Dimethyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,6-Dimethyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2,3-Dimethyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2,6-Dimethyl-Naphthalene	nr		nr		nr		nr																			

Table A.4
Surface Water Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump A-1 A-1 Pond CA 876 MCC224 06/27/85 NUS Surface Water Aqueous	Sauer Dump A-2 A-2 Marsh-River-Drain CA 879 MCC225 06/27/85 NUS Surface Water Aqueous	Sauer Dump A-3 A-3 Channel CA 880 MCB975 06/27/85 NUS Surface Water Aqueous	Sauer Dump A-4 A-4 Blank CA 881 MCB976 06/27/85 NUS Water Aqueous	Sauer Dump FB-1 CHH28 MCGX27 12/08/92 HNUS Water Aqueous Field Blank	Sauer Dump SW-01 CHH04 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-02 CHH12 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-04 CHH14 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-08 CHH16 MCGX15 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-10 CHH18 MCGX17 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-15 CHH08 MCGX08 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-18 CHH20 MCGX19 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-22 CHH24 MCGX23 12/08/92 HNUS Surface Water Aqueous									
VOCs (cont.)																						
Analytical Method Dilution Factor % Moisture Units Notes	not reported 1 NA mg/L	not reported 1 NA mg/L	not reported 1 NA mg/L	not reported 1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L									
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,4-Dioxane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dodecane, 6-Methyl-	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethanol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethylbenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
1-Ethyl-2,3-Dimethyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Ethyl-1,2-Dimethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-2-Methyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-3-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-4-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethylene Oxide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethylmethacrylate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Epichlorohydrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Hexachlorobutadiene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Hexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2-Hexanone	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
2-Hydroxypropionitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Isobutyl alcohol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Isopropylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
p-Isopropyl Toluene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Malononitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methacrylonitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methyl Acetate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Methyl-2- Benzene (1 Methyl-2-Propylbenzene)	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Methyl-3- Benzene (1 Methyl-3-Ethylbenzene)	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Methyl-4- Benzene (1 Methyl-4-Ethylbenzene)	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylene Bromide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylene Chloride	0.005	U	0.005	U	0.005	U	0.005	U	0.02	B	0.002	J,B	0.009	J,B	0.008	J,B	0.006	J,B	0.001	J,B	0.003	J,B
1-Methyl-indan	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methyl Iodide/Iodomethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylmethacrylate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2-Methyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Methyl-Nonane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
O-(2-Methyl Propyl Hydroxylamine)	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methyl-t-Butyl Ether	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Naphthalene, decahydro-, trans-	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Pentachloroethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Propargyl Alcohol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Propiolactone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Propionitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Propylamine	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
n-Propylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Styrene	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
1,1,1,2-Tetrachloroethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,1,2,2-Tetrachloroethane	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Tetrachloroethene	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
1,2,4,5-Tetramethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Toluene	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
1,2,3-Trichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,2,4-Trichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,1,1-Trichloroethane	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.0									

Table A.4
Surface Water Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump A-1 A-1 Pond CA 876 MCC224	Sauer Dump A-2 A-2 Marsh-River-Drain CA 879 MCC225	Sauer Dump A-3 A-3 Channel CA 880 MCB975	Sauer Dump A-4 A-4 Blank CA 881 MCB976	Sauer Dump FB-1 CHH28 MCGX27	Sauer Dump SW-01 CHH04	Sauer Dump SW-02 CHH12	Sauer Dump SW-04 CHH14	Sauer Dump SW-08 CHH16 MCGX15	Sauer Dump SW-10 CHH18 MCGX17	Sauer Dump SW-15 CHH08 MCGX08	Sauer Dump SW-18 CHH20 MCGX19	Sauer Dump SW-22 CHH24 MCGX23											
	06/27/85 NUS Surface Water Aqueous	06/27/85 NUS Surface Water Aqueous	06/27/85 NUS Surface Water Aqueous	06/27/85 NUS Water Aqueous	12/08/92 HNUS Water Aqueous Field Blank	12/08/92 HNUS Surface Water Aqueous	12/08/92 HNUS Surface Water Aqueous	12/08/92 HNUS Surface Water Aqueous	12/08/92 HNUS Surface Water Aqueous	12/08/92 HNUS Surface Water Aqueous	12/08/92 HNUS Surface Water Aqueous	12/08/92 HNUS Surface Water Aqueous	12/08/92 HNUS Surface Water Aqueous											
SVOCs																								
Analytical Method Dilution Factor % Moisture Units	1 NA mg/L	1 NA mg/L	2 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L											
Notes																								
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Acenaphthene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.004	J	0.01	U	0.01	U	0.01	U	0.01	U	0.007	J	0.01	U
Acenaphthylene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Acetophenone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Anthracene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Atrazine	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Benzaldehyde	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Benzo(a)Anthracene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Benzo(a)Pyrene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Benzo(b)fluoranthene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Benzo(g,h,i)Perylene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Benzo(k)fluoranthene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Benzybutylphthalate/Butylbenzylphthalate	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.001	J	0.01	U
1,1'-Biphenyl	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Bromophenyl-phenylether	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Caprolactam	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Carbazole	nr		nr		nr		nr		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
4-Chloroaniline	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
bis(2-Chloroethoxy)Methane	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
bis(2-Chloroethyl)Ether	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
bis(2-Chloroisopropyl)Ether	0.01	U	0.01	U	0.02	U	0.01	U	nr		nr		nr		nr		nr		nr		nr		nr	
4-Chloro-3-Methylphenol	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
2-Chloronaphthalene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
2-Chlorophenol	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
4-Chlorophenyl-phenylether	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Chrysene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Dibenzo(a,h)Anthracene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Dibenzofuran	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.001	J	0.01	U
1,2-Dichlorobenzene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
1,3-Dichlorobenzene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
1,4-Dichlorobenzene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
3,3'-Dichlorobenzidine	0.02	U	0.02	U	0.04	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
2,4-Dichlorophenol	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Diethylphthalate	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
2,4-Dimethylphenol	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Dimethyl Phthalate	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Di-n-Butylphthalate	0.007	J,B	0.005	J,B	0.004	J,B	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.001	J,B	0.01	U
4,6-Dinitro-2-Methylphenol	0.05	U	0.05	U	0.1	U	0.05	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U
2,4-Dinitrophenol	0.05	U	0.05	U	0.1	U	0.05	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U
2,4-Dinitrotoluene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
2,6-Dinitrotoluene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Di-n-Octyl Phthalate	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
bis(2-Ethylhexyl)Phthalate	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.003	J,B	0.001	J,B	0.006	J,B	0.023	B	0.015	B	0.032	B	0.004	J,B
Fluoranthene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.002	J	0.01	U
Fluorene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.001	J	0.01	U
Hexachlorobenzene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Hexachlorobutadiene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Hexachlorocyclopentadiene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Hexachloroethane	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Indeno(1,2,3-cd)Pyrene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Isophorone	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
2-Methylnaphthalene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
2-Methylphenol	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
4-Methylphenol	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
MethylMercury	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Naphthalene	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
2-Nitroaniline	0.05	U	0.05	U	0.1	U	0.05	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U
3-Nitroaniline	0.05	U	0.05	U	0.1	U	0.05	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U
4-Nitroaniline	0.05	U	0.05	U	0.1	U	0.05	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U
Nitrobenzene	0.01	U	0.01	U	0.0																			

Table A.4
Surface Water Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump A-1		Sauer Dump A-2		Sauer Dump A-3		Sauer Dump A-4		Sauer Dump FB-1		Sauer Dump SW-01		Sauer Dump SW-02		Sauer Dump SW-04		Sauer Dump SW-08		Sauer Dump SW-10		Sauer Dump SW-15		Sauer Dump SW-18		Sauer Dump SW-22	
	A-1 Pond		A-2 Marsh-River-Drain		A-3 Channel		A-4 Blank		CHH28		CHH04		CHH12		CHH14		CHH16		CHH18		CHH08		CHH20		CHH24	
	CA 876		CA 879		CA 880		CA 881		MCH28		MCH04		MCH12		MCH14		MCH16		MCH18		MCH08		MCH20		MCH24	
	MCC224		MCC225		MCB975		MCB976		MCGX27								MCGX15		MCGX17		MCGX08		MCGX19		MCGX23	
	06/27/85		06/27/85		06/27/85		06/27/85		12/08/92		12/08/92		12/08/92		12/08/92		12/08/92		12/08/92		12/08/92		12/08/92		12/08/92	
	NUS		NUS		NUS		NUS		HNUS		HNUS		HNUS		HNUS		HNUS		HNUS		HNUS		HNUS		HNUS	
	Surface Water		Surface Water		Surface Water		Water		Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water	
	Aqueous		Aqueous		Aqueous		Aqueous		Aqueous		Aqueous		Aqueous		Aqueous		Aqueous		Aqueous		Aqueous		Aqueous		Aqueous	
2,4,6-Trichlorophenol	0.01	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U

Table A.4
Surface Water Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump A-1 A-1 Pond CA 876 MCC224 06/27/85 NUS Surface Water Aqueous	Sauer Dump A-2 A-2 Marsh-River-Drain CA 879 MCC225 06/27/85 NUS Surface Water Aqueous	Sauer Dump A-3 A-3 Channel CA 880 MCB975 06/27/85 NUS Surface Water Aqueous	Sauer Dump A-4 A-4 Blank CA 881 MCB976 06/27/85 NUS Water Aqueous	Sauer Dump FB-1 CHH28 MCGX27 12/08/92 HNUS Water Aqueous Field Blank	Sauer Dump SW-01 CHH04 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-02 CHH12 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-04 CHH14 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-08 CHH16 MCGX15 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-10 CHH18 MCGX17 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-15 CHH08 MCGX08 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-18 CHH20 MCGX19 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-22 CHH24 MCGX23 12/08/92 HNUS Surface Water Aqueous													
Inorganics/Total Metals																										
Analytical Method Dilution Factor % Moisture Units	NA mg/L		NA mg/L		NA mg/L		NA mg/L		1 NA mg/L		1 NA mg/L		1 NA mg/L		1 NA mg/L		1 NA mg/L		1 NA mg/L		1 NA mg/L		1 NA mg/L			
Notes																										
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag		
Aluminum	9.57		0.89	J	73.5		0.232	J,B	0.0352	B	30		3.01		73.4		68.2		18.3		1.79		94.8		1.16	
Antimony	0.06	U	0.06	U	0.06	U	0.06	U	0.0169	U	0.0359	B	0.0169	U	0.0169	U	0.0169	U	0.0169	U	0.0169	U	0.0169	U	0.0169	U
Arsenic	0.01	U	0.0145	R	0.0303	R	0.01	U	0.0022	U	0.0688		0.0047	B	0.0359		0.0169		0.0125		0.0022	U	0.0246		0.0022	U
Barium	0.628		0.2	U	0.617		0.2	U	0.0029	U	1.44		0.283		752		0.804		0.769		0.155	B	0.953		0.0899	B
Beryllium	0.005	U	0.005	U	0.008		0.005	U	0.0004	B	0.0012	B	0.0004	U	0.0099		0.0176		0.0026	B	0.0004	U	0.0268		0.0004	U
Cadmium	0.005	U	0.005	J	0.005	U	0.005	U	0.001	U	0.0065		0.001	U	0.0015	B	0.0522		0.007	B	0.001	U	0.0382		0.001	U
Calcium	57.2		62.75		347		5	U	0.15	B	364		240		235		184		129		105		110		37.4	
Chromium	0.01	U	0.01	U	0.332		0.01	U	0.0045	U	0.227		0.0302		0.802		0.761		0.162		0.0154		0.559		0.0045	U
Chromium III	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium VI	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	0.05	U	0.05	U	0.05	U	0.05	U	0.0027	U	0.0365	B	0.0036	B	0.0769	B	0.17		0.0328	B	0.0031	B	0.375		0.0328	B
Copper	0.025	U	0.025	U	1.14		0.025	U	0.005	B	0.845		0.0725		0.722		0.679		0.39		0.136		0.73		0.0382	
Iron	31.12		1.17		253.25		0.1	U	0.0148	B	157		20.4		254		164		78		7.15		108		7.33	
Lead	0.0297	J	0.005	U	0.546		0.005	U	0.0057		2.76		0.12		2.6		1.41		0.55		0.0501		0.973		0.0331	
Magnesium	16.8		120		56.75		5	U	0.0408	U	70		49.9		144		159		127		103		129		28.5	
Manganese	13.24		0.342		1.94		0.015	U	0.0047	U	1.81		0.864		2.87		9.14		1.49		0.581		3.76		3.9	
Mercury	0.0002	U	0.0002	U	0.0058		0.0002	U	0.0001	U	0.0022		0.00026		0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.013	B	0.0001	U
Nickel	0.04	U	0.04	U	0.333		0.04	U	0.0054	U	0.213		0.0208	B	0.604		1.11		0.198		0.0133	B	0.713		0.0109	B
Potassium	37.3	J	40.2	J	33.5	J	5	U	0.242	U	22.1		19.6		44.6		54.5		38.7		28.5		41.7		7.44	
Selenium	0.005	U	0.005	U	0.005	U	0.005	U	0.0036	U	0.0081		0.0038	B	0.0149		0.018	U	0.0036	U	0.0036	U	0.0048	B	0.0036	U
Silver	0.01	U	0.01	U	0.01	U	0.01	U	0.0025	U	0.0027	B	0.0025	U	0.0147		0.0025	U	0.0026	B	0.0025	U	0.0137		0.0025	U
Sodium	37.5	J	760	J	110	J	5	U	0.544	B	72.3		92.1		636		579		545		345		723		78.5	
Thallium	0.01	U	0.01	U	0.01	U	0.01	U	0.0017	U	0.003	B	0.0017	U	0.0125	B	0.0085	U	0.0085	U	0.0085	U	0.0085	U	0.0017	U
Tin	0.04	U	0.04	U	0.04	U	0.04	U	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vanadium	0.05	U	0.05	U	0.869		0.05	U	0.0028	U	0.3		0.0539		0.247		0.278		0.0774		0.0054	B	0.253		0.006	B
Zinc	0.197		0.02	U	5.41		0.02	U	0.0022	U	7.85		0.449		5.58		11.2		2.39		0.193		10.8		0.147	
Cyanide	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.0186		0.01	U	0.015		0.01	U	0.01	U
Dissolved Metals																										
Analytical Method Dilution Factor % Moisture Units	1		1		1		1																			
Notes																										
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag		
Aluminum	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Antimony	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Arsenic	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Barium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Beryllium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cadmium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Calcium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Copper	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Iron	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Lead	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Magnesium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Manganese	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Mercury	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Nickel	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Potassium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Selenium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Silver	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Sodium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Thallium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vanadium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Zinc	nr		nr		nr																					

Table A.4
Surface Water Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump A-1 A-1 Pond CA 876 MCC224 06/27/85 NUS Surface Water Aqueous	Sauer Dump A-2 A-2 Marsh-River-Drain CA 879 MCC225 06/27/85 NUS Surface Water Aqueous	Sauer Dump A-3 A-3 Channel CA 880 MCC975 06/27/85 NUS Surface Water Aqueous	Sauer Dump A-4 A-4 Blank CA 881 MCC976 06/27/85 NUS Water Aqueous	Sauer Dump FB-1 CHH28 MCGX27 12/08/92 HNUS Water Aqueous Field Blank	Sauer Dump SW-01 CHH04 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-02 CHH12 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-04 CHH14 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-08 CHH16 MCGX15 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-10 CHH18 MCGX17 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-15 CHH08 MCGX08 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-18 CHH20 MCGX19 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-22 CHH24 MCGX23 12/08/92 HNUS Surface Water Aqueous											
Pesticides/PCBs																								
Analytical Method Dilution Factor % Moisture Units	NA mg/L	NA mg/L	NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L											
Notes																								
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	0.00005	U	0.00005	U	0.0005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U
alpha-BHC	0.00005	U	0.00005	U	0.0005	U	0.00005	U	0.00005	U	0.00005	U	0.0000074	J	0.00005	U	0.000065	J	0.00005	U	0.00005	U	0.00005	U
beta-BHC	0.00005	U	0.00005	U	0.0005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U
delta-BHC	0.00005	U	0.00005	U	0.0005	U	0.00005	U	0.0000014	J	0.00005	U	0.0000024	J,B	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U
gamma-BHC (Lindane)	0.00005	U	0.00005	U	0.0005	U	0.00005	U	0.0000036	J	0.00005	U	0.0000039	J	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U
alpha-Chlordane	nr		nr		nr		nr		0.00005	U	0.0000011	J	0.00005	U	0.00005	U	0.00005	U	0.0000012	J	0.00005	U	0.00005	U
gamma-Chlordane	nr		nr		nr		nr		0.00005	U	0.00005	U	0.000001	J	0.00005	U	0.0000024	J	0.00005	U	0.00005	U	0.00005	U
Chlordane, total	0.0005	U	0.0005	U	0.005	U	0.0005	U	nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	0.0001	U	0.0001	U	0.001	U	0.0001	U	0.0000022	J	0.0001	U	0.0000031	J	0.0001	U	0.0000027	J	0.0001	U	0.0001	U	0.0001	U
4,4'-DDE	0.0001	U	0.0001	U	0.001	U	0.0001	U	0.0001	U	0.0000027	J	0.0000024	J	0.0000018	J	0.0001	U	0.0001	U	0.0001	U	0.0001	U
4,4'-DDT	0.0001	U	0.0001	U	0.001	U	0.0001	U	0.0000032	J	0.0000022	J	0.0000032	J	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U
Dieldrin	0.0001	U	0.0001	U	0.001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U
Endosulfan I	0.00005	U	0.00005	U	0.0005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U
Endosulfan II	0.0001	U	0.0001	U	0.001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0000017	J	0.0001	U	0.0001	U
Endosulfan sulfate	0.0001	U	0.0001	U	0.001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0000024	J	0.0001	U	0.0001	U	0.0001	U
Endrin	0.0001	U	0.0001	U	0.001	U	0.0001	U	0.0001	U	0.0000017	J	0.0000016	J	0.0001	U	0.0000029	J	0.0000012	J	0.0001	U	0.0001	U
Endrin aldehyde	0.0001	U	0.0001	U	0.001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0000027	J
Endrin ketone	0.0001	U	0.0001	U	0.001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U
Heptachlor	0.00005	U	0.00005	U	0.0005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U
Heptachlor epoxide	0.00005	U	0.00005	U	0.0005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U
Methoxychlor	0.0001	U	0.0001	U	0.001	U	0.0001	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0000041	J
Toxaphene	0.001	U	0.001	U	0.01	U	0.001	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Aroclor-1016	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Aroclor-1221	0.0001	U	0.0001	U	0.001	U	0.0001	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U
Aroclor-1232	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Aroclor-1242	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Aroclor-1248	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Aroclor-1254	0.001	U	0.001	U	0.0299		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.00059	J	0.00017	J
Aroclor-1260	0.001	U	0.001	U	0.01	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Total PCBs					0.0299																0.00059		0.00017	
Other Analytes																								
Analytical Method Dilution Factor % Moisture Units																								
Notes																								
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Monochlorobiphenyl (total)																								
Dichlorobiphenyl (total)																								
Trichlorobiphenyl (total)																								
Tetrachlorobiphenyl (total)																								
Pentachlorobiphenyl (total)																								
Hexachlorobiphenyl (total)																								
Heptachlorobiphenyl (total)																								
Octachlorobiphenyl (total)																								
Nonachlorobiphenyl (total)																								
Decachlorobiphenyl (total)																								
Total PCB Homologs																								

Table A.4
Surface Water Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SW-24	Sauer Dump SW-25	Sauer Dump SW-26	Sauer Dump SW-29	Sauer Dump SW-30	Sauer Dump TB-1	Sauer Dump TB-2	Sauer Dump SW-01	Sauer Dump SW-02	Sauer Dump SW-03	Sauer Dump SW-04	Sauer Dump SW-05	Sauer Dump FB-1	Sauer Dump FB-2
CHH10 MCGX10	CHH26 MCGX25	CHH06 MCGX06	CHH32 MCGX30	CHH22 MCGX21	CHH11	CHH29	A964244 761253	A964245 761254	A964246 761255	A964247 761256	A964248 761257	A900929 M700304 A900959	A901007 M700315 A901018	
12/08/92 HNUS	12/08/92 HNUS	12/08/92 HNUS	12/08/92 HNUS	12/08/92 HNUS	12/08/92 HNUS	12/09/92 HNUS	04/04/96 MDE	04/04/96 MDE	04/04/96 MDE	04/04/96 MDE	04/04/96 MDE	09/29/99 MDE	10/01/99 MDE	
Surface Water Aqueous	Surface Water Aqueous Duplicate of SW-30	Surface Water Aqueous	Surface Water Aqueous	Surface Water Aqueous	Surface Water Aqueous Duplicate of SW-25	Water Aqueous Trip Blank	Water Aqueous Trip Blank	Surface Water Aqueous	Surface Water Aqueous	Surface Water Aqueous	Surface Water Aqueous	Surface Water Aqueous	Water Aqueous Field Blank	Water Aqueous Field Blank
VOCs	yes	yes	yes	yes	yes	yes	yes	no	no	no	no	no	yes	yes
SVOCs	yes	yes	yes	yes	yes	no	no	no	no	no	no	no	yes	yes
Inorganics/Total Metals	yes	yes	yes	yes	yes	no	no	yes	yes	yes	yes	yes	CN only	CN only
Dissolved Metals	no	no	no	no	no	no	no	no	no	no	no	no	yes	yes
PCBs/Pesticides	yes	yes	yes	yes	yes	no	no	PCBs	PCBs	PCBs	PCBs	PCBs	yes	yes
Other Analytes	no	no	no	no	no	no	no	no	no	no	no	no	no	no
VOCs														
Analytical Method Dilution Factor % Moisture Units Notes	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L						EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L
Analyte	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag
Acetone	0.016 B	0.015 B	0.018 B	0.01 U	0.008 B	0.01 B	0.01 U	nr U	nr U	nr U	nr U	nr U	0.0104 B	0.0082 B
Acetonitrile	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
Acrolein	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
Acrylonitrile	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
Allyl Alcohol	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
Allyl Chloride	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
Benzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr U	nr U	nr U	nr U	nr U	0.005 U	0.005 U
Benzene (2-Methyl-1-Propeny	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
Benzyl Chloride	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
Bromoacetone	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
Bromobenzene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	0.005 U	0.005 U
Bromochloromethane/Chlorobromomethane	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	0.005 U	0.005 U
Bromodichloromethane	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr U	nr U	nr U	nr U	nr U	0.005 U	0.005 U
Bromoform	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr U	nr U	nr U	nr U	nr U	0.005 U	0.005 U
Bromomethane/Methyl bromide	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr U	nr U	nr U	nr U	nr U	0.005 U	0.005 U
2-Butanone (Methyl Ethyl Ketone)	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr U	nr U	nr U	nr U	nr U	0.005 U	0.005 U
n-Butylbenzene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	0.005 U	0.005 U
sec-Butylbenzene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	0.005 U	0.005 U
tert-Butylbenzene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	0.005 U	0.005 U
Camphene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
Carbon Disulfide	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr U	nr U	nr U	nr U	nr U	nr	nr
Carbon Tetrachloride	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr U	nr U	nr U	nr U	nr U	0.005 U	0.005 U
Chlorobenzene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr U	nr U	nr U	nr U	nr U	0.005 U	0.005 U
Chloroethane/Ethyl chloride	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr U	nr U	nr U	nr U	nr U	0.005 U	0.005 U
2-Chloroethanol/Ethylene chlorohydrin	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
2-Chloroethylvinyl Ether	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	0.005 U	0.005 U
Chloroform	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr U	nr U	nr U	nr U	nr U	0.005 U	0.005 U
Chloromethane/Methyl chloride	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr U	nr U	nr U	nr U	nr U	0.005 U	0.005 U
Chloroprene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
2-Chlorotoluene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	0.005 U	0.005 U
4-Chlorotoluene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	0.005 U	0.005 U
Cyclohexane	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
Cyclohexane, Butyl-	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
1,3-Cyclopentadiene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
Decahydro-naphthalene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
Dibromochloromethane/Chlorodibromomethane	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr U	nr U	nr U	nr U	nr U	0.005 U	0.005 U
trans-1,4-Dichloro-2-butene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
1,4-Dichloro-2-butene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
1,2-Dibromo-3-chloropropane	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	0.005 U	0.005 U
1,2-Dibromoethane	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	0.005 U	0.005 U
1,2-Dichlorobenzene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	0.005 U	0.005 U
1,3-Dichlorobenzene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	0.005 U	0.005 U
1,4-Dichlorobenzene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	0.005 U	0.005 U
Dichlorodifluoromethane	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	0.005 U	0.005 U
1,1-Dichloroethane	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr	nr	nr	nr	nr	0.005 U	0.005 U
1,2-Dichloroethane	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr	nr	nr	nr	nr	0.005 U	0.005 U
1,1-Dichloroethene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr	nr	nr	nr	nr	0.005 U	0.005 U
cis-1,2-Dichloroethene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
trans-1,2-Dichloroethene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
1,2-Dichloroethene (Total)	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr	nr	nr	nr	nr	nr	nr
Dichloromethane	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
1,2-Dichloropropane	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr	nr	nr	nr	nr	0.005 U	0.005 U
1,3-Dichloropropane	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	0.005 U	0.005 U
2,2-Dichloropropane	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	0.005 U	0.005 U
1,3-Dichloro-2-Propanol	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
1,1-Dichloropropene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	0.005 U	0.005 U
cis-1,3-Dichloropropene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr	nr	nr	nr	nr	nr	nr
trans-1,3-Dichloropropene	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr	nr	nr	nr	nr	nr	nr
1,3-Dichloropropylene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
1,2,3,4-Diepoxybutane	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
1,2-Dimetyl-Naphthalene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
1,3-Dimetyl-Naphthalene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
1,6-Dimetyl-Naphthalene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
2,3-Dimetyl-Naphthalene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr
2,6-Dimetyl-Naphthalene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr

Table A.4
Surface Water Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SW-24 CHH10 MCGX10 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-25 CHH26 MCGX25 12/08/92 HNUS Surface Water Aqueous Duplicate of SW-30	Sauer Dump SW-26 CHH06 MCGX06 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-29 CHH32 MCGX30 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-30 CHH22 MCGX21 12/08/92 HNUS Surface Water Aqueous Duplicate of SW-25	Sauer Dump TB-1 CHH11 12/08/92 HNUS Water Aqueous Trip Blank	Sauer Dump TB-2 CHH29 12/09/92 HNUS Water Aqueous Trip Blank	Sauer Dump SW-01 A964244 761253 04/04/96 MDE Surface Water Aqueous	Sauer Dump SW-02 A964245 761254 04/04/96 MDE Surface Water Aqueous	Sauer Dump SW-03 A964246 761255 04/04/96 MDE Surface Water Aqueous	Sauer Dump SW-04 A964247 761256 04/04/96 MDE Surface Water Aqueous	Sauer Dump SW-05 A964248 761257 04/04/96 MDE Surface Water Aqueous	Sauer Dump FB-1 A900929 M700304 A900959 09/29/99 MDE Water Aqueous Field Blank	Sauer Dump FB-2 A901007 M700315 A901018 10/01/99 MDE Water Aqueous Field Blank
VOCs (cont.)														
Analytical Method Dilution Factor % Moisture Units Notes	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,4-Dioxane	nr		nr		nr		nr		nr		nr		nr	
Dodecane, 6-Methyl-	nr		nr		nr		nr		nr		nr		nr	
Ethanol	nr		nr		nr		nr		nr		nr		nr	
Ethylbenzene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr	
1-Ethyl-2,3-Dimethyl-Benzene	nr		nr		nr		nr		nr		nr		nr	
4-Ethyl-1,2-Dimethylbenzene	nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-2-Methyl-Benzene	nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-3-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-4-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr	
Ethylene Oxide	nr		nr		nr		nr		nr		nr		nr	
Ethylmethacrylate	nr		nr		nr		nr		nr		nr		nr	
Epichlorohydrin	nr		nr		nr		nr		nr		nr		nr	
Hexachlorobutadiene	nr		nr		nr		nr		nr		nr		nr	
Hexane	nr		nr		nr		nr		nr		nr		nr	
2-Hexanone	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr	
2-Hydroxypropionitrile	nr		nr		nr		nr		nr		nr		nr	
Isobutyl alcohol	nr		nr		nr		nr		nr		nr		nr	
Isopropylbenzene	nr		nr		nr		nr		nr		nr		nr	
p-Isopropyl Toluene	nr		nr		nr		nr		nr		nr		nr	
Malononitrile	nr		nr		nr		nr		nr		nr		nr	
Methacrylonitrile	nr		nr		nr		nr		nr		nr		nr	
Methyl Acetate	nr		nr		nr		nr		nr		nr		nr	
Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr	
1-Methyl-2- Benzene (1 Methy	nr		nr		nr		nr		nr		nr		nr	
1-Methyl-3- Benzene (1 Methy	nr		nr		nr		nr		nr		nr		nr	
1-Methyl-4- Benzene (1 Methy														
Methylene Bromide	nr		nr		nr		nr		nr		nr		nr	
Methylene Chloride	0.003	J,B	0.002	J,B	0.004	J,B	0.002	J,B	0.003	J,B	0.004	J,B	nr	
1-Methyl-indan	nr		nr		nr		nr		nr		nr		nr	
Methyl Iodide/Iodomethane	nr		nr		nr		nr		nr		nr		nr	
Methylmethacrylate	nr		nr		nr		nr		nr		nr		nr	
2-Methyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr	
4-Methyl-Nonane	nr		nr		nr		nr		nr		nr		nr	
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr	
O-(2-Methyl Propyl Hydroxylamine	nr		nr		nr		nr		nr		nr		nr	
Methyl-t-Butyl Ether	nr		nr		nr		nr		nr		nr		nr	
Naphthalene	nr		nr		nr		nr		nr		nr		nr	
Naphthalene, decahydro-, trans-	nr		nr		nr		nr		nr		nr		nr	
Pentachloroethane	nr		nr		nr		nr		nr		nr		nr	
Propargyl Alcohol	nr		nr		nr		nr		nr		nr		nr	
Propiolactone	nr		nr		nr		nr		nr		nr		nr	
Propionitrile	nr		nr		nr		nr		nr		nr		nr	
Propylamine	nr		nr		nr		nr		nr		nr		nr	
n-Propylbenzene	nr		nr		nr		nr		nr		nr		nr	
Styrene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr	
1,1,1,2-Tetrachloroethane	nr		nr		nr		nr		nr		nr		nr	
1,1,2,2-Tetrachloroethane	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr	
Tetrachloroethene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr	
1,2,4,5-Tetramethylbenzene	nr		nr		nr		nr		nr		nr		nr	
Toluene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr	
1,2,3-Trichlorobenzene	nr		nr		nr		nr		nr		nr		nr	
1,2,4-Trichlorobenzene	nr		nr		nr		nr		nr		nr		nr	
1,1,1-Trichloroethane	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr	
1,1,2-Trichloroethane	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr	
Trichloroethene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr	
1,1, 2 - Trichloro -1, 2, 2 -trifluoroethane	nr		nr		nr		nr		nr		nr		nr	
Trichlorofluoromethane	nr		nr		nr		nr		nr		nr		nr	
1,2,3-Trichloropropane	nr		nr		nr		nr		nr		nr		nr	
Tridecane	nr		nr		nr		nr		nr		nr		nr	
1,2,4-Trimethylbenzene	nr		nr		nr		nr		nr		nr		nr	
1,2,3-Trimethylbenzene	nr		nr		nr		nr		nr		nr		nr	
1,3,5-Trimethylbenzene	nr		nr		nr		nr		nr		nr		nr	
2,3,4-Trimethylhexane	nr		nr		nr		nr		nr		nr		nr	
Vinyl Acetate	nr		nr		nr		nr		nr		nr		nr	
Vinyl chloride	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr	
m+p-Xylenes	nr		nr		nr		nr		nr		nr		nr	
o-Xylene	nr		nr		nr		nr		nr		nr		nr	
Xylenes (Total)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr	

Table A.4
Surface Water Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SW-24 CHH10 MCGX10 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-25 CHH26 MCGX25 12/08/92 HNUS Surface Water Aqueous Duplicate of SW-30	Sauer Dump SW-26 CHH06 MCGX06 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-29 CHH32 MCGX30 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-30 CHH22 MCGX21 12/08/92 HNUS Surface Water Aqueous Duplicate of SW-25	Sauer Dump TB-1 CHH11 12/08/92 HNUS Water Aqueous Trip Blank	Sauer Dump TB-2 CHH29 12/09/92 HNUS Water Aqueous Trip Blank	Sauer Dump SW-01 A964244 761253 04/04/96 MDE Surface Water Aqueous	Sauer Dump SW-02 A964245 761254 04/04/96 MDE Surface Water Aqueous	Sauer Dump SW-03 A964246 761255 04/04/96 MDE Surface Water Aqueous	Sauer Dump SW-04 A964247 761256 04/04/96 MDE Surface Water Aqueous	Sauer Dump SW-05 A964248 761257 04/04/96 MDE Surface Water Aqueous	Sauer Dump FB-1 A900929 M700304 A900959 09/29/99 MDE Water Aqueous Field Blank	Sauer Dump FB-2 A901007 M700315 A901018 10/01/99 MDE Water Aqueous Field Blank												
SVOCs																										
Analytical Method Dilution Factor % Moisture Units	1 NA mg/L		1 NA mg/L		1 NA mg/L		1 NA mg/L		1 NA mg/L														EPA 625 NA mg/L		EPA 625 NA mg/L	
Notes																							Incomplete lab report: "No other SVOCs detected"		Incomplete lab report: "No other SVOCs detected"	
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Acenaphthene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
Acenaphthylene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
Acetophenone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr					
Anthracene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
Atrazine	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Benzaldehyde	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr					
Benzo(a)Anthracene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
Benzo(a)Pyrene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
Benzo(b)fluoranthene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
Benzo(g,h,i)Perylene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
Benzo(k)fluoranthene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
BenzyIbutylphthalate/Butylbenzylphthalate	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
1,1'-Biphenyl	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr					
4-Bromophenyl-phenylether	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
Caprolactam	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr					
Carbazole	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
4-Chloroaniline	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
bis(2-Chloroethoxy)Methane	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
bis(2-Chloroethyl)Ether	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
bis(2-Chloroisopropyl)Ether	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr					
4-Chloro-3-Methylphenol	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
2-Chloronaphthalene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
2-Chlorophenol	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
4-Chlorophenyl-phenylether	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
Chrysene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
Dibenzo(a,h)Anthracene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
Dibenzofuran	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
1,2-Dichlorobenzene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
1,3-Dichlorobenzene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
1,4-Dichlorobenzene	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
3,3'-Dichlorobenzidine	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
2,4-Dichlorophenol	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
Diethylphthalate	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr		0.04442	B	0.03135	B
2,4-Dimethylphenol	0.05	U	0.01	U	0.05	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
Dimethyl Phthalate	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
Di-n-Butylphthalate	0.01	U	0.01	U	0.001	J	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr					
4,6-Dinitro-2-Methylphenol	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	nr		nr		nr		nr		nr		nr					
2,4-Dinitrophenol	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	nr		nr		nr		nr		nr		nr					

Table A.4 Surface Water Analytical Data - 1985 to 2007 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																												
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SW-24		Sauer Dump SW-25		Sauer Dump SW-26		Sauer Dump SW-29		Sauer Dump SW-30		Sauer Dump TB-1		Sauer Dump TB-2		Sauer Dump SW-01		Sauer Dump SW-02		Sauer Dump SW-03		Sauer Dump SW-04		Sauer Dump SW-05		Sauer Dump FB-1		Sauer Dump FB-2	
	CHH10 MCGX10		CHH26 MCGX25		CHH06 MCGX06		CHH32 MCGX30		CHH22 MCGX21		CHH11		CHH29		A964244 761253		A964245 761254		A964246 761255		A964247 761256		A964248 761257		A900929 M700304 A900959		A901007 M700315 A901018	
	12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		12/09/92 HNUS		04/04/96 MDE		04/04/96 MDE		04/04/96 MDE		04/04/96 MDE		04/04/96 MDE		09/29/99 MDE		10/01/99 MDE	
	Surface Water Aqueous		Surface Water Aqueous Duplicate of SW-30		Surface Water Aqueous		Surface Water Aqueous		Surface Water Aqueous Duplicate of SW-25		Water Aqueous Trip Blank		Water Aqueous Trip Blank		Surface Water Aqueous		Surface Water Aqueous		Surface Water Aqueous		Surface Water Aqueous		Surface Water Aqueous		Water Aqueous Field Blank		Water Aqueous Field Blank	
2,4,6-Trichlorophenol	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr		nr		nr		nr		nr		nr					

Table A.4
Surface Water Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SW-24 CHH10 MCGX10 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-25 CHH26 MCGX25 12/08/92 HNUS Surface Water Aqueous Duplicate of SW-30	Sauer Dump SW-26 CHH06 MCGX06 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-29 CHH32 MCGX30 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-30 CHH22 MCGX21 12/08/92 HNUS Surface Water Aqueous Duplicate of SW-25	Sauer Dump TB-1 CHH11 12/08/92 HNUS Water Aqueous Trip Blank	Sauer Dump TB-2 CHH29 12/09/92 HNUS Water Aqueous Trip Blank	Sauer Dump SW-01 A964244 761253 04/04/96 MDE Surface Water Aqueous	Sauer Dump SW-02 A964245 761254 04/04/96 MDE Surface Water Aqueous	Sauer Dump SW-03 A964246 761255 04/04/96 MDE Surface Water Aqueous	Sauer Dump SW-04 A964247 761256 04/04/96 MDE Surface Water Aqueous	Sauer Dump SW-05 A964248 761257 04/04/96 MDE Surface Water Aqueous	Sauer Dump FB-1 A900929 M700304 A900959 09/29/99 MDE Water Aqueous Field Blank	Sauer Dump FB-2 A901007 M700315 A901018 10/01/99 MDE Water Aqueous Field Blank	
Inorganics/Total Metals Analytical Method Dilution Factor % Moisture Units Notes	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L			NA mg/L	NA mg/L	NA mg/L	NA mg/L	NA mg/L		1 NA mg/L	
Analyte	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag
Aluminum	0.192 B	1.12 U	0.116 B	1.76 U	0.157 B	nr nr	nr nr	0.5 U	3.65 U	7.84 U	2.39 U	0.56 U	nr nr	nr nr	
Antimony	0.0169 U	0.0169 U	0.0169 U	0.0169 U	0.0169 U	nr nr	nr nr	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	nr nr	nr nr	
Arsenic	0.0022 U	0.0138 U	0.0042 B	0.0022 U	0.0022 U	nr nr	nr nr	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	nr nr	nr nr	
Barium	0.0553 B	0.0774 B	0.0352 B	0.0325 B	0.0437 B	nr nr	nr nr	0.5 U	0.5 U	0.5 U	0.52 U	0.5 U	nr nr	nr nr	
Beryllium	0.0004 B	0.0004 U	0.0004 U	0.0004 U	0.0004 U	nr nr	nr nr	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	nr nr	nr nr	
Cadmium	0.001 U	0.001 U	0.001 U	0.001 U	0.001 B	nr nr	nr nr	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	nr nr	nr nr	
Calcium	27.1 nr	35.6 nr	29.2 nr	59.4 nr	30.9 nr	nr nr	nr nr	92.7 U	30 U	30 U	81.8 U	29.8 U	nr nr	nr nr	
Chromium	0.0045 U	0.0059 B	0.0045 U	0.0207 nr	0.0045 U	nr nr	nr nr	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	nr nr	nr nr	
Chromium III	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	
Chromium VI	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	
Cobalt	0.0027 U	0.0051 B	0.0027 U	0.0027 U	0.0027 U	nr nr	nr nr	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	nr nr	nr nr	
Copper	0.0122 B	0.025 nr	0.0099 B	0.0206 B	0.0123 B	nr nr	nr nr	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	nr nr	nr nr	
Iron	1.43 nr	9.08 nr	2.86 nr	2.67 nr	3.43 nr	nr nr	nr nr	24.24 U	4.09 U	7.2 U	13.1 U	1.72 U	nr nr	nr nr	
Lead	0.0147 nr	0.0538 nr	0.0061 nr	0.017 nr	0.0076 nr	nr nr	nr nr	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	nr nr	nr nr	
Magnesium	8.69 nr	10.3 nr	8.5 nr	81.8 nr	8.82 nr	nr nr	nr nr	44.9 nr	17.5 nr	18 nr	79.3 nr	10 nr	nr nr	nr nr	
Manganese	0.223 nr	1.49 nr	0.266 nr	0.119 nr	0.441 nr	nr nr	nr nr	0.67 nr	0.25 nr	0.35 nr	0.39 nr	0.25 nr	nr nr	nr nr	
Mercury	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	nr nr	nr nr	0.0029 U	0.0029 U	0.0029 U	0.0029 U	0.0029 U	nr nr	nr nr	
Nickel	0.0054 U	0.0073 B	0.0054 U	0.0211 B	0.0054 U	nr nr	nr nr	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	nr nr	nr nr	
Potassium	7.1 nr	12.2 nr	9.08 nr	35.2 nr	8.33 nr	nr nr	nr nr	17 nr	16.6 nr	17.2 nr	39.7 nr	3.4 nr	nr nr	nr nr	
Selenium	0.0036 U	0.0073 nr	0.0036 U	0.0036 U	0.0036 U	nr nr	nr nr	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	nr nr	nr nr	
Silver	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	nr nr	nr nr	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	nr nr	nr nr	
Sodium	11.4 nr	11.3 nr	9.77 nr	609 nr	10.9 nr	nr nr	nr nr	72.8 nr	160 nr	159 nr	154 nr	148 nr	nr nr	nr nr	
Thallium	0.0018 B	0.0017 U	0.0017 U	0.0085 U	0.0017 U	nr nr	nr nr	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	nr nr	nr nr	
Tin	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	
Vanadium	0.0028 U	0.0046 B	0.0028 U	0.0062 B	0.0028 U	nr nr	nr nr	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	nr nr	nr nr	
Zinc	0.0247 nr	0.124 nr	0.0237 nr	0.0848 nr	0.023 nr	nr nr	nr nr	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	nr nr	nr nr	
Cyanide	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.005 U	0.005 U	
Dissolved Metals Analytical Method Dilution Factor % Moisture Units Notes													Not Reported NA mg/L	Not Reported NA mg/L	
Analyte	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag
Aluminum	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.5 U	0.5 U	
Antimony	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.05 U	0.05 U	
Arsenic	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.05 U	0.05 U	
Barium	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.5 U	0.5 U	
Beryllium	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.05 U	0.05 U	
Cadmium	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.1 U	0.1 U	
Calcium	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	1 U	1 U	
Chromium	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.1 U	0.1 U	
Cobalt	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.1 U	0.1 U	
Copper	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.1 U	0.1 U	
Iron	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.5 U	0.5 U	
Lead	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.25 U	0.25 U	
Magnesium	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	1 U	0.25 U	
Manganese	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.05 U	0.05 U	
Mercury	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.002 U	0.002 U	
Nickel	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.1 U	0.1 U	
Potassium	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	1 U	157 U	
Selenium	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.05 U	0.05 U	
Silver	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.05 U	0.05 U	
Sodium	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	1 U	1 U	
Thallium	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.025 U	0.025 U	
Vanadium	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.1 U	0.1 U	
Zinc	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	nr nr	0.05 U	0.05 U	

Table A.4
Surface Water Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SW-24 CHH10 MCGX10 12/08/92 HNUS Surface Water Aqueous	Sauer Dump SW-25 CHH26 MCGX25 12/08/92 HNUS Surface Water Aqueous Duplicate of SW-30	Sauer Dump SW-26 CHH06 MCGX06	Sauer Dump SW-29 CHH32 MCGX30	Sauer Dump SW-30 CHH22 MCGX21	Sauer Dump TB-1 CHH11	Sauer Dump TB-2 CHH29	Sauer Dump SW-01 A964244 761253	Sauer Dump SW-02 A964245 761254	Sauer Dump SW-03 A964246 761255	Sauer Dump SW-04 A964247 761256	Sauer Dump SW-05 A964248 761257	Sauer Dump FB-1 A900929 M700304 A900959 09/29/99 MDE Water Aqueous Field Blank	Sauer Dump FB-2 A901007 M700315 A901018 10/01/99 MDE Water Aqueous Field Blank														
Pesticides/PCBs																												
Analytical Method Dilution Factor % Moisture Units	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L	1 NA mg/L			NA mg/L	NA mg/L	NA mg/L	NA mg/L	NA mg/L	EPA 608 Not reported NA mg/L	EPA 608 Not reported NA mg/L														
Notes								Incomplete lab report: "No PCBs detected"	Incomplete lab report: "No PCBs detected"	Incomplete lab report: "No PCBs detected"	Incomplete lab report: "No PCBs detected"	Incomplete lab report: "No PCBs detected"																
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag		
Aldrin	0.00005	U	0.0000011	J	0.00005	U	0.00005	U	0.00005	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0001	U		
alpha-BHC	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0001	U		
beta-BHC	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0001	U		
delta-BHC	0.0000029	J,B	0.00005	U	0.00005	U	0.0000019	J	0.0000026	J	nr		nr		nr		nr		nr		nr			U		U		
gamma-BHC (Lindane)	0.00005	U	0.00005	U	0.00005	U	0.0000032	J	0.00005	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0001	U		
alpha-Chlordane	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0001	U		
gamma-Chlordane	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	nr		nr		nr		nr		nr		nr		nr		nr			
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
4,4'-DDD	0.0001	U	0.0001	U	0.0001	U	0.0000016	J	0.0001	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0001	U		
4,4'-DDE	0.0001	U	0.0001	U	0.0001	U	0.0000011	J,B	0.0001	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0001	U		
4,4'-DDT	0.0001	U	0.0001	U	0.0000036	J	0.0001	U	0.0001	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0001	U		
Dieldrin	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0001	U		
Endosulfan I	0.000002	J	0.0000011	J	0.0000019	J	0.00005	U	0.00005	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0001	U		
Endosulfan II	0.0000028	J	0.0001	U	0.0000014	J	0.0001	U	0.0001	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0001	U		
Endosulfan sulfate	0.0001	U	0.0001	U	0.0000024	J	0.0001	U	0.0001	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0001	U		
Endrin	0.0001	U	0.0001	U	0.0000014	J	0.0001	U	0.0001	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0001	U		
Endrin aldehyde	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0001	U		
Endrin ketone	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0016	B		
Heptachlor	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0001	U		
Heptachlor epoxide	0.00005	U	0.00005	U	0.00005	U	0.0000017	J	0.00005	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0001	U		
Methoxychlor	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		nr		0.0001	U	0.0001	U		
Toxaphene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	nr		nr		nr		nr		nr		nr		0.05	U	0.05	U		
Aroclor-1016	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	nr		nr			U		U		U		U	0.005	U	0.005	U		
Aroclor-1221	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	nr		nr			U		U		U		U	0.005	U	0.005	U		
Aroclor-1232	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	nr		nr			U		U		U		U	0.005	U	0.005	U		
Aroclor-1242	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	nr		nr			U		U		U		U	0.005	U	0.005	U		
Aroclor-1248	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	nr		nr			U		U		U		U	nr		nr			
Aroclor-1254	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	nr		nr		0.2	U	0.5	U	0.4	U	0.2	U	0.4	U	0.005	U	0.005	U
Aroclor-1260	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	nr		nr			U		U		U		U	0.005	U	0.005	U		
Total PCBs																	U		U		U		U					
Other Analytes																												
Analytical Method Dilution Factor % Moisture Units																												
Notes																												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag		
Monochlorobiphenyl (total)																												
Dichlorobiphenyl (total)																												
Trichlorobiphenyl (total)																												
Tetrachlorobiphenyl (total)																												
Pentachlorobiphenyl (total)																												
Hexachlorobiphenyl (total)																												
Heptachlorobiphenyl (total)																												
Octachlorobiphenyl (total)																												
Nonachlorobiphenyl (total)																												
Decachlorobiphenyl (total)																												
Total PCB Homologs																												

Table A.4
Surface Water Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SW-1	Sauer Dump SW-2	Sauer Dump SW-3	Sauer Dump SW-4	Sauer Dump SW-5	Sauer Dump SW-6	Sauer Dump SW-7	Sauer Dump SW-8	Sauer Dump SW-9	Sauer Dump TB-1	Sauer Dump TB-2	Sauer Dump Trip Blank	SW-1
VOCs SVOCs Inorganics/Total Metals Dissolved Metals PCBs/Pesticides Other Analytes	A900913 M700299 A900954 09/29/99 MDE Surface Water Aqueous	A900914 M700300 A900955 09/29/99 MDE Surface Water Aqueous	A901002 M700310 A901013 10/01/99 MDE Surface Water Aqueous	A901003 M700311 A901014 10/01/99 MDE Surface Water Aqueous	A901004 M700312 A901015 10/01/99 MDE Surface Water Aqueous	A901005 M700313 A901016 10/01/99 MDE Surface Water Aqueous	A900915 M700301 A900956 09/29/99 MDE Surface Water Aqueous	A901006 M700314 A901017 10/01/99 MDE Surface Water Aqueous Background	CTS24 09/29/99 MDE Surface Water Aqueous Dup. Of SW/SED-2	A900930 09/29/99 MDE Water Aqueous Trip Blank	A901001 10/01/99 MDE Water Aqueous Trip Blank	99121531 12/15/99 MDE Water Aqueous Trip Blank	08/12/02 ENSAT Surface Water Aqueous yes - PCB Congeners
VOCs													
Analytical Method Dilution Factor % Moisture Units	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	1 NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	1 NA mg/L
Notes	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded		Holding time exceeded	Holding time exceeded	
Analyte	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag
Acetone	0.0193 B	0.0123 B	0.005 U	0.0086 B	0.0089 B	0.0082 B	0.0169 B	0.008 B	0.003 J.B	0.0109 B	0.005 U	0.01 U	
Acetonitrile	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
Acrolein	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
Acrylonitrile	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
Allyl Alcohol	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
Allyl Chloride	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
Benzene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
Benzene (2-Methyl-1-Propeny	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
Benzyl Chloride	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
Bromoacetone	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
Bromobenzene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	
Bromochloromethane/Chlorobromomethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	nr	0.005 U	0.005 U	0.005 U	
Bromodichloromethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
Bromoform	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
Bromomethane/Methyl bromide	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
2-Butanone (Methyl Ethyl Ketone)	nr	nr	nr	nr	nr	nr	nr	nr	0.01 U	nr	nr	0.01 U	
n-Butylbenzene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	nr	0.005 U	0.005 U	0.005 U	
sec-Butylbenzene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	nr	0.005 U	0.005 U	0.005 U	
tert-Butylbenzene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	nr	0.005 U	0.005 U	0.005 U	
Camphene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
Carbon Disulfide	nr	nr	nr	nr	nr	nr	nr	nr	0.01 U	nr	nr	0.005 U	
Carbon Tetrachloride	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
Chlorobenzene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
Chloroethane/Ethyl chloride	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
2-Chloroethanol/Ethylene chlorohydrin	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
2-Chloroethylvinyl Ether	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	nr	0.005 U	0.005 U	nr	
Chloroform	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
Chloromethane/Methyl chloride	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
Chloroprene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
2-Chlorotoluene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	nr	0.005 U	0.005 U	0.005 U	
4-Chlorotoluene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	nr	0.005 U	0.005 U	0.005 U	
Cyclohexane	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
Cyclohexane, Butyl-	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
1,3-Cyclopentadiene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
Decahydro-naphthalene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
Dibromochloromethane/Chlorodibromomethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
trans-1,4-Dichloro-2-butene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
1,4-Dichloro-2-butene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
1,2-Dibromo-3-chloropropane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
1,2-Dibromoethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
1,2-Dichlorobenzene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
1,3-Dichlorobenzene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
1,4-Dichlorobenzene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
Dichlorodifluoromethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
1,1-Dichloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
1,2-Dichloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
1,1-Dichloroethene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
cis-1,2-Dichloroethene	nr	nr	nr	nr	nr	nr	nr	nr	0.01 U	nr	nr	0.005 U	
trans-1,2-Dichloroethene	nr	nr	nr	nr	nr	nr	nr	nr	0.01 U	nr	nr	0.005 U	
1,2-Dichloroethene (Total)	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
Dichloromethane	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
1,2-Dichloropropane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	
1,3-Dichloropropane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	nr	0.005 U	0.005 U	0.005 U	
2,2-Dichloropropane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	nr	0.005 U	0.005 U	0.005 U	
1,3-Dichloro-2-Propanol	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
1,1-Dichloropropene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	
cis-1,3-Dichloropropene	nr	nr	nr	nr	nr	nr	nr	nr	0.01 U	nr	nr	0.005 U	
trans-1,3-Dichloropropene	nr	nr	nr	nr	nr	nr	nr	nr	0.01 U	nr	nr	0.005 U	
1,3-Dichloropropylene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
1,2,3,4-Diepoxybutane	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
1,2-Dimethyl-Naphthalene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
1,3-Dimethyl-Naphthalene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
1,6-Dimethyl-Naphthalene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
2,3-Dimethyl-Naphthalene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	
2,6-Dimethyl-Naphthalene	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	nr	

Table A.4
Surface Water Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SW-1	Sauer Dump SW-2	Sauer Dump SW-3	Sauer Dump SW-4	Sauer Dump SW-5	Sauer Dump SW-6	Sauer Dump SW-7	Sauer Dump SW-8	Sauer Dump SW-9	Sauer Dump TB-1	Sauer Dump TB-2	Sauer Dump Trip Blank	SW-1											
	A900913 M700299 A900954 09/29/99 MDE Surface Water Aqueous	A900914 M700300 A900955 09/29/99 MDE Surface Water Aqueous	A901002 M700310 A901013 10/01/99 MDE Surface Water Aqueous	A901003 M700311 A901014 10/01/99 MDE Surface Water Aqueous	A901004 M700312 A901015 10/01/99 MDE Surface Water Aqueous	A901005 M700313 A901016 10/01/99 MDE Surface Water Aqueous	A900915 M700301 A900956 09/29/99 MDE Surface Water Aqueous	A901006 M700314 A901017 10/01/99 MDE Surface Water Aqueous Background	CTS24 09/29/99 MDE Surface Water Aqueous Dup. Of SW/SED-2	A900930 09/29/99 MDE Water Aqueous Trip Blank	A901001 10/01/99 MDE Water Aqueous Trip Blank	99121531 12/15/99 MDE Water Aqueous Trip Blank	08/12/02 ENSAT Surface Water Aqueous											
VOCs (cont.)																								
Analytical Method Dilution Factor % Moisture Units	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	1 NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	1 NA mg/L											
Notes	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded		Holding time exceeded	Holding time exceeded												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,4-Dioxane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Dodecane, 6-Methyl-	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Ethanol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethylbenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.005	U	0.005	U	0.005	U		
1-Ethyl-2,3-Dimethyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
4-Ethyl-1,2-Dimethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1-Ethyl-2-Methyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1-Ethyl-3-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1-Ethyl-4-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Ethylene Oxide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Ethylmethacrylate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Epichlorohydrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Hexachlorobutadiene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	nr		0.005	U	0.005	U	0.005	U		
Hexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
2-Hexanone	nr		nr		nr		nr		nr		nr		nr		0.01	U	nr		nr		0.01	U		
2-Hydroxypropionitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Isobutyl alcohol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Isopropylbenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.005	U	0.005	U	0.005	U		
p-Isopropyl Toluene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	nr		0.005	U	0.005	U	0.005	U		
Malononitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methacrylonitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methyl Acetate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1-Methyl-2- Benzene (1 Methy	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1-Methyl-3- Benzene (1 Methy	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1-Methyl-4- Benzene (1 Methy	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methylene Bromide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methylene Chloride	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.005	U	0.005	U	0.005	U		
1-Methyl-indan	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methyl Iodide/Iodomethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methylmethacrylate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
2-Methyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
4-Methyl-Nonane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.005	U	0.005	U	0.01	U		
O-(2-Methyl Propyl Hydroxylamine	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methyl-t-Butyl Ether	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0073		0.002	J	0.005	U	0.005	U	0.005	U
Naphthalene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	nr		0.005	U	0.005	U		
Naphthalene, decahydro-, trans-	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Pentachloroethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Propargyl Alcohol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Propiolactone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Propionitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Propylamine	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
n-Propylbenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	nr		0.005	U	0.005	U	0.005	U		
Styrene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.005	U	0.005	U	0.005	U		
1,1,1,2-Tetrachloroethane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	nr		0.005	U	0.005	U	0.005	U		
1,1,2,2-Tetrachloroethane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.005	U	0.005	U	0.005	U		
Tetrachloroethene	nr		nr		nr		nr		nr		nr		nr		0.01	U	nr		nr		0.005	U		
1,2,4,5-Tetramethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Toluene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.005	U	0.005	U	0.005	U		
1,2,3-Trichlorobenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	nr		0.005	U	0.005	U	0.005	U		
1,2,4-Trichlorobenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.005	U	0.005	U	0.005	U		
1,1,1-Trichloroethane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.005	U	0.005	U	0.005	U		
1,1,2-Trichloroethane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.005	U	0.005	U	0.005	U		
Trichloroethene	nr		nr		nr		nr		nr		nr		nr		0.01	U	nr		nr		0.005	U		
1,1, 2 - Trichloro -1, 2, 2 -trifluoroethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Trichlorofluoromethane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.005	U	0.005	U	0.005	U		
1,2,3-Trichloropropane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	nr		0.005	U	0.005	U	0.005	U		
Tridecane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1,2,4-Trimethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1,2,3-Trimethylbenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	nr		0.005	U	0.005	U	0.005	U		
1,3,5-Trimethylbenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	nr		0.005	U	0.005	U	0.005	U		
2,3,4-Trimethylhexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Vinyl Acetate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Vinyl chloride	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.01	U	0.005	U	0.005	U	0.005	U		
m+p-Xylenes	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		0.005	U		
o-Xylene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		0.005	U		
Xylenes (Total)	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	nr			

Table A.4
Surface Water Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SW-1	Sauer Dump SW-2	Sauer Dump SW-3	Sauer Dump SW-4	Sauer Dump SW-5	Sauer Dump SW-6	Sauer Dump SW-7	Sauer Dump SW-8	Sauer Dump SW-9	Sauer Dump TB-1	Sauer Dump TB-2	Sauer Dump Trip Blank	SW-1							
A900913 M700299 A900954 09/29/99 MDE Surface Water Aqueous	A900914 M700300 A900955 09/29/99 MDE Surface Water Aqueous	A901002 M700310 A901013 10/01/99 MDE Surface Water Aqueous	A901003 M700311 A901014 10/01/99 MDE Surface Water Aqueous	A901004 M700312 A901015 10/01/99 MDE Surface Water Aqueous	A901005 M700313 A901016 10/01/99 MDE Surface Water Aqueous	A900915 M700301 A900956 09/29/99 MDE Surface Water Aqueous	A901006 M700314 A901017 10/01/99 MDE Surface Water Aqueous Background	CTS24 09/29/99 MDE Surface Water Aqueous Dup. Of SW/SED-2	A900930 09/29/99 MDE Water Aqueous Trip Blank	A901001 10/01/99 MDE Water Aqueous Trip Blank	99121531 12/15/99 MDE Water Aqueous Trip Blank	08/12/02 ENSAT Surface Water Aqueous								
SVOCs	EPA 625	EPA 625	EPA 625	EPA 625	EPA 625	EPA 625	EPA 625	EPA 625	NA mg/L											
Analytical Method Dilution Factor % Moisture Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg												
Notes	Incomplete lab report: "No SVOCs detected"																			
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Acenaphthene											0.002	J	nr		nr		nr			
Acenaphthylene											0.01	U	nr		nr		nr			
Acetophenone											0.01	U	nr		nr		nr			
Anthracene											0.01	U	nr		nr		nr			
Atrazine											0.01	U	nr		nr		nr			
Benzaldehyde											0.01	U	nr		nr		nr			
Benzo(a)Anthracene											0.01	U	nr		nr		nr			
Benzo(a)Pyrene											0.01	U	nr		nr		nr			
Benzo(b)fluoranthene											0.01	U	nr		nr		nr			
Benzo(g,h,i)Perylene											0.01	U	nr		nr		nr			
Benzo(k)fluoranthene											0.01	U	nr		nr		nr			
Benzylbutylphthalate/Butylbenzylphthalate											0.01	U	nr		nr		nr			
1,1'-Biphenyl											0.01	U	nr		nr		nr			
4-Bromophenyl-phenylether											0.01	U	nr		nr		nr			
Caprolactam											0.01	U	nr		nr		nr			
Carbazole											0.01	U	nr		nr		nr			
4-Chloroaniline											0.01	U	nr		nr		nr			
bis(2-Chloroethoxy)Methane											0.01	U	nr		nr		nr			
bis(2-Chloroethyl)Ether											0.01	U	nr		nr		nr			
bis(2-Chloroisopropyl)Ether											nr		nr		nr		nr			
4-Chloro-3-Methylphenol											0.01	U	nr		nr		nr			
2-Chloronaphthalene											0.01	U	nr		nr		nr			
2-Chlorophenol											0.01	U	nr		nr		nr			
4-Chlorophenyl-phenylether											0.01	U	nr		nr		nr			
Chrysene											0.01	U	nr		nr		nr			
Dibenzo(a,h)Anthracene											0.01	U	nr		nr		nr			
Dibenzofuran											0.01	U	nr		nr		nr			
1,2-Dichlorobenzene											nr		nr		nr		nr			
1,3-Dichlorobenzene											nr		nr		nr		nr			
1,4-Dichlorobenzene											nr		nr		nr		nr			
3,3'-Dichlorobenzidine											0.01	U	nr		nr		nr			
2,4-Dichlorophenol											0.01	U	nr		nr		nr			
Diethylphthalate											0.003	J,B	nr		nr		nr			
2,4-Dimethylphenol											0.01	U	nr		nr		nr			
Dimethyl Phthalate											0.01	U	nr		nr		nr			
Di-n-Butylphthalate											0.01	U	nr		nr		nr			
4,6-Dinitro-2-Methylphenol											0.025	U	nr		nr		nr			
2,4-Dinitrophenol											0.01	U	nr		nr		nr			
2,4-Dinitrotoluene											0.01	U	nr		nr		nr			
2,6-Dinitrotoluene											0.01	U	nr		nr		nr			
Di-n-Octyl Phthalate											0.01	U	nr		nr		nr			
bis(2-Ethylhexyl)Phthalate											0.002	J,B	nr		nr		nr			
Fluoranthene											0.01	U	nr		nr		nr			
Fluorene											0.01	U	nr		nr		nr			
Hexachlorobenzene											0.01	U	nr		nr		nr			
Hexachlorobutadiene											0.01	U	nr		nr		nr			
Hexachlorocyclopentadiene											0.01	U	nr		nr		nr			
Hexachloroethane											0.01	U	nr		nr		nr			
Indeno(1,2,3-cd)Pyrene											0.01	U	nr		nr		nr			
Isophorone											0.01	U	nr		nr		nr			
2-Methylnaphthalene											0.01	U	nr		nr		nr			
2-Methylphenol											0.01	U	nr		nr		nr			
4-Methylphenol											0.01	U	nr		nr		nr			
MethylMercury											nr		nr		nr		nr			
Naphthalene											0.01	U	nr		nr		nr			
2-Nitroaniline											0.025	U	nr		nr		nr			
3-Nitroaniline											0.025	U	nr		nr		nr			
4-Nitroaniline											0.025	U	nr		nr		nr			
Nitrobenzene											0.01	U	nr		nr		nr			
2-Nitrophenol											0.01	U	nr		nr		nr			
4-Nitrophenol											0.025	U	nr		nr		nr			
N-Nitroso-Di-n-Propylamine											0.01	U	nr		nr		nr			
N-Nitrosodiphenylamine											0.01	U	nr		nr		nr			
2,2-Oxybis(1-Chloropropane)											0.01	U	nr		nr		nr			
Pentachlorophenol											0.025	U	nr		nr		nr			
Phenanthrene											0.0005	J	nr		nr		nr			
Phenol											0.006	J,B	nr		nr		nr			
Pyrene											0.01	U	nr		nr		nr			
1,2,4-Trichlorobenzene											nr		nr		nr		nr			
2,4,5-Trichlorophenol											0.025	U	nr		nr		nr			

Table A.4
Surface Water Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site	Sauer Dump SW-1		Sauer Dump SW-2		Sauer Dump SW-3		Sauer Dump SW-4		Sauer Dump SW-5		Sauer Dump SW-6		Sauer Dump SW-7		Sauer Dump SW-8		Sauer Dump SW-9		Sauer Dump TB-1		Sauer Dump TB-2		Sauer Dump Trip Blank		SW-1	
Sample Identification	A900913		A900914		A901002		A901003		A901004		A901005		A900915		A901006		CTS24		A900930		A901001		99121531			
Alt. Sample Identification	M700299		M700300		M700310		M700311		M700312		M700313		M700301		M700314											
Alt. Sample Identification/VOCs and SVOCs	A900954		A900955		A901013		A901014		A901015		A901016		A900956		A901017											
Alt. Sample Identification/Inorg.	09/29/99		09/29/99		10/01/99		10/01/99		10/01/99		10/01/99		09/29/99		10/01/99		09/29/99		09/29/99		10/01/99		12/15/99		08/12/02	
Alt. Sample Identification/PCB's	MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		ENSAT	
Date of Sample Collection	Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Water		Water		Water		Surface Water	
Sampler	Aqueous		Aqueous		Aqueous		Aqueous		Aqueous		Aqueous		Aqueous		Aqueous		Dup. Of SW/SED-2		Aqueous		Aqueous		Aqueous		Aqueous	
Sample Type																			nr		nr		nr			
Matrix																	0.01		U							
Field QC																										
2,4,6-Trichlorophenol																										

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Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SW-1	Sauer Dump SW-2	Sauer Dump SW-3	Sauer Dump SW-4	Sauer Dump SW-5	Sauer Dump SW-6	Sauer Dump SW-7	Sauer Dump SW-8	Sauer Dump SW-9	Sauer Dump TB-1	Sauer Dump TB-2	Sauer Dump Trip Blank	SW-1											
	A900913 M700299 A900954 09/29/99 MDE Surface Water Aqueous	A900914 M700300 A900955 09/29/99 MDE Surface Water Aqueous	A901002 M700310 A901013 10/01/99 MDE Surface Water Aqueous	A901003 M700311 A901014 10/01/99 MDE Surface Water Aqueous	A901004 M700312 A901015 10/01/99 MDE Surface Water Aqueous	A901005 M700313 A901016 10/01/99 MDE Surface Water Aqueous	A900915 M700301 A900956 09/29/99 MDE Surface Water Aqueous	A901006 M700314 A901017 10/01/99 MDE Surface Water Aqueous Background	CTS24 09/29/99 MDE Surface Water Aqueous Dup. Of SW/SED-2	A900930 09/29/99 MDE Water Aqueous Trip Blank	A901001 10/01/99 MDE Water Aqueous Trip Blank	99121531 12/15/99 MDE Water Aqueous Trip Blank	08/12/02 ENSAT Surface Water Aqueous											
Inorganics/Total Metals Analytical Method Dilution Factor % Moisture Units Notes																								
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Antimony	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Arsenic	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Barium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Beryllium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Cadmium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Calcium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Chromium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Chromium III	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Chromium VI	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Cobalt	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Copper	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Iron	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Lead	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Magnesium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Manganese	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Mercury	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Nickel	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Potassium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Selenium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Silver	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Sodium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Thallium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Tin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Vanadium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Zinc	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Cyanide	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0018	J	nr		nr		nr	
Dissolved Metals Analytical Method Dilution Factor % Moisture Units Notes	Not Reported NA mg/L		Not Reported NA mg/L		Not Reported NA mg/L		Not Reported NA mg/L		Not Reported NA mg/L		Not Reported NA mg/L		Not Reported NA mg/L		Not Reported NA mg/L		1 mg/L							
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.2	U	nr		nr			
Antimony	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.06	U	nr		nr			
Arsenic	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.01	U	nr		nr			
Barium	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.58		0.5	U	0.208		nr		nr			
Beryllium	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.0001	J	nr		nr			
Cadmium	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.0006	J	nr		nr			
Calcium	198		250		5.56		65.1		62.8		61.4		127		49.2		278		nr		nr			
Chromium	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.0011	J,B	nr		nr			
Cobalt	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.0018	J	nr		nr			
Copper	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.025	U	nr		nr			
Iron	2.12		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.141		nr		nr			
Lead	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.0013	J,B	nr		nr			
Magnesium	60.8		62.6		10		126		121.5		120		132		75.1		58.2		nr		nr			
Manganese	0.77		0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.87		0.05	U	0.661		nr		nr			
Mercury	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.00012	J	nr		nr			
Nickel	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.005	J	nr		nr			
Potassium	29.2		3.5		61.2		89.7		88.8		62.6		103		1	U	25.8	E	nr		nr			
Selenium	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.005	U	nr		nr			
Silver	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.01	U	nr		nr			
Sodium	130		153		15.2		1084		1120		1085		555		683		156		nr		nr			
Thallium	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.01	U	nr		nr			
Vanadium	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.0037	J	nr		nr			
Zinc	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.02	U	nr		nr			

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Pesticides/PCBs	EPA 608 Not reported NA mg/L	EPA 608 Not reported NA mg/L	EPA 608 Not reported NA mg/L	EPA 608 Not reported NA mg/L	EPA 608 Not reported NA mg/L	EPA 608 Not reported NA mg/L	EPA 608 Not reported NA mg/L	EPA 608 Not reported NA mg/L	1 NA mg/L															
Analytical Method Dilution Factor % Moisture Units Notes																								
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.00005	U	nr		nr		nr			
alpha-BHC	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.00005	U	nr		nr		nr			
beta-BHC	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.00005	U	nr		nr		nr			
delta-BHC	0.0001	U	0.0001	U	0.0001	U		U		U		U		U	0.00005	U								
gamma-BHC (Lindane)	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.00005	U	nr		nr		nr			
alpha-Chlordane	nr		nr		nr		nr		0.0001	U	0.0001	U	0.0001	U	0.00005	U	nr		nr		nr			
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr		0.00005	U	nr		nr		nr			
Chlordane, total	0.005	U	0.005	U	0.005	U	0.005	U	nr		nr		nr		nr		nr		nr		nr			
4,4'-DDD	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	nr		nr		nr			
4,4'-DDE	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	nr		nr		nr			
4,4'-DDT	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	nr		nr		nr			
Dieldrin	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	nr		nr		nr			
Endosulfan I	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	nr		nr		nr			
Endosulfan II	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	nr		nr		nr			
Endosulfan sulfate	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	nr		nr		nr			
Endrin	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	nr		nr		nr			
Endrin aldehyde	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	nr		nr		nr			
Endrin ketone	0.0001	U	0.0001	U	0.0017	B	0.0015	B	0.0017	B	0.0001	U	0.0001	U	0.0001	U	nr		nr		nr			
Heptachlor	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	nr		nr		nr			
Heptachlor epoxide	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	nr		nr		nr			
Methoxychlor	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	nr		nr		nr			
Toxaphene	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	nr		nr		nr			
Aroclor-1016	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	nr		nr		nr			
Aroclor-1221	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	nr		nr		nr			
Aroclor-1232	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.001	U	nr		nr		nr			
Aroclor-1242	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.001	U	nr		nr		nr			
Aroclor-1248	nr		nr		nr		nr		nr		nr		nr		0.001	U	nr		nr		nr			
Aroclor-1254	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.001	U	nr		nr		nr			
Aroclor-1260	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.001	U	nr		nr		nr			
Total PCBs																								
Other Analytes Analytical Method Dilution Factor % Moisture Units Notes																								EPA 1668A N/A N/A pg/L
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Monochlorobiphenyl (total)																								272
Dichlorobiphenyl (total)																								2060
Trichlorobiphenyl (total)																								4600
Tetrachlorobiphenyl (total)																								8870
Pentachlorobiphenyl (total)																								12900
Hexachlorobiphenyl (total)																								12600
Heptachlorobiphenyl (total)																								5990
Octachlorobiphenyl (total)																								1800
Nonachlorobiphenyl (total)																								798
Decachlorobiphenyl (total)																								644
Total PCB Homologs																								50600

Table A.4
Surface Water Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SW-2		Sauer Dump SW-3		Sauer Dump SW-4		Sauer Dump SW-5		Sauer Dump SW-A SW-4 dup		Sauer Dump DG-SW01-F (DISSOLVED) C7A130135016		Sauer Dump DG-SW01-T C7A130135015		Sauer Dump DG-SW02-F (DISSOLVED) C7A130135018		Sauer Dump DG-SW02-T C7A130135017	
	08/12/02 ENSAT Surface Water Aqueous		08/12/02 ENSAT Surface Water Aqueous		08/12/02 ENSAT Surface Water Aqueous		08/12/02 ENSAT Surface Water Aqueous		08/12/02 ENSAT Surface Water Aqueous Duplicate		01/11/07 Malcolm Pirnie Surface Water Aqueous		01/11/07 Malcolm Pirnie Surface Water Aqueous		01/11/07 Malcolm Pirnie Surface Water Aqueous		01/11/07 Malcolm Pirnie Surface Water Aqueous	
Inorganics/Total Metals											SW846 6010B 1		SW846 6010B 1		SW846 6010B 1		SW846 6010B 1	
Analytical Method Dilution Factor % Moisture Units											ug/L		ug/L		ug/L		ug/L	
Notes																		
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum											nr		nr		nr		nr	
Antimony											nr		nr		nr		nr	
Arsenic											nr		nr		nr		nr	
Barium											nr		nr		nr		nr	
Beryllium											nr		nr		nr		nr	
Cadmium											nr		nr		nr		nr	
Calcium											nr		nr		nr		nr	
Chromium											nr		nr		nr		nr	
Chromium III											nr		nr		nr		nr	
Chromium VI											nr		nr		nr		nr	
Cobalt											nr		nr		nr		nr	
Copper											nr		nr		nr		nr	
Iron											nr		nr		nr		nr	
Lead											nr		9.2	J	nr		30.2	
Magnesium											nr		nr		nr		nr	
Manganese											nr		nr		nr		nr	
Mercury											nr		nr		nr		nr	
Nickel											nr		nr		nr		nr	
Potassium											nr		nr		nr		nr	
Selenium											nr		nr		nr		nr	
Silver											nr		nr		nr		nr	
Sodium											nr		nr		nr		nr	
Thallium											nr		nr		nr		nr	
Tin											nr		nr		nr		nr	
Vanadium											nr		nr		nr		nr	
Zinc											nr		nr		nr		nr	
Cyanide											nr		nr		nr		nr	
Dissolved Metals											SW846 6010B 1		SW846 6010B 1		SW846 6010B 1		SW846 6010B 1	
Analytical Method Dilution Factor % Moisture Units											ug/L		ug/L		ug/L		ug/L	
Notes																		
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum											nr		nr		nr		nr	
Antimony											nr		nr		nr		nr	
Arsenic											nr		nr		nr		nr	
Barium											nr		nr		nr		nr	
Beryllium											nr		nr		nr		nr	
Cadmium											nr		nr		nr		nr	
Calcium											nr		nr		nr		nr	
Chromium											nr		nr		nr		nr	
Cobalt											nr		nr		nr		nr	
Copper											nr		nr		nr		nr	
Iron											nr		nr		nr		nr	
Lead											3	U	nr		1.6	J	nr	
Magnesium											nr		nr		nr		nr	
Manganese											nr		nr		nr		nr	
Mercury											nr		nr		nr		nr	
Nickel											nr		nr		nr		nr	
Potassium											nr		nr		nr		nr	
Selenium											nr		nr		nr		nr	
Silver											nr		nr		nr		nr	
Sodium											nr		nr		nr		nr	
Thallium											nr		nr		nr		nr	
Vanadium											nr		nr		nr		nr	
Zinc											nr		nr		nr		nr	

Table A.4
Surface Water Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SW-2		Sauer Dump SW-3		Sauer Dump SW-4		Sauer Dump SW-5		Sauer Dump SW-A SW-4 dup		Sauer Dump DG-SW01-F (DISSOLVED) C7A130135016		Sauer Dump DG-SW01-T C7A130135015		Sauer Dump DG-SW02-F (DISSOLVED) C7A130135018		Sauer Dump DG-SW02-T C7A130135017	
	08/12/02 ENSAT Surface Water Aqueous		08/12/02 ENSAT Surface Water Aqueous		08/12/02 ENSAT Surface Water Aqueous		08/12/02 ENSAT Surface Water Aqueous		08/12/02 ENSAT Surface Water Aqueous Duplicate		01/11/07 Malcolm Pirnie Surface Water Aqueous		01/11/07 Malcolm Pirnie Surface Water Aqueous		01/11/07 Malcolm Pirnie Surface Water Aqueous		01/11/07 Malcolm Pirnie Surface Water Aqueous	
Pesticides/PCBs											SW846 8082 1		SW846 8082 1		SW846 8082 1		SW846 8082 1	
Analytical Method																		
Dilution Factor																		
% Moisture																		
Units											ug/L		ug/L		ug/L		ug/L	
Notes																		
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin											nr		nr		nr		nr	
alpha-BHC											nr		nr		nr		nr	
beta-BHC											nr		nr		nr		nr	
delta-BHC											nr		nr		nr		nr	
gamma-BHC (Lindane)											nr		nr		nr		nr	
alpha-Chlordane											nr		nr		nr		nr	
gamma-Chlordane											nr		nr		nr		nr	
Chlordane, total											nr		nr		nr		nr	
4,4'-DDD											nr		nr		nr		nr	
4,4'-DDE											nr		nr		nr		nr	
4,4'-DDT											nr		nr		nr		nr	
Dieldrin											nr		nr		nr		nr	
Endosulfan I											nr		nr		nr		nr	
Endosulfan II											nr		nr		nr		nr	
Endosulfan sulfate											nr		nr		nr		nr	
Endrin											nr		nr		nr		nr	
Endrin aldehyde											nr		nr		nr		nr	
Endrin ketone											nr		nr		nr		nr	
Heptachlor											nr		nr		nr		nr	
Heptachlor epoxide											nr		nr		nr		nr	
Methoxychlor											nr		nr		nr		nr	
Toxaphene											nr		nr		nr		nr	
Aroclor-1016											1.1	U	1	U	1.1	U	1	U
Aroclor-1221											1.1	U	1	U	1.1	U	1	U
Aroclor-1232											1.1	U	1	U	1.1	U	1	U
Aroclor-1242											1.1	U	1	U	1.1	U	1	U
Aroclor-1248											1.1	U	1	U	1.1	U	1	U
Aroclor-1254											1.1	U	1	U	1.1	U	1	U
Aroclor-1260											1.1	U	1	U	1.1	U	1	U
Total PCBs																		
Other Analytes																		
Analytical Method	EPA 1668A		EPA 1668A		EPA 1668A		EPA 1668A		EPA 1668A		EPA-22 1668A		EPA-22 1668A		EPA-22 1668A		EPA-22 1668A	
Dilution Factor	N/A		N/A		N/A		N/A		N/A		1		1		1		1	
% Moisture	N/A		N/A		N/A		N/A		N/A									
Units	pg/L		pg/L		pg/L		pg/L		pg/L		ng/L		ng/L		ng/L		ng/L	
Notes																		
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Monochlorobiphenyl (total)	112		334		10200		65		910		0.25		0.12	Q	0.22		0.5	
Dichlorobiphenyl (total)	794		12700		41700		753		4200		0.6	B,Q	0.62	B,Q	0.62	B,Q	2.6	B,Q
Trichlorobiphenyl (total)	1490		63000		160000		1240		14700		0.44	B,Q	1.2	B,Q	0.6	B,Q	5	B,Q
Tetrachlorobiphenyl (total)	2630		121000		574000		2170		44700		0.87	B,Q	3.5	B,Q	0.54	Q,B	15	B,Q
Pentachlorobiphenyl (total)	3390		104000		1110000		2520		96000		1.3	Q,B	6	Q,B	0.57	B,Q	31	B,Q
Hexachlorobiphenyl (total)	3130		95500		908000		1850		77900		1.2	Q,B	5.4	B,Q	0.4	Q,B	22	B,Q
Heptachlorobiphenyl (total)	1410		42200		388000		755		31000		0.57	Q,B	2.6	B	0.13	J,Q,B	5.8	Q,B
Octachlorobiphenyl (total)	424		13000		130000		211		9200		0.19	Q	0.85	Q	0.024	J,Q	1.3	Q
Nonachlorobiphenyl (total)	205		2100		28000		78		2110		0.085		0.36		0.0082	J,Q	0.47	
Decachlorobiphenyl (total)	178		518		34300		50.4		2170		0.076		0.32		0.0064	J	0.32	
Total PCB Homologs	13800		454000		3390000		9690		283000		5.581	B Q	20.97	B Q	3.1186	B Q	83.99	B Q

Table A.3
Sediment Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

	Sauer Dump S-1 S-1 Pond Sed. CA 882 MCB977 06/27/85 NUS Sediment Solid	Sauer Dump S-2 S-2 Marsh-River-Drain CA 883 MCB978 06/27/85 NUS Sediment Solid	Sauer Dump S-3 S-3 Channel CA 884 MCB979 06/27/85 NUS Sediment Solid	Sauer Dump A-1 10/24/90 MDE Sediment Solid	Sauer Dump A-2 10/24/90 MDE Sediment Solid	Sauer Dump SD-01 CHH03 MCGX03 12/08/92 HNUS Sediment Solid	Sauer Dump SD-02 CHH13 MCGX12 12/08/92 HNUS Sediment Solid	Sauer Dump SD-04 CHH15 MCGX14 12/08/92 HNUS Sediment Solid	Sauer Dump SD-05 CHH01 MCGX01 12/08/92 HNUS Sediment Solid Duplicate of SD-6	Sauer Dump SD-06 CHH02 MCGX02 12/08/92 HNUS Sediment Solid Duplicate of SD-5	Sauer Dump SD-07 CJM46 12/08/92 HNUS Sediment Solid	Sauer Dump SD-08 CHH17 MCGX16 12/08/92 HNUS Sediment Solid	Sauer Dump SD-10 CHH19 MCGX18 12/08/92 HNUS Sediment Solid											
Sample Identification																								
Alt. Sample Identification																								
Alt. Sample Identification/VOCs and SVOCs																								
Alt. Sample Identification/Inorg.																								
Alt. Sample Identification/PCB's																								
Date of Sample Collection																								
Sampler																								
Sample Type																								
Matrix																								
Field QC																								
VOCs	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes											
SVOCs	yes	yes	yes	no	no	yes	yes	yes	yes	yes	no	yes	yes											
Inorganics/Total Metals	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes											
Dissolved Metals	no	no	no	no	no	no	no	no	no	no	no	no	no											
PCBs/Pesticides	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes											
Other Analytes	no	no	no	no	no	no	no	no	no	no	no	no	no											
VOCs																								
Analytical Method	not reported		not reported		not reported		not reported		not reported		not reported		not reported		not reported		not reported		not reported		not reported		not reported	
Dilution Factor	1		1		1						1		1		1		1		1		1		1	
% Moisture	26.6		62.5		31.6						77		79		87		79		78		28		63	
Units	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Notes							holding time exceeded, detection limits very high or mis-reported		holding time exceeded, detection limits very high or mis-reported															
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Acetone	0.012	B	0.065	B	0.028	B	1	U	1	U	0.57	B	0.31	B	0.2	B	0.13	B	0.27	B	nr		0.055	B
Acetonitrile	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr	
Acrolein	nr		nr		nr		1	U	1	U	nr		nr		nr		nr		nr		nr		nr	
Acrylonitrile	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr	
Allyl Alcohol	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr	
Allyl Chloride	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr	
Benzene	0.005	U	0.005	U	0.005	U	5	U	5	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U
Benzene (2-Methyl-1-Propeny	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Benzyl Chloride	nr		nr		nr		1	U	1	U	nr		nr		nr		nr		nr		nr		nr	
Bromoacetone	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr	
Bromobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Bromochloromethane/Chlorobromomethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Bromodichloromethane	0.005	U	0.005	U	0.005	U	5	U	5	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U
Bromoform	0.005	U	0.005	U	0.005	U	1	U	1	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U
Bromomethane/Methyl bromide	0.01	U	0.01	U	0.01	U	5	U	5	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U
2-Butanone (Methyl Ethyl Ketone)	0.01	U	0.01	U	0.01	U	5	U	5	U	0.18		0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U
n-Butylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
sec-Butylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
tert-Butylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Camphene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Carbon Disulfide	0.005	U	0.005	U	0.005	U	5	U	5	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U
Carbon Tetrachloride	0.005	U	0.005	U	0.005	U	5	U	5	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U
Chlorobenzene	0.005	U	0.005	U	0.005	U	1	U	1	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.015	
Chloroethane/Ethyl chloride	0.01	U	0.01	U	0.01	U	5	U	5	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U
2-Chloroethanol/Ethylene chlorohydrin	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr	
2-Chloroethylvinyl Ether	0.01	U	0.01	U	0.01	U	50	U	50	U	nr		nr		nr		nr		nr		nr		nr	
Chloroform	0.005	U	0.005	U	0.005	U	5	U	5	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U
Chloromethane/Methyl chloride	0.01	U	0.01	U	0.01	U	25	U	25	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U
Chloroprene	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr	
2-Chlorotoluene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Chlorotoluene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cyclohexane, Butyl-	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,3-Cyclopentadiene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Decahydro-naphthalene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dibromochloromethane/Chlorodibromomethane	0.005	U	0.005	U	0.005	U	1	U	1	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U
trans-1,4-Dichloro-2-butene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,4-Dichloro-2-butene	nr		nr		nr		1	U	1	U	nr		nr		nr		nr		nr		nr		nr	
1,2-Dibromo-3-chloropropane	nr		nr		nr		1	U	1	U	nr		nr		nr		nr		nr		nr		nr	
1,2-Dibromoethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,2-Dichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,3-Dichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,4-Dichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dichlorodifluoromethane	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr	
1,1-Dichloroethane	0.005	U	0.005	U	0.005	U	5	U	5	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U
1,2-Dichloroethane	0.005	U	0.005	U	0.005	U	5	U	5	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U
1,1-Dichloroethene	0.005	U	0.005	U	0.005	U	1	U	1	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U
cis-1,2-Dichloroethene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
trans-1,2-Dichloroethene	0.005	U	0.005	U	0.005	U	5	U	5	U	nr		nr		nr		nr		nr		nr		nr	
1,2-Dichloroethene (Total)	nr		nr		nr		nr		nr		0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U
Dichloromethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,2-Dichloropropane	0.005	U	0.005	U	0.005	U	5	U	5	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U
1,3-Dichloropropane	nr		nr		nr		nr		nr		nr													

Table A.3
Sediment Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump S-1 S-1 Pond Sed. CA 882 MCB977 06/27/85 NUS Sediment Solid	Sauer Dump S-2 S-2 Marsh-River-Drain CA 883 MCB978 06/27/85 NUS Sediment Solid	Sauer Dump S-3 S-3 Channel CA 884 MCB979 06/27/85 NUS Sediment Solid	Sauer Dump A-1 10/24/90 MDE Sediment Solid	Sauer Dump A-2 10/24/90 MDE Sediment Solid	Sauer Dump SD-01 CHH03 MCGX03 12/08/92 HNUS Sediment Solid	Sauer Dump SD-02 CHH13 MCGX12 12/08/92 HNUS Sediment Solid	Sauer Dump SD-04 CHH15 MCGX14 12/08/92 HNUS Sediment Solid	Sauer Dump SD-05 CHH01 MCGX01 12/08/92 HNUS Sediment Solid Duplicate of SD-6	Sauer Dump SD-06 CHH02 MCGX02 12/08/92 HNUS Sediment Solid Duplicate of SD-5	Sauer Dump SD-07 CJM46 12/08/92 HNUS Sediment Solid	Sauer Dump SD-08 CHH17 MCGX16 12/08/92 HNUS Sediment Solid	Sauer Dump SD-10 CHH19 MCGX18 12/08/92 HNUS Sediment Solid													
VOCs (cont.)																										
Analytical Method Dilution Factor % Moisture Units	not reported 1 26.6 mg/Kg		not reported 1 62.5 mg/Kg		not reported 1 31.6 mg/Kg		not reported mg/Kg		not reported mg/Kg		1 77 mg/Kg		1 79 mg/Kg		1 87 mg/Kg		1 79 mg/Kg		1 78 mg/Kg				1 28 mg/Kg		1 63 mg/Kg	
Notes							holding time exceeded, detection limits very high or mis-reported		holding time exceeded, detection limits very high or mis-reported																	
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,4-Dioxane	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr		nr	
Dodecane, 6-Methyl-Ethanol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethylbenzene	0.005	U	0.005	U	0.005	U	1	U	1	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U	0.027	U
1-Ethyl-2,3-Dimethyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Ethyl-1,2-Dimethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-2-Methyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-3-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-4-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethylene Oxide	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr		nr	
Ethylmethacrylate	nr		nr		nr		1	U	1	U	nr		nr		nr		nr		nr		nr		nr		nr	
Epichlorohydrin	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr		nr	
Hexachlorobutadiene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Hexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2-Hexanone	0.01	U	0.01	U	0.01	U	1	U	1	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U	0.027	U
2-Hydroxypropionitrile	nr		nr		nr		1	U	1	U	nr		nr		nr		nr		nr		nr		nr		nr	
Isobutyl alcohol	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr		nr	
Isopropylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
p-Isopropyl Toluene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Malononitrile	nr		nr		nr		1	U	1	U	nr		nr		nr		nr		nr		nr		nr		nr	
Methacrylonitrile	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr		nr	
Methyl Acetate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Methyl-2- Benzene (1 Methyl)	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Methyl-3- Benzene (1 Methyl)	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Methyl-4- Benzene (1 Methyl)	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylene Bromide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylene Chloride	0.0081	B	0.014	B	0.013	B	5	U	25		0.07	B	0.14	B	0.5	B	0.1	B	0.17	B	nr		0.058	B	0.084	B
1-Methyl-indan	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methyl Iodide/Iodomethane	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr		nr	
Methylmethacrylate	nr		nr		nr		1	U	1	U	nr		nr		nr		nr		nr		nr		nr		nr	
2-Methyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Methyl-Nonane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.01	U	0.01	U	0.01	U	1	U	1	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U	0.027	U
O-(2-Methyl Propyl Hydroxylamine	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methyl-t-Butyl Ether	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Naphthalene, decahydro-, trans-	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Pentachloroethane	nr		nr		nr		1	U	1	U	nr		nr		nr		nr		nr		nr		nr		nr	
Propargyl Alcohol	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr		nr	
Propiolactone	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr		nr	
Propionitrile	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr		nr	
Propylamine	nr		nr		nr		1	U	1	U	nr		nr		nr		nr		nr		nr		nr		nr	
n-Propylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Styrene	0.005	U	0.005	U	0.005	U	1	U	1	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.001	J	0.027	U
1,1,1,2-Tetrachloroethane	nr		nr		nr		1	U	1	U	nr		nr		nr		nr		nr		nr		nr		nr	
1,1,2,2-Tetrachloroethane	0.005	U	0.005	U	0.005	U	1	U	1	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U	0.027	U
Tetrachloroethene	0.005	U	0.005	U	0.005	U	1	U	1	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U	0.027	U
1,2,4,5-Tetramethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Toluene	0.005	U	0.005	U	0.005	U	1	U	1	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U	0.027	U
1,2,3-Trichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,2,4-Trichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,1,1-Trichloroethane	0.005	U	0.005	U	0.0056		5	U	5	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U	0.027	U
1,1,2-Trichloroethane	0.005	U	0.005	U	0.005	U	1	U	1	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U	0.027	U
Trichloroethene	0.005	U	0.005	U	0.005	U	5	U	5	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U	0.027	U
1,1, 2 - Trichloro -1, 2, 2 -trifluoroethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Trichlorofluoromethane	nr		nr		nr		5	U	5	U	nr		nr		nr		nr		nr		nr		nr		nr	
1,2,3-Trichloropropane	nr		nr		nr		1	U	1	U	nr		nr		nr		nr		nr		nr		nr		nr	
Tridecane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,2,4-Trimethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,2,3-Trimethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1,3,5-Trimethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2,3,4-Trimethylhexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vinyl Acetate	0.01	U	0.01	U	0.01	U	1	U	1	U	nr		nr		nr		nr		nr		nr		nr		nr	
Vinyl chloride	0.01	U	0.01	U	0.01	U	5	U	5	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U	0.027	U
m+p-Xylenes	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
o-Xylene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Xylenes (Total)	0.005	U	0.005	U	0.005	U	10	U	10	U	0.043	U	0.048	U	0.077	U	0.048	U	0.045	U	nr		0.014	U	0.027	U

Table A.3
Sediment Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump S-1 S-1 Pond Sed. CA 882 MCB977	Sauer Dump S-2 S-2 Marsh-River-Drain CA 883 MCB978	Sauer Dump S-3 S-3 Channel CA 884 MCB979	Sauer Dump A-1	Sauer Dump A-2	Sauer Dump SD-01	Sauer Dump SD-02	Sauer Dump SD-04	Sauer Dump SD-05	Sauer Dump SD-06	Sauer Dump SD-07	Sauer Dump SD-08	Sauer Dump SD-10											
						CHH03 MCGX03	CHH13 MCGX12	CHH15 MCGX14	CHH01 MCGX01	CHH02 MCGX02	CJM46	CHH17 MCGX16	CHH19 MCGX18											
	06/27/85 NUS	06/27/85 NUS	06/27/85 NUS	10/24/90 MDE	10/24/90 MDE	12/08/92 HNUS	12/08/92 HNUS	12/08/92 HNUS	12/08/92 HNUS	12/08/92 HNUS	12/08/92 HNUS	12/08/92 HNUS	12/08/92 HNUS											
	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment											
	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid	Solid											
									Duplicate of SD-6	Duplicate of SD-5														
SVOCs																								
Analytical Method																								
Dilution Factor																								
% Moisture																								
Units																								
Notes																								
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag										
Acenaphthene	0.92	U	2.2	U	2.2	U	nr		1.5		2		0.42	J	1.6	U	1.4	U	nr		0.23	J	0.19	J
Acenaphthylene	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.054	J	0.11	J
Acetophenone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Anthracene	0.92	U	2.2	U	2.2	U	nr		1.4	U	0.27	J	2.5	U	1.6	U	1.4	U	nr		0.14	J	0.62	J
Atrazine	nr		nr		nr			U	nr		nr		nr		nr		nr		nr		nr		nr	
Benzaldehyde	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Benzo(a)Anthracene	0.92	U	3.09		2.2	U	nr		0.56	J	1.4	J	0.71	J	0.86	J	1.2	J	nr		1.1		4.3	
Benzo(a)Pyrene	0.92	U	2.2	U	2.2	U	nr		0.56	J	0.84	J	0.7	J	1.2	J	1.2	J	nr		0.46		3.5	
Benzo(b)fluoranthene	0.92	U	2.2	U	2.5		nr		1	J	1.1	J	1.6	J	1.5	J	2.2	J	nr		0.83	J	5.8	J
Benzo(g,h,i)Perylene	0.92	U	2.2	U	2.2	U	nr		0.56	J	0.44	J	2.5	U	0.55	J	0.86	J	nr		0.34	J	2.6	
Benzo(k)fluoranthene	0.92	U	2.2	U	2.2	U	nr		1	J	1.1	J	1.6	J	1.5	J	2.2	J	nr		0.83	J	5.8	J
Benzylbutylphthalate/Butylbenzylphthalate	0.92	U	2.2	U	2.2	U	nr		3.6		0.97	J	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
1,1'-Biphenyl	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Bromophenyl-phenylether	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
Caprolactam	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Carbazole	nr		nr		nr		nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.062	J	0.12	J
4-Chloroaniline	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
bis(2-Chloroethoxy)Methane	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
bis(2-Chloroethyl)Ether	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
bis(2-Chloroisopropyl)Ether	0.92	U	2.2	U	2.2	U	nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Chloro-3-Methylphenol	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
2-Chloronaphthalene	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	0.12	J
2-Chlorophenol	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
4-Chlorophenyl-phenylether	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
Chrysene	0.92	U	3.5		1.9	J	nr		0.56	J	0.79	J	0.88	J	0.78	J	1.2	J	nr		0.62		3.7	
Dibenzo(a,h)Anthracene	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	0.25	J	nr		0.2	J	0.68	J
Dibenzofuran	0.92	U	2.2	U	2.2	U	nr		0.24	J	0.58	J	2.5	U	1.6	U	1.4	U	nr		0.15	J	0.11	J
1,2-Dichlorobenzene	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
1,3-Dichlorobenzene	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.049	J	8.5	U
1,4-Dichlorobenzene	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.11	J	8.5	U
3,3'-Dichlorobenzidine	1.84	U	4.6	U	4.6	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
2,4-Dichlorophenol	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
Diethylphthalate	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
2,4-Dimethylphenol	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
Dimethyl Phthalate	11		2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
Di-n-Butylphthalate	9.9		9.4		1.1	J,B	nr		0.57	J	0.21	J	0.4	J	0.23	J	0.28	J	nr		0.12	J	0.24	J
4,6-Dinitro-2-Methylphenol	4.6	U	11.4		11.4	U	nr		3.4	U	3.8	U	6.1	U	3.8	U	3.5	U	nr		1.1	U	2.1	U
2,4-Dinitrophenol	4.6	U	11.4	U	11.4	U	nr		3.4	U	3.8	U	6.1	U	3.8	U	3.5	U	nr		1.1	U	2.1	U
2,4-Dinitrotoluene	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.19	J	8.5	U
2,6-Dinitrotoluene	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
Di-n-Octyl Phthalate	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
bis(2-Ethylhexyl)Phthalate	0.65	J	1.5	J	2.2	U	nr		1.5		1.4	J	1.6	J	1.2	J	1	B	nr		0.9		0.79	J
Fluoranthene	0.92	U	3		2.2	U	nr		0.94	J	1.4	J	1.1	J	1.1	J	1.6		nr		1.2		5.2	
Fluorene	0.92	U	2.2	U	2.2	U	nr		0.15	J	0.21	J	2.5	U	1.6	U	1.4	U	nr		0.24	J	0.26	J
Hexachlorobenzene	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
Hexachlorobutadiene	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
Hexachlorocyclopentadiene	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
Hexachloroethane	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
Indeno(1,2,3-cd)Pyrene	0.92	U	2.2	U	2.2	U	nr		0.44	J	0.45	J	0.44	J	0.55	J	0.86	J	nr		0.42	J	2.4	
Isophorone	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
2-Methylnaphthalene	2.5		2.2	U	2.2	U	nr		1.4	U	0.17	J	2.5	U	1.6	U	1.4	U	nr		0.065	J	8.5	U
2-Methylphenol	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
4-Methylphenol	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
MethylMercury	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Naphthalene	4.1		2.2	U	2.2	U	nr		1.4	U	0.2	J	0.43	J	1.6	U	1.4	U	nr		0.21	J	0.13	J
2-Nitroaniline	4.6	U	11.4	U	11.4	U	nr		3.4	U	3.8	U	6.1	U	3.8	U	3.5	U	nr		1.1	U	2.1	U
3-Nitroaniline	4.6	U	11.4	U	11.4	U	nr		3.4	U	3.8	U	6.1	U	3.8	U	3.5	U	nr		1.1	U	2.1	U
4-Nitroaniline	4.6	U	11.4	U	11.4	U	nr		3.4	U	3.8	U	6.1	U	3.8	U	3.5	U	nr		1.1	U	2.1	U
Nitrobenzene	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
2-Nitrophenol	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
4-Nitrophenol	4.6	U	11.4	U	11.4	U	nr		3.4	U	3.8	U	6.1	U	3.8	U	3.5	U	nr		1.1	U	2.1	U
N-Nitroso-Di-n-Propylamine	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
N-Nitrosodiphenylamine	0.92	U	2.2	U	2.2	U	nr		1.4	U	1.6	U	2.5	U	1.6	U	1.4	U	nr		0.44	U	8.5	U
2,2-Oxybis(1-Chloropropane)	nr		nr		nr		nr																	

Table A.3
Sediment Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump S-1 S-1 Pond Sed. CA 882 MCB977 06/27/85 NUS Sediment Solid	Sauer Dump S-2 S-2 Marsh-River-Drain CA 883 MCB978 06/27/85 NUS Sediment Solid	Sauer Dump S-3 S-3 Channel CA 884 MCB979 06/27/85 NUS Sediment Solid	Sauer Dump A-1 10/24/90 MDE Sediment Solid	Sauer Dump A-2 10/24/90 MDE Sediment Solid	Sauer Dump SD-01 CHH03 MCGX03 12/08/92 HNUS Sediment Solid	Sauer Dump SD-02 CHH13 MCGX12 12/08/92 HNUS Sediment Solid	Sauer Dump SD-04 CHH15 MCGX14 12/08/92 HNUS Sediment Solid	Sauer Dump SD-05 CHH01 MCGX01 12/08/92 HNUS Sediment Solid Duplicate of SD-6	Sauer Dump SD-06 CHH02 MCGX02 12/08/92 HNUS Sediment Solid Duplicate of SD-5	Sauer Dump SD-07 CJM46 12/08/92 HNUS Sediment Solid	Sauer Dump SD-08 CHH17 MCGX16 12/08/92 HNUS Sediment Solid	Sauer Dump SD-10 CHH19 MCGX18 12/08/92 HNUS Sediment Solid													
Inorganics/Total Metals																										
Analytical Method																										
Dilution Factor																										
% Moisture	Not Reported		Not Reported		Not Reported		32.3		87.1		1		1		1		1		1		1		1		1	
Units	28.2 mg/Kg		66.8 mg/Kg		27.8 mg/Kg		mg/Kg		mg/Kg		65.2 mg/Kg		83.9 mg/Kg		88.4 mg/Kg		77.5 mg/Kg		72.5 mg/Kg		25.6 mg/Kg		69.1 mg/Kg			
Notes																										
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	1,320		7,850		10,650		nr		nr		8,250		7,570		7,730		6,530		7,290		nr		3,710		5,100	
Antimony	37	U	83	U	38	U	27.9		25		9.5	U	18.7	U	27.2	U	13.9	U	11.4	U	nr		4.4	U	10.3	U
Arsenic	7	U	14	U	12	J	9.8		1		16		12.9		7.1	B	5.3	B	22		nr		2.7		3.9	B
Barium	122	U	295	U	159		nr		nr		264		148	B	76.1	B	68.3	B	69	B	nr		78.6		142	
Beryllium	3	U	8	U	3	U	0.5		0.5	U	1.4	B	1.6	B	0.69	B	0.97	B	1.3	B	nr		0.35	B	1.2	B
Cadmium	3	U	11.8		3.64		0.1	U	0.1	U	0.56	U	9.4		2.4	B	0.9	B	1.1	B	nr		0.26	U	1.5	B
Calcium	1,320	J	11,320		27,120		nr		nr		30,900		17,700		7,650	B	42,700		4,880		nr		49,300		6,120	
Chromium	6	U	130		26.1		26		9.03		54.1		193		149		116		125		nr		35.9		84.5	
Chromium III	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium VI	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	31	U	74	U	31	U	nr		nr	B	11.8	B	14.7	B	15.4	B	13.9	B	13.8	B	nr		5.7	B	12.5	B
Copper	16	U	105		224		91.1		15		179		298		153		120		126		nr		53.3		135	
Iron	6,580		23180		47,720		nr		nr		62,200		59,300		32,900		23,100		24,800		nr		26,300		18,700	
Lead	35.3	J	231	J	232	J	279		20.5		716		436		142		180		150		nr		87.2		155	
Magnesium	526	J	3,310	J	8,040		nr		nr		7,940		4,110	B	3,550	B	22,500		2,920	B	nr		12,100		2,930	B
Manganese	108	J	311	J	993	J	nr		nr		468		509		330		265		247		nr		343		153	
Mercury	0.2	U	2.41		0.91		0.325		0.1	U	0.83		2.1		1.2		1.3		1.5		nr		0.23		1.1	
Nickel	25	U	91.3		29.1		48		10.6		58.3		74.3		102		83.9		88.5		nr		29.7		64.8	
Potassium	3,100	U	7,400	U	1,330	J	nr		nr	B	826	B	1,020	B	1,220	B	1,030	B	1,000	B	nr		437	B	672	B
Selenium	4	U	7	U	4	U	0.05	U	0.05	U	4.2		8		7.5	B	5.3		2.6	B	nr		2.7		6.2	
Silver	7	U	15	U	7	U	0.211		0.263		1.4	U	2.8	U	4	U	2.1	U	2.4	B	nr		0.65	U	5.1	B
Sodium	3,100	U	2,800	J	667	J	nr		nr	B	598	B	3,130	B	5,160	B	3,520	B	2,860	B	nr		289	B	2,030	B
Thallium	7	U	1.4	U	7	U	12		11		0.73	U	1.5	U	2.1	U	1	U	0.93	U	nr		0.33	U	0.77	U
Tin	31	U	59	U	25	U	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vanadium	31	U	74	U	36.4		nr		nr		58.5		133		39.8	B	23.4	B	24.6	B	nr		24.9		16	B
Zinc	39.6		643		490		280		45.9		1,220		601		443		443		479		nr		161		467	
Cyanide	1.4	U	30	U	1.4	U	nr		nr		1.4	U	3	U	4	U	2.2	U	1.8	U	nr		0.67	U	1.6	U
Dissolved Metals																										
Analytical Method																										
Dilution Factor																										
% Moisture																										
Units																										
Notes																										
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Antimony	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Arsenic	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Barium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Beryllium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cadmium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Calcium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Copper	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Iron	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Lead	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Magnesium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Manganese	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Mercury	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Nickel	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Potassium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Selenium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Silver	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Sodium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Thallium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vanadium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Zinc	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	

Table A.3
Sediment Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site		Sauer Dump S-1		Sauer Dump S-2		Sauer Dump S-3		Sauer Dump A-1		Sauer Dump A-2		Sauer Dump SD-01		Sauer Dump SD-02		Sauer Dump SD-04		Sauer Dump SD-05		Sauer Dump SD-06		Sauer Dump SD-07		Sauer Dump SD-08		Sauer Dump SD-10			
Sample Identification		S-1 Pond Sed.		S-2 Marsh-River-Drain		S-3 Channel						CHH03 MCGX03		CHH13 MCGX12		CHH15 MCGX14		CHH01 MCGX01		CHH02 MCGX02		CJM46		CHH17 MCGX16		CHH19 MCGX18			
Alt. Sample Identification/VOCs and SVOCs		CA 882		CA 883		CA 884																							
Alt. Sample Identification/Inorg.		MCB977		MCB978		MCB979																							
Alt. Sample Identification/PCB's																													
Date of Sample Collection		06/27/85		06/27/85		06/27/85		10/24/90		10/24/90		12/08/92		12/08/92		12/08/92		12/08/92		12/08/92		12/08/92		12/08/92		12/08/92			
Sampler		NUS		NUS		NUS		MDE		MDE		HNUS		HNUS		HNUS		HNUS		HNUS		HNUS		HNUS		HNUS			
Sample Type		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment			
Matrix		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid			
Field QC																		Duplicate of SD-6		Duplicate of SD-5									
Pesticides/PCBs																													
Analytical Method		5		10		1000		Not Reported		Not Reported		5		200		1		1		1		1		1		1			
Dilution Factor		Not reported		Not Reported		Not Reported						77		37		87		79		78		56		28		63			
% Moisture												mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg			
Units																													
Notes								Incomplete lab report: "No Other Pesticides or PCBs detected"		Incomplete lab report: "No Other Pesticides or PCBs detected"																			
Analyte		Result		Flag		Result		Flag		Result		Flag		Result		Flag		Result		Flag		Result		Flag		Result		Flag	
Aldrin		0.023		U		0.09		U		4.855		U				U		0.036		U		0.48		B		0.0014		J	
alpha-BHC		0.023		U		0.09		U		4.855		U				U		0.036		U		0.016		U		0.013		U	
beta-BHC		0.023		U		0.09		U		4.855		U				U		0.036		U		1.1				0.013		U	
delta-BHC		0.023		U		0.09		U		4.855		U				U		0.036		U		0.023		J		0.00053		J	
gamma-BHC (Lindane)		0.023		U		0.09		U		4.855		U				U		0.036		U		0.016		U		0.00083		J	
alpha-Chlordane		nr				nr				nr						U		U		0.036		U		0.016		U		0.013	
gamma-Chlordane		nr				nr				nr						U		U		0.036		U		0.056		J		0.013	
Chlordane, total		0.225		U		0.9		U		48.55		U				U		nr				nr		nr		nr		nr	
4,4'-DDD		0.045		U		0.18		U		9.71		U				U		0.07		U		0.031		U		0.025		U	
4,4'-DDE		0.045		U		0.18		U		9.71		U				U		0.07		U		0.031		U		0.025		U	
4,4'-DDT		0.045		U		0.18		U		9.71		U				U		0.07		U		0.031		U		0.025		U	
Dieldrin		0.045		U		0.18		U		9.71		U				U		0.07		U		0.031		U		0.025		U	
Endosulfan I		0.023		U		0.09		U		4.855		U				U		0.036		U		0.38		U		0.013		U	
Endosulfan II		0.045		U		0.18		U		9.71		U				U		0.07		U		0.031		U		0.025		U	
Endosulfan sulfate		0.045		U		0.18		U		9.71		U				U		0.07		U		0.01		J		0.025		U	
Endrin		0.045		U		0.18		U		9.71		U				U		0.07		U		0.031		U		0.025		U	
Endrin aldehyde		0.045		U		0.18		U		9.71		U				U		0.07		U		0.13		J		0.025		U	
Endrin ketone		0.045		U		0.18		U		9.71		U				U		0.07		U		0.031		U		0.025		U	
Heptachlor		0.023		U		0.09		U		4.855		U				U		0.036		U		0.016		U		0.013		U	
Heptachlor epoxide		0.023		U		0.09		U		4.855		U				U		0.036		U		0.016		U		0.013		U	
Methoxychlor		0.045		U		0.18		U		9.71		U				U		0.36		U		0.16		U		0.13		U	
Toxaphene		0.45		U		1.8		U		97.1		U		1.6		U		3.6		U		1.6		U		1.3		U	
Aroclor-1016		0.2		U		0.9		U		48.6		U				U		0.7		U		0.3		U		0.3		U	
Aroclor-1221		0.2		U		0.9		U		48.6		U				U		1.4		U		0.6		U		0.5		U	
Aroclor-1232		0.2		U		0.9		U		48.6		U				U		0.7		U		0.3		U		0.3		U	
Aroclor-1242		0.2		U		0.9		U		48.6		U				U		0.7		U		0.3		U		0.3		U	
Aroclor-1248		0.2		U		0.9		U		48.6		U				U		0.7		U		0.3		U		0.3		U	
Aroclor-1254		0.45		U		2.948				267.899				18		1		11				15				0.28		U	
Aroclor-1260		0.5		U		1.8		U		97.1		U				U		0.7		U		0.3		U		0.3		U	
Total PCBs						2.9				267.9				18.0		1.0		11.0				15.0				0.3			
Other Analytes																													
Analytical Method																													
Dilution Factor																													
% Moisture																													
Units																													
Notes																													
Analyte		Result		Flag		Result		Flag		Result		Flag		Result		Flag		Result		Flag		Result		Flag		Result		Flag	
Monochlorobiphenyl (total)																													
Dichlorobiphenyl (total)																													
Trichlorobiphenyl (total)																													
Tetrachlorobiphenyl (total)																													
Pentachlorobiphenyl (total)																													
Hexachlorobiphenyl (total)																													
Heptachlorobiphenyl (total)																													
Octachlorobiphenyl (total)																													
Nonachlorobiphenyl (total)																													
Decachlorobiphenyl (total)																													
Total PCB Homologs																													

Table A.3
Sediment Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SD-15 CHH07 MCGX07 12/08/92 HNUS Sediment Solid	Sauer Dump SD-18 CHH21 12/08/92 HNUS Sediment Solid	Sauer Dump SD-21 CHH23 12/08/92 HNUS Sediment Solid	Sauer Dump SD-22 CHH25 MCGX24 12/08/92 HNUS Sediment Solid	Sauer Dump SD-24 CHH09 MCGX09 12/08/92 HNUS Sediment Solid	Sauer Dump SD-25 CHH27 MCGX26 12/08/92 HNUS Sediment Solid	Sauer Dump SD-26 CHH05 MCGX05 12/08/92 HNUS Sediment Solid	Sauer Dump SD-27 CHH30 MCGX28 12/08/92 HNUS Sediment Solid	Sauer Dump SD-29 CHH33 MCGX31 12/08/92 HNUS Sediment Solid	Sauer Dump SED-1 A964255 761264 04/04/96 MDE Sediment Solid	Sauer Dump SED-2 A964256 761265 04/04/96 MDE Sediment Solid	Sauer Dump SED-3 A964257 761266 04/04/96 MDE Sediment Solid	Sauer Dump SED-4 A964258 761267 04/04/96 MDE Sediment Solid	Sauer Dump SED-5 A964259 761268 04/04/96 MDE Sediment Solid												
VOCs (cont.)	1 88 mg/Kg	1 89 mg/Kg	1 58 mg/Kg	1 73 mg/Kg	1 37 mg/Kg	1 75 mg/Kg	1 68 mg/Kg	1 78 mg/Kg	1 30 mg/Kg																	
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,4-Dioxane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dodecane, 6-Methyl-	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethanol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethylbenzene	0.083	U	0.091	U	0.024	U	0.037	U	0.016	U	0.04	U	0.031	U	0.045	U	0.014	U	nr		nr		nr		nr	
1-Ethyl-2,3-Dimethyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Ethyl-1,2-Dimethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-2-Methyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-3-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Ethyl-4-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethylene Oxide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Ethylmethacrylate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Epichlorohydrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Hexachlorobutadiene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Hexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2-Hexanone	0.083	U	0.091	U	0.024	U	0.037	U	0.016	U	0.04	U	0.031	U	0.045	U	0.014	U	nr		nr		nr		nr	
2-Hydroxypropionitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Isobutyl alcohol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Isopropylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
p-Isopropyl Toluene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Malononitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methacrylonitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methyl Acetate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Methyl-2- Benzene (1 Methyl	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Methyl-3- Benzene (1 Methyl	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
1-Methyl-4- Benzene (1 Methyl	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylene Bromide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylene Chloride	0.13	B	0.097	B	0.033	B	0.04	B	0.029	B	0.24	B	0.068	B	0.12	B	0.026	B	nr		nr		nr		nr	
1-Methyl-indan	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methyl Iodide/Iodomethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methylmethacrylate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
2-Methyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Methyl-Nonane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.083	U	0.091	U	0.024	U	0.037	U	0.016	U	0.04	U	0.031	U	0.045	U	0.014	U	nr		nr		nr		nr	
O-(2-Methyl Propyl Hydroxylamine	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methyl-t-Butyl Ether	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Naphthalene, decahydro-, trans-	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Pentachloroethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Propargyl Alcohol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Propiolactone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Propionitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Propylamine	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
n-Propylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Styrene	0.083	U	0.091	U	0.024	U	0.037	U	0.016	U	0.04	U	0.031	U	0.045	U	0.014	U	nr		nr		nr		nr	
1,1,1,2-Tetrachloroethach																										

Table A.3 Sediment Analytical Data - 1985 to 2007 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																												
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SD-15		Sauer Dump SD-18		Sauer Dump SD-21		Sauer Dump SD-22		Sauer Dump SD-24		Sauer Dump SD-25		Sauer Dump SD-26		Sauer Dump SD-27		Sauer Dump SD-29		Sauer Dump SED-1		Sauer Dump SED-2		Sauer Dump SED-3		Sauer Dump SED-4		Sauer Dump SED-5	
	CHH07 MCGX07		CHH21		CHH23		CHH25 MCGX24		CHH09 MCGX09		CHH27 MCGX26		CHH05 MCGX05		CHH30 MCGX28		CHH33 MCGX31		A964255 761264		A964256 761265		A964257 761266		A964258 761267		A964259 761268	
	12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		04/04/96 MDE		04/04/96 MDE		04/04/96 MDE		04/04/96 MDE		04/04/96 MDE	
	Sediment Solid		Sediment Solid		Sediment Solid		Sediment Solid		Sediment Solid		Sediment Solid		Sediment Solid		Sediment Solid		Sediment Solid		Sediment Solid		Sediment Solid		Sediment Solid		Sediment Solid		Sediment Solid	
SVOCs																												
Analytical Method Dilution Factor % Moisture Units	1 88 mg/Kg		1 89 mg/Kg		1 58 mg/Kg		1 and 2 73 mg/Kg		1 37 mg/Kg		1 75 mg/Kg		1 68 mg/Kg		1 78 mg/Kg		1 30 mg/Kg											
Notes																												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Acenaphthene	2.8	U	2.9	U	0.8	U	0.34	J	0.51	U	1.4	U	1	U	1.3	J	0.47	U	nr		nr		nr		nr		nr	
Acenaphthylene	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
Acetophenone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Anthracene	2.8	U	2.9	U	0.8	U	1.3		0.057	J	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
Atrazine	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Benzaldehyde	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Benzo(a)Anthracene	2.8	U	2.9	U	0.8	U	8.2		0.33	J	0.27	J	1	U	1.5	U	0.061	J	nr		nr		nr		nr		nr	
Benzo(a)Pyrene	2.8	U	2.9	U	0.8	U	12		0.29	J	0.18	J	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
Benzo(b)fluoranthene	0.47	J	2.9	U	0.094	J	17	J	0.5	J	0.3	J	0.16	J	0.25	J	0.47	U	nr		nr		nr		nr		nr	
Benzo(g,h,i)Perylene	2.8	U	2.9	U	0.8	U	6.5		0.24	J	0.15	J	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
Benzo(k)fluoranthene	0.47	J	2.9	U	0.094	J	17	J	0.5	J	0.3	J	0.16	J	0.25	J	0.47	U	nr		nr		nr		nr		nr	
Benzylbutylphthalate/Butylbenzylphthalate	0.47	J	0.52	J	0.18	J	1.2	U	0.33	J	0.19	J	0.17	J	2.4		0.47	U	nr		nr		nr		nr		nr	
1,1'-Biphenyl	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Bromophenyl-phenylether	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
Caprolactam	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Carbazole	2.8	U	2.9	U	0.8	U	0.21	J	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
4-Chloroaniline	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
bis(2-Chloroethoxy)Methane	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
bis(2-Chloroethyl)Ether	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
bis(2-Chloroisopropyl)Ether	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4-Chloro-3-Methylphenol	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
2-Chloronaphthalene	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
2-Chlorophenol	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
4-Chlorophenyl-phenylether	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
Chrysene	2.8	U	2.9	U	0.8	U	7.6		0.36	J	0.17	J	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
Dibenzo(a,h)Anthracene	2.8	U	2.9	U	0.8	U	2.6		0.081	J	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
Dibenzofuran	2.8	U	2.9	U	0.8	U	0.13	J	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
1,2-Dichlorobenzene	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
1,3-Dichlorobenzene	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
1,4-Dichlorobenzene	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
3,3'-Dichlorobenzidine	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
2,4-Dichlorophenol	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
Diethylphthalate	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
2,4-Dimethylphenol	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
Dimethyl Phthalate	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
Di-n-Butylphthalate	0.51	J	0.36	J	0.11	J	0.29	J	0.07	J	1.4	U	0.12	J	0.37	J	0.47	U	nr		nr		nr		nr		nr	
4,6-Dinitro-2-Methylphenol	6.8	U	7	U	1.9	U	2.9	U	1.2	U	3.3	U	2.5	U	3.5	U	1.1	U	nr		nr		nr		nr		nr	
2,4-Dinitrophenol	6.8	U	7	U	1.9	U	2.9	U	1.2	U	3.3	U	2.5	U	3.5	U	1.1	U	nr		nr		nr		nr		nr	
2,4-Dinitrotoluene	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
2,6-Dinitrotoluene	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
Di-n-Octyl Phthalate	2.8	U	0.48	J	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
bis(2-Ethylhexyl)Phthalate	0.85	J	0.94	J	0.089	J	4.5		0.38	J	0.3	J	0.17	J	0.98	J	0.13	J,B	nr		nr		nr		nr		nr	
Fluoranthene	0.29	J	2.9	U	0.8	U	8.8		0.34	J	0.15	J	0.12	J	0.25	J	0.083	J	nr		nr		nr		nr		nr	
Fluorene	2.8	U	2.9	U	0.8	U	0.3	J	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
Hexachlorobenzene	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
Hexachlorobutadiene	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4	U	1	U	1.5	U	0.47	U	nr		nr		nr		nr		nr	
Hexachlorocyclopentadiene	2.8	U	2.9	U	0.8	U	1.2	U	0.51	U	1.4																	

Table A.3 Sediment Analytical Data - 1985 to 2007 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																												
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SD-15 CHH07 MCGX07 12/08/92 HNUS Sediment Solid	Sauer Dump SD-18 CHH21 12/08/92 HNUS Sediment Solid	Sauer Dump SD-21 CHH23 12/08/92 HNUS Sediment Solid	Sauer Dump SD-22 CHH25 MCGX24 12/08/92 HNUS Sediment Solid	Sauer Dump SD-24 CHH09 MCGX09 12/08/92 HNUS Sediment Solid	Sauer Dump SD-25 CHH27 MCGX26 12/08/92 HNUS Sediment Solid	Sauer Dump SD-26 CHH05 MCGX05 12/08/92 HNUS Sediment Solid	Sauer Dump SD-27 CHH30 MCGX28 12/08/92 HNUS Sediment Solid	Sauer Dump SD-29 CHH33 MCGX31 12/08/92 HNUS Sediment Solid	Sauer Dump SED-1 A964255 761264 04/04/96 MDE Sediment Solid	Sauer Dump SED-2 A964256 761265 04/04/96 MDE Sediment Solid	Sauer Dump SED-3 A964257 761266 04/04/96 MDE Sediment Solid	Sauer Dump SED-4 A964258 761267 04/04/96 MDE Sediment Solid	Sauer Dump SED-5 A964259 761268 04/04/96 MDE Sediment Solid														
Inorganics/Total Metals																	Not Reported Not Reported mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg			
Analytical Method Dilution Factor % Moisture Units Notes	1 87.6 mg/Kg		1 87.9 mg/Kg		1 63.3 mg/Kg		1 77.4 mg/Kg		1 35.7 mg/Kg		1 75.8 mg/Kg		1 59.1 mg/Kg		1 81.5 mg/Kg		1 23.1 mg/Kg											
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag		
Aluminum	10,000		12,300		10,100		14,600		4,860		13,600		7,020		9,930		4,250		4,950		5,485		51,605		9,971		4,162	
Antimony	24.8	U	25.6	U	8.5	U	14.5	U	11.6	B	13.8	U	8.3	U	16.2	U	4.2	U	10	U	10	U	10	U	10	U	10	U
Arsenic	7.7	B	5	B	5	B	13.5		10.7		12.7		4	B	17.5		2	B	0.5	U	3.4		6.3		9.3		5.2	
Barium	89.5	B	128	B	51.1	B	172		173		125	B	63.6	B	477		18.5	B	66.5		39.2		52.3		12		6.9	
Beryllium	2.8	B	3.5	B	1.4	B	3	B	0.41	B	2	B	0.78	B	1.3	B	0.58	B	0.25	U	0.25	U	0.25	U	0.25	U	0.237	
Cadmium	3.1	B	3.3	B	0.5	U	2.6	B	3.5		1.9	B	0.49	U	4.5	B	0.25	U	2.56		2.51		3.87		9.7		1.1	
Calcium	8,250		5,980	B	2,890		12,300		26,800		7,450		1,980	B	29,200		365	B	41,085		15,657		12,506		14,912		1,037	
Chromium	99.2		96.4		19.9		38.4		145		70.6		16.4		77.2		19.9		9.6		28		32.5		11		2.2	
Chromium III	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium VI	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	30.7	B	64.3	B	13.1	B	50.9		7.4	B	25	B	9.4	B	14	B	3.5	B	1.9		4.2		3.6		3.9		4.4	
Copper	478		106		49.7		225		696		146		27		428		10.5		17.6		34.7		86.5		74		3.8	
Iron	28,200		18,400		12,900		24,000		46,400		33,900		13,000		48,700		8,130		10,765		12,170		15,649		38,012		1,418	
Lead	288		178		129		394		839		364		68.3		1,060		16.5		69.4		46.6		41.7		264		27.6	
Magnesium	5,080	B	4,140	B	1,550	B	5,120		6,220		4,660		861	B	8,820		791	B	8,394		5,175		7,521		4,738		464	
Manganese	400		291		195		731		641		258		166		331		61.8		169		339		361		448		52.2	
Mercury	1.5		0.88		0.45		1.6		2.2		0.88		0.32		1.5		0.21		0.2	U	0.31		1.2	U	0.29		0.2	U
Nickel	84.6		114		16.2	B	50.4		54.5		51.1		12.2	B	81.9		11.7		7.2		21.7		18.3		76		1.8	
Potassium	1,260	B	1,080	B	581	B	788	B	401	B	1,110	B	330	B	1,180	B	330	B	641		572		344		356		333	
Selenium	12.6		5.6		2.7		5.1		16.1		19.1		4.6		5.5		1.2	B	1.25		0.5	U	2.4		0.89		0.5	U
Silver	5.5	B	3.8	U	1.3	U	2.1	U	4		2	U	1.2	U	3.7	B	0.62	U	0.5	U	0.85		0.75		1.6		0.5	U
Sodium	4,690	B	6,770		833	B	969	B	169	B	249	B	161	B	651	B	496	B	142		379		215		358		170	
Thallium	2	U	2	U	0.69	U	1.1	U	0.36	U	0.95	U	0.65	U	1.3	U	0.32	U	10	U	10	U	10	U	10	U	10	U
Tin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vanadium	34	B	39.2	B	25.1	B	40.7	B	35.7		57.3		23	B	104		11.4	B	9.4		7.6		9.2		8.3		9.3	
Zinc	874		934		182		851		1,270		1,050		147		2,360		53.8		160		159		354		902		22.4	
Cyanide	4	U	4	U	1.3	U	2.1	U	0.75	U	1.9	U	1.2	U	2.5	U	0.65	U	nr		nr		nr		nr		nr	
Dissolved Metals																												
Analytical Method Dilution Factor % Moisture Units Notes																												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag		
Aluminum	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Antimony	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Arsenic	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Barium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Beryllium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cadmium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Calcium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Copper	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Iron	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Lead	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Magnesium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Manganese	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Mercury	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Nickel	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Potassium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Selenium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr					

Table A.3 Sediment Analytical Data - 1985 to 2007 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																												
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SD-15		Sauer Dump SD-18		Sauer Dump SD-21		Sauer Dump SD-22		Sauer Dump SD-24		Sauer Dump SD-25		Sauer Dump SD-26		Sauer Dump SD-27		Sauer Dump SD-29		Sauer Dump SED-1		Sauer Dump SED-2		Sauer Dump SED-3		Sauer Dump SED-4		Sauer Dump SED-5	
	CHH07 MCGX07		CHH21		CHH23		CHH25 MCGX24		CHH09 MCGX09		CHH27 MCGX26		CHH05 MCGX05		CHH30 MCGX28		CHH33 MCGX31		A964255 761264		A964256 761265		A964257 761266		A964258 761267		A964259 761268	
	12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		12/08/92 HNUS		04/04/96 MDE Sediment Solid		04/04/96 MDE Sediment Solid		04/04/96 MDE Sediment Solid		04/04/96 MDE Sediment Solid		04/04/96 MDE Sediment Solid	
Pesticides/PCBs																												
Analytical Method Dilution Factor % Moisture Units	1 88 mg/Kg		1 89 mg/Kg		1 58 mg/Kg		1 73 mg/Kg		20 and 200 37 mg/Kg		1 75 mg/Kg		1 68 mg/Kg		1 78 mg/Kg		1 30 mg/Kg		mg/Kg									
Notes																			Incomplete lab report: "No other PCBs detected"		Incomplete lab report: "No other PCBs detected"		Incomplete lab report: "No other PCBs detected"		Incomplete lab report: "No other PCBs detected"		Incomplete lab report: "No other PCBs detected"	
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	0.0073	J	0.015	U	0.004	U	0.0062	U	0.016	J	0.0012	J	0.00051	J	0.015		0.00042	J	nr		nr		nr		nr		nr	
alpha-BHC	0.014	U	0.00035	J	0.00021	J	0.0062	U	0.053	U	0.00028	J	0.0053	U	0.0077	U	0.00012	J	nr		nr		nr		nr		nr	
beta-BHC	0.014	U	0.015	U	0.00092	J	0.027	J	0.053	U	0.0068	U	0.0053	U	0.0077	U	0.0024	U	nr		nr		nr		nr		nr	
delta-BHC	0.014	U	0.015	U	0.0018	J	0.00075	J	0.053	U	0.0068	U	0.0053	U	0.0077	U	0.0024	U	nr		nr		nr		nr		nr	
gamma-BHC (Lindane)	0.0027	J	0.015	U	0.004	U	0.0062	U	0.053	U	0.0068	U	0.0053	U	0.0077	U	0.0024	U	nr		nr		nr		nr		nr	
alpha-Chlordane	0.014	U	0.015	U	0.004	U	0.078	J	0.053	U	0.0051	J	0.00069	J,B	0.0077	U	0.0024	U	nr		nr		nr		nr		nr	
gamma-Chlordane	0.0062	J,B	0.0038	J	0.004	U	0.0062	U	0.017	J,B	0.021		0.0064	B	0.0077	U	0.00032	J	nr		nr		nr		nr		nr	
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	0.027	U	0.0059	J	0.0078	U	0.012	U	0.1	U	0.013	U	0.01	U	0.015	U	0.0047	U	nr		nr		nr		nr		nr	
4,4'-DDE	0.027	U	0.0098	J	0.0027	J	0.012	U	0.1	U	0.0027	J	0.01	U	0.015	U	0.00066	J	nr		nr		nr		nr		nr	
4,4'-DDT	0.027	U	0.03	U	0.0078	U	0.012	U	2.8		0.013	U	0.01	U	0.015	U	0.0047	U	nr		nr		nr		nr		nr	
Dieldrin	0.027	U	0.0012	J	0.0078	U	0.012	U	0.0078	J	0.013	U	0.00035	J	0.015	U	0.000077	J	nr		nr		nr		nr		nr	
Endosulfan I	0.014	U	0.015	U	0.004	U	0.0062	U	0.053	U	0.0068	U	0.0053	U	0.0077	U	0.0024	U	nr		nr		nr		nr		nr	
Endosulfan II	0.027	U	0.03	U	0.0078	U	0.027	J	0.1	U	0.0028	J	0.0065	J,B	0.015	U	0.00046	J	nr		nr		nr		nr		nr	
Endosulfan sulfate	0.027	U	0.0053	J	0.0046	J	0.012	U	0.061	J	0.0093	J	0.01	U	0.0045	J	0.00033	J	nr		nr		nr		nr		nr	
Endrin	0.0012	J	0.03	U	0.0078	U	0.012	U	0.0078	J	0.013	U	0.00035	J	0.015	U	0.0047	U	nr		nr		nr		nr		nr	
Endrin aldehyde	0.027	U	0.0016	J	0.0078	U	0.23	J	0.27		0.0022	J	0.01	U	0.015	U	0.0047	U	nr		nr		nr		nr		nr	
Endrin ketone	0.027	U	0.03	U	0.0078	U	0.012	U	0.01	U	0.013	U	0.01	U	0.0072	J	0.0047	U	nr		nr		nr		nr		nr	
Heptachlor	0.014	U	0.0013	J,B	0.00015	J,B	0.0062	U	0.053	U	0.0068	U	0.011	B	0.0077	U	0.00029	J,B	nr		nr		nr		nr		nr	
Heptachlor epoxide	0.014	U	0.015	U	0.004	U	0.021	J	0.053	U	0.00081	J	0.0053	U	0.0077	U	0.0024	U	nr		nr		nr		nr		nr	
Methoxychlor	0.14	U	0.0016	J	0.0012	J	0.002	J	0.08	J	0.068	U	0.053	U	0.016	J	0.024	U	nr		nr		nr		nr		nr	
Toxaphene	1.4	U	1.5	U	0.4	U	0.62	U	5.3	U	0.68	U	0.53	U	0.77	U	0.24	U	nr		nr		nr		nr		nr	
Aroclor-1016	0.3	U	0.3	U	0.1	U	0.1	U	1.0	U	0.1	U	0.1	U	0.2	U	0.0	U										
Aroclor-1221	0.6	U	0.6	U	0.2	U	0.3	U	2.1	U	0.3	U	0.2	U	0.3	U	0.1	U										
Aroclor-1232	0.3	U	0.3	U	0.1	U	0.1	U	1.0	U	0.1	U	0.1	U	0.2	U	0.0	U										
Aroclor-1242	0.3	U	0.3	U	0.1	U	0.1	U	1.0	U	0.1	U	0.1	U	0.2	U	0.0	U										
Aroclor-1248	0.3	U	0.3	U	0.1	U	0.1	U	1.0	U	0.1	U	0.1	U	0.2	U	0.0	U										
Aroclor-1254	0.27	U	0.3	U	0.22		3.1	U	1	U	0.14		0.1	U	1.1		0.047	U										
Aroclor-1260	0.3		0.3	U	0.1	U	4.8		5.6		0.2	J	0.1	U	0.2	U	0.0	U	0.1		0.1		0.3		0.3		0.1	
Total PCBs	0.3				0.2		7.9		5.6		0.3				1.1				0.1		0.1		0.3		0.3		0.1	
Other Analytes																												
Analytical Method Dilution Factor % Moisture Units																												
Notes																												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Monochlorobiphenyl (total																												
Dichlorobiphenyl (total																												
Trichlorobiphenyl (total																												
Tetrachlorobiphenyl (total																												
Pentachlorobiphenyl (total																												
Hexachlorobiphenyl (total																												
Heptachlorobiphenyl (total																												
Octachlorobiphenyl (total																												
Nonachlorobiphenyl (total																												
Decachlorobiphenyl (total																												
Total PCB Homologs																												

Table A.3
Sediment Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

	Sauer Dump SED-00	Sauer Dump SED-01	Sauer Dump SED-02	Sauer Dump SED-03	Sauer Dump SED-04	Sauer Dump SED-05	Sauer Dump SED-06	Sauer Dump SED-07	Sauer Dump SED-08	Sauer Dump SED-09	Sauer Dump SED-10	Sauer Dump SDMT-1 (0-6")	Sauer Dump SDMT-1 (6-12")	Sauer Dump SDMT-2 (0-20")	
Sample Identification															
Alt. Sample Identification	99121537	A900931	A900932	A901008	A901009	A901010	A901011	A900933	A901012	CTS25	99121536				
Alt. Sample Identification/VOCs and SVOCs		E400073	E400074	M700316	M700317	M700318	M700319	E400075	M700920						
Alt. Sample Identification/Inorg.		A900951	A900952	A901019	A901920	A901021	A901022	A900953	A901023						
Alt. Sample Identification/PCB's															
Date of Sample Collection	12/15/99	09/29/99	09/29/99	10/01/99	10/01/99	10/01/99	10/01/99	09/29/99	10/01/99	09/29/99	12/15/99	12/18/01	12/18/01	12/18/01	
Sampler	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	ENSAT	ENSAT	ENSAT	
Sample Type	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	
Matrix	Soil	Soil	Soil	Soil	Solid	Solid	Solid	Solid	Solid	Soil	Soil	Solid	Solid	Solid	
Field QC	Dup. Of SED-10								Background	Duplicate of SED-2					
VOCs	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no	no	no	
SVOCs	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	yes	
Inorganics/Total Metals	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	yes	
Dissolved Metals	no	no	no	no	no	no	no	no	no	no	no	no	no	no	
PCBs/Pesticides	PCBs only	yes	yes	yes	yes	yes	yes	yes	yes	yes	PCBs only	yes	yes	yes	
Other Analytes	no	no	no	no	no	no	no	no	no	no	no	no	no	no	
VOCs															
Analytical Method		EPA 8260		EPA 8260		EPA 8260		EPA 8260		EPA 8260		EPA 8260		EPA 8260	
Dilution Factor		Not Reported		Not Reported		Not Reported		Not Reported		Not Reported		Not Reported		Not Reported	
% Moisture						NA		NA		NA		NA		NA	
Units		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Notes															
		Holding time exceeded		Holding time exceeded		Holding time exceeded		Holding time exceeded		Holding time exceeded		Holding time exceeded		Holding time exceeded	
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result
Acetone	nr		0.4075	U	0.4028	U	0.319	U	0.283	U	0.33	U	0.2588	U	0.3155
Acetonitrile	nr		nr		nr		nr		nr		nr		nr		nr
Acrolein	nr		nr		nr		nr		nr		nr		nr		nr
Acrylonitrile	nr		nr		nr		nr		nr		nr		nr		nr
Allyl Alcohol	nr		nr		nr		nr		nr		nr		nr		nr
Allyl Chloride	nr		nr		nr		nr		nr		nr		nr		nr
Benzene	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
Benzene (2-Methyl-1-Propeny	nr		nr		nr		nr		nr		nr		nr		nr
Benzyl Chloride	nr		nr		nr		nr		nr		nr		nr		nr
Bromoacetone	nr		nr		nr		nr		nr		nr		nr		nr
Bromobenzene	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
Bromochloromethane/Chlorobromomethane	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
Bromodichloromethane	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
Bromoform	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
Bromomethane/Methyl bromide	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
2-Butanone (Methyl Ethyl Ketone)	nr		0.1725		0.1576		0.1096		0.1115		0.1402		0.1112		0.1384
n-Butylbenzene	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
sec-Butylbenzene	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
tert-Butylbenzene	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
Camphene	nr		nr		nr		nr		nr		nr		nr		nr
Carbon Disulfide	nr		nr		nr		nr		nr		nr		nr		nr
Carbon Tetrachloride	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
Chlorobenzene	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
Chloroethane/Ethyl chloride	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
2-Chloroethanol/Ethylene chlorohydrin	nr		nr		nr		nr		nr		nr		nr		nr
2-Chloroethylvinyl Ether	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
Chloroform	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
Chloromethane/Methyl chloride	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
Chloroprene	nr		nr		nr		nr		nr		nr		nr		nr
2-Chlorotoluene	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
4-Chlorotoluene	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
Cyclohexane	nr		nr		nr		nr		nr		nr		nr		nr
Cyclohexane, Butyl-	nr		nr		nr		nr		nr		nr		nr		nr
1,3-Cyclopentadiene	nr		nr		nr		nr		nr		nr		nr		nr
Decahydro-naphthalene	nr		nr		nr		nr		nr		nr		nr		nr
Dibromochloromethane/Chlorodibromomethane	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
trans-1,4-Dichloro-2-butene	nr		nr		nr		nr		nr		nr		nr		nr
1,4-Dichloro-2-butene	nr		nr		nr		nr		nr		nr		nr		nr
1,2-Dibromo-3-chloropropane	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
1,2-Dibromoethane	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
1,2-Dichlorobenzene	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
1,3-Dichlorobenzene	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
1,4-Dichlorobenzene	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
Dichlorodifluoromethane	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
1,1-Dichloroethane	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
1,2-Dichloroethane	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
1,1-Dichloroethene	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
cis-1,2-Dichloroethene	nr		nr		nr		nr		nr		nr		nr		nr
trans-1,2-Dichloroethene	nr		nr		nr		nr		nr		nr		nr		nr
1,2-Dichloroethene (Total)	nr		nr		nr		nr		nr		nr		nr		nr
Dichloromethane	nr		nr		nr		nr		nr		nr		nr		nr
1,2-Dichloropropane	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
1,3-Dichloropropane	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
2,2-Dichloropropane	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
1,3-Dichloro-2-Propanol	nr		nr		nr		nr		nr		nr		nr		nr
1,1-Dichloropropene	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631
cis-1,3-Dichloropropene	nr		nr		nr		nr		nr		nr		nr		nr
trans-1,3-Dichloropropene	nr		nr		nr		nr		nr		nr		nr		nr
1,3-Dichloropropylene	nr		nr		nr		nr		nr		nr		nr		nr
1,2:3,4-Diepoxybutane	nr		nr		nr		nr		nr		nr		nr		nr
1,2-Dimethyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr
1,3-Dimethyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr
1,6-Dimethyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr
2,3-Dimethyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr
2,6-Dimethyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr
2,6-Dimethyl Octane	nr		nr		nr		nr		nr		nr		nr		nr
3,5-Dimethyl Octane	nr</														

Table A.3 Sediment Analytical Data - 1985 to 2007 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																										
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SED-00	Sauer Dump SED-01	Sauer Dump SED-02	Sauer Dump SED-03	Sauer Dump SED-04	Sauer Dump SED-05	Sauer Dump SED-06	Sauer Dump SED-07	Sauer Dump SED-08	Sauer Dump SED-09	Sauer Dump SED-10	Sauer Dump SDMT-1 (0-6")	Sauer Dump SDMT-1 (6-12")	Sauer Dump SDMT-2 (0-20")												
	99121537	A900931 E400073 A900951 09/29/99 MDE Sediment Soil Dup. Of SED-10	A900932 E400074 A900952 09/29/99 MDE Sediment Soil	A901008 M700316 A901019 10/01/99 MDE Sediment Solid	A901009 M700317 A901920 10/01/99 MDE Sediment Solid	A901010 M700318 A901021 10/01/99 MDE Sediment Solid	A901011 M700319 A901022 10/01/99 MDE Sediment Solid	A900933 E400075 A900953 09/29/99 MDE Sediment Soil	A901012 M700920 A901023 10/01/99 MDE Sediment Soil Background	CTS25 09/29/99 MDE Sediment Soil Duplicate of SED-2	99121536 12/15/99 MDE Sediment Soil	12/18/01 ENSAT Sediment Solid	12/18/01 ENSAT Sediment Solid	12/18/01 ENSAT Sediment Solid												
VOCs (cont.)																										
Analytical Method Dilution Factor % Moisture Units			EPA 8260 Not Reported mg/Kg	EPA 8260 Not Reported mg/Kg	EPA 8260 Not Reported NA mg/Kg	EPA 8260 Not Reported NA mg/Kg	EPA 8260 Not Reported NA mg/Kg	EPA 8260 Not Reported NA mg/Kg	EPA 8260 Not Reported NA mg/Kg	EPA 8260 Not Reported NA mg/Kg	EPA 8260 Not Reported NA mg/Kg	1 79 mg/Kg														
Notes			Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded														
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag		
1,4-Dioxane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Dodecane, 6-Methyl-	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Ethanol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Ethylbenzene	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631	U	0.0887	U	0.048	U	nr		nr			
1-Ethyl-2,3-Dimethyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
4-Ethyl-1,2-Dimethylbenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1-Ethyl-2-Methyl-Benzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1-Ethyl-3-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1-Ethyl-4-Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Ethylene Oxide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Ethylmethacrylate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Epichlorohydrin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Hexachlorobutadiene	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631	U	0.0887	U	nr		nr		nr			
Hexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
2-Hexanone	nr		nr		nr		nr		nr		nr		nr		nr		0.048	U	nr		nr		nr			
2-Hydroxypropionitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Isobutyl alcohol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Isopropylbenzene	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631	U	0.0887	U	0.048	U	nr		nr			
p-Isopropyl Toluene	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631	U	0.0887	U	nr		nr		nr			
Malononitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methacrylonitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methyl Acetate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methylcyclohexane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1-Methyl-2- Benzene (1 Methyl	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1-Methyl-3- Benzene (1 Methyl	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
1-Methyl-4- Benzene (1 Methyl	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methylene Bromide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methylene Chloride	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631	U	0.0887	U	0.015	J,B	nr		nr			
1-Methyl-indan	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methyl Iodide/Iodomethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methylmethacrylate	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
2-Methyl-Naphthalene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
4-Methyl-Nonane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631	U	0.0887	U	0.048	U	nr		nr			
O-(2-Methyl Propyl Hydroxylamine	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Methyl-t-Butyl Ether	nr		0.0815	U	0.0806	U	0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631	U	0.0887	U	0.048	U	nr		nr			
Naphthalene	nr		0.4454		0.4694		0.0638	U	0.0566	U	0.066	U	0.0518	U	0.0631	U	0.0887	U	nr		nr		nr			
Naphthalene, decahydro-, trans-	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Pentachloroethane	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Propargyl Alcohol	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Propiolactone	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Propionitrile	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr			
Propylamine	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr</			

Table A.3
Sediment Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

	Sauer Dump SED-00		Sauer Dump SED-01		Sauer Dump SED-02		Sauer Dump SED-03		Sauer Dump SED-04		Sauer Dump SED-05		Sauer Dump SED-06		Sauer Dump SED-07		Sauer Dump SED-08		Sauer Dump SED-09		Sauer Dump SED-10		Sauer Dump SDMT-1 (0-6")		Sauer Dump SDMT-1 (6-12")		Sauer Dump SDMT-2 (0-20")																											
Sample Identification	99121537		A900931		A900932		A901008		A901009		A901010		A901011		A900933		A901012		CTS25		99121536																																	
Alt. Sample Identification/VOCs and SVOCs			E400073		E400074		M700316		M700317		M700318		M700319		E400075		M700920																																					
Alt. Sample Identification/Inorg.			A900951		A900952		A901019		A901920		A901021		A901022		A900953		A901023																																					
Alt. Sample Identification/PCB's																																																						
Date of Sample Collection	12/15/99		09/29/99		09/29/99		10/01/99		10/01/99		10/01/99		10/01/99		09/29/99		10/01/99		09/29/99		12/15/99		12/18/01		12/18/01		12/18/01																											
Sampler	MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		ENSAT		ENSAT		ENSAT																											
Sample Type	Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment																											
Matrix	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Solid		Solid		Solid																											
Field QC	Dup. Of SED-10																		Duplicate of SED-2																																			
SVOCs																																																						
Analytical Method			EPA 608 not reported NA				EPA 608				EPA 625				EPA 625				EPA 625				EPA 625				EPA 625				EPA 625				EPA 625				1 85				EPA 8070 1 31				EPA 8070 1 21				EPA 8070 1 56			
Dilution Factor			mg/Kg				mg/Kg				mg/Kg				mg/Kg				mg/Kg				mg/Kg				mg/Kg				mg/Kg				mg/Kg				mg/Kg				mg/Kg				mg/Kg							
% Moisture			Incomplete lab report: "No SVOCs detected"				Incomplete lab report: "No SVOCs detected"				Incomplete lab report: "No SVOCs detected"				Incomplete lab report: "No SVOCs detected"				Incomplete lab report: "No SVOCs detected"				Incomplete lab report: "No SVOCs detected"				Incomplete lab report: "No SVOCs detected"				Incomplete lab report: "No SVOCs detected"				Incomplete lab report: "No SVOCs detected"				Incomplete lab report: "No SVOCs detected"				Incomplete lab report: "No SVOCs detected"				Incomplete lab report: "No SVOCs detected"							
Units																																																						
Notes																																																						
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag																		
Acenaphthene	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
Acenaphthylene	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
Acetophenone	nr			U		U														0.12	J	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
Anthracene	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
Atrazine	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
Benzaldehyde	nr			U		U														2.2	U	nr			nr			nr		nr		nr		nr																				
Benzo(a)Anthracene	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
Benzo(a)Pyrene	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
Benzo(b)fluoranthene	nr			U		U														0.13	J	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
Benzo(g,h,i)Perylene	nr			U		U														0.11	J	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
Benzo(k)fluoranthene	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
Benzylbutylphthalate/Butylbenzylphthalate	nr			U		U														0.18	J	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
1,1'-Biphenyl	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
4-Bromophenyl-phenylether	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
Caprolactam	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
Carbazole	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
4-Chloroaniline	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
bis(2-Chloroethoxy)Methane	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
bis(2-Chloroethyl)Ether	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
bis(2-Chloroisopropyl)Ether	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
4-Chloro-3-Methylphenol	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
2-Chloronaphthalene	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
2-Chlorophenol	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
4-Chlorophenyl-phenylether	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
Chrysene	nr			U		U														0.14	J	nr			0.33	U		0.33	U		0.33	U		0.33	U																			
Dibenzo(a,h)Anthracene	nr			U		U														2.2	U	nr			0.33	U		0.33	U		0.33	U		0.33	U																			

Table A.3 Sediment Analytical Data - 1985 to 2007 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																												
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SED-00	Sauer Dump SED-01	Sauer Dump SED-02	Sauer Dump SED-03	Sauer Dump SED-04	Sauer Dump SED-05	Sauer Dump SED-06	Sauer Dump SED-07	Sauer Dump SED-08	Sauer Dump SED-09	Sauer Dump SED-10	Sauer Dump SDMT-1 (0-6")	Sauer Dump SDMT-1 (6-12")	Sauer Dump SDMT-2 (0-20")														
	99121537	A900931 E400073 A900951 12/15/99 MDE Sediment Soil Dup. Of SED-10	A900932 E400074 A900952 09/29/99 MDE Sediment Soil	A901008 M700316 A901019 10/01/99 MDE Sediment Solid	A901009 M700317 A901920 10/01/99 MDE Sediment Solid	A901010 M700318 A901021 10/01/99 MDE Sediment Solid	A901011 M700319 A901022 10/01/99 MDE Sediment Solid	A900933 E400075 A900953 09/29/99 MDE Sediment Soil	A901012 M700920 A901023 10/01/99 MDE Sediment Soil Background	CTS25 09/29/99 MDE Sediment Soil Duplicate of SED-2	99121536 12/15/99 MDE Sediment Soil	12/18/01 ENSAT Sediment Solid	12/18/01 ENSAT Sediment Solid	12/18/01 ENSAT Sediment Solid														
Inorganics/Total Metals																												
Analytical Method Dilution Factor % Moisture Units Notes			Not Reported Not Reported mg/Kg		Not Reported Not Reported mg/Kg		Not Reported Not Reported mg/Kg		Not Reported Not Reported mg/Kg		Not Reported Not Reported mg/Kg		Not Reported Not Reported mg/Kg		Not Reported Not Reported mg/Kg		Not Reported Not Reported mg/Kg				EPA 200.8 1 31 mg/Kg		EPA 200.8 1 21 mg/Kg		EPA 200.8 1 56 mg/Kg			
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag		
Aluminum	nr		3,936		1,898		5,071		4,818		4,394		3,343		7,962		6,474		9,100		nr		7,246		9,494		11,591	
Antimony	nr		2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.6		2.5	U	11.4	J	nr		2.5	U	2.5	U	2.5	U
Arsenic	nr		3.57		1.4		1.25	U	1.25	U	1.25	U	1.25	U	7.943		1.36		16.3		nr		2.5	U	3.9		2	U
Barium	nr		71		26.2		26.9		26		26.4		42.9		35.8		48		249	J	nr		23		25		34	
Beryllium	nr		2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	0.49	J	nr		1	U	1	U	1	U
Cadmium	nr		5.4		5	U	5	U	5	U	5	U	5	U	41		5	U	0.81	J,B	nr		1	U	1	U	1	U
Calcium	nr		5,535		1,079		1,270		1,650		1,663		4,254		8,753		890		12,100		nr		7.2		10		73	
Chromium	nr		25.5		14.3		44.1		34.3		33.7		27.1		55.2		78.3		96.5	J	nr		19		18		34	
Chromium III	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium VI	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	nr		5	U	5	U	5.44		5.32		5.08		5.15		7.33		5.84		14.8	J	nr		4.6		4.1		8.9	
Copper	nr		67		28.5		35.5		25.7		29.5		34		281		48.9		169	J	nr		9.4		7.1		20	
Iron	nr		18,970		5,225		446		443.5		444		417.9		103,796		543		47,300		nr		11,739		12,658		17,045	
Lead	nr		186		26.5		44.8		32.4		33.8		42.7		109		56.4		182		nr		13		10		27	
Magnesium	nr		1,979		713		1,328		1,372		1717		2,926		1,392		4,940	J	nr		nr		1,261		1,152		2,727	
Manganese	nr		202		118		116.4		128.2		126.6		127		361		192.6		1,410		nr		112		59		341	
Mercury	nr		1.32		0.198		0.25		0.211		0.254		0.223	U	0.219		0.369		0.86		nr		0.1	U	0.1	U	0.1	U
Nickel	nr		17		8.24		27.7		20.9		20.9		19		49.3		34.3		65.7	J	nr		11		8.7		30	
Potassium	nr		386		612		706		675		557		403		229		831		987	J	nr		609		633		1,795	
Selenium	nr		2.61		1.25	U	1.25	U	1.25	U	1.25	U	1.25	U	6.11		1.25	U	7.4	J	nr		5	U	5	U	5	U
Silver	nr		2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	3.3	J	nr		2	U	2	U	2	U
Sodium	nr		1,212		935		1,130		919		975		719		1,490		1,081		2,890	J	nr		1,739		1,519		2,159	
Thallium	nr		1.25	U	1.25	U	1.25	U	1.25	U	1.25	U	1.25	U	1.25	U	1.25	U	2	U	nr		2	U	2	U	2	U
Tin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vanadium	nr		18.5		8.33		12.94		10.98		10.6		8.79		11.7		13.89		67.2	J	nr		16		22		20	
Zinc	nr		308		74.5		149.2		118.6		177.8		116.3		531		194		655		nr		42		23		107	
Cyanide	nr		0.072	U	0.02	U	0.051	U	0.089	U	0.071	U	0.082	U	0.03	U	0.062	U	0.5	U	nr		nr		nr		nr	
Dissolved Metals																												
Analytical Method Dilution Factor % Moisture Units Notes																												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag		
Aluminum	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Antimony	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Arsenic	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Barium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Beryllium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cadmium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Calcium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Copper	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Iron	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Lead	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Magnesium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Manganese	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Mercury	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Nickel	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Potassium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Selenium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Silver	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Sodium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Thallium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vanadium	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Zinc	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr					

Table A.3
Sediment Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification	Sauer Dump SED-00		Sauer Dump SED-01		Sauer Dump SED-02		Sauer Dump SED-03		Sauer Dump SED-04		Sauer Dump SED-05		Sauer Dump SED-06		Sauer Dump SED-07		Sauer Dump SED-08		Sauer Dump SED-09		Sauer Dump SED-10		Sauer Dump SDMT-1 (0-6")		Sauer Dump SDMT-1 (6-12")		Sauer Dump SDMT-2 (0-20")	
Alt. Sample Identification																												
Alt. Sample Identification/VOCs and SVOCs	99121537		A900931		A900932		A901008		A901009		A901010		A901011		A900933		A901012		CTS25		99121536							
Alt. Sample Identification/Inorg.			E400073		E400074		M700316		M700317		M700318		M700319		E400075		M700920											
Alt. Sample Identification/PCB's			A900951		A900952		A901019		A901920		A901021		A901022		A900953		A901023											
Date of Sample Collection	12/15/99		09/29/99		09/29/99		10/01/99		10/01/99		10/01/99		10/01/99		09/29/99		10/01/99		09/29/99		12/15/99		12/18/01		12/18/01		12/18/01	
Sampler	MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		ENSAT		ENSAT		ENSAT	
Sample Type	Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment	
Matrix	Soil		Soil		Soil		Solid		Solid		Solid		Solid		Soil		Background		Duplicate of SED-2		Soil		Soil		Solid		Solid	
Field QC	Dup. Of SED-10																											
Pesticides/PCBs																							EPA 8081/8082		EPA 8081/8082		EPA 8081/8082	
Analytical Method																			1				1		1		1	
Dilution Factor																			NA				31		21		56	
% Moisture																			mg/L				mg/Kg		mg/Kg		mg/Kg	
Units																												
Notes																												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.017	J	nr		0.004	U	0.004	U	0.004	U
alpha-BHC	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.011	U	nr		0.004	U	0.004	U	0.004	U
beta-BHC	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.011	U	nr		0.004	U	0.004	U	0.004	U
delta-BHC	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.011	U	nr		0.004	U	0.004	U	0.004	U
gamma-BHC (Lindane)	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.011	U	nr		0.004	U	0.004	U	0.004	U
alpha-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		0.011	U	nr		0.004	U	0.004	U	0.004	U
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr		0.011	U	nr		0.004	U	0.004	U	0.004	U
Chlordane, total	nr		0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	nr		nr		nr		nr		nr	
4,4'-DDD	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.022	U	nr		0.004	U	0.004	U	0.004	U
4,4'-DDE	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.022	U	nr		0.004	U	0.004	U	0.004	U
4,4'-DDT	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.022	U	nr		0.004	U	0.004	U	0.004	U
Dieldrin	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.022	U	nr		0.004	U	0.004	U	0.004	U
Endosulfan I	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.0063	J	nr		0.004	U	0.004	U	0.004	U
Endosulfan II	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.022	U	nr		0.004	U	0.004	U	0.004	U
Endosulfan sulfate	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.022	U	nr		0.01	U	0.02	U	0.02	U
Endrin	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.022	U	nr		0.004	U	0.004	U	0.004	U
Endrin aldehyde	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.022	U	nr		0.004	U	0.004	U	0.004	U
Endrin ketone	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.0097	J	nr		0.004	U	0.004	U	0.004	U
Heptachlor	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.011	U	nr		0.004	U	0.004	U	0.004	U
Heptachlor epoxide	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.011	U	nr		0.004	U	0.004	U	0.004	U
Methoxychlor	nr		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.11	U	nr		0.004	U	0.004	U	0.004	U
Toxaphene	nr		2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	1.1	U	nr		0.1	U	0.1	U	0.1	U
Aroclor-1016	0.1	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.2	U	0.1	U	0.0	U	0.0	U	0.0	U
Aroclor-1221	0.1	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.5	U	0.1	U	0.0	U	0.0	U	0.0	U
Aroclor-1232	0.1	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.2	U	0.1	U	0.0	U	0.0	U	0.0	U
Aroclor-1242	0.1	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.2	U	0.1	U	0.0	U	0.0	U	0.0	U
Aroclor-1248	0.1	U	nr		nr		nr		nr		nr		nr		nr		nr		0.2	U	0.1	U	0.0	U	0.0	U	0.0	U
Aroclor-1254	0.334		7.9		14.4		0.25	U	2.1		0.25	U	0.25	U	2		0.25	U	2		0.401		0.013	U	0.013	U	0.013	U
Aroclor-1260	0.1	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.2	U	0.1	U	0.0	U	0.0	U	0.0	U
Total PCBs	0.3		7.9		14.4		0.3		2.1		0.3		0.3		2.0		0.3		2.0		0.4		0.0		0.0		0.0	
Other Analytes																												
Analytical Method																												
Dilution Factor																												
% Moisture																												
Units																												
Notes																												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Monochlorobiphenyl (total																												
Dichlorobiphenyl (total																												
Trichlorobiphenyl (total																												
Tetrachlorobiphenyl (total																												
Pentachlorobiphenyl (total																												
Hexachlorobiphenyl (total																												
Heptachlorobiphenyl (total																												
Octachlorobiphenyl (total																												
Nonachlorobiphenyl (total																												
Decachlorobiphenyl (total																												
Total PCB Homologs																												

Table A.3 Sediment Analytical Data - 1985 to 2007 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																													
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SDMT-2 (20-30")		Sauer Dump SDMT-3 (0-4")		Sauer Dump SDMT-3 (4-10")		Sauer Dump SDMT-4 (0-20")		Sauer Dump SDMT-4 (20-30")		Sauer Dump SDMT-5 (0-20")		Sauer Dump SDMT-5 (20-30")		Sauer Dump SDMT-6 (0-4")		Sauer Dump SDMT-6 (4-7")		Sauer Dump SDMT-7 (0-20")		Sauer Dump SDMT-7 (20-30")		Sauer Dump SDMT-8 (0-20")		Sauer Dump SDMT-8 (20-30")		Sauer Dump SDMT-9 (0-20")		
	12/18/01		12/18/01		12/18/01		12/18/01		12/18/01		12/19/01		12/19/01		12/18/01		12/18/01		12/19/01		12/19/01		12/18/01		12/18/01		12/18/01		12/19/01
	ENSAT		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT		ENSAT
	Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment
	Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid		Solid
SVOCs																													
Analytical Method	EPA 8070		EPA 8070		EPA 8070		EPA 8070		EPA 8070		EPA 8070		EPA 8070		EPA 8070		EPA 8070		EPA 8070		EPA 8070		EPA 8070		EPA 8070		EPA 8070		
Dilution Factor	1		1		1		1		1		1		1		1		1		1		1		1		1		1		
% Moisture	51		23		23		62		22		57		50		57		25		64		52		57		50		54		
Units	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		
Notes																													
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	
Acenaphthene	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
Acenaphthylene	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
Acetophenone	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
Anthracene	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
Atrazine	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
Benzaldehyde	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		
Benzo(a)Anthracene	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.22	J	0.116	J	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
Benzo(a)Pyrene	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.22	J	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
Benzo(b)fluoranthene	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.184	J	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
Benzo(g,h,i)Perylene	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
Benzo(k)fluoranthene	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.186	J	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
Benzylbutylphthalate/Butylbenzylphthalate	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
1,1'-Biphenyl	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
4-Bromophenyl-phenylether	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
Caprolactam	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
Carbazole	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
4-Chloroaniline	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
bis(2-Chloroethoxy)Methane	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
bis(2-Chloroethyl)Ether	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
bis(2-Chloroisopropyl)Ether	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
4-Chloro-3-Methylphenol	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
2-Chloronaphthalene	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
2-Chlorophenol	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
4-Chlorophenyl-phenylether	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
Chrysene	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.26	J	0.13	J	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
Dibenzo(a,h)Anthracene	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
Dibenzofuran	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
1,2-Dichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		
1,3-Dichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		
1,4-Dichlorobenzene	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		
3,3'-Dichlorobenzidine	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
2,4-Dichlorophenol	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
Diethylphthalate	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
2,4-Dimethylphenol	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	
Dimethyl Phthalate	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U	0												

Table A.3 Sediment Analytical Data - 1985 to 2007 Former Sauer Dump and Salvage Yard Dundalk, Baltimore County, Maryland																												
Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SDMT-2 (20-30")		Sauer Dump SDMT-3 (0-4")		Sauer Dump SDMT-3 (4-10")		Sauer Dump SDMT-4 (0-20")		Sauer Dump SDMT-4 (20-30")		Sauer Dump SDMT-5 (0-20")		Sauer Dump SDMT-5 (20-30")		Sauer Dump SDMT-6 (0-4")		Sauer Dump SDMT-6 (4-7")		Sauer Dump SDMT-7 (0-20")		Sauer Dump SDMT-7 (20-30")		Sauer Dump SDMT-8 (0-20")		Sauer Dump SDMT-8 (20-30")		Sauer Dump SDMT-9 (0-20")	
	12/18/01 ENSAT Sediment Solid		12/18/01 ENSAT Sediment Solid		12/18/01 ENSAT Sediment Solid		12/18/01 ENSAT Sediment Solid		12/18/01 ENSAT Sediment Solid		12/19/01 ENSAT Sediment Solid		12/19/01 ENSAT Sediment Solid		12/18/01 ENSAT Sediment Solid		12/18/01 ENSAT Sediment Solid		12/19/01 ENSAT Sediment Solid		12/19/01 ENSAT Sediment Solid		12/18/01 ENSAT Sediment Solid		12/18/01 ENSAT Sediment Solid		12/19/01 ENSAT Sediment Solid	
Pesticides/PCBs																												
Analytical Method Dilution Factor % Moisture Units	EPA 8081/8082 1 51 mg/Kg		EPA 8081/8082 1 23 mg/Kg		EPA 8081/8082 1 23 mg/Kg		EPA 8081/8082 1 62 mg/Kg		EPA 8081/8082 1 22 mg/Kg		EPA 8081/8082 1 57 mg/Kg		EPA 8081/8082 1 50 mg/Kg		EPA 8081/8082 1 57 mg/Kg		EPA 8081/8082 1 25 mg/Kg		EPA 8081/8082 1 64 mg/Kg		EPA 8081/8082 1 52 mg/Kg		EPA 8081/8082 1 57 mg/Kg		EPA 8081/8082 1 50 mg/Kg		EPA 8081/8082 1 54 mg/Kg	
Notes																												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
alpha-BHC	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
beta-BHC	0.004	U	0.005	U	0.005	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
delta-BHC	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
gamma-BHC (Lindane)	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
alpha-Chlordane	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
gamma-Chlordane	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
4,4'-DDE	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
4,4'-DDT	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
Dieldrin	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
Endosulfan I	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
Endosulfan II	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.02	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
Endosulfan sulfate	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.004	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
Endrin	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
Endrin aldehyde	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
Endrin ketone	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
Heptachlor	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
Heptachlor epoxide	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
Methoxychlor	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
Toxaphene	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor-1016	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U
Aroclor-1221	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U
Aroclor-1232	0.027	U	0.027	U	0.027	U	0.027	U	0.027	U	0.027	U	0.027	U	0.027	U	0.027	U	0.027	U	0.027	U	0.027	U	0.027	U	0.027	U
Aroclor-1242	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U
Aroclor-1248	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U
Aroclor-1254	0.013	U	0.013	U	0.013	U	0.013	U	0.013	U	0.013	U	0.013	U	0.013	U	0.013	U	0.013	U	0.013	U	0.013	U	0.013	U	0.013	U
Aroclor-1260	0.007	U	0.007	U	0.007	U	0.007	U	0.007	U	0.007	U	0.007	U	0.007	U	0.007	U	0.007	U	0.007	U	0.007	U	0.007	U	0.007	U
Total PCBs																												
Other Analytes																												
Analytical Method Dilution Factor % Moisture Units																												
Notes																												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Monochlorobiphenyl (total																												
Dichlorobiphenyl (total																												
Trichlorobiphenyl (total																												
Tetrachlorobiphenyl (total																												
Pentachlorobiphenyl (total																												
Hexachlorobiphenyl (total																												
Heptachlorobiphenyl (total																												
Octachlorobiphenyl (total																												
Nonachlorobiphenyl (total																												
Decachlorobiphenyl (total																												
Total PCB Homologs																												

Table A.3
Sediment Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SDMT-9 (20-30") 12/19/01 ENSAT Sediment Solid	Sauer Dump SDMT-A (0-4") 12/18/01 ENSAT Sediment Solid Dup. Of SDMT-6	Sauer Dump SDMT-B (20-30") 12/18/01 ENSAT Sediment Solid Dup. Of SDMT-4	Sauer Dump DG-SD01-0.5 C7A110284001 01/09/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD02-0.5 C7A110284002 01/09/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD03-0.5 C7A110284003 01/09/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD04-0.5 C7A130138002 01/10/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD05-0.5 C7A130138001 01/10/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD06-0.5 C7A130138003 01/10/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD07-0.5 C7A130138005 01/11/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD08-0.5 C7A130138006 01/11/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD09-0.5 C7A130138007 01/12/07 Malcolm Pirnie Sediment Solid
SVOCs	EPA 8070 1 62 mg/Kg	EPA 8070 1 32 mg/Kg	EPA 8070 1 26 mg/Kg									
Analytical Method Dilution Factor % Moisture Units												
Notes												
Analyte	Result	Flag	Result	Flag	Result	Flag						
Acenaphthene	0.33	U	0.33	U	0.33	U						
Acenaphthylene	0.33	U	0.33	U	0.33	U						
Acetophenone	0.33	U	0.33	U	0.33	U						
Anthracene	0.33	U	0.33	U	0.33	U						
Atrazine	0.33	U	0.33	U	0.33	U						
Benzaldehyde	nr		nr		nr							
Benzo(a)Anthracene	0.33	U	0.33	U	0.33	U						
Benzo(a)Pyrene	0.33	U	0.33	U	0.33	U						
Benzo(b)fluoranthene	0.33	U	0.33	U	0.33	U						
Benzo(g,h,i)Perylene	0.33	U	0.33	U	0.33	U						
Benzo(k)fluoranthene	0.33	U	0.33	U	0.33	U						
BenzyIbutylphthalate/ButylbenzyIphthalate	0.33	U	0.33	U	0.33	U						
1,1'-Biphenyl	0.33	U	0.33	U	0.33	U						
4-Bromophenyl-phenylether	0.33	U	0.33	U	0.33	U						
Caprolactam	0.33	U	0.33	U	0.33	U						
Carbazole	0.33	U	0.33	U	0.33	U						
4-Chloroaniline	0.33	U	0.33	U	0.33	U						
bis(2-Chloroethoxy)Methane	0.33	U	0.33	U	0.33	U						
bis(2-Chloroethyl)Ether	0.33	U	0.33	U	0.33	U						
bis(2-Chloroisopropyl)Ether	0.33	U	0.33	U	0.33	U						
4-Chloro-3-Methylphenol	0.33	U	0.33	U	0.33	U						
2-Chloronaphthalene	0.33	U	0.33	U	0.33	U						
2-Chlorophenol	0.33	U	0.33	U	0.33	U						
4-Chlorophenyl-phenylether	0.33	U	0.33	U	0.33	U						
Chrysene	0.33	U	0.33	U	0.33	U						
Dibenzo(a,h)Anthracene	0.33	U	0.33	U	0.33	U						
Dibenzofuran	0.33	U	0.33	U	0.33	U						
1,2-Dichlorobenzene	nr		nr		nr							
1,3-Dichlorobenzene	nr		nr		nr							
1,4-Dichlorobenzene	nr		nr		nr							
3,3'-Dichlorobenzidine	0.33	U	0.33	U	0.33	U						
2,4-Dichlorophenol	0.33	U	0.33	U	0.33	U						
Diethylphthalate	0.33	U	0.33	U	0.33	U						
2,4-Dimethylphenol	0.33	U	0.33	U	0.33	U						
Dimethyl Phthalate	0.33	U	0.33	U	0.33	U						
Di-n-Butylphthalate	0.33	U	0.33	U	0.33	U						
4,6-Dinitro-2-Methylphenol	0.78	U	0.78	U	0.78	U						
2,4-Dinitrophenol	0.83	U	0.83	U	0.83	U						
2,4-Dinitrotoluene	0.33	U	0.33	U	0.33	U						
2,6-Dinitrotoluene	0.33	U	0.33	U	0.33	U						
Di-n-Octyl Phthalate	0.33	U	0.33	U	0.33	U						
bis(2-Ethylhexyl)Phthalate	0.33	U	0.33	U	0.33	U						
Fluoranthene	0.33	U	0.33	U	0.33	U						
Fluorene	0.33	U	0.33	U	0.33	U						
Hexachlorobenzene	0.33	U	0.33	U	0.33	U						
Hexachlorobutadiene	0.33	U	0.33	U	0.33	U						
Hexachlorocyclopentadiene	0.33	U	0.33	U	0.33	U						
Hexachloroethane	0.33	U	0.33	U	0.33	U						
Indeno(1,2,3-cd)Pyrene	0.33	U	0.33	U	0.33	U						
Isophorone	0.33	U	0.33	U	0.33	U						
2-Methylnaphthalene	0.33	U	0.33	U	0.33	U						
2-Methylphenol	0.33	U	0.33	U	0.33	U						
4-Methylphenol	0.33	U	0.33	U	0.33	U						
MethylMercury	nr		nr		nr							
Naphthalene	0.33	U	0.33	U	0.33	U						
2-Nitroaniline	0.83	U	0.83	U	0.83	U						
3-Nitroaniline	0.83	U	0.83	U	0.83	U						
4-Nitroaniline	0.83	U	0.83	U	0.83	U						
Nitrobenzene	0.33	U	0.33	U	0.33	U						
2-Nitrophenol	0.33	U	0.33	U	0.33	U						
4-Nitrophenol	0.83	U	0.83	U	0.83	U						
N-Nitroso-Di-n-Propylamine	0.33	U	0.33	U	0.33	U						
N-Nitrosodiphenylamine	0.33	U	0.33	U	0.33	U						
2,2-Oxybis(1-Chloropropane)	nr		nr		nr							
Pentachlorophenol	0.83	U	0.83	U	0.83	U						
Phenanthrene	0.33	U	0.33	U	0.33	U						
Phenol	0.33	U	0.33	U	0.33	U						
Pyrene	0.33	U	0.33	U	0.33	U						
1,2,4-Trichlorobenzene	nr		nr		nr							
2,4,5-Trichlorophenol	0.83	U	0.83	U	0.83	U						
2,4,6-Trichlorophenol	0.33	U	0.33	U	0.33	U						

Table A.3
Sediment Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SDMT-9 (20-30") 12/19/01 ENSAT Sediment Solid	Sauer Dump SDMT-A (0-4") 12/18/01 ENSAT Sediment Solid Dup. Of SDMT-6	Sauer Dump SDMT-B (20-30") 12/18/01 ENSAT Sediment Solid Dup. Of SDMT-4	Sauer Dump DG-SD01-0.5 C7A110284001 01/09/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD02-0.5 C7A110284002 01/09/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD03-0.5 C7A110284003 01/09/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD04-0.5 C7A130138002 01/10/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD05-0.5 C7A130138001 01/10/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD06-0.5 C7A130138003 01/10/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD07-0.5 C7A130138005 01/11/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD08-0.5 C7A130138006 01/11/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD09-0.5 C7A130138007 01/12/07 Malcolm Pirnie Sediment Solid										
Inorganics/Total Metals	EPA 200.8	EPA 200.8	EPA 200.8	SW846 6010B	SW846 6010B	SW846 6010B	SW846 6010B	SW846 6010B	SW846 6010B	SW846 6010B	SW846 6010B	SW846 6010B										
Analytical Method	1	1	1	1	1	1	1	5	1	1	1	1										
Dilution Factor	62	32	26																			
% Moisture																						
Units	mg/Kg	mg/Kg	mg/Kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg										
Notes																						
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	10,263		2,059		7,973		nr		nr		nr		nr		nr		nr		nr		nr	
Antimony	5	U	2.5	U	2.5	U	nr		nr		nr		nr		nr		nr		nr		nr	
Arsenic	4	U	2	U	2.8		nr		nr		nr		nr		nr		nr		nr		nr	
Barium	26		15		15		nr		nr		nr		nr		nr		nr		nr		nr	
Beryllium	2	U	1	U	1	U	nr		nr		nr		nr		nr		nr		nr		nr	
Cadmium	2	U	1	U	1	U	nr		nr		nr		nr		nr		nr		nr		nr	
Calcium	218		46		22		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium	21		18		12		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium III	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium VI	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	5	U	2.5	U	9.2		nr		nr		nr		nr		nr		nr		nr		nr	
Copper	5	U	19		15		nr		nr		nr		nr		nr		nr		nr		nr	
Iron	15,263		4,265		37,838		nr		nr		nr		nr		nr		nr		nr		nr	
Lead	5	U	22		6		7.5		47.1		370		488		4,800		595		150		10.1	
Magnesium	3,158		691		1,216		nr		nr		nr		nr		nr		nr		nr		nr	
Manganese	221		84		203		nr		nr		nr		nr		nr		nr		nr		nr	
Mercury	0.1	U	0.1	U	0.1	U	nr		nr		nr		nr		nr		nr		nr		nr	
Nickel	16		8.7		15		nr		nr		nr		nr		nr		nr		nr		nr	
Potassium	1,789		338		770		nr		nr		nr		nr		nr		nr		nr		nr	
Selenium	5	U	5	U	5	U	nr		nr		nr		nr		nr		nr		nr		nr	
Silver	4	U	2	U	2	U	nr		nr		nr		nr		nr		nr		nr		nr	
Sodium	3,158		1,618		1,622		nr		nr		nr		nr		nr		nr		nr		nr	
Thallium	2	U	2	U	2	U	nr		nr		nr		nr		nr		nr		nr		nr	
Tin	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vanadium	24		5		1.4		nr		nr		nr		nr		nr		nr		nr		nr	
Zinc	42		65		42		nr		nr		nr		nr		nr		nr		nr		nr	
Cyanide	nr		nr		nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dissolved Metals																						
Analytical Method																						
Dilution Factor																						
% Moisture																						
Units																						
Notes																						
Analyte	Result	Flag	Result	Flag	Result	Flag																
Aluminum	nr		nr		nr				nr													
Antimony	nr		nr		nr																	
Arsenic	nr		nr		nr																	
Barium	nr		nr		nr																	
Beryllium	nr		nr		nr																	
Cadmium	nr		nr		nr																	
Calcium	nr		nr		nr																	
Chromium	nr		nr		nr																	
Cobalt	nr		nr		nr																	
Copper	nr		nr		nr																	
Iron	nr		nr		nr																	
Lead	nr		nr		nr																	
Magnesium	nr		nr		nr																	
Manganese	nr		nr		nr																	
Mercury	nr		nr		nr																	
Nickel	nr		nr		nr																	
Potassium	nr		nr		nr																	
Selenium	nr		nr		nr																	
Silver	nr		nr		nr																	
Sodium	nr		nr		nr																	
Thallium	nr		nr		nr																	
Vanadium	nr		nr		nr																	
Zinc	nr		nr		nr																	

Table A.3
Sediment Analytical Data - 1985 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump SDMT-9 (20-30") 12/19/01 ENSAT Sediment Solid	Sauer Dump SDMT-A (0-4") 12/18/01 ENSAT Sediment Solid Dup. Of SDMT-6	Sauer Dump SDMT-B (20-30") 12/18/01 ENSAT Sediment Solid Dup. Of SDMT-4	Sauer Dump DG-SD01-0.5 C7A110284001 01/09/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD02-0.5 C7A110284002 01/09/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD03-0.5 C7A110284003 01/09/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD04-0.5 C7A130138002 01/10/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD05-0.5 C7A130138001 01/10/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD06-0.5 C7A130138003 01/10/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD07-0.5 C7A130138005 01/11/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD08-0.5 C7A130138006 01/11/07 Malcolm Pirnie Sediment Solid	Sauer Dump DG-SD09-0.5 C7A130138007 01/12/07 Malcolm Pirnie Sediment Solid
Pesticides/PCBs	EPA 8081/8082	EPA 8081/8082	EPA 8081/8082	SW846 8082	SW846 8082	SW846 8082	SW846 8082	SW846 8082	SW846 8082	SW846 8082	SW846 8082	SW846 8082
Analytical Method	1	1	1	0	0	0	2	0	5	0	0	0
Dilution Factor	62	32	26									
% Moisture												
Units	mg/Kg	mg/Kg	mg/Kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Notes												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	0.004	U	0.004	U	0.004	U	nr		nr		nr	
alpha-BHC	0.004	U	0.004	U	0.004	U	nr		nr		nr	
beta-BHC	0.004	U	0.004	U	0.004	U	nr		nr		nr	
delta-BHC	0.004	U	0.004	U	0.004	U	nr		nr		nr	
gamma-BHC (Lindane)	0.004	U	0.004	U	0.004	U	nr		nr		nr	
alpha-Chlordane	0.004	U	0.004	U	0.004	U	nr		nr		nr	
gamma-Chlordane	0.004	U	0.004	U	0.004	U	nr		nr		nr	
Chlordane, total	nr		nr		nr		nr		nr		nr	
4,4'-DDD	0.004	U	0.004	U	0.004	U	nr		nr		nr	
4,4'-DDE	0.004	U	0.004	U	0.004	U	nr		nr		nr	
4,4'-DDT	0.004	U	0.004	U	0.004	U	nr		nr		nr	
Dieldrin	0.004	U	0.004	U	0.004	U	nr		nr		nr	
Endosulfan I	0.004	U	0.004	U	0.004	U	nr		nr		nr	
Endosulfan II	0.004	U	0.004	U	0.004	U	nr		nr		nr	
Endosulfan sulfate	0.02	U	0.02	U	0.02	U	nr		nr		nr	
Endrin	0.004	U	0.004	U	0.004	U	nr		nr		nr	
Endrin aldehyde	0.004	U	0.004	U	0.004	U	nr		nr		nr	
Endrin ketone	0.004	U	0.004	U	0.004	U	nr		nr		nr	
Heptachlor	0.004	U	0.004	U	0.004	U	nr		nr		nr	
Heptachlor epoxide	0.004	U	0.004	U	0.004	U	nr		nr		nr	
Methoxychlor	0.004	U	0.004	U	0.004	U	nr		nr		nr	
Toxaphene	0.1	U	0.1	U	0.1	U	nr		nr		nr	
Aroclor-1016	0.0	U	0.0	U	0.0	U	0.048	U	0.031	U	1.3	
Aroclor-1221	0.0	U	0.0	U	0.0	U	0.048	U	0.031	U	0.079	U
Aroclor-1232	0.0	U	0.0	U	0.0	U	0.048	U	0.031	U	0.079	U
Aroclor-1242	0.0	U	0.0	U	0.0	U	0.048	U	0.031	U	0.079	U
Aroclor-1248	0.0	U	0.0	U	0.0	U	0.048	U	0.031	U	0.079	U
Aroclor-1254	0.013	U	0.013	U	0.013	U	0.048	U	0.031	U	0.91	
Aroclor-1260	0.0	U	0.0	U	0.0	U	0.048	U	0.086		1.4	
Total PCBs							0.048	U	0.086		3.61	
Other Analytes							EPA-22 1668A		EPA-22 1668A		EPA-22 1668A	
Analytical Method							1		5		10	
Dilution Factor												
% Moisture												
Units							mg/kg		mg/kg		mg/kg	
Notes												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Monochlorobiphenyl (total)							0.0000026	B,J	0.00026	B	0.029	B
Dichlorobiphenyl (total)							0.000052	Q,B,J	0.0049	B,Q	0.62	B,Q
Trichlorobiphenyl (total)							0.000078	Q B J	0.017	B,Q	2.2	B
Tetrachlorobiphenyl (total)							0.000097	B,J,Q	0.066	B,Q	2.3	B,Q
Pentachlorobiphenyl (total)							0.000092	B,J,Q	0.13	Q,B	1.3	Q,B
Hexachlorobiphenyl (total)							0.000076	Q,B,J	0.084	B,Q	1.8	Q,B
Heptachlorobiphenyl (total)							0.000021	B,J,Q	0.024	B,Q	1.2	B,Q
Octachlorobiphenyl (total)							0.000029	U	0.0063	Q,B	0.35	B
Nonachlorobiphenyl (total)							0.000029	U	0.0014		0.05	
Decachlorobiphenyl (total)							0.000029	U	0.00026		0.0073	Q
Total PCB Homologs							0.0004186		0.33412		9.8563	

Table A.5
Groundwater Analytical Data - 1999 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump FB-1	Sauer Dump GW-1	Sauer Dump GW-2	Sauer Dump TB-1	Sauer Dump GW-00	Sauer Dump GW-1a	Sauer Dump GW-2a	Sauer Dump Trip Blank	Sauer Dump MW-1	Sauer Dump MW-2	Sauer Dump MW-3	Sauer Dump MW-4
VOCs SVOCs Inorganics/Total Metals Dissolved Metals PCBs/Pesticides Other Analytes	A900929 M700304 A900959 09/29/99 MDE Water Aqueous Field Blank	A900916 M700302 A900957 09/29/99 MDE Groundwater Aqueous	A900917 M700303 A900958 09/29/99 MDE Groundwater Aqueous	A900930 09/29/99 MDE Water Aqueous Trip Blank	99121530 12/15/99 MDE Groundwater Aqueous Dup. Of GW-2a	99121528 12/15/99 MDE Groundwater Aqueous Resampling of GW-1	99121529 12/15/99 MDE Groundwater Aqueous Resampling of GW-2	99121531 12/15/99 MDE Water Aqueous Trip Blank	12/27/01 ENSAT Groundwater Aqueous	12/27/01 ENSAT Groundwater Aqueous	12/27/01 ENSAT Groundwater Aqueous	12/27/01 ENSAT Groundwater Aqueous
	yes CN only yes	yes CN only yes	yes yes CN only yes	yes no no no	yes no no no	yes no no no	yes no no no	yes no no no	yes yes yes yes	yes yes yes yes	yes yes yes yes	yes yes yes yes
	yes no	yes no	yes no	no no	no no	no no	no no	no no	yes no	yes no	yes no	yes no
VOCs												
Analytical Method Dilution Factor % Moisture Units	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 1 NA mg/L	EPA 8260 1 NA mg/L	EPA 8260 1 NA mg/L	1 NA mg/L	EPA 8260 NA mg/L	EPA 8260 NA mg/L	EPA 8260 NA mg/L	EPA 8260 NA mg/L
Notes	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded								
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Acetone	0.0104	B	0.025	U	0.025	U	0.0109	B	0.01	U	0.01	U
Acetonitrile	nr		nr		nr		nr		nr		nr	
Acrolein	nr		nr		nr		nr		nr		nr	
Acrylonitrile	nr		nr		nr		nr		nr		nr	
Allyl Alcohol	nr		nr		nr		nr		nr		nr	
Allyl Chloride	nr		nr		nr		nr		nr		nr	
Benzene	0.005	U	0.005	U	0.005	U	0.0041	J	0.005	U	0.0042	J
Benzene (2-Methyl-1-Propeny	nr		nr		nr		nr		nr		nr	
Benzyl Chloride	nr		nr		nr		nr		nr		nr	
Bromoacetone	nr		nr		nr		nr		nr		nr	
Bromobenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Bromochloromethane/Chlorobromomethane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Bromodichloromethane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Bromoform	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Bromomethane/Methyl bromide	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
2-Butanone (Methyl Ethyl Ketone)	nr		nr		nr		0.01	U	0.01	U	0.01	U
n-Butylbenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
sec-Butylbenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
tert-Butylbenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Camphene	nr		nr		nr		nr		nr		nr	
Carbon Disulfide	nr		nr		nr		0.005	U	0.005	U	0.005	U
Carbon Tetrachloride	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Chlorobenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Chloroethane/Ethyl chloride	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
2-Chloroethanol/Ethylene chlorohydrin	nr		nr		nr		nr		nr		nr	
2-Chloroethylvinyl Ether	0.005	U	0.005	U	0.005	U	nr		nr		nr	
Chloroform	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Chloromethane/Methyl chloride	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Chloroprene	nr		nr		nr		nr		nr		nr	
2-Chlorotoluene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
4-Chlorotoluene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Cyclohexane	nr		nr		nr		nr		nr		0.001	U
Cyclohexane, Butyl-	nr		nr		nr		nr		nr		nr	
1,3-Cyclopentadiene	nr		nr		nr		nr		nr		nr	
Decahydro-naphthalene	nr		nr		nr		nr		nr		nr	
Dibromochloromethane/Chlorodibromomethane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
trans-1,4-Dichloro-2-butene	nr		nr		nr		nr		nr		nr	
1,4-Dichloro-2-butene	nr		nr		nr		nr		nr		nr	
1,2-Dibromo-3-chloropropane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,2-Dibromoethane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,2-Dichlorobenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,3-Dichlorobenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,4-Dichlorobenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Dichlorodifluoromethane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,1-Dichloroethane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,2-Dichloroethane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,1-Dichloroethene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
cis-1,2-Dichloroethene	nr		nr		nr		0.005	U	0.005	U	0.005	U
trans-1,2-Dichloroethene	nr		nr		nr		0.005	U	0.005	U	0.005	U
1,2-Dichloroethene (Total)	nr		nr		nr		nr		nr		nr	
Dichloromethane	nr		nr		nr		nr		nr		nr	
1,2-Dichloropropane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,3-Dichloropropane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	nr	
2,2-Dichloropropane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	nr	
1,3-Dichloro-2-Propanol	nr		nr		nr		nr		nr		nr	
1,1-Dichloropropene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	nr	
cis-1,3-Dichloropropene	nr		nr		nr		0.005	U	0.005	U	0.001	U
trans-1,3-Dichloropropene	nr		nr		nr		0.005	U	0.005	U	0.001	U
1,3-Dichloropropylene	nr		nr		nr		nr		nr		nr	
1,2:3,4-Diepoxybutane	nr		nr		nr		nr		nr		nr	
1,2-Dimethyl-Naphthalene	nr		nr		nr		nr		nr		nr	
1,3-Dimethyl-Naphthalene	nr		nr		nr		nr		nr		nr	
1,6-Dimethyl-Naphthalene	nr		nr		nr		nr		nr		nr	
2,3-Dimethyl-Naphthalene	nr		nr		nr		nr		nr		nr	
2,6-Dimethyl-Naphthalene	nr		nr		nr		nr		nr		nr	
2,6-Dimethyl Octane	nr		nr		nr		nr		nr		nr	
3,5-Dimethyl Octane	nr		nr		nr		nr		nr		nr	

Table A.5
Groundwater Analytical Data - 1999 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump FB-1	Sauer Dump GW-1	Sauer Dump GW-2	Sauer Dump TB-1	Sauer Dump GW-00	Sauer Dump GW-1a	Sauer Dump GW-2a	Sauer Dump Trip Blank	Sauer Dump MW-1	Sauer Dump MW-2	Sauer Dump MW-3	Sauer Dump MW-4
	A900929 M700304 A900959 09/29/99 MDE Water Aqueous Field Blank	A900916 M700302 A900957 09/29/99 MDE Groundwater Aqueous	A900917 M700303 A900958 09/29/99 MDE Groundwater Aqueous	A900930 09/29/99 MDE Water Aqueous Trip Blank	99121530 12/15/99 MDE Groundwater Aqueous Dup. Of GW-2a	99121528 12/15/99 MDE Groundwater Aqueous Resampling of GW-1	99121529 12/15/99 MDE Groundwater Aqueous Resampling of GW-2	99121531 12/15/99 MDE Water Aqueous Trip Blank	12/27/01 ENSAT Groundwater Aqueous	12/27/01 ENSAT Groundwater Aqueous	12/27/01 ENSAT Groundwater Aqueous	12/27/01 ENSAT Groundwater Aqueous
VOCs (cont.)												
Analytical Method Dilution Factor % Moisture Units	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 Not Reported NA mg/L	EPA 8260 1 NA mg/L	EPA 8260 1 NA mg/L	EPA 8260 1 NA mg/L	EPA 8260 1 NA mg/L	1 NA mg/L	EPA 8260 NA mg/L	EPA 8260 NA mg/L	EPA 8260 NA mg/L
Notes	Holding time exceeded	Holding time exceeded	Holding time exceeded	Holding time exceeded								
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,4-Dioxane	nr		nr		nr		nr		nr		nr	
Dodecane, 6-Methyl-	nr		nr		nr		nr		nr		nr	
Ethanol	nr		nr		nr		nr		nr		nr	
Ethylbenzene	0.005	U	0.005	U	0.005	U	0.0049	J	0.0039	J	0.0049	J
1-Ethyl-2,3-Dimethyl-Benzene	nr		nr		nr		nr		nr		nr	
4-Ethyl-1,2-Dimethylbenzene	nr		nr		nr		nr		nr		nr	
1-Ethyl-2-Methyl-Benzene	nr		nr		nr		nr		nr		nr	
1-Ethyl-3-Methylcyclohexane	nr		nr		nr		nr		nr		nr	
1-Ethyl-4-Methylcyclohexane	nr		nr		nr		nr		nr		nr	
Ethylene Oxide	nr		nr		nr		nr		nr		nr	
Ethylmethacrylate	nr		nr		nr		nr		nr		nr	
Epichlorohydrin	nr		nr		nr		nr		nr		nr	
Hexachlorobutadiene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Hexane	nr		nr		nr		nr		nr		nr	
2-Hexanone	nr		nr		nr		0.01	U	0.01	U	0.01	U
2-Hydroxypropionitrile	nr		nr		nr		nr		nr		nr	
Isobutyl alcohol	nr		nr		nr		nr		nr		nr	
Isopropylbenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.002	J	0.005	U
p-Isopropyl Toluene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Malononitrile	nr		nr		nr		nr		nr		nr	
Methacrylonitrile	nr		nr		nr		nr		nr		nr	
Methyl Acetate	nr		nr		nr		nr		nr		0.001	U
Methylcyclohexane	nr		nr		nr		nr		nr		0.001	U
1-Methyl-2- Benzene (1 Methy	nr		nr		nr		nr		nr		nr	
1-Methyl-3- Benzene (1 Methy	nr		nr		nr		nr		nr		nr	
1-Methyl-4- Benzene (1 Methy	nr		nr		nr		nr		nr		nr	
Methylene Bromide	nr		nr		nr		nr		nr		nr	
Methylene Chloride	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.001	U
1-Methyl-indan	nr		nr		nr		nr		nr		nr	
Methyl Iodide/Iodomethane	nr		nr		nr		nr		nr		nr	
Methylmethacrylate	nr		nr		nr		nr		nr		nr	
2-Methyl-Naphthalene	nr		nr		nr		nr		nr		nr	
4-Methyl-Nonane	nr		nr		nr		nr		nr		nr	
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.005	U	0.005	U	0.005	U	0.01	U	0.01	U	0.01	U
O-(2-Methyl Propyl Hydroxylamine	nr		nr		nr		nr		nr		nr	
Methyl-t-Butyl Ether	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.001	U
Naphthalene	0.005	U	0.005	U	0.005	U	0.02		0.0049	J	0.019	
Naphthalene, decahydro-, trans-	nr		nr		nr		nr		nr		nr	
Pentachloroethane	nr		nr		nr		nr		nr		nr	
Propargyl Alcohol	nr		nr		nr		nr		nr		nr	
Propiolactone	nr		nr		nr		nr		nr		nr	
Propionitrile	nr		nr		nr		nr		nr		nr	
Propylamine	nr		nr		nr		nr		nr		nr	
n-Propylbenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Styrene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.001	U
1,1,1,2-Tetrachloroethane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,1,2,2-Tetrachloroethane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.001	U
Tetrachloroethene	nr		nr		nr		0.005	U	0.005	U	0.001	U
1,2,4,5-Tetramethylbenzene	nr		nr		nr		nr		nr		nr	
Toluene	0.005	U	0.005	U	0.005	U	0.013		0.0031	J	0.013	
1,2,3-Trichlorobenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,2,4-Trichlorobenzene	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.001	U
1,1,1-Trichloroethane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.001	U
1,1,2-Trichloroethane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.001	U
Trichloroethene	nr		nr		nr		0.005	U	0.005	U	0.005	U
1,1, 2 - Trichloro -1, 2, 2 -trifluoroethane	nr		nr		nr		nr		nr		0.001	U
Trichlorofluoromethane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.001	U
1,2,3-Trichloropropane	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Tridecane	nr		nr		nr		nr		nr		nr	
1,2,4-Trimethylbenzene	nr		nr		nr		nr		nr		nr	
1,2,3-Trimethylbenzene	0.005	U	0.005	U	0.005	U	0.011		0.0039	J	0.012	
1,3,5-Trimethylbenzene	0.005	U	0.005	U	0.005	U	0.0069	U	0.0073	U	0.005	U
2,3,4-Trimethylhexane	nr		nr		nr		nr		nr		nr	
Vinyl Acetate	nr		nr		nr		nr		nr		nr	
Vinyl chloride	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.001	U
m+p-Xylenes	nr		nr		nr		0.021		0.0047	J	0.021	
o-Xylene	nr		nr		nr		0.012		0.0026	J	0.012	
Xylenes (Total)	0.01	U	0.01	U	0.01	U	0.01	U	nr		nr	

Table A.5
Groundwater Analytical Data - 1999 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site	Sauer Dump FB-1	Sauer Dump GW-1	Sauer Dump GW-2	Sauer Dump TB-1	Sauer Dump GW-00	Sauer Dump GW-1a	Sauer Dump GW-2a	Sauer Dump Trip Blank	Sauer Dump MW-1	Sauer Dump MW-2	Sauer Dump MW-3	Sauer Dump MW-4
Sample Identification												
Alt. Sample Identification												
Alt. Sample Identification/VOCs and SVOCs	A900929	A900916	A900917	A900930	99121530	99121528	99121529	99121531				
Alt. Sample Identification/Inorg.	M700304	M700302	M700303									
Alt. Sample Identification/PCB's	A900959	A900957	A900958									
Date of Sample Collection	09/29/99	09/29/99	09/29/99	09/29/99	12/15/99	12/15/99	12/15/99	12/15/99	12/27/01	12/27/01	12/27/01	12/27/01
Sampler	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	ENSAT	ENSAT	ENSAT	ENSAT
Sample Type	Water	Groundwater	Groundwater	Water	Groundwater	Groundwater	Groundwater	Water	Groundwater	Groundwater	Groundwater	Groundwater
Matrix	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Field QC	Field Blank			Trip Blank	Dup. Of GW-2a	Resampling of GW-1	Resampling of GW-2	Trip Blank				
SVOCs												
Analytical Method	EPA 625	EPA 625	EPA 625						EPA 8270	EPA 8270	EPA 8270	EPA 8270
Dilution Factor												
% Moisture	NA	NA	NA						NA	NA	NA	NA
Units	mg/L	mg/L	mg/L						mg/L	mg/L	mg/L	mg/L
Notes	Incomplete lab report: "No other SVOCs detected"	Incomplete lab report: "No other SVOCs detected"	Incomplete lab report: "No SVOCs detected"									
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Acenaphthene									0.01	U	0.001	J
Acenaphthylene									0.01	U	0.01	U
Acetophenone									0.01	U	0.01	U
Anthracene									0.01	U	0.01	U
Atrazine									0.01	U	0.01	U
Benzaldehyde									nr		nr	
Benzo(a)Anthracene									0.01	U	0.01	U
Benzo(a)Pyrene									0.01	U	0.01	U
Benzo(b)fluoranthene									0.01	U	0.01	U
Benzo(g,h,i)Perylene									0.01	U	0.01	U
Benzo(k)fluoranthene									0.01	U	0.01	U
Benzylbutylphthalate/Butylbenzylphthalate									0.01	U	0.01	U
1,1'-Biphenyl									0.01	U	0.01	U
4-Bromophenyl-phenylether									0.01	U	0.01	U
Caprolactam									0.01	U	0.01	U
Carbazole									0.01	U	0.01	U
4-Chloroaniline									0.01	U	0.01	U
bis(2-Chloroethoxy)Methane									0.01	U	0.01	U
bis(2-Chloroethyl)Ether									0.01	U	0.01	U
bis(2-Chloroisopropyl)Ether									0.01	U	0.01	U
4-Chloro-3-Methylphenol									0.01	U	0.01	U
2-Chloronaphthalene									0.01	U	0.01	U
2-Chlorophenol									0.01	U	0.01	U
4-Chlorophenyl-phenylether									0.01	U	0.01	U
Chrysene									0.01	U	0.01	U
Dibenzo(a,h)Anthracene									0.01	U	0.01	U
Dibenzofuran									0.01	U	0.01	U
1,2-Dichlorobenzene									nr		nr	
1,3-Dichlorobenzene									nr		nr	
1,4-Dichlorobenzene									nr		nr	
3,3'-Dichlorobenzidine									0.01	U	0.01	U
2,4-Dichlorophenol									0.01	U	0.01	U
Diethylphthalate	0.04442	B							0.01	U	0.01	U
2,4-Dimethylphenol									0.01	U	0.01	U
Dimethyl Phthalate									0.01	U	0.01	U
Di-n-Butylphthalate									0.01	U	0.01	U
4,6-Dinitro-2-Methylphenol									0.025	U	0.025	U
2,4-Dinitrophenol									0.025	U	0.025	U
2,4-Dinitrotoluene									0.01	U	0.01	U
2,6-Dinitrotoluene									0.01	U	0.01	U
Di-n-Octyl Phthalate									0.01	U	0.01	U
bis(2-Ethylhexyl)Phthalate			0.01443						0.01	U	0.01	U
Fluoranthene									0.01	U	0.01	U
Fluorene									0.01	U	0.01	U
Hexachlorobenzene									0.01	U	0.01	U
Hexachlorobutadiene									0.01	U	0.01	U
Hexachlorocyclopentadiene									0.01	U	0.01	U
Hexachloroethane									0.01	U	0.01	U
Indeno(1,2,3-cd)Pyrene									0.01	U	0.01	U
Isophorone									0.01	U	0.01	U
2-Methylnaphthalene									0.01	U	0.003	J
2-Methylphenol									0.01	U	0.01	U
4-Methylphenol									0.01	U	0.01	U
MethylMercury									nr		nr	
Naphthalene									0.01	U	0.004	J
2-Nitroaniline									0.01	U	0.01	U
3-Nitroaniline									0.025	U	0.025	U
4-Nitroaniline									0.01	U	0.01	U
Nitrobenzene									0.01	U	0.01	U
2-Nitrophenol									0.01	U	0.01	U
4-Nitrophenol									0.025	U	0.025	U
N-Nitroso-Di-n-Propylamine									0.01	U	0.01	U
N-Nitrosodiphenylamine									0.01	U	0.01	U
2,2-Oxybis(1-Chloropropane)									nr		nr	
Pentachlorophenol									0.025	U	0.025	U
Phenanthrene									0.01	U	0.01	U
Phenol									0.01	U	0.01	U
Pyrene									0.01	U	0.01	U
1,2,4-Trichlorobenzene									nr		nr	
2,4,5-Trichlorophenol									0.025	U	0.025	U
2,4,6-Trichlorophenol									0.01	U	0.01	U

Table A.5
Groundwater Analytical Data - 1999 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site	Sauer Dump FB-1	Sauer Dump GW-1	Sauer Dump GW-2	Sauer Dump TB-1	Sauer Dump GW-00	Sauer Dump GW-1a	Sauer Dump GW-2a	Sauer Dump Trip Blank	Sauer Dump MW-1	Sauer Dump MW-2	Sauer Dump MW-3	Sauer Dump MW-4
Sample Identification												
Alt. Sample Identification												
Alt. Sample Identification/VOCs and SVOCs	A900929	A900916	A900917	A900930	99121530	99121528	99121529	99121531				
Alt. Sample Identification/Inorg.	M700304	M700302	M700303									
Alt. Sample Identification/PCB's	A900959	A900957	A900958									
Date of Sample Collection	09/29/99	09/29/99	09/29/99	09/29/99	12/15/99	12/15/99	12/15/99	12/15/99	12/27/01	12/27/01	12/27/01	12/27/01
Sampler	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE	ENSAT	ENSAT	ENSAT	ENSAT
Sample Type	Water	Groundwater	Groundwater	Water	Groundwater	Groundwater	Groundwater	Water	Groundwater	Groundwater	Groundwater	Groundwater
Matrix	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Field QC	Field Blank			Trip Blank	Dup. Of GW-2a	Resampling of GW-1	Resampling of GW-2	Trip Blank				
Inorganics/Total Metals												
Analytical Method												
Dilution Factor												
% Moisture												
Units			NA mg/L		NA mg/L		NA mg/L		NA mg/L		NA mg/L	
Notes												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	nr		nr		nr		nr		nr		0.16	
Antimony	nr		nr		nr		nr		nr		0.006	U
Arsenic	nr		nr		nr		nr		nr		0.035	
Barium	nr		nr		nr		nr		nr		0.53	
Beryllium	nr		nr		nr		nr		nr		0.004	U
Cadmium	nr		nr		nr		nr		nr		0.005	U
Calcium	nr		nr		nr		nr		nr		246	
Chromium	nr		nr		nr		nr		nr		0.025	U
Chromium III	nr		nr		nr		nr		nr		nr	
Chromium VI	nr		nr		nr		nr		nr		nr	
Cobalt	nr		nr		nr		nr		nr		0.025	U
Copper	nr		nr		nr		nr		nr		0.025	U
Iron	nr		nr		nr		nr		nr		0.9	
Lead	nr		nr		nr		nr		nr		0.01	U
Magnesium	nr		nr		nr		nr		nr		100	
Manganese	nr		nr		nr		nr		nr		0.4	
Mercury	nr		nr		nr		nr		nr		0.0005	U
Nickel	nr		nr		nr		nr		nr		0.064	
Potassium	nr		nr		nr		nr		nr		38	
Selenium	nr		nr		nr		nr		nr		0.005	U
Silver	nr		nr		nr		nr		nr		0.01	U
Sodium	nr		nr		nr		nr		nr		790	
Thallium	nr		nr		nr		nr		nr		0.002	U
Tin	nr		nr		nr		nr		nr		nr	
Vanadium	nr		nr		nr		nr		nr		0.025	U
Zinc	nr		nr		nr		nr		nr		0.031	
Cyanide	0.005	U	0.005	U	0.005	U	nr		nr		nr	
Dissolved Metals												
Analytical Method												
Dilution Factor	Not Reported		Not Reported		Not Reported							
% Moisture	NA		NA		NA							
Units	mg/L		mg/L		mg/L						EPA 200.8	
Notes												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	0.5	U	0.5	U	0.5	U	nr		nr		nr	
Antimony	0.05	U	0.05	U	0.05	U	nr		nr		nr	
Arsenic	0.05	U	0.05	U	0.05	U	nr		nr		nr	
Barium	0.5	U	0.5	U	0.5	U	nr		nr		nr	
Beryllium	0.05	U	0.05	U	0.05	U	nr		nr		nr	
Cadmium	0.1	U	0.1	U	0.1	U	nr		nr		nr	
Calcium	1	U	127		24.6		nr		nr		nr	
Chromium	0.1	U	0.1	U	0.1	U	nr		nr		nr	
Cobalt	0.1	U	0.1	U	0.1	U	nr		nr		nr	
Copper	0.1	U	0.1	U	0.1	U	nr		nr		nr	
Iron	0.5	U	0.5	U	0.5	U	nr		nr		nr	
Lead	0.25	U	0.25	U	0.25	U	nr		nr		nr	
Magnesium	1	U	83.1		26.6		nr		nr		nr	
Manganese	0.05	U	0.1		0.05	U	nr		nr		nr	
Mercury	0.002	U	0.002	U	0.002	U	nr		nr		nr	
Nickel	0.1	U	0.1	U	0.1	U	nr		nr		nr	
Potassium	1	U	70.2		53		nr		nr		nr	
Selenium	0.05	U	0.05	U	0.05	U	nr		nr		nr	
Silver	0.05	U	0.05	U	0.05	U	nr		nr		nr	
Sodium	1	U	412		85.1		nr		nr		nr	
Thallium	0.025	U	0.025	U	0.025	U	nr		nr		nr	
Vanadium	0.1	U	0.1	U	0.1	U	nr		nr		nr	
Zinc	0.05	U	0.05	U	0.05	U	nr		nr		nr	

Table A.5
Groundwater Analytical Data - 1999 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump FB-1 A900929 M700304 A900959 09/29/99 MDE Water Aqueous Field Blank	Sauer Dump GW-1 A900916 M700302 A900957 09/29/99 MDE Groundwater Aqueous	Sauer Dump GW-2 A900917 M700303 A900958 09/29/99 MDE Groundwater Aqueous	Sauer Dump TB-1 A900930 09/29/99 MDE Water Aqueous Trip Blank	Sauer Dump GW-00 99121530 12/15/99 MDE Groundwater Aqueous Dup. Of GW-2a	Sauer Dump GW-1a 99121528 12/15/99 MDE Groundwater Aqueous Resampling of GW-1	Sauer Dump GW-2a 99121529 12/15/99 MDE Groundwater Aqueous Resampling of GW-2	Sauer Dump Trip Blank 99121531 12/15/99 MDE Water Aqueous Trip Blank	Sauer Dump MW-1 12/27/01 ENSAT Groundwater Aqueous	Sauer Dump MW-2 12/27/01 ENSAT Groundwater Aqueous	Sauer Dump MW-3 12/27/01 ENSAT Groundwater Aqueous	Sauer Dump MW-4 12/27/01 ENSAT Groundwater Aqueous												
Pesticides/PCBs																								
Analytical Method Dilution Factor % Moisture Units Notes	EPA 608 Not reported NA mg/L		EPA 608 Not Reported NA mg/L		EPA 608 Not Reported NA mg/L				NA mg/L		NA mg/L		NA mg/L				EPA 8081/8082 NA mg/L		EPA 8081/8082 NA mg/L		EPA 8081/8082 NA mg/L		EPA 8081/8082 NA mg/L	
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	0.0001	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
alpha-BHC	0.0001	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
beta-BHC	0.0001	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
delta-BHC			0.0005	U	0.0005	U											0.00008	U	0.00008	U	0.00008	U	0.00008	U
gamma-BHC (Lindane)	0.0001	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
alpha-Chlordane	0.0001	U	nr		nr		nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
Chlordane, total	nr		0.0005	U	0.0005	U	nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	0.0001	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
4,4'-DDE	0.0001	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
4,4'-DDT	0.0001	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
Dieldrin	0.0001	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
Endosulfan I	0.0001	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
Endosulfan II	0.0001	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
Endosulfan sulfate	0.0001	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
Endrin	0.0001	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
Endrin aldehyde	0.0001	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
Endrin ketone	0.0001	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
Heptachlor	0.0001	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
Heptachlor epoxide	0.0001	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
Methoxychlor	0.0001	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.00008	U	0.00008	U	0.00008	U	0.00008	U
Toxaphene	0.05	U	0.005	U	0.005	U	nr		nr		nr		nr		nr		0.002	U	0.002	U	0.002	U	0.002	U
Aroclor-1016	0.005	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.0005	U	0.0005	U	0.0005	U	0.0005	U
Aroclor-1221	0.005	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.0005	U	0.0005	U	0.0005	U	0.0005	U
Aroclor-1232	0.005	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.0005	U	0.0005	U	0.0005	U	0.0005	U
Aroclor-1242	0.005	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.0005	U	0.0005	U	0.0005	U	0.0005	U
Aroclor-1248	nr		nr		nr		nr		nr		nr		nr		nr		0.0005	U	0.0005	U	0.0005	U	0.0005	U
Aroclor-1254	0.005	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.0005	U	0.0005	U	0.0005	U	0.0005	U
Aroclor-1260	0.005	U	0.0005	U	0.0005	U	nr		nr		nr		nr		nr		0.0005	U	0.0005	U	0.0005	U	0.0005	U
Total PCBs																								
Other Analytes : PCB Homologues																								
Analytical Method Dilution Factor % Moisture Units Notes																								
Analyte																								
Monochlorobiphenyl (total)																								
Dichlorobiphenyl (total)																								
Trichlorobiphenyl (total)																								
Tetrachlorobiphenyl (total)																								
Pentachlorobiphenyl (total)																								
Hexachlorobiphenyl (total)																								
Heptachlorobiphenyl (total)																								
Octachlorobiphenyl (total)																								
Nonachlorobiphenyl (total)																								
Decachlorobiphenyl (total)																								
Total PCB Homologs																								

Table A.5
Groundwater Analytical Data - 1999 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump MW-5	Sauer Dump MW-A	Sauer Dump FB-1	Sauer Dump TB-1	Sauer Dump MW-1	Sauer Dump MW-2	Sauer Dump MW-3	Sauer Dump MW-4	Sauer Dump MW-5	Sauer Dump FB(FIELD BLANK)	Sauer Dump LAB BLANK	Sauer Dump MW-2-F C7B080261002
VOCs	yes	yes	yes	yes	no	no	no	no	no	no	no	no
SVOCs	yes	yes	yes	yes	no	no	no	no	no	no	no	no
Inorganics/Total Metals	yes	yes	yes	yes	no	no	no	no	no	no	no	no
Dissolved Metals	yes	yes	yes	yes	no	no	no	no	no	no	no	Yes - Lead Only
PCBs/Pesticides	yes	yes	yes	yes	yes - PCB Congeners only	yes - PCB Congeners only	yes - PCB Congeners only	yes - PCB Congeners only	yes - PCB Congeners only	yes - PCB Congeners only	yes - PCB Congeners only	Yes - PCBs only
Other Analytes	no	no	no	no	no	no	no	no	no	no	no	Yes - PCBs homologues
VOCs												
Analytical Method	EPA 8260	EPA 8260	EPA 8260	EPA 8260								
Dilution Factor												
% Moisture	NA	NA	NA	NA								
Units	mg/L	mg/L	mg/L	mg/L								
Notes												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag				
Acetone	0.01	U	0.01	U	0.05	U	0.05	U				
Acetonitrile	nr		nr		nr		nr					
Acrolein	nr		nr		nr		nr					
Acrylonitrile	nr		nr		nr		nr					
Allyl Alcohol	nr		nr		nr		nr					
Allyl Chloride	nr		nr		nr		nr					
Benzene	0.001	U	0.001	U	0.005	U	0.005	U				
Benzene (2-Methyl-1-Propeny	nr		nr		nr		nr					
Benzyl Chloride	nr		nr		nr		nr					
Bromoacetone	nr		nr		nr		nr					
Bromobenzene	nr		nr		nr		nr					
Bromochloromethane/Chlorobromomethane	nr		nr		nr		nr					
Bromodichloromethane	0.001	U	0.001	U	0.005	U	0.005	U				
Bromoform	0.001	U	0.001	U	0.005	U	0.005	U				
Bromomethane/Methyl bromide	0.001	U	0.001	U	0.005	U	0.005	U				
2-Butanone (Methyl Ethyl Ketone)	0.05	U	0.05	U	0.05	U	0.05	U				
n-Butylbenzene	nr		nr		nr		nr					
sec-Butylbenzene	nr		nr		nr		nr					
tert-Butylbenzene	nr		nr		nr		nr					
Camphene	nr		nr		nr		nr					
Carbon Disulfide	0.01	U	0.01	U	0.05	U	0.05	U				
Carbon Tetrachloride	0.001	U	0.001	U	0.005	U	0.005	U				
Chlorobenzene	0.001	U	0.001	U	0.005	U	0.005	U				
Chloroethane/Ethyl chloride	0.001	U	0.001	U	0.005	U	0.005	U				
2-Chloroethanol/Ethylene chlorohydrin	nr		nr		nr		nr					
2-Chloroethylvinyl Ether	nr		nr		nr		nr					
Chloroform	0.001	U	0.001	U	0.005	U	0.005	U				
Chloromethane/Methyl chloride	0.001	U	0.001	U	0.005	U	0.005	U				
Chloroprene	nr		nr		nr		nr					
2-Chlorotoluene	nr		nr		nr		nr					
4-Chlorotoluene	nr		nr		nr		nr					
Cyclohexane	0.001	U	0.001	U	0.005	U	0.005	U				
Cyclohexane, Butyl-	nr		nr		nr		nr					
1,3-Cyclopentadiene	nr		nr		nr		nr					
Decahydro-naphthalene	nr		nr		nr		nr					
Dibromochloromethane/Chlorodibromomethane	0.001	U	0.001	U	0.005	U	0.005	U				
trans-1,4-Dichloro-2-butene	nr		nr		nr		nr					
1,4-Dichloro-2-butene	nr		nr		nr		nr					
1,2-Dibromo-3-chloropropane	0.01	U	0.01	U	0.05	U	0.05	U				
1,2-Dibromoethane	0.001	U	0.001	U	0.005	U	0.005	U				
1,2-Dichlorobenzene	0.001	U	0.001	U	0.005	U	0.005	U				
1,3-Dichlorobenzene	0.001	U	0.001	U	0.005	U	0.005	U				
1,4-Dichlorobenzene	0.001	U	0.001	U	0.005	U	0.005	U				
Dichlorodifluoromethane	0.001	U	0.001	U	0.005	U	0.005	U				
1,1-Dichloroethane	0.001	U	0.001	U	0.005	U	0.005	U				
1,2-Dichloroethane	0.001	U	0.001	U	0.005	U	0.005	U				
1,1-Dichloroethene	0.001	U	0.001	U	0.005	U	0.005	U				
cis-1,2-Dichloroethene	0.001	U	0.001	U	0.005	U	0.005	U				
trans-1,2-Dichloroethene	0.001	U	0.001	U	0.005	U	0.005	U				
1,2-Dichloroethene (Total)	nr		nr		nr		nr					
Dichloromethane	nr		nr		nr		nr					
1,2-Dichloropropane	0.001	U	0.001	U	0.005	U	0.005	U				
1,3-Dichloropropane	nr		nr		nr		nr					
2,2-Dichloropropane	nr		nr		nr		nr					
1,3-Dichloro-2-Propanol	nr		nr		nr		nr					
1,1-Dichloropropene	nr		nr		nr		nr					
cis-1,3-Dichloropropene	0.001	U	0.001	U	0.005	U	0.005	U				
trans-1,3-Dichloropropene	0.001	U	0.001	U	0.005	U	0.005	U				
1,3-Dichloropropylene	nr		nr		nr		nr					
1,2:3,4-Diepoxybutane	nr		nr		nr		nr					
1,2-Dimetyl-Naphthalene	nr		nr		nr		nr					
1,3-Dimetyl-Naphthalene	nr		nr		nr		nr					
1,6-Dimetyl-Naphthalene	nr		nr		nr		nr					
2,3-Dimetyl-Naphthalene	nr		nr		nr		nr					
2,6-Dimetyl-Naphthalene	nr		nr		nr		nr					
2,6-Dimethyl Octane	nr		nr		nr		nr					
3,5-Dimethyl Octane	nr		nr		nr		nr					

Table A.5
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Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump MW-5	Sauer Dump MW-A	Sauer Dump FB-1	Sauer Dump TB-1	Sauer Dump MW-1	Sauer Dump MW-2	Sauer Dump MW-3	Sauer Dump MW-4	Sauer Dump MW-5	Sauer Dump FB(FIELD BLANK)	Sauer Dump LAB BLANK	Sauer Dump MW-2-F C7B080261002
	12/27/01 ENSAT Groundwater Aqueous	12/27/01 ENSAT Groundwater Aqueous Dup. Of MW-1	12/27/01 ENSAT Groundwater Aqueous Field Blank	12/27/01 ENSAT Groundwater Aqueous Trip Blank	08/12/02 ENSAT Groundwater Aqueous	08/12/02 ENSAT Groundwater Aqueous	08/12/02 ENSAT Groundwater Aqueous	08/12/02 ENSAT Groundwater Aqueous	08/12/02 ENSAT Groundwater Aqueous	08/12/02 ENSAT Aqueous Field Blank	08/12/02 ENSAT Aqueous Lab Blank	02/07/07 Malcolm Pirnie Groundwater Aqueous
VOCs (cont.)	EPA 8260	EPA 8260	EPA 8260	EPA 8260								
Analytical Method	NA	NA	NA	NA								
Dilution Factor	mg/L	mg/L	mg/L	mg/L								
% Moisture												
Units												
Notes												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag				
1,4-Dioxane	nr		nr		nr		nr					
Dodecane, 6-Methyl-	nr		nr		nr		nr					
Ethanol	nr		nr		nr		nr					
Ethylbenzene	0.001	U	0.001	U	0.005	U	0.005	U				
1-Ethyl-2,3-Dimethyl-Benzene	nr		nr		nr		nr					
4-Ethyl-1,2-Dimethylbenzene	nr		nr		nr		nr					
1-Ethyl-2-Methyl-Benzene	nr		nr		nr		nr					
1-Ethyl-3-Methylcyclohexane	nr		nr		nr		nr					
1-Ethyl-4-Methylcyclohexane	nr		nr		nr		nr					
Ethylene Oxide	nr		nr		nr		nr					
Ethylmethacrylate	nr		nr		nr		nr					
Epichlorohydrin	nr		nr		nr		nr					
Hexachlorobutadiene	nr		nr		nr		nr					
Hexane	nr		nr		nr		nr					
2-Hexanone	0.01	U	0.01	U	0.05	U	0.05	U				
2-Hydroxypropionitrile	nr		nr		nr		nr					
Isobutyl alcohol	nr		nr		nr		nr					
Isopropylbenzene	0.001	U	0.001	U	0.005	U	0.005	U				
p-Isopropyl Toluene	nr		nr		nr		nr					
Malononitrile	nr		nr		nr		nr					
Methacrylonitrile	nr		nr		nr		nr					
Methyl Acetate	0.001	U	0.001	U	0.005	U	0.005	U				
Methylcyclohexane	0.001	U	0.001	U	0.005	U	0.005	U				
1-Methyl-2- Benzene (1 Methyl)	nr		nr		nr		nr					
1-Methyl-3- Benzene (1 Methyl)	nr		nr		nr		nr					
1-Methyl-4- Benzene (1 Methyl)	nr		nr		nr		nr					
Methylene Bromide	nr		nr		nr		nr					
Methylene Chloride	0.001	U	0.001	U	0.005	U	0.002	JB				
1-Methyl-indan	nr		nr		nr		nr					
Methyl Iodide/Iodomethane	nr		nr		nr		nr					
Methylmethacrylate	nr		nr		nr		nr					
2-Methyl-Naphthalene	nr		nr		nr		nr					
4-Methyl-Nonane	nr		nr		nr		nr					
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	0.01	U	0.01	U	0.05	U	0.05	U				
O-(2-Methyl Propyl Hydroxylamine	nr		nr		nr		nr					
Methyl-t-Butyl Ether	0.01	U	0.002		0.05	U	0.05	U				
Naphthalene	nr		nr		nr		nr					
Naphthalene, decahydro-, trans-	nr		nr		nr		nr					
Pentachloroethane	nr		nr		nr		nr					
Propargyl Alcohol	nr		nr		nr		nr					
Propiolactone	nr		nr		nr		nr					
Propionitrile	nr		nr		nr		nr					
Propylamine	nr		nr		nr		nr					
n-Propylbenzene	nr		nr		nr		nr					
Styrene	0.001	U	0.001	U	0.005	U	0.005	U				
1,1,1,2-Tetrachloroethane	nr		nr		nr		nr					
1,1,2,2-Tetrachloroethane	0.001	U	0.001	U	0.005	U	0.005	U				
Tetrachloroethene	0.001	U	0.001	U	0.005	U	0.005	U				
1,2,4,5-Tetramethylbenzene	nr		nr		nr		nr					
Toluene	0.001	U	0.001	U	0.005	U	0.005	U				
1,2,3-Trichlorobenzene	nr		nr		nr		nr					
1,2,4-Trichlorobenzene	0.001	U	0.001	U	0.005	U	0.005	U				
1,1,1-Trichloroethane	0.001	U	0.001	U	0.005	U	0.005	U				
1,1,2-Trichloroethane	0.001	U	0.001	U	0.005	U	0.005	U				
Trichloroethene	0.001	U	0.001	U	0.005	U	0.005	U				
1,1,2 - Trichloro -1, 2, 2 -trifluoroethane	0.001	U	0.001	U	0.005	U	0.005	U				
Trichlorofluoromethane	0.001	U	0.001	U	0.005	U	0.005	U				
1,2,3-Trichloropropane	nr		nr		nr		nr					
Tridecane	nr		nr		nr		nr					
1,2,4-Trimethylbenzene	nr		nr		nr		nr					
1,2,3-Trimethylbenzene	nr		nr		nr		nr					
1,3,5-Trimethylbenzene	nr		nr		nr		nr					
2,3,4-Trimethylhexane	nr		nr		nr		nr					
Vinyl Acetate	nr		nr		nr		nr					
Vinyl chloride	0.001	U	0.001	U	0.005	U	0.005	U				
m+p-Xylenes	nr		nr		nr		nr					
o-Xylene	nr		nr		nr		nr					
Xylenes (Total)	0.015	U	0.015	U	0.075	U	0.075	U				

Table A.5
Groundwater Analytical Data - 1999 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump MW-5	Sauer Dump MW-A	Sauer Dump FB-1	Sauer Dump TB-1	Sauer Dump MW-1	Sauer Dump MW-2	Sauer Dump MW-3	Sauer Dump MW-4	Sauer Dump MW-5	Sauer Dump FB(FIELD BLANK)	Sauer Dump LAB BLANK	Sauer Dump MW-2-F C7B080261002
	12/27/01 ENSAT Groundwater Aqueous	12/27/01 ENSAT Groundwater Dup. Of MW-1	12/27/01 ENSAT Groundwater Field Blank	12/27/01 ENSAT Groundwater Trip Blank	08/12/02 ENSAT Groundwater Aqueous	08/12/02 ENSAT Groundwater Aqueous	08/12/02 ENSAT Groundwater Aqueous	08/12/02 ENSAT Groundwater Aqueous	08/12/02 ENSAT Groundwater Aqueous	08/12/02 ENSAT Aqueous Field Blank	08/12/02 ENSAT Aqueous Lab Blank	02/07/07 Malcolm Pirnie Groundwater Aqueous
SVOCs												
Analytical Method	EPA 8270	EPA 8270	EPA 8270	EPA 8270								
Dilution Factor												
% Moisture	NA	NA	NA	NA								
Units	mg/L	mg/L	mg/L	mg/L								
Notes												
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag				
Acenaphthene	0.01	U	0.001	J	0.01	U	0.01	U				
Acenaphthylene	0.01	U	0.01	U	0.01	U	0.01	U				
Acetophenone	0.01	U	0.01	U	0.01	U	0.01	U				
Anthracene	0.01	U	0.01	U	0.01	U	0.01	U				
Atrazine	0.01	U	0.01	U	0.01	U	0.01	U				
Benzaldehyde	nr		nr		nr		nr					
Benzo(a)Anthracene	0.01	U	0.01	U	0.01	U	0.01	U				
Benzo(a)Pyrene	0.01	U	0.01	U	0.01	U	0.01	U				
Benzo(b)fluoranthene	0.01	U	0.01	U	0.01	U	0.01	U				
Benzo(g,h,i)Perylene	0.01	U	0.01	U	0.01	U	0.01	U				
Benzo(k)fluoranthene	0.01	U	0.01	U	0.01	U	0.01	U				
Benzylbutylphthalate/Butylbenzylphthalate	0.01	U	0.01	U	0.01	U	0.01	U				
1,1'-Biphenyl	0.01	U	0.01	U	0.01	U	0.01	U				
4-Bromophenyl-phenylether	0.01	U	0.01	U	0.01	U	0.01	U				
Caprolactam	0.01	U	0.01	U	0.01	U	0.01	U				
Carbazole	0.01	U	0.01	U	0.01	U	0.01	U				
4-Chloroaniline	0.01	U	0.01	U	0.01	U	0.01	U				
bis(2-Chloroethoxy)Methane	0.01	U	0.01	U	0.01	U	0.01	U				
bis(2-Chloroethyl)Ether	0.01	U	0.01	U	0.01	U	0.01	U				
bis(2-Chloroisopropyl)Ether	0.01	U	0.01	U	0.01	U	0.01	U				
4-Chloro-3-Methylphenol	0.01	U	0.01	U	0.01	U	0.01	U				
2-Chloronaphthalene	0.01	U	0.01	U	0.01	U	0.01	U				
2-Chlorophenol	0.01	U	0.01	U	0.01	U	0.01	U				
4-Chlorophenyl-phenylether	0.01	U	0.01	U	0.01	U	0.01	U				
Chrysene	0.01	U	0.01	U	0.01	U	0.01	U				
Dibenzo(a,h)Anthracene	0.01	U	0.01	U	0.01	U	0.01	U				
Dibenzofuran	0.01	U	0.01	U	0.01	U	0.01	U				
1,2-Dichlorobenzene	nr		nr		nr		nr					
1,3-Dichlorobenzene	nr		nr		nr		nr					
1,4-Dichlorobenzene	nr		nr		nr		nr					
3,3'-Dichlorobenzidine	0.01	U	0.01	U	0.01	U	0.01	U				
2,4-Dichlorophenol	0.01	U	0.01	U	0.01	U	0.01	U				
Diethylphthalate	0.01	U	0.01	U	0.01	U	0.01	U				
2,4-Dimethylphenol	0.01	U	0.01	U	0.01	U	0.01	U				
Dimethyl Phthalate	0.01	U	0.01	U	0.01	U	0.01	U				
Di-n-Butylphthalate	0.01	U	0.01	U	0.01	U	0.01	U				
4,6-Dinitro-2-Methylphenol	0.025	U	0.025	U	0.025	U	0.025	U				
2,4-Dinitrophenol	0.025	U	0.025	U	0.025	U	0.025	U				
2,4-Dinitrotoluene	0.01	U	0.01	U	0.01	U	0.01	U				
2,6-Dinitrotoluene	0.01	U	0.01	U	0.01	U	0.01	U				
Di-n-Octyl Phthalate	0.01	U	0.01	U	0.01	U	0.01	U				
bis(2-Ethylhexyl)Phthalate	0.01	U	0.01	U	0.01	U	0.01	U				
Fluoranthene	0.01	U	0.01	U	0.01	U	0.01	U				
Fluorene	0.01	U	0.01	U	0.01	U	0.01	U				
Hexachlorobenzene	0.01	U	0.01	U	0.01	U	0.01	U				
Hexachlorobutadiene	0.01	U	0.01	U	0.01	U	0.01	U				
Hexachlorocyclopentadiene	0.01	U	0.01	U	0.01	U	0.01	U				
Hexachloroethane	0.01	U	0.01	U	0.01	U	0.01	U				
Indeno(1,2,3-cd)Pyrene	0.01	U	0.01	U	0.01	U	0.01	U				
Isophorone	0.01	U	0.01	U	0.01	U	0.01	U				
2-Methylnaphthalene	0.01	U	0.01	U	0.01	U	0.01	U				
2-Methylphenol	0.01	U	0.01	U	0.01	U	0.01	U				
4-Methylphenol	0.01	U	0.01	U	0.01	U	0.01	U				
MethylMercury	nr		nr		nr		nr					
Naphthalene	0.01	U	0.01	U	0.01	U	0.01	U				
2-Nitroaniline	0.01	U	0.01	U	0.01	U	0.01	U				
3-Nitroaniline	0.025	U	0.025	U	0.025	U	0.025	U				
4-Nitroaniline	0.01	U	0.01	U	0.01	U	0.01	U				
Nitrobenzene	0.01	U	0.01	U	0.01	U	0.01	U				
2-Nitrophenol	0.01	U	0.01	U	0.01	U	0.01	U				
4-Nitrophenol	0.025	U	0.025	U	0.025	U	0.025	U				
N-Nitroso-Di-n-Propylamine	0.01	U	0.01	U	0.01	U	0.01	U				
N-Nitrosodiphenylamine	0.01	U	0.01	U	0.01	U	0.01	U				
2,2-Oxybis(1-Chloropropane)	nr		nr		nr		nr					
Pentachlorophenol	0.025	U	0.025	U	0.025	U	0.025	U				
Phenanthrene	0.01	U	0.01	U	0.01	U	0.01	U				
Phenol	0.01	U	0.01	U	0.01	U	0.01	U				
Pyrene	0.01	U	0.01		0.01	U	0.01	U				
1,2,4-Trichlorobenzene	nr		nr		nr		nr					
2,4,5-Trichlorophenol	0.025	U	0.025	U	0.025	U	0.025	U				
2,4,6-Trichlorophenol	0.01	U	0.01	U	0.01	U	0.01	U				

Table A.5
Groundwater Analytical Data - 1999 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump MW-5 12/27/01 ENSAT Groundwater Aqueous	Sauer Dump MW-A 12/27/01 ENSAT Groundwater Aqueous Dup. Of MW-1	Sauer Dump FB-1 12/27/01 ENSAT Groundwater Aqueous Field Blank	Sauer Dump TB-1 12/27/01 ENSAT Groundwater Aqueous Trip Blank	Sauer Dump MW-1 08/12/02 ENSAT Groundwater Aqueous	Sauer Dump MW-2 08/12/02 ENSAT Groundwater Aqueous	Sauer Dump MW-3 08/12/02 ENSAT Groundwater Aqueous	Sauer Dump MW-4 08/12/02 ENSAT Groundwater Aqueous	Sauer Dump MW-5 08/12/02 ENSAT Groundwater Aqueous	Sauer Dump FB(FIELD BLANK) 08/12/02 ENSAT Aqueous Field Blank	Sauer Dump LAB BLANK 08/12/02 ENSAT Aqueous Lab Blank	Sauer Dump MW-2-F C7B080261002 02/07/07 Malcolm Pirnie Groundwater Aqueous	
Inorganics/Total Metals	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8								SW846 6010B 1	
Analytical Method Dilution Factor % Moisture Units	NA mg/L	NA mg/L	NA mg/L	NA mg/L								ug/L	
Notes													
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag				Result	Flag
Aluminum	0.048		0.39		0.005	U	0.005	U				nr	
Antimony	0.006	U	0.006	U	0.006	U	0.006	U				nr	
Arsenic	0.025	U	0.035		0.005	U	0.005	U				nr	
Barium	0.32		0.56		0.005	U	0.011					nr	
Beryllium	0.004	U	0.004	U	0.004	U	0.004	U				nr	
Cadmium	0.005	U	0.005	U	0.001	U	0.001	U				nr	
Calcium	131		242		5	U	5	U				nr	
Chromium	0.025	U	0.025	U	0.005	U	0.005	U				nr	
Chromium III	nr		nr		nr		nr					nr	
Chromium VI	nr		nr		nr		nr					nr	
Cobalt	0.025	U	0.025	U	0.005	U	0.005	U				nr	
Copper	0.025	U	0.025	U	0.005	U	0.005	U				nr	
Iron	27		1.1		0.1	U	0.1	U				nr	
Lead	0.012		0.015		0.002	U	0.002	U				nr	
Magnesium	82		95		5	U	5	U				nr	
Manganese	0.91		0.38		0.005	U	0.005	U				nr	
Mercury	0.0005	U	0.0005	U	0.0005	U	0.0005	U				nr	
Nickel	0.034		0.061		0.005	U	0.005	U				nr	
Potassium	15		36		5	U	5	U				nr	
Selenium	0.005	U	0.005	U	0.005	U	0.005	U				nr	
Silver	0.01	U	0.01	U	0.002	U	0.013					nr	
Sodium	85		764		5	U	5	U				nr	
Thallium	0.002	U	0.002	U	0.002	U	0.002	U				nr	
Tin	nr		nr		nr		nr					nr	
Vanadium	0.025	U	0.025	U	0.005	U	0.005	U				nr	
Zinc	0.025	U	0.038		0.008		0.009					nr	
Cyanide												nr	
Dissolved Metals	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8								SW846 6010B 1	
Analytical Method Dilution Factor % Moisture Units	NA mg/L	NA mg/L	NA mg/L	NA mg/L								ug/L	
Notes													
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag				Result	Flag
Aluminum	0.025	U	0.025	U	0.017		0.007					nr	
Antimony	0.006	U	0.006	U	0.006	U	0.006	U				nr	
Arsenic	0.025	U	0.033		0.005	U	0.005	U				nr	
Barium	0.2		0.57		0.005	U	0.005	U				nr	
Beryllium	0.004	U	0.004	U	0.004	U	0.004	U				nr	
Cadmium	0.005	U	0.005	U	0.001	U	0.001	U				nr	
Calcium	126		246		5	U	5	U				nr	
Chromium	0.025	U	0.025	U	0.005	U	0.005	U				nr	
Cobalt	0.025	U	0.025	U	0.005	U	0.005	U				nr	
Copper	0.025	U	0.025	U	0.005	U	0.005	U				nr	
Iron	0.1	U	0.1	U	0.1	U	0.1	U				nr	
Lead	0.01	U	0.01	U	0.002	U	0.002	U				3	U
Magnesium	82		97		5	U	5	U				nr	
Manganese	0.87		0.27		0.005	U	0.005	U				nr	
Mercury	0.0005	U	0.0005	U	0.0005	U	0.0005	U				nr	
Nickel	0.03		0.069		0.005	U	0.005	U				nr	
Potassium	15		40		5	U	5	U				nr	
Selenium	0.005	U	0.005	U	0.005	U	0.005	U				nr	
Silver	0.01	U	0.01	U	0.002	U	0.002	U				nr	
Sodium	85		789		5	U	5	U				nr	
Thallium	0.002	U	0.002	U	0.002	U	0.002	U				nr	
Vanadium	0.025	U	0.025	U	0.005	U	0.005	U				nr	
Zinc	0.025	U	0.025	U	0.008		0.01					nr	

Table A.5
Groundwater Analytical Data - 1999 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump MW-5 12/27/01 ENSAT Groundwater Aqueous	Sauer Dump MW-A 12/27/01 ENSAT Groundwater Aqueous Dup. Of MW-1	Sauer Dump FB-1 12/27/01 ENSAT Groundwater Aqueous Field Blank	Sauer Dump TB-1 12/27/01 ENSAT Groundwater Aqueous Trip Blank	Sauer Dump MW-1 08/12/02 ENSAT Groundwater Aqueous	Sauer Dump MW-2 08/12/02 ENSAT Groundwater Aqueous	Sauer Dump MW-3 08/12/02 ENSAT Groundwater Aqueous	Sauer Dump MW-4 08/12/02 ENSAT Groundwater Aqueous	Sauer Dump MW-5 08/12/02 ENSAT Groundwater Aqueous	Sauer Dump FB(FIELD BLANK) 08/12/02 ENSAT Aqueous Field Blank	Sauer Dump LAB BLANK 08/12/02 ENSAT Aqueous Lab Blank	Sauer Dump MW-2-F C7B080261002 02/07/07 Malcolm Pirnie Groundwater Aqueous										
Pesticides/PCBs																						
Analytical Method Dilution Factor % Moisture Units Notes	EPA 8081/8082 NA mg/L	EPA 8081/8082 NA mg/L	EPA 8081/8082 NA mg/L	EPA 8081/8082 NA mg/L								SW846 8082 1 ug/L										
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag				Result	Flag									
Aldrin	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
alpha-BHC	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
beta-BHC	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
delta-BHC	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
gamma-BHC (Lindane)	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
alpha-Chlordane	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
gamma-Chlordane	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
Chlordane, total	nr		nr		nr		nr					nr										
4,4'-DDD	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
4,4'-DDE	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
4,4'-DDT	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
Dieldrin	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
Endosulfan I	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
Endosulfan II	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
Endosulfan sulfate	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
Endrin	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
Endrin aldehyde	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
Endrin ketone	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
Heptachlor	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
Heptachlor epoxide	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
Methoxychlor	0.00008	U	0.00008	U	0.00008	U	0.00008	U				nr										
Toxaphene	0.002	U	0.002	U	0.002	U	0.002	U				nr										
Aroclor-1016	0.0005	U	0.0005	U	0.0005	U	0.0005	U				0.95	U									
Aroclor-1221	0.0005	U	0.0005	U	0.0005	U	0.0005	U				0.95	U									
Aroclor-1232	0.0005	U	0.0005	U	0.0005	U	0.0005	U				0.95	U									
Aroclor-1242	0.0005	U	0.0005	U	0.0005	U	0.0005	U				0.95	U									
Aroclor-1248	0.0005	U	0.0005	U	0.0005	U	0.0005	U				0.95	U									
Aroclor-1254	0.0005	U	0.0005	U	0.0005	U	0.0005	U				0.95	U									
Aroclor-1260	0.0005	U	0.0005	U	0.0005	U	0.0005	U				0.95	U									
Total PCBs												0.95	U									
Other Analytes : PCB Homologues																						
Analytical Method Dilution Factor % Moisture Units Notes							EPA 1668A N/A N/A pg/L		EPA 1668A N/A N/A pg/L		EPA 1668A N/A N/A pg/L		EPA 1668A N/A N/A pg/L		EPA 1668A N/A N/A pg/L		EPA 1668A N/A N/A pg/L		EPA 22 1668A 5 ng/L			
Analyte							Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag		
Monochlorobiphenyl (total)							3090		88300		39300		5430		1970		286		1.83	U	63	B,Q
Dichlorobiphenyl (total)							33300		192000		270000		133000		8130		1270		10.7		91	B,Q
Trichlorobiphenyl (total)							45700		85900		207000		164000		9860		1320		6.3		26	B,Q
Tetrachlorobiphenyl (total)							65800		32700		143000		40800		7930		447		4.12	U	6.3	B,Q
Pentachlorobiphenyl (total)							83400		10200		24100		3730		2170		235		13.3		0.46	Q,B
Hexachlorobiphenyl (total)							64900		5370		9300		1400		1640		392		77.4		0.069	Q,J,B
Heptachlorobiphenyl (total)							30300		2000		2750		361		836		107		9.03		0.04	U
Octachlorobiphenyl (total)							8230		607		376		71.6		182		6.86	U	7.41	U	0.04	U
Nonachlorobiphenyl (total)							1520		119		29.8		8.21		27.2		5.5	U	5.67	U	0.04	U
Decachlorobiphenyl (total)							135		16.2		5.6		3.76	U	12.6		4.51	U	4.31	U	0.04	U
Total PCB Homologs							336000		417000		697000		349000		32800		4060		117		186,829	

Table A.5
Groundwater Analytical Data - 1999 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump MW-2-T C7B080261001 02/07/07 Malcolm Pirnie Groundwater Aqueous		Sauer Dump MW-1R-F C7B090142002 02/08/07 Malcolm Pirnie Groundwater Aqueous		Sauer Dump MW-1R-T C7B090142001 02/08/07 Malcolm Pirnie Groundwater Aqueous		Sauer Dump MW-3-F C7B090142004 02/08/07 Malcolm Pirnie Groundwater Aqueous		Sauer Dump MW-3-T C7B090142003 02/08/07 Malcolm Pirnie Groundwater Aqueous		Sauer Dump MW-4-F C7B130171004 02/12/07 Malcolm Pirnie Groundwater Aqueous		Sauer Dump MW-4-T C7B130171003 02/12/07 Malcolm Pirnie Groundwater Aqueous		Sauer Dump MW-5-F C7B130171002 02/12/07 Malcolm Pirnie Groundwater Aqueous		Sauer Dump MW-5-T C7B130171001 02/12/07 Malcolm Pirnie Groundwater Aqueous	
Inorganics/Total Metals																		
Analytical Method	SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B	
Dilution Factor	1		1		1		1		1		1		1		1		1	
% Moisture																		
Units	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Notes																		
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Antimony	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Arsenic	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Barium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Beryllium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cadmium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Calcium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium III	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium VI	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Copper	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Iron	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Lead	3	U	nr		3	U	nr		1.7	J	nr		2.6	J	nr		5.7	
Magnesium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Manganese	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Mercury	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Nickel	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Potassium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Selenium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Silver	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Sodium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Thallium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Tin	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vanadium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Zinc	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cyanide	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dissolved Metals																		
Analytical Method	SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B		SW846 6010B	
Dilution Factor	1		1		1		1		1		1		1		1		1	
% Moisture																		
Units	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Notes																		
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Antimony	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Arsenic	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Barium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Beryllium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cadmium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Calcium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chromium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Cobalt	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Copper	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Iron	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Lead	nr		3	U	nr		3	U	nr		3	U	nr		3	U	nr	
Magnesium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Manganese	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Mercury	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Nickel	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Potassium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Selenium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Silver	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Sodium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Thallium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Vanadium	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Zinc	nr		nr		nr		nr		nr		nr		nr		nr		nr	

Table A.5
Groundwater Analytical Data - 1999 to 2007
Former Sauer Dump and Salvage Yard
Dundalk, Baltimore County, Maryland

Site Sample Identification Alt. Sample Identification Alt. Sample Identification/VOCs and SVOCs Alt. Sample Identification/Inorg. Alt. Sample Identification/PCB's Date of Sample Collection Sampler Sample Type Matrix Field QC	Sauer Dump MW-2-T C7B080261001 02/07/07 Malcolm Pirnie Groundwater Aqueous	Sauer Dump MW-1R-F C7B090142002 02/08/07 Malcolm Pirnie Groundwater Aqueous	Sauer Dump MW-1R-T C7B090142001 02/08/07 Malcolm Pirnie Groundwater Aqueous	Sauer Dump MW-3-F C7B090142004 02/08/07 Malcolm Pirnie Groundwater Aqueous	Sauer Dump MW-3-T C7B090142003 02/08/07 Malcolm Pirnie Groundwater Aqueous	Sauer Dump MW-4-F C7B130171004 02/12/07 Malcolm Pirnie Groundwater Aqueous	Sauer Dump MW-4-T C7B130171003 02/12/07 Malcolm Pirnie Groundwater Aqueous	Sauer Dump MW-5-F C7B130171002 02/12/07 Malcolm Pirnie Groundwater Aqueous	Sauer Dump MW-5-T C7B130171001 02/12/07 Malcolm Pirnie Groundwater Aqueous									
Pesticides/PCBs																		
Analytical Method	SW846 8082		SW846 8082		SW846 8082		SW846 8082		SW846 8082		SW846 8082		SW846 8082		SW846 8082		SW846 8082	
Dilution Factor	1		1		1		1		1		1		1		1		1	
% Moisture																		
Units	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Notes																		
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr	
alpha-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr	
beta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr	
delta-BHC	nr		nr		nr		nr		nr		nr		nr		nr		nr	
gamma-BHC (Lindane)	nr		nr		nr		nr		nr		nr		nr		nr		nr	
alpha-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr	
gamma-Chlordane	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Chlordane, total	nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDD	nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDE	nr		nr		nr		nr		nr		nr		nr		nr		nr	
4,4'-DDT	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Dieldrin	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan I	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan II	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endosulfan sulfate	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin aldehyde	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Endrin ketone	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Heptachlor epoxide	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Methoxychlor	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Toxaphene	nr		nr		nr		nr		nr		nr		nr		nr		nr	
Aroclor-1016	1	U	1	U	1	U	0.95	U	0.99	U	0.99	U	0.84	J	0.99	U	0.96	U
Aroclor-1221	1	U	1	U	1	U	0.95	U	0.99	U	0.99	U	0.97	U	0.99	U	0.96	U
Aroclor-1232	1	U	1	U	1	U	0.95	U	0.99	U	0.99	U	0.97	U	0.99	U	0.96	U
Aroclor-1242	1	U	1	U	1	U	0.95	U	0.99	U	0.99	U	0.97	U	0.99	U	0.96	U
Aroclor-1248	1	U	1	U	1	U	0.95	U	0.99	U	0.99	U	0.97	U	0.99	U	0.96	U
Aroclor-1254	1	U	1	U	1	U	0.95	U	0.99	U	0.99	U	0.97	U	0.99	U	0.96	U
Aroclor-1260	1	U	1	U	1	U	0.95	U	0.99	U	0.99	U	0.97	U	0.99	U	0.96	U
Total PCBs													0.84					
Other Analytes : PCB Homologues																		
Analytical Method	EPA-22 1668A		EPA-22 1668A		EPA-22 1668A		EPA-22 1668A		EPA-22 1668A		EPA-22 1668A		EPA-22 1668A		EPA-22 1668A		EPA-22 1668A	
Dilution Factor	5		1		1		1		1		10		10		10		10	
% Moisture																		
Units	ng/L		ng/L		ng/L		ng/L		ng/L		ng/L		ng/L		ng/L		ng/L	
Notes																		
Analyte	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Monochlorobiphenyl (total)	80	B	2.1	B	4.1	B	4.4	B	4.5	B	2	B,Q	0.63	B,Q	0.13	B,Q	0.26	B,Q
Dichlorobiphenyl (total)	130	B,Q	14	Q,B	37	B,Q	25	Q,B	34	B,Q	140	Q,B	430	B	0.51	Q,B	1.4	Q,B
Trichlorobiphenyl (total)	50	B	13	B	81	B	20	B,Q	40	B,Q	95	B	880	B,Q	0.34	Q,B	1.7	B,Q
Tetrachlorobiphenyl (total)	19	B,Q	3.3	Q,B	63	B,Q	13	B,Q	35	B,Q	13	B,Q	350	B,Q	0.32	Q,B	2.6	Q,B
Pentachlorobiphenyl (total)	2.3	Q,B	0.9	Q,B	74	Q,B	1.2	Q,B	5.8	Q,B	0.21	Q,B	21	B,Q	0.12	Q,J,B	0.56	Q,B
Hexachlorobiphenyl (total)	0.65	Q,B	0.31	Q,B	50	B,Q	0.29	Q,B	2.4	Q,B	0.035	J,Q,B	6.5	Q,B	0.086	Q,J,B	0.47	Q,B
Heptachlorobiphenyl (total)	0.17	Q,B	0.05	Q,J,B	16	Q,B	0.081	J,Q,B	0.93	Q,B	0.038	U	1.4	Q,B	0.031	Q,J,B	0.22	Q,B
Octachlorobiphenyl (total)	0.051	J,Q	0.04	U	4.2	Q	0.038	U	0.23	Q	0.038	U	0.32	Q	0.039	U	0.028	J
Nonachlorobiphenyl (total)	0.01	J	0.04	U	0.93		0.038	U	0.018	Q,J	0.038	U	0.055	Q	0.039	U	0.039	U
Decachlorobiphenyl (total)	0.04	U	0.01	Q,J	0.11		0.038	U	0.038	U	0.038	U	0.0075	QJ	0.039	U	0.039	U
Total PCB Homologs	282.181		33.67		330.34		63.971		122.878		250.245		1689.9125		1.537		7.238	

APPENDIX B-1

**REMOVAL TECHNOLOGY COST ESTIMATES
ALTERNATIVE 2
Surface Cap, Excavation, and Off-Site Disposal**

Appendix B-1
Surface Cap, Excavation and Off-Site Disposal Cost Estimate
Alternative 2

Soil Cover Alternative # 2						
Line Item	Unit	Quantity	Unit Cost	Cost	2008 Cost	Reference
Mobilization						
Work Plans	Lump Sum	1	\$ 50,000	\$ 50,000	\$ 50,000	Engineering Judgment
Equip. / Contractor Mobilization	Lump Sum	1	\$ 40,000	\$ 40,000	\$ 40,000	Engineering Judgment
Install Runoff Controls(silt fence and turbidity curtain)	Linear Feet	1,195	\$ 0.79	\$ 944	\$ 1,282	0227007041000 Means (2005)
Site Survey	Acre	4.09	\$ 3,500.00	\$ 14,307	\$ 14,307	02 21 13.09 0100 Means (2008)
Site Preparation						
Remove surface debris/ transport to disposal						
Non-hazardous disposal	ton	50	\$ 87.84	\$ 4,392	\$ 5,963	33 19 7269 Means (2005)
Hazardous disposal	Cubic Yard	296	\$ 394.00	\$ 116,568	\$ 158,276	Vendor Quote
Clearing and Grubbing (non-river areas)	Acre	4.09	\$ 4,760.00	\$ 19,457	\$ 19,457	Engineering Judgment
Non-hazardous disposal of cleared vegetation	ton	598	\$ 50.00	\$ 29,876	\$ 29,876	Engineering Judgment
Off-site disposal of grubbed vegetation (assume PRG not met)	tons	372	\$ 394.00	\$ 146,759	\$ 199,269	Vendor Quote
Site Excavation						
Soil (and Sediment Outside of Back River) Excavation:						
Parcel 425	Cubic Yard	1,642	\$ 1.87	\$ 3,078	\$ 4,179	0222002380260 Means (2005);Cost Bkp tab for qty
Residential Parcels 137, 295,464, 503,532	Cubic Yard	4,612	\$ 1.87	\$ 8,645	\$ 11,738	0222002380260 Means (2005)
Wetlands	Cubic Yard	7,740	\$ 12.90	\$ 99,843	\$ 123,805	023154240950 Means (2006)
Back River Sampling to assess need for excavation	Each	1	\$ 10,563	\$ 10,563	\$ 10,563	See Back R. Sed Sampling tab
Excavation Screening (all areas):						
Screening samples at 2-foot excavation depth	Each	27	\$ 370.00	\$ 9,990	\$ 9,990	Sampling Cost tab
Screening samples at 4-foot excavation depth	Each	11	\$ 370.00	\$ 4,070	\$ 4,070	Sampling Cost tab
Transport soil and sediment to staging areas	Cubic Yard	13,994	\$ 3.68	\$ 51,496	\$ 51,496	31 23 23.18 0020 Means (2008)
Confirmation Sampling @ cy per sample [replaced 20/acre excavated]	Each	50	\$ 370.00	\$ 18,500	\$ 18,500	Sampling Cost tab
Transport soil and sediment to capping area	Cubic Yard	6,176	\$ 3.68	\$ 22,727	\$ 22,727	31 23 23.18 0020 Means (2008)
Verification Screening (all areas) based on grid network						
Parcel 425	Each	58	\$ 370.00	\$ 21,460	\$ 21,460	Sampling Cost tab
Residential Parcels 137, 295,464, 503,532	Each	143	\$ 370.00	\$ 52,910	\$ 52,910	Sampling Cost tab
Wetlands	Each	42	\$ 370.00	\$ 15,540	\$ 15,540	Sampling Cost tab
Dust Suppression	Square Foot	125,816	\$ 0.01	\$ 1,258	\$ 1,708	33 08 0585 Means (2005) water by truck
Soil Characterization (TCLP @ 1 per 200 CY)	Each	9	\$ 130.00	\$ 1,170	\$ 1,170	HGL Langley R. Bird
Treatment of water from sediments - (Assume 50% water content sediments)	Gallons	781,560	\$ 0.01	\$ 4,924	\$ 7,145	EPA FRTR (2002)
OFF-Site Disposal						
Hazardous Waste Landfill Disposal (PCB 50 -500 ppm)	ton	2,803	\$ 394.00	\$ 1,104,227	\$ 1,104,227	Vendor Quote
Incineration (PCB >500 ppm)	ton	475	\$ 780.00	\$ 370,396	\$ 370,396	Vendor Quote

Appendix B-1
Surface Cap, Excavation and Off-Site Disposal Cost Estimate
Alternative 2

Line Item	Unit	Quantity	Unit Cost	Cost	2008 Cost	Reference
<i>Cap Placement</i>						
Cap Layers (material and placement, no grading)						
Top Cover	Cubic Yard	2,630	\$ 22.37	\$ 58,830	\$ 79,879	18 05 0301 Means (2005)
Burrow Barrier	Cubic Yard	3,481	\$ 20.00	\$ 69,614	\$ 69,614	Engineering Judgment
Drainage Layer	Cubic Yard	1,315	\$ 10.55	\$ 13,872	\$ 18,835	17 03 0430 Means (2005)
Low Permeability Barrier - Clay	Cubic Yard	4,542	\$ 21.56	\$ 97,934	\$ 132,975	33 08 0507 Means (2005)
Cobble Perimeter Boundary	Cubic Yard	1,148	\$ 20.00	\$ 22,959	\$ 22,959	Engineering Judgment
Grading - TSCA Cap	Square Yard	19,938	\$ 17.00	\$ 338,939	\$ 338,939	31 22 16.10 3300 Means (2008)
Initial Grading after Clear and Grub, Before Cap Placement	Square Yard	11,834	\$ 3.22	\$ 38,107	\$ 47,253	023101000010 Means (2006)
Top Cover Grading	Square Yard	11,834	\$ 3.22	\$ 38,107	\$ 47,253	023101000010 Means (2006)
Well Abandonment	Each	1	\$ 7,360	\$ 7,360	\$ 7,360	Engineering Judgment / Cost Bkp tab
Monitoring Well Modifications	Each	7	\$ 4,000	\$ 28,000	\$ 28,000	Engineering Judgment
<i>Cap Completion</i>						
Seeding and mulching for Vegetation Cover	Square Foot	106,509	\$ 0.05	\$ 5,219	\$ 7,086	0293003080400 Means (2005)
Access Controls - Fence Modification	Linear Feet	1,613	\$ 2.00	\$ 3,226	\$ 3,226	Engineering Judgment
Access Controls - Signs	Linear Feet	1,613	\$ 0.20	\$ 323	\$ 323	1 sign / 500 ft of perimeter; \$100 installed = \$0.20/ft
Demobilization	Lump Sum	1	\$ 20,000	\$ 20,000	\$ 20,000	Engineering Judgment
Wetlands Restoration	Acres	1.20	\$ 100,000	\$ 119,934	\$ 134,465	Engineering Judgment
Site Grading	Square Yard	5,805	\$ 3.22	\$ 18,691	\$ 23,177	023101000010 Means (2006)
Clean Fill	Cubic Yard	7,740	\$ 6.97	\$ 53,946	\$ 73,248	17 03 0422 Means (2005)
Compaction	Cubic Yard	7,740	\$ 3.00	\$ 23,219	\$ 31,527	Engineering Judgment
<i>Residential Area Site Restoration</i>						
Top Cover	Cubic Yard	1,996	\$ 22.37	\$ 44,644	\$ 60,618	18 05 0301 Means (2005)
Clean Fill	Cubic Yard	5,672	\$ 6.97	\$ 39,537	\$ 53,683	17 03 0422 Means (2005)
Grading - One pass	Square Yard	2,145	\$ 3.22	\$ 6,908	\$ 8,566	023101000010 Means (2006)
Seeding and mulching for Vegetation Cover	Square Foot	19,307	\$ 0.25	\$ 4,730	\$ 6,422	0293003080400 Means (2005) *5 (EJ) for residential area
			Subtotal	\$ 3,085,524	\$ 3,565,464	
<i>Project Support</i>						
Engineering Design	12%	of Subtotal		\$ 370,263	\$ 415,123	Past Project Experience
Project Management	10%	of Subtotal		\$ 308,552	\$ 345,935	Past Project Experience
Construction Management	8%	of Subtotal		\$ 246,842	\$ 276,749	Past Project Experience
Contingencies	15%	of Subtotal		\$ 462,829	\$ 518,904	EPA 540-R-98-045
Back River Excavation Contingency	50%	of est. cost		\$ 250,000	\$ 125,000	Engineering Judgment
Completion Reports	Lump Sum	1	\$ 60,000.00	\$ 60,000	\$ 60,000	Past Project Experience
			Subtotal	\$ 1,698,486	\$ 1,741,711	
	TOTAL INSTALLED COST			\$ 4,784,010	\$ 5,307,175	

Appendix B-1
Surface Cap, Excavation and Off-Site Disposal Cost Estimate
Alternative 2

Line Item	Unit	Quantity	Unit Cost	Cost	2008 Cost	Reference
<i>Operation and Maintenance</i>						
Periodic Inspection (4/yr, engr, 20 hr ea)	Hrs	80	\$ 100.00	\$ 8,000	\$ 8,000	Engineering Judgment
Burrowing Animal Control, allowance	Each	1	\$ 2,500.00	\$ 2,500	\$ 2,500	Engineering Judgment
Hydroseeding, repair veg cover (10%/yr)	Acre	0.24	\$ 537.62	\$ 131	\$ 188	180504028102002 Means (2004)
Fence Repairs (10%)	Linear Feet	161	\$ 15.00	\$ 2,419	\$ 3,466	17020701 Means + \$4/ft material allowance
Cap Repairs/Fill/Regrading/Compaction (5%, 8 in. fills)	Cubic Yard	656	\$ 11.16	\$ 7,319	\$ 10,484	17 03 0429 Means (2004)
Groundwater/Surface Water Monitoring, 1/yr, 2 ppl, 24 hr each	hrs	48	\$ 100.00	\$ 4,800	\$ 4,800	Engineering Judgment
Groundwater/Surface Water Monitoring Lab, Supplies, Equip	Unit Cost	1	\$ 10,000.00	\$ 10,000	\$ 10,000	Engineering Judgment
Reporting (1/yr)	Hrs	160	\$ 100.00	\$ 16,000	\$ 16,000	Engineering Judgment
Total Annual O&M Cost				\$ 43,169	\$ 47,438	
Present Value of O&M				\$ 663,621	\$ 729,236	
			TOTAL PROJECT COST:	\$ 6,036,410		

APPENDIX B-2

REMOVAL TECHNOLOGY COST ESTIMATES

ALTERNATIVE 3

Surface Cap, Excavation, Off-Site Disposal, and Groundwater Collection and Treatment

Appendix B-2
Surface Cap, Excavation, Off-Site Disposal and Groundwater Collection and Treatment Cost Estimate
Alternative 3

Alternative # 3 Excavation, Off-site Disposal, and GW Treatment						
Line Item	Unit	Quantity	Unit Cost	Cost	2008 Cost	Reference
<i>Mobilization</i>						
Work Plans	Lump Sum	1	\$ 100,000	\$ 100,000	\$ 100,000	Engineering Judgment
Equip. / Contractor Mobilization	Lump Sum	1	\$ 75,000	\$ 75,000	\$ 75,000	Engineering Judgment
Install Runoff Controls(silt fence and turbidity curtain)	Linear Feet	1,195	\$ 0.79	\$ 944	\$ 1,282	0227007041000 Means (2005)
Permitting (NPDES Permit, etc)	Lump Sum	1	\$ 50,000	\$ 50,000	\$ 50,000	Engineering Judgment
Site Survey	Acre	4.09	\$ 3,500.00	\$ 14,307	\$ 14,307	02 21 13.09 0100 Means (2008)
System Startup, Shakedown	Lump Sum	1	\$ 25,000	\$ 25,000	\$ 25,000	Engineering Judgment
<i>Site Preparation and Excavation</i>						
Remove surface debris/ transport to disposal						
Non-hazardous disposal	ton	50	\$ 87.84	\$ 4,392	\$ 5,963	33 19 7269 Means (2005)
Hazardous disposal	Cubic Yard	296	\$ 394.00	\$ 116,568	\$ 158,276	Vendor Quote
Clearing and Grubbing (non-river areas)	Acre	4.67	\$ 4,760.00	\$ 22,218	\$ 22,218	Engineering Judgment
Non-hazardous disposal of cleared vegetation	ton	598	\$ 50.00	\$ 29,876	\$ 29,876	Engineering Judgment
Off-site disposal of grubbed vegetation (assume PRG not met)	tons	372	\$ 394.00	\$ 146,759	\$ 199,269	Vendor Quote
Soil (and Sediment Outside of Back River) Excavation:						
Parcel 425	Cubic Yard	8,058	\$ 1.87	\$ 15,105	\$ 20,510	0222002380260 Means (2005);Cost Bkp tab for qty
Residential Parcels 137, 295,464, 503,532	Cubic Yard	4,612	\$ 1.87	\$ 8,645	\$ 11,738	0222002380260 Means (2005)
Wetlands	Cubic Yard	7,740	\$ 12.90	\$ 99,843	\$ 123,805	023154240950 Means (2006)
Back River Sampling to assess need for excavation	Each	1	\$10,563	\$ 10,563	\$ 10,563	See Back R. Sed Sampling tab
Excavation Screening (all areas):						
Screening samples at 2-foot excavation depth	Each	27	\$ 370.00	\$ 9,990	\$ 9,990	Sampling Cost tab
Screening samples at 4-foot excavation depth	Each	11	\$ 370.00	\$ 4,070	\$ 4,070	Sampling Cost tab
Transport soil and sediment to staging areas						
Confirmation Sampling @ cy per sample [replaced 20/acre excavated]	Each	82	\$ 370.00	\$ 30,340	\$ 30,340	Sampling Cost tab
Transport soil and sediment to capping area	Cubic Yard	6,176	\$ 3.68	\$ 22,727	\$ 22,727	31 23 23.18 0020 Means (2008)
Verification Screening (all areas) based on grid network						
Parcel 425	Each	81	\$ 370.00	\$ 29,970	\$ 29,970	Sampling Cost tab
Residential Parcels 137, 295,464, 503,532	Each	143	\$ 370.00	\$ 52,910	\$ 52,910	Sampling Cost tab
Wetlands	Each	42	\$ 370.00	\$ 15,540	\$ 15,540	Sampling Cost tab
Dust Suppression	Square Foot	125,816	\$ 0.01	\$ 1,258	\$ 1,708	33 08 0585 Means (2005) water by truck
Soil Characterization (TCLP @ 1 per 200 CY)	Each	41	\$ 130.00	\$ 5,330	\$ 5,330	HGL Langley R. Bird
Treatment of water from sediments - (Assume 50% water content sediments)	Gallons	781,560	\$ 0.01	\$ 4,924	\$ 7,145	EPA FRTR (2002)
OFF-Site Disposal						
Hazardous Waste Landfill Disposal (PCB 50 -500 ppm)	ton	2,803	\$ 394.00	\$ 1,104,227	\$ 1,104,227	Vendor Quote
Incineration (PCB >500 ppm)	ton	475	\$ 780.00	\$ 370,396	\$ 370,396	Vendor Quote
Non-hazardous disposal (PCB < 50 ppm)	ton	10,808	\$ 87.84	\$ 949,350	\$ 1,289,027	33 19 7269 Means (2005)

Appendix B-2
Surface Cap, Excavation, Off-Site Disposal and Groundwater Collection and Treatment Cost Estimate
Alternative 3

Line Item	Unit	Quantity	Unit Cost	Cost	2008 Cost	Reference
<i>Cap Placement</i>						
Cap Layers (material and placement, no grading)						
Top Cover	Cubic Yard	2,630	\$ 22.37	\$ 58,830	\$ 79,879	18 05 0301 Means (2005)
Burrow Barrier	Cubic Yard	3,481	\$ 20.00	\$ 69,614	\$ 69,614	Engineering Judgment
Drainage Layer	Cubic Yard	1,315	\$ 10.55	\$ 13,872	\$ 18,835	17 03 0430 Means (2005)
Low Permeability Barrier - Clay	Cubic Yard	4,542	\$ 21.56	\$ 97,934	\$ 132,975	33 08 0507 Means (2005)
Cobble Perimeter Boundary	Cubic Yard	1,148	\$ 20.00	\$ 22,959	\$ 22,959	Engineering Judgment
Grading - TSCA Cap	Square Yard	19,938	\$ 17.00	\$ 338,946	\$ 338,946	31 22 16.10 3300 Means (2008)
Initial Grading after Clear and Grub, Before Cap Placement	Square Yard	11,834	\$ 3.22	\$ 38,107	\$ 47,253	023101000010 Means (2006)
TopCover	Square Yard	11,834	\$ 3.22	\$ 38,107	\$ 47,253	023101000010 Means (2006)
Well Abandonment	Each	1	\$ 7,360	\$ 7,360	\$ 7,360	Engineering Judgment / Cost Bkp tab
Monitoring Well Modifications	Each	7	\$ 4,000	\$ 28,000	\$ 28,000	Engineering Judgment
<i>Cap Completion</i>						
Seeding and mulching for Vegetation Cover	Square Foot	106,509	\$ 0.05	\$ 5,219	\$ 7,086	0293003080400 Means (2005)
Access Controls - Fence Modification	Linear Feet	1,613	\$ 2.00	\$ 3,226	\$ 3,226	Engineering Judgment
Access Controls - Signs	Linear Feet	1,613	\$ 0.20	\$ 323	\$ 323	1 sign / 500 ft of perimeter; \$100 installed = \$0.20/ft
Demobilization	Lump Sum	1	\$ 20,000	\$ 20,000	\$ 20,000	Engineering Judgment
<i>Residential Area Site Restoration</i>						
Top Cover	Cubic Yard	1,996	\$ 22.37	\$ 44,644	\$ 60,618	18 05 0301 Means (2005)
Clean Fill	Cubic Yard	5,672	\$ 6.97	\$ 39,537	\$ 53,683	17 03 0422 Means (2005)
Grading - One pass	Square Yard	2,145	\$ 3.22	\$ 6,908	\$ 8,566	023101000010 Means (2006)
Seeding and mulching for Vegetation Cover	Square Foot	19,307	\$ 0.25	\$ 4,730	\$ 6,422	0293003080400 Means (2005) *5 (EJ) for residential area
<i>Wetlands Restoration</i>						
	Acres	1.20	\$ 100,000	\$ 119,934	\$ 134,465	Engineering Judgment
Site Grading	Square Yard	5,805	\$ 3.22	\$ 18,691	\$ 23,177	023101000010 Means (2006)
Clean Fill	Cubic Yard	7,740	\$ 6.97	\$ 53,946	\$ 73,248	17 03 0422 Means (2005)
Compaction	Cubic Yard	7,740	\$ 3.00	\$ 23,219	\$ 31,527	Engineering Judgment
<i>Groundwater Interceptor Trench, Extraction and Treatment, Discharge, Upgradient Groundwater Redirection</i>						
	Each	1	\$ 169,888.00	\$ 169,888	\$ 169,888	See Groundwater Collection and Treatment Sheet
			Subtotal	\$ 4,619,355	\$ 5,251,600	
<i>Project Support</i>						
Engineering Design	12%	of Subtotal		\$ 554,323	\$ 621,483	Past Project Experience
Project Management	10%	of Subtotal		\$ 461,936	\$ 517,903	Past Project Experience
Construction Management	8%	of Subtotal		\$ 369,548	\$ 414,321	Past Project Experience
Contingencies	15%	of Subtotal		\$ 692,903	\$ 776,853	EPA 540-R-98-045
Back River Excavation Contingency	50%	of est. cost		\$ 250,000	\$ 125,000	Engineering Judgment
Completion Reports	Lump Sum	1	\$ 60,000.00	\$ 60,000	\$ 60,000	Past Project Experience
			Subtotal	\$ 2,388,710	\$ 2,515,560	
TOTAL INSTALLED COST				\$ 7,008,065	\$ 7,767,160	

Appendix B-2
Surface Cap, Excavation, Off-Site Disposal and Groundwater Collection and Treatment Cost Estimate
Alternative 3

Line Item	Unit	Quantity	Unit Cost	Cost	2008 Cost	Reference
<i>Annual O&M Costs</i>						
<i>Operation and Maintenance, Groundwater Collection and Treatment System</i>						
Periodic Inspection (2/yr, engr, 8 hr ea)	hrs	16	\$ 100.00	\$ 1,600	\$ 1,600	Engineering Judgment
System Operations Reporting (1/yr)	hrs	48	\$ 100.00	\$ 4,800	\$ 4,800	Engineering Judgment
System, NPDES Monitoring, 4/yr, 2 ppl, 16 hr each	hrs	128	\$ 100.00	\$ 12,800	\$ 12,800	Engineering Judgment
NPDES Monitoring Report, 4/yr, 24 hr/report	hrs	96	\$ 100.00	\$ 9,600	\$ 9,600	Engineering Judgment
Annual Monitoring Lab, Supplies, Equip	Unit Cost	1	\$ 10,000.00	\$ 10,000	\$ 10,000	Engineering Judgment
Part-time operator, check system 1/week, \$60/hr, 6 hr/wk	hrs	312	\$ 60.00	\$ 18,720	\$ 18,720	Engineering Judgment
Filter Bag Replacement, 1x/wk	each	156	\$ 10.00	\$ 1,560	\$ 1,560	Engineering Judgment
Filter Bag Disposal, drum, 2 drums/yr, TSCA incineration	drum	2	\$ 1,000.00	\$ 2,000	\$ 2,000	Engineering Judgment
GAC annual profiling fees, changeout 1 vessel/yr	each	1	\$ 250.00	\$ 250	\$ 250	vendor quote
GAC changeout/regeneration, 1x/yr	each	2	\$ 1,432.48	\$ 2,865	\$ 2,865	33 13 2005 13274 1215 Means (2004)
Utilities - 2-1/4 hp pumps, 2-1/2hp pumps, add 40% for heat, lighting, controls	kW hr	32751	\$ 0.08	\$ 2,620	\$ 2,620	Engineering Judgment
Utilities - phone	mo	12	\$ 75.00	\$ 900	\$ 900	Engineering Judgment
<i>Operation and Maintenance, Compacted Soil Cover and Monitoring</i>						
Periodic Inspection (4/yr, engr, 20 hr ea)	Hrs	80	\$ 100.00	\$ 8,000	\$ 8,000	Engineering Judgment
Burrowing Animal Control, allowance	Each	1	\$ 2,500.00	\$ 2,500	\$ 2,500	Engineering Judgment
Hydroseeding, repair veg cover (10%/yr)	Acre	0.24	\$ 537.62	\$ 131	\$ 188	180504028102002 Means (2004)
Fence Repairs (10%)	Linear Feet	161	\$ 15.00	\$ 2,419	\$ 3,466	17020701 Means + \$4/ft material allowance
Cap Repairs/Fill/Regrading/Compaction (5%, 8 in. fills)	Cubic Yard	656	\$ 11.16	\$ 7,319	\$ 10,484	17 03 0429 Means (2004)
Groundwater/Surface Water Monitoring, 1/yr, 2 ppl, 24 hr each	hrs	48	\$ 100.00	\$ 4,800	\$ 4,800	Engineering Judgment
Groundwater/Surface Water Monitoring Lab, Supplies, Equip	Unit Cost	1	\$ 10,000.00	\$ 10,000	\$ 10,000	Engineering Judgment
Reporting (1/yr)	Hrs	160	\$ 100.00	\$ 16,000	\$ 16,000	Engineering Judgment
Total Annual O&M Cost				\$ 118,885	\$ 123,153	
Present Value of Annual O&M (7% discount factor, 30 yrs)				\$ 1,475,243	\$ 1,528,209	
<i>Periodic O&M Costs</i>						
<i>Remove Interceptor Trench Gravel, Replace 15 yrs into Project</i>						
Interceptor Trench Excavation, overburden and gravel	bank cubic yd	1,496	\$ 2.47	\$ 3,696	\$ 3,696	02315 424 0250 Means (2006)
Purchase, deliver clean gravel backfill	Cubic Yard	748	\$ 32.86	\$ 24,584	\$ 24,584	17 03 0419 02704 0300 Means (2004)
Backfill Trench w/ Gravel	Cubic Yard	748	\$ 1.03	\$ 771	\$ 771	02310 120 3000 Means (2006)
Backfill, grade above pea gravel, w/ filter fabric	Cubic Yard	748	\$ 3.36	\$ 2,514	\$ 2,514	02315 120 3320 Means (2006)
Non-hazardous disposal of excavated soil/gravel, nonhazardous	ton	748	\$ 87.84	\$ 65,717	\$ 65,717	33 19 7269 Means (2005)
Present Value Periodic O&M Costs				\$ 97,282	\$ 97,282	
Total Present Value all O&M Costs				\$ 1,572,525	\$ 1,625,491	
TOTAL PROJECT COST:				\$ 9,392,652		

Appendix B-2
Excavation, Offsite Disposal and Groundwater Collection and Treatment Cost Estimate
Alternative 4

Groundwater Interceptor Trench, Extraction and Treatment, Discharge, Upgradient Groundwater Redirection									
Line Item	Unit	Quantity	Unit Cost	2009 Cost	Reference				
<i>Interceptor Trench, Sump Construction(2 trenches)</i>									
Interceptor Trench Excavation	bank cubic yd	3,741	\$ 2.47	\$9,231	02315 424 0250 Means (2006)				
Purchase, deliver clean gravel backfill	Cubic Yard	1,496	\$ 32.86	\$49,170	17 03 0419 02704 0300 Means (2004)				
Backfill Trench w/ Gravel	Cubic Yard	1,496	\$ 1.03	\$1,540	02310 120 3000 Means (2006)				
Purchase, prep, set groundwater extraction sumps	Each	2	\$ 1,000.00	\$2,000	Engineering Judgment, previous experience				
Purchase, install 4" PVC perforated drain pipe	ft	1,000	\$ 10.57	\$10,572	33 26 09 02709 2100 Means (2004)				
Haul, dump, place excess trench waste, soil at cap area	Cubic Yard	1,496	\$ 2.24	\$3,358	02315 110 1900 Means (2006)				
Backfill, grade above pea gravel, w/ filter fabric	Cubic Yard	2,244	\$ 3.36	\$7,542	02315 120 3320 Means (2006)				
Extraction pumps -	Each	2	\$ 300.00	\$600	pump supplier web site, incl freight 1/4 hp motor				
Pump Controls, panels, connections	Each	2	\$ 1,500.00	\$3,000	Engineering Judgment				
<i>Pump System Piping (treatment building located at south end of Parcel 425)</i>									
Sumps to treatment building									
trench header lines, 48" deep	lineal ft	1,200	\$ 1.10	\$1,324	02315 620 2250 Means (2006)				
install 1.5" sch 80 PVC headers	lineal ft	1,200	\$ 4.20	\$5,037	33 26 0427 Means (2004)				
<i>Treatment System</i>									
Treatment Building, 20' x 20'	sq ft	400	\$ 79.36	\$31,744	median \$/sf, factory , Means (2006)				
Piping Allowance	each	1	\$ 2,500.00	\$2,500	Engineering Judgement				
Surge Tank, 2,500 gal poly tank	each	2	\$ 2,000.00	\$4,000	online pricing, added freight estimate				
Transfer Pumps, 30 gpm, 1/2 hp centrifugal	each	2	\$ 400.00	\$800	pump web site pricing, plus freight allowance				
Prefilter, basket strainers	each	2	\$ 1,200.00	\$2,400	Engineering Judgement				
GAC Adsorbers, 2 in series, 200 lb ea, initial	each	2	\$ 1,432.48	\$2,865	33 13 2005 13274 1215 Means (2004)				
Valving, Flowmeters, Controls, Electrical	each	1	\$ 10,000.00	\$10,000	Engineering Judgement				
trench discharge line, 48" deep	lineal ft	200	\$ 1.10	\$221	02315 620 2250 Means (2006)				
Discharge Piping, 4" sch 80 PVC	lineal ft	200	\$ 9.92	\$1,984	33 26 0427 Means (2004)				
Utilities - electrical, phone service to site, install poles, l	each	1	\$ 20,000.00	\$20,000	allowance, engineering estimate				
TOTAL INSTALLED COST				\$169,888					

APPENDIX B-3

REMOVAL TECHNOLOGY COST ESTIMATES

ALTERNATIVE 4

Excavation, Off-Site Disposal, and Groundwater Collection and Treatment

Appendix B-3
Excavation, Off-Site Disposal, and Groundwater Collection and Treatment Cost Estimate
Alternative 4

Alternative # 4 Excavation, Off-site Disposal, and GW Treatment						
Line Item	Unit	Quantity	Unit Cost	Cost	2008 Cost	Reference
<i>Mobilization</i>						
Work Plans	Lump Sum	1	\$ 100,000	\$ 100,000	\$ 100,000	Engineering Judgment
Equip. / Contractor Mobilization	Lump Sum	1	\$ 75,000	\$ 75,000	\$ 75,000	Engineering Judgment
Install Runoff Controls(silt fence and turbidity curtain)	Linear Feet	1,195	\$ 0.79	\$ 944	\$ 1,282	0227007041000 Means (2005)
Permitting (NPDES Permit, etc)	Lump Sum	1	\$ 50,000	\$ 50,000	\$ 50,000	Engineering Judgment
Site Survey	Acre	4.09	\$ 3,500.00	\$ 14,307	\$ 14,307	02 21 13.09 0100 Means (2008)
System Startup, Shakedown	Lump Sum	1	\$ 25,000	\$ 25,000	\$ 25,000	Engineering Judgment
<i>Site Preparation and Excavation</i>						
Remove surface debris/ transport to disposal						
Non-hazardous disposal	ton	50	\$ 87.84	\$ 4,392	\$ 5,963	33 19 7269 Means (2005)
Hazardous disposal	Cubic Yard	296	\$ 394.00	\$ 116,568	\$ 158,276	Vendor Quote
Clearing and Grubbing (non-river areas)	Acre	4.67	\$ 4,760.00	\$ 22,218	\$ 22,218	Engineering Judgment
Non-hazardous disposal of cleared vegetation	ton	598	\$ 50.00	\$ 29,899	\$ 29,899	Engineering Judgment
Off-site disposal of grubbed vegetation (assume PRG not met)	ton	372	\$ 394.00	\$ 146,759	\$ 199,269	Vendor Quote
Soil (and Sediment Outside of Back River) Excavation:						
Parcel 425	Cubic Yard	12,154	\$ 1.87	\$ 22,783	\$ 30,935	0222002380260 Means (2005);Cost Bkp tab for qty
Residential Parcels 137, 295,464, 503,532	Cubic Yard	4,612	\$ 1.87	\$ 8,645	\$ 11,738	0222002380260 Means (2005)
Wetlands	Cubic Yard	7,740	\$ 12.90	\$ 99,843	\$ 123,805	023154240950 Means (2006)
Back River Sampling to assess need for excavation	Each	1	\$10,563	\$ 10,563	\$ 10,563	See Back R. Sed Sampling tab
Excavation Screening (all areas):						
Screening samples at 2-foot excavation depth	Each	44	\$ 370.00	\$ 16,280	\$ 16,280	Sampling Cost tab
Screening samples at 4-foot excavation depth	Each	18	\$ 370.00	\$ 6,660	\$ 6,660	Sampling Cost tab
Transport soil and sediment to staging areas	Cubic Yard	24,506	\$ 3.68	\$ 90,181	\$ 90,181	31 23 23.18 0020 Means (2008)
Confirmation Sampling @ cy per sample [replaced 20/acre excavated]	Each	99	\$ 370.00	\$ 36,630	\$ 36,630	Sampling Cost tab
Verification Screening (all areas) based on grid network						
Parcel 425	Each	88	\$ 370.00	\$ 32,560	\$ 32,560	Sampling Cost tab
Residential Parcels 137, 295,464, 503,532	Each	143	\$ 370.00	\$ 52,910	\$ 52,910	Sampling Cost tab
Wetlands	Each	42	\$ 370.00	\$ 15,540	\$ 15,540	Sampling Cost tab
Dust Suppression	Square Foot	125,816	\$ 0.01	\$ 1,258	\$ 1,708	33 08 0585 Means (2005) water by truck
Soil Characterization (TCLP @ 1 per 200 CY)	Each	122	\$ 130.00	\$ 15,860	\$ 15,860	HGL Langley R. Bird
Treatment of water from sediments - (Assume 50% water content sediments)	Gallons	781,560	\$ 0.01	\$ 4,924	\$ 7,145	EPA FRTR (2002)

Appendix B-3
Excavation, Off-Site Disposal, and Groundwater Collection and Treatment Cost Estimate
Alternative 4

Line Item	Unit	Quantity	Unit Cost	Cost	2008 Cost	Reference
OFF-Site Disposal						
Hazardous Waste Landfill Disposal (PCB 50 -500 ppm)	ton	2,781	\$ 394.00	\$ 1,095,545	\$ 1,095,545	Vendor Quote
Incineration (PCB >500 ppm)	ton	475	\$ 780.00	\$ 370,396	\$ 370,396	Vendor Quote
Non-hazardous disposal (PCB < 50 ppm) ??	ton	38,404	\$ 87.84	\$ 3,373,451	\$ 4,580,470	33 19 7269 Means (2005)
Well Abandonment	Each	1	\$ 7,360	\$ 7,360	\$ 7,360	Engineering Judgment / Cost Bkp tab
Monitoring Well Modifications	Each	7	\$ 4,000	\$ 28,000	\$ 28,000	Engineering Judgment
<i>Residential Area Site Restoration</i>						
Top Cover	Cubic Yard	1,996	\$ 22.37	\$ 44,644	\$ 60,618	18 05 0301 Means (2005)
Clean Fill	Cubic Yard	5,672	\$ 6.97	\$ 39,537	\$ 53,683	17 03 0422 Means (2005)
Grading - One pass	Square Yard	2,145	\$ 3.22	\$ 6,908	\$ 8,566	023101000010 Means (2006)
<i>Parcel 425 Restoration</i>						
Top Cover	Cubic Yard	921	\$ 22.37	\$ 20,613	\$ 27,988	18 05 0301 Means (2005)
Clean Fill	Cubic Yard	11,233	\$ 6.97	\$ 78,292	\$ 106,305	17 03 0422 Means (2005)
Grading - One pass	Square Yard	5,529	\$ 3.22	\$ 17,803	\$ 22,076	023101000010 Means (2006)
Seeding and mulching for Vegetation Cover	Square Foot	69,066	\$ 0.25	\$ 16,921	\$ 22,975	0293003080400 Means (2005) *5 (EJ) for residential area
<i>Wetlands Restoration</i>						
Site Grading	Square Yard	5,805	\$ 3.22	\$ 18,691	\$ 23,177	023101000010 Means (2006)
Clean Fill	Cubic Yard	7,740	\$ 6.97	\$ 53,946	\$ 73,248	17 03 0422 Means (2005)
Compaction	Cubic Yard	7,740	\$ 3.00	\$ 23,219	\$ 31,527	Engineering Judgment
<i>Groundwater Interceptor Trench, Extraction and Treatment, Discharge, Upgradient Groundwater Redirection</i>						
	Each	1	\$ 169,888.00	\$ 169,888	\$ 169,888	See Groundwater Collection and Treatment Sheet
			Subtotal	\$ 6,484,872	\$ 7,950,017	
<i>Project Support</i>						
Engineering Design	12%	of Subtotal		\$ 778,185	\$ 872,468	Past Project Experience
Project Management	10%	of Subtotal		\$ 648,487	\$ 727,056	Past Project Experience
Construction Management	8%	of Subtotal		\$ 518,790	\$ 581,645	Past Project Experience
Contingencies	15%	of Subtotal		\$ 972,731	\$ 1,090,584	EPA 540-R-98-045
Back River Excavation Contingency	50%	of est. cost		\$ 250,000	\$ 125,000	Engineering Judgment
Completion Reports	Lump Sum	1	\$ 60,000.00	\$ 60,000	\$ 60,000	Past Project Experience
			Subtotal	\$ 3,228,193	\$ 3,456,753	
TOTAL INSTALLED COST				\$ 9,713,065	\$ 11,406,769	

Appendix B-3
Excavation, Off-Site Disposal, and Groundwater Collection and Treatment Cost Estimate
Alternative 4

Line Item	Unit	Quantity	Unit Cost	Cost	2008 Cost	Reference
<i>Annual O&M Costs</i>						
<i>Operation and Maintenance, Groundwater Collection and Treatment System</i>						
Periodic Inspection (2/yr, engr, 8 hr ea)	hrs	16	\$ 100.00	\$ 1,600	\$ 1,600	Engineering Judgment
System Operations Reporting (1/yr)	hrs	48	\$ 100.00	\$ 4,800	\$ 4,800	Engineering Judgment
System, NPDES Monitoring, 4/yr, 2 ppl, 16 hr each	hrs	128	\$ 100.00	\$ 12,800	\$ 12,800	Engineering Judgment
NPDES Monitoring Report, 4/yr, 24 hr/report	hrs	96	\$ 100.00	\$ 9,600	\$ 9,600	Engineering Judgment
Annual Monitoring Lab, Supplies, Equip	Unit Cost	1	\$ 10,000.00	\$ 10,000	\$ 10,000	Engineering Judgment
Part-time operator, check system 1/week, \$60/hr, 6 hr/wk	hrs	312	\$ 60.00	\$ 18,720	\$ 18,720	Engineering Judgment
Filter Bag Replacement, 1x/wk	each	156	\$ 10.00	\$ 1,560	\$ 1,560	Engineering Judgment
Filter Bag Disposal, drum, 2 drums/yr, TSCA incineration	drum	2	\$ 1,000.00	\$ 2,000	\$ 2,000	Engineering Judgment
GAC annual profiling fees, changeout 1 vessel/yr	each	1	\$ 250.00	\$ 250	\$ 250	vendor quote
GAC changeout/regeneration, 1x/yr	each	2	\$ 1,432.48	\$ 2,865	\$ 2,865	33 13 2005 13274 1215 Means (2004)
Utilities - 2-1/4 hp pumps, 2-1/2hp pumps, add 40% for heat, lighting, controls	kW hr	32751	\$ 0.08	\$ 2,620	\$ 2,620	Engineering Judgement
Utilities - phone	mo	12	\$ 75.00	\$ 900	\$ 900	Engineering Judgment
<i>Operation and Maintenance, Groundwater and Surface Water Monitoring</i>						
Fence Repairs (10%)	Linear Feet	10	\$ 15.00	\$ 150	\$ 215	17020701 Means + \$4/ft material allowance
Groundwater/Surface Water Monitoring, 1/yr, 2 ppl, 24 hr each	hrs	48	\$ 100.00	\$ 4,800	\$ 4,800	Engineering Judgment
Groundwater/Surface Water Monitoring Lab, Supplies, Equip	Unit Cost	1	\$ 10,000.00	\$ 10,000	\$ 10,000	Engineering Judgment
Reporting (1/yr)	Hrs	160	\$ 100.00	\$ 16,000	\$ 16,000	Engineering Judgment
Total Annual O&M Cost				\$ 98,665	\$ 98,730	
Present Value of Annual O&M (7% discount factor, 30 yrs)				\$ 1,224,339	\$ 1,225,144	
<i>Periodic O&M Costs</i>						
<i>Remove Interceptor Trench Gravel, Replace 15 yrs into Project</i>						
Interceptor Trench Excavation, overburden and gravel	bank cubic yd	1,496	\$ 2.47	\$ 3,696	\$ 3,696	02315 424 0250 Means (2006)
Purchase, deliver clean gravel backfill	Cubic Yard	748	\$ 32.86	\$ 24,584	\$ 24,584	17 03 0419 02704 0300 Means (2004)
Backfill Trench w/ Gravel	Cubic Yard	748	\$ 1.03	\$ 771	\$ 771	02310 120 3000 Means (2006)
Backfill, grade above pea gravel, w/ filter fabric	Cubic Yard	748	\$ 3.36	\$ 2,514	\$ 2,514	02315 120 3320 Means (2006)
Non-hazardous disposal of excavated soil/gravel, nonhazardous	ton	748	\$ 87.84	\$ 65,717	\$ 65,717	33 19 7269 Means (2005)
Present Value Periodic O&M Costs				\$ 97,282	\$ 97,282	
Total Present Value all O&M Costs				\$ 1,321,621	\$ 1,322,426	
TOTAL PROJECT COST:				\$ 12,729,195		

Appendix B-3
Excavation, Off-Site Disposal and Groundwater Collection and Treatment Cost Estimate
Alternative 4

Groundwater Interceptor Trench, Extraction and Treatment, Discharge, Upgradient Groundwater Redirection					
Line Item	Unit	Quantity	Unit Cost	2009 Cost	Reference
<i>Interceptor Trench, Sump Construction(2 trenches)</i>					
Interceptor Trench Excavation	bank cubic yd	3,741	\$ 2.47	\$9,231	02315 424 0250 Means (2006)
Purchase, deliver clean gravel backfill	Cubic Yard	1,496	\$ 32.86	\$49,170	17 03 0419 02704 0300 Means (2004)
Backfill Trench w/ Gravel	Cubic Yard	1,496	\$ 1.03	\$1,540	02310 120 3000 Means (2006)
Purchase, prep, set groundwater extraction sumps	Each	2	\$ 1,000.00	\$2,000	Engineering Judgment, previous experience
Purchase, install 4" PVC perforated drain pipe	ft	1,000	\$ 10.57	\$10,572	33 26 09 02709 2100 Means (2004)
Haul, dump, place excess trench waste, soil at cap area	Cubic Yard	1,496	\$ 2.24	\$3,358	02315 110 1900 Means (2006)
Backfill, grade above pea gravel, w/ filter fabric	Cubic Yard	2,244	\$ 3.36	\$7,542	02315 120 3320 Means (2006)
Extraction pumps -	Each	2	\$ 300.00	\$600	pump supplier web site, incl freight 1/4 hp motor
Pump Controls, panels, connections	Each	2	\$ 1,500.00	\$3,000	Engineering Judgment
<i>Pump System Piping (treatment building located at south end of Parcel 425)</i>					
Sumps to treatment building					
trench header lines, 48" deep	lineal ft	1,200	\$ 1.10	\$1,324	02315 620 2250 Means (2006)
install 1.5" sch 80 PVC headers	lineal ft	1,200	\$ 4.20	\$5,037	33 26 0427 Means (2004)
<i>Treatment System</i>					
Treatment Building, 20' x 20'	sq ft	400	\$ 79.36	\$31,744	median \$/sf, factory , Means (2006)
Piping Allowance	each	1	\$ 2,500.00	\$2,500	Engineering Judgement
Surge Tank, 2,500 gal poly tank	each	2	\$ 2,000.00	\$4,000	online pricing, added freight estimate
Transfer Pumps, 30 gpm, 1/2 hp centrifugal	each	2	\$ 400.00	\$800	pump web site pricing, plus freight allowance
Prefilter, basket strainers	each	2	\$ 1,200.00	\$2,400	Engineering Judgement
GAC Adsorbers, 2 in series, 200 lb ea, initial	each	2	\$ 1,432.48	\$2,865	33 13 2005 13274 1215 Means (2004)
Valving, Flowmeters, Controls, Electrical	each	1	\$ 10,000.00	\$10,000	Engineering Judgement
trench discharge line, 48" deep	lineal ft	200	\$ 1.10	\$221	02315 620 2250 Means (2006)
Discharge Piping, 4" sch 80 PVC	lineal ft	200	\$ 9.92	\$1,984	33 26 0427 Means (2004)
Utilities - electrical, phone service to site, install poles, l	each	1	\$ 20,000.00	\$20,000	allowance, engineering estimate
TOTAL INSTALLED COST				\$169,888	