AL TECH

PHASE I
RCRA FACILITY INVESTIGATION
REPORT

AL Tech Specialty Steel Corporation
Dunkirk, New York

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Text, Tables, and Figures

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AL TECH SPECIALTY STEEL CORPORATION
DUNKIRK, NEW YORK FACILITY

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AL TECH SPECIALTY STEEL CORPORATION
DUNKIRK, NEW YORK FACILITY

PREPARED

BY

ENVIRONMENTAL STRATEGIES CORPORATION

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40 CFR	Title 40
ANOVA	Code of Federal Regulations
AOC	areas of concern
BFS	bar finishing and storage
BRP	Brigham Road Plant
CAMU	corrective action management unit
CMS	corrective measures study
COD	chemical oxygen demand
HAP	Howard Avenue Plant
ICM	interim corrective measure
ISCST3	Industrial Source Complex Short-Term
LAP	Lucas Avenue Plant
NTU	nephelometric turbidity unit
NYSDEC	New York State Department of Environmental Conservation
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PE	polyethylene
PID	photoionization detector
PIECM	Pre-Investigation Evaluation of Corrective Measures
POTW	publicly-owned treatment works
PVC	polyvinyl chloride
QAPjP	Quality Assurance Project Plan
QC	quality control
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
SVOC	semi-volatile organic compound
SWMU	solid waste management unit
TAGM	Technical and Administrative Guidance Memorandum
TAL	Target Analyte List
TC	toxicity characteristic
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TOC	total organic carbon
TPH/Pet.I.D.	total petroleum hydrocarbons/petroleum identification
TSS	total suspended solids
UCL	upper confidence limit
VOC	volatile organic compound
WWTP	wastewater treatment plant

Executive Summary

In 1995, an Order on Consent (Order) was entered into by the New York State Department of Environmental Conservation (NYSDEC) and AL Tech Specialty Steel Corporation (AL Tech). The Order required the implementation of a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) at AL Tech's facility in Dunkirk, New York (site) under the RCRA Corrective Action Program.

The Order identified 24 solid waste management units (SWMUs) and 11 areas of concern (AOCs) at the site. Based on the information presented in a RCRA facility assessment and the description of current conditions for site, the need for investigation of one SWMU and three AOCs as part of the RFI was deleted from the requirements of the Order.

A Phase I RCRA Facility Investigation Work Plan was prepared and submitted to NYSDEC in 1996. The work plan identified four corrective action management units (CAMUs) that incorporated one or more SWMUs (a total of 7 SWMUs) located within the facility's four pickling areas (CAMUs A, B, C, and D). The work plan was subsequently approved and the scope of work was implemented in 1996 and 1997. The findings of the investigation and recommendations for supplemental activities are presented in this Phase I RCRA Facility Investigation Report.

The Phase I scope of work included:

- the completion of soil borings and test pits
- the installation of monitoring wells within the unconsolidated overburden
- the collection of environmental media samples for laboratory analysis, including surface and subsurface soils, groundwater, and surface water and sediment
- the collection of surface and subsurface soil samples for geotechnical testing
- the evaluation of aquifer characteristics, including water-level monitoring and insitu hydraulic conductivity testing
- the inspection of process pits and tanks
- the identification of process sewers
- the identification of storm water discharge locations to a nearby stream
- the modeling of predicted impact at the facility's boundary from metals in surficial soils

Recommendations for no further action, additional investigation (i.e., Phase II RFI), and interim corrective measures have been made for each SWMU, AOC, or CAMU based on the data and information generated via the implementation of the Phase I RFI and pursuant to the requirements of the RCRA Corrective Action Program.

No Further Action

No further action is recommended for 12 of the 16 individual SWMUs and 7 of the 8 AOCs investigated during the RFI. However, individual units in AOC 1, Transformers (Transformer T3), and AOC 3, Cooling Towers and Process Pits (AOC 3B, Howard Avenue Plant [HAP] Cooling Tower) have been identified for further investigation during the Phase II RFI or implementation of an interim corrective measure.

Additional Investigation

Additional investigation as part of the Phase II RFI is recommended for:

- SWMU 11, Shark Pit Residual Material Loading Area
- SWMU 15, Former Waste Acid Surface Impoundments
- SWMU 16, Willowbrook Pond (area)[1]
- AOC 3A, HAP Cooling Tower
- AOC 9, Unnamed Tributary to Crooked Brook
- CAMU B, Former Brigham Road Plant (BRP) Pickling Facility
- CAMU D, Former Lucas Avenue Plant (LAP) East Pickling Facility
- CAMU E, Northwest Quadrant Fill Area
- RFI-08 (groundwater)

CAMU E has been proposed within this Phase I RFI report to incorporate an area with historically diverse operations. Well RFI-08 was installed to provide a perimeter monitoring location for groundwater quality. The surficial soil sample collected from this location and one of two groundwater samples collected from this location indicated impact from lead. Consequently, RFI-08 has been identified as an additional area of interest.

Investigation as part of the Phase II RFI is recommended to provide better locations for sampling of environmental media than those previously sampled for SWMUs 11 and 15, AOCs 3A and 9, and CAMU B.

[1] Groundwater samples that were collected from monitoring wells hydraulically upgradient of Willowbrook Pond contained volatile organic compounds. The source of these constituents is not believed to be associated with operation of the pond. The SWMU designation has merely been used to identify the "area" of interest.

Volatile organic compounds were detected in soil or groundwater samples, or both, collected from the area of SWMU 16, and CAMUs D and E. The focus of the Phase II activities for these locations is the delineation of the impact and potential identification of the source areas..

Lead was detected in the total (unfiltered) sample collected during one of two groundwater sampling events from RFI-08 at a concentration above potentially applicable criteria. Because RFI-08 is located along a downgradient boundary of the facility and because lead was also detected in the surficial soil sample collected at this location above the toxicity characteristic limit, additional evaluation of groundwater quality at this location was recommended.

Additional recommendations for the Phase II RFI include the calculation of site-specific risk-based action levels for select metals and PAHs in site soils, a comparison of surface soil data with these action levels, and an assessment of surface soil and its relationship to conditions in the unnamed tributary.

The site-specific risk-based concentrations will be used to determine if it is necessary to evaluate site soils as part of the CMS. These values will also be used to develop necessary and appropriate health and safety requirements for potential remedial construction scenarios in which exposure to subsurface soils might occur.

The sediment investigation results generated for the AOC 9, Unnamed Tributary to Crooked Brook, during the Phase I RFI were inconclusive. If the results of the Phase I and Phase II investigations suggest impact to these sediments from facility operations, surface soil conditions will be assessed to determine if it is necessary to establish engineering controls to prohibit further impact to the stream.

Interim Corrective Measures

Interim corrective measures (ICMs) are recommended for:

- AOC 1, Transformer T3
- CAMU A, Former LAP West Pickling Facility
- CAMU C, Bar Finishing and Storage (BFS) Pickling Facility
- RFI-08 (soil)

During implementation of the Phase I RFI, impact to groundwater quality from historical pickling operations was identified in the areas of CAMU A and CAMU C. An ICM work plan was prepared for both CAMUs and was subsequently approved by the NYSDEC. The first phase of the ICM for CAMU A was implemented in 1997. It is anticipated that the second phase of this ICM will be implemented in late 1998. Implementation of the ICM for CAMU A was identified as a priority because the Former Lucas Avenue Plant West Picking Facility is located near the site's property boundary. The ICM for CAMU C, located in the central portion of the facility has not yet been implemented.

A supplemental ICM activity has been identified for CAMU A. In addition to the groundwater impact observed in this area during the Phase I RFI, lead was detected above the TC limit in the surface soil sample collected from RB-04. The recommended supplemental activity includes delineation of the surficial extent of impact and removal of the soil for offsite disposal or construction of an engineering control to prevent future potential migration of lead to groundwater and exposure to onsite workers.

Polychlorinated biphenyls (PCBs) were detected in one of four surface soil samples collected from AOC 1, Transformer T3, at a concentration above the PCB Spill Cleanup Policy limit for restricted soil of 25 mg/kg. The recommended ICM includes delineation of the surficial extent of PCBs above this limit and removal of the soil for offsite disposal or construction of an engineering control to prohibit access to onsite workers.

As stated above, lead was detected above the TC limit in the surface soil sample collected from RFI-08. The recommended ICM includes delineation of the surficial extent of impact and removal of the soil for offsite disposal or construction of an engineering control to prevent future potential migration of lead to groundwater and exposure to onsite workers.

<u>Anticipated Future Activities</u>

It is anticipated that the results of the Phase II RFI will indicate that no further action is required for the following SWMUs and AOCs:

- SWMU 11, Shark Pit Residual material Loading Area
- SWMU 15, Former Waste Acid Surface Impoundments
- AOC 3B, HAP Cooling Tower
- RFI-08 (groundwater only)

The following SWMUs, AOCs, CAMUs, and area of interest are anticipated to be evaluated as part of the corrective measures study (CMS) for the site:

- SWMU 16, Willowbrook Pond (area)
- AOC 1, Transformer T3
- AOC 9, Unnamed Tributary to Crooked Brook
- CAMU A, Former LAP West Pickling Facility
- CAMU B, Former BRP Pickling Facility
- CAMU C, BFS Pickling Facility
- CAMU D, Former LAP East Pickling Facility
- CAMU E, Northwest Quadrant Fill Area
- RFI-08

Limited evaluation of site soils is anticipated to be performed as part of the CMS based on potential exceedances of some metals and PAHs above the site-specific risk-based action levels or identified impact to the unnamed tributary, or both.

Corrective measures are anticipated to be required for:

- SWMU 16, Willowbrook Pond, to address the potential closure of the pond and to address the presence of volatile organic compounds detected in groundwater samples collected near the pond (but not necessarily impacted by the pond)

- AOC 9, Unnamed Tributary to Crooked Brook, to address the implementation of engineering controls to limit impact to the stream from storm water runoff from the site.

- CAMU A, Former LAP West Pickling Facility, to address soil and groundwater conditions in this area. The corrective measure is anticipated to include, in part, the ICM.

- CAMU B, Former BRP Pickling Facility, to address potential soil or groundwater impact in this area.

- CAMU D, Former LAP East Pickling Facility, to address soil and groundwater conditions in this area.

Limited areas of the site may potentially require corrective measures based on exceedances of the site-specific risk-based action levels for metals and PAHs in soil.

Corrective measures are not anticipated for the following areas:

- AOC 1, Transformer T3, as the recommended ICM is anticipated to be adequate

- RFI-08, as the recommended ICM for soil is anticipated to be adequate

- CAMU C, BFS Pickling Facility, as the recommended ICM is anticipated to be adequate and offsite migration of impacted groundwater from this CAMU (located in the central portion of the facility) is not likely

- CAMU E, Northwest Quadrant Fill Area, as the extent of impact is anticipated to be limited and offsite migration of impacted groundwater from this CAMU (located in the north-central portion of the facility) is not likely

The final measure for the site is anticipated to include provisions for a groundwater compliance monitoring program along the facility's downgradient boundaries. The absence of groundwater exposure pathways (i.e., there is no downgradient potable usage) and implementation of this program will eliminate the need for corrective measures for groundwater, except as discussed above.

1.0 Introduction

This report presents the findings of the Phase I Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) implemented at the AL Tech Specialty Steel Corporation (AL Tech) facility in Dunkirk, New York (site) (Figure 1-1). The Phase I RFI was performed in partial fulfillment of Appendix B of the Order on Consent (Order) issued by the New York State Department of Environmental Conservation (NYSDEC) (Order No. R4-1467-93-02) (NYSDEC 1995) under the RCRA Corrective Action Program.

1.1 Background

AL Tech initiated the Corrective Action Program at the Site in 1990. A RCRA Facility Assessment (RFA) was performed to identify inactive and active solid waste management units (SWMUs) and areas of concern (AOCs), which, based on process knowledge and historical and current practices, could potentially release hazardous waste or hazardous constituents (substances of concern) to the environment which may pose an unacceptable risk to human health or the environment. The findings of the RFA (McLaren/Hart 1992a) formed the basis for the development of the corrective action requirements specified for the site in Appendix B of the Order.

Appendix B of the Order identifies seven key project tasks to be implemented during the RFI process, including:

Task I	-	Description of Current Conditions
Task II	-	Pre-Investigation Evaluation of Corrective Measures
Task III	-	RFI Management Plans
Task IV	-	Facility Investigation
Task V	-	Investigative Analysis
Task VI	-	Laboratory, Bench-Scale, and Pilot Studies
Task VII	-	Reports

A study of current conditions was implemented to provide background information on the site in support of the RFA. The Current Conditions Report (McLaren/Hart 1992b) includes information on the physical setting and history of the site and facility features, process and support operations, waste generation, spill history, past enforcement actions, preliminary identification of SWMUs and AOCs, identification of constituents of interest associated with these units and the potentially impacted environmental media.

Appendix B, Section A.2 of the Order identifies the site's 24 SWMUs and 11 AOCs. Four corrective action management units (CAMUs) have been identified which encompass several of the SWMUs or AOCs or a combination of these units which represent the historical and existing pickling operations areas. The individual units were combined and classified as CAMUs, due to their proximity and compatible nature of the processes and general wastes. The units, unit numbers, and descriptions are presented in Tables 1-1 and 1-2; the locations are identified in Figure 1-2. The potential SOCs for each of the units and summaries of operational histories for the units are presented in Table 1-3. The Pre-Investigation Evaluation of Corrective Measures (PIECM) (ESC 1996a) identified potential remedial technologies that may be considered for implementation at the site and was used to focus the data requirements for the Phase I RFI Work Plan (Work Plan) (ESC 1996b).

RFI Management Plans were developed for the site to document the scope of the Phase I RFI and to provide supporting information and protocols to be implemented in support of the investigation. These documents were appended to the Work Plan:

- Quality Assurance Project Plan (QAPjP)
- Health and Safety Plan
- Data Management Plan
- Community Relations Plan

The RFI Management Plans were approved by NYSDEC in September 1996 (NYSDEC 1996).

The implementation of the approved Work Plan, including the field investigation, addressed the requirements of Task IV. Analysis and reporting of the Phase I (Tasks V and VII) are addressed within the context of this Phase I RFI Report.

If a Corrective Measures Study (CMS) is necessary, Task VI will be completed as applicable to the SWMUs, AOCs, and CAMUs identified.

1.2 Project Objectives

The objectives of the Phase I RFI were:

- to establish facility baseline conditions for potential substances of concern in the site environmental media
- to characterize the nature of the potential substances of concern (locations, media, and concentrations)
- to determine if the potential substances of concern have the potential to migrate offsite
- to provide data for use in evaluating potential corrective measures, if any, as identified in the PIECM
- to determine if the potential substances of concern pose potential unacceptable risks to human health and the environment
- to determine appropriate subsequent action based on potential risk, i.e.,
  - no further action
  - additional investigations (e.g., Phase II RFI)
  - interim corrective measure (ICM)
  - CMS

1.3 Scope of Work

The Phase I RFI included physical and chemical characterization of several environmental media and implementation of miscellaneous activities including inspection of inactive and active process tanks and pits, identification of process sewers, and a preliminary assessment of Crooked Brook (east-northeast of the site).

A brief summary of the activities performed is presented below. Implementation of these activities was performed in accordance with the NYSDEC-approved Work Plan or as modified based on conditions encountered. A summary of the implementation activities and identification of modifications to the scope of work are presented in Section 2.0.

All environmental media analytical data were compared to the potentially applicable regulatory guidelines to evaluate the nature and extent of potentially impacted media.

1.3.1 Soils Investigation

Site soils from various units were evaluated through the collection and analysis of surface and subsurface soil samples. The relationships between the SWMUs, AOCs, and CAMUs and specific sampling locations are presented in Table 1-4.

Surface soil samples were collected from the following areas:

- 7 offsite (background) locations
- 3 transformer substations (AOC 1)
- 53 facility locations

The results of analysis for the Target Analyte List (TAL) Inorganics (plus hexavalent chromium and molybdenum) for soil samples collected from the offsite locations were used to calculate background concentrations. The TAL Inorganic and geotechnical data for the onsite surface soil samples were also used to perform an Air Pathway Analysis for the Site.

Subsurface soil samples were collected from 44 locations within the facility boundary. The analytical data for these samples were also compared to calculated background concentrations to evaluate potential relative impact from facility operations with depth. Geotechnical data for the subsurface soils was used to evaluate general site characteristics and evaluate the vertical permeability of the confining clay layer underlying the site.

Several surface and subsurface soil samples were submitted for Toxicity Characteristic Leaching Procedure (TCLP) extraction and analysis of the extract for various metals. The purpose of the extraction and analysis was to evaluate the potential effect of soils, impacted by metals, on groundwater quality.

1.3.2 Groundwater Investigation

Groundwater monitoring wells were completed during the Phase I RFI, in accordance with the approved Work Plan, along the facility boundaries and within the facility.

Groundwater quality data were generated from two groundwater sampling and analytical events. Both events included the collection of samples from all newly installed wells and select existing wells. Physical groundwater data were used to determine aquifer characteristics.

1.3.3 Surface Water and Sediment Investigation

Surface water and sediment samples were collected for laboratory analysis from three locations in the unnamed southern tributary to Crooked Brook, which transverses the southwestern corner of the site.

1.3.4 Air Pathway Analysis

Data for the site surface soil samples submitted for analysis of TAL Inorganics (plus hexavalent chromium and molybdenum) were used to perform an Air Pathway Analysis. The objective of this analysis was to predict concentrations of these constituents at the property boundary and for the nearest offsite receptor(s) and to compare the predicted concentrations to established regulatory criteria.

1.3.5 Miscellaneous Investigation Tasks

Additional activities that were performed during the Phase I RFI to supplement the interpretation of other site data included:

- evaluation of the integrity of the existing monitoring wells at the site
- evaluation of the integrity of various process pits and tanks
- identification of the process sewer lines.

Other activities were also implemented in accordance with the Work Plan to support the aforementioned tasks. Each of these tasks are discussed in Section 2.0.

1.4 Report Format

Section 2.0 of this report presents a brief summary of the investigation activities. In general, all activities were completed in accordance with the NYSDEC-approved Work Plan. Necessary modifications to the Work Plan protocols are also identified in Section 2.0.

A summary of site physical conditions is presented in Section 3.0 and chemical analytical results generated during the investigation presented in Section 4.0. Section 5.0 addresses conditions proximate to SWMU 17, Closed Surface Impoundment, and includes a summary discussion of historical groundwater monitoring data for this unit.

Evaluation of the environmental media data and potentially applicable state and federal regulations and guidance are presented in Section 6.0. An interpretation of the Phase I RFI findings, including the results of the Air Pathways Analysis, is presented in Section 7.0. Conclusions and recommendations, largely developed on the basis of the data interpretation and evaluation, are presented in Section 8.0.

Table 1-1

Solid Waste Management Units
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

SWMU Category (a)	Unit No. (b)	Unit Description
Tank Systems	1	Former Lucas Avenue Plant West Pickle Facility (CAMU A)
	2	Former Brigham Road Plant Pickle Facility (CAMU B)
	3	Bar Finishing and Storage Pickle Facility (CAMU C)
	4	Former Lucas Avenue Plant East Pickle Facility (CAMU D)
	5	Former Grinding Room Pickling Process
	6	Former Barium Chloride Bath (CAMU A)
	7	Former Plating Operations
	7A	(CAMU D - Continuous Lead Coating)
	7B	(CAMU A - Continuous Lead Coating)
	7C	(CAMU A - Batch Lead Coating)
	7D	(CAMU D - Copper Coating)
	7E (c)	(CAMU A - Non-Electrolytic Copper Coating)
	8 (d)	Former Lucas Avenue Plant Neutralization Plant (CAMU A)
Container Storage Units	9	Former Trichloroethane Container Storage Area
	10	Waste Container Accumulation Areas
	10A (d)	(near Bar Finishing and Storage)
	10B (d)	(in Old Hot Top Building/Howard Avenue Plant)
	10C (d)	(in Warehouse/Howard Avenue Plant)
	11	Shark Pit Residual Material Loading Area
Waste Disposal Units	12	Former Lime Disposal Area
	13	Crucible Disposal Areas
	13A	(near Bar Finishing and Storage)
	13B	(near Howard Avenue Plant Parking Lot)
	13C	(near Brigham Road Plant)
	14	Waste Disposal Facilities
	14A	(near Bar Finishing and Storage)
	14B	(near Howard Avenue Plant Parking Lot)
	14C	(near Brigham Road Plant)
Surface Impoundments	15 (15A and 15B)	Former Waste Acid Surface Impoundments
	16	Willowbrook Pond
	17	Closed Surface Impoundment
Waste Piles	18	Grinding Dust Transfer Pile
	19	Former Waste Pile
	20	Waste Asbestos Accumulation Area
	21	Grinding Swarf Storage Area
Wastewater Treatment Units	22	Wastewater Treatment Plant
Waste Oil Handling Units	23	API Oil/Water Separator
Sewers handling hazardous waste or hazardous constituents	24	Process Sewers

a/ SWMU = solid waste management unit; CAMU = corrective action management unit.
b/ Unit numbers are as defined in the Order on Consent, not necessarily as defined in the RCRA Facility Assessment (RFA).
c/ As discussed in the Phase I RFI Work Plan, the non-electrolytic copper-coating unit identified in the Order on Consent as SWMU 7E was never constructed.
d/ The Order on Consent, Appendix B, Section C.1. indicates that no further action is required for these units, based on information provided in the RFA.

Table 1-2

Areas of Concern
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

AOC Category (a)	Unit No. (b)	Unit Description
Electrical Equipment	1	Transformers
	2 (c)	Battery Storage Areas
	2A	(Brigham Road Plant - northwest)
	2B	(Lucas Avenue Plant - south central)
	2C	(Bar Finishing and Storage)
	2D	(Howard Avenue Plant - southwest)
	2E	(Howard Avenue Plant - north central)
	2F	(Howard Avenue Plant - northeast)
	2G	(near Lucas Avenue Plant West Pickle Facility)
Tank Systems	3	Cooling Towers and Process Pits (c)
	3A	(Rust Furnace Cooling Tower)
	3B	(Howard Avenue Plant Cooling Tower)
	4 (c)	Former Heat Treating Facility
	5 (d)	Lucas Avenue Oil Tanks
	5A	(Lucas Avenue West Oil Tanks)
	5B	(Lucas Avenue East Oil Tanks)
	6	Former Aboveground Fuel Oil Tank
Raw Materials Piles	7	Scrap Steel Storage Areas
	7A	(Howard Avenue Plant)
	7B	(Bar Finishing and Storage - east)
	7C	(Bar Finishing and Storage - west)
	8	Former Coal Storage Area
Surface Water	9	Unnamed Tributary to Crooked Brook
Dust Control Areas	10	Oiled Roads
Process Waste Disposal Area	11	Former Coal Gasification Plant

a/ AOC = area of concern; CAMU = corrective action management unit.

b/ Unit numbers are as defined in the Order on Consent, not necessarily as defined in the RCRA Facility Assessment (RFA).

c/ The Order on Consent, Appendix B, Section C.1, indicates that no further action is required for these units, based on information provided in the RFA.

d/ During preparation of the Phase I RFI Work Plan, AL Tech identified a series of oil tanks at the Lucas Avenue Plant. These tanks, which were not identified in the Order on Consent, are subsequently referenced as the Lucas Avenue East Oil Tanks (AOC 5B).
The tanks identified in the Order on Consent as AOC5 are subsequently referenced as Lucas Avenue West Oil Tanks (AOC 5A).

Table 1-3

Summary of SWMU and AOC Information
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Unit No. (a)	Description	Materials Handled/SOCs (b)	Description (Period of Operation)
CAMU A (SWMU 1)	Former Lucas Avenue Plant West Pickle Facility	Caustic, nitric acid, sulfuric acid, hydrofluoric acid, lime, chromium, and nickel	Abandoned wire pickling operation consisting of 15 process tanks, 2 waste pits, an acid neutralizing pit, and 2 acid storage tanks (1921-1989).
(SWMU 6)	Former Barium Chloride Bath	Barium chloride and metal salts/metals	Abandoned molten barium chloride annealing tank in LAP (1960-1988).
(SWMU 7)	Former Plating Operations (c) (SWMUs 7B and 7C)	Copper, lead, cyanide, and trichloroethane	Abandoned lead-coating operations (1909-1964).
CAMU B (SWMU 2)	Former Brigham Road Plant Pickle Facility	Caustic, nitric acid, sulfuric acid, hydrofluoric acid, lime, chromium, and nickel	Previous bar and coil pickling operation consisting of 8 process tanks, a waste acid pit, and 2 acid storage tanks. Also included an abandoned acid neutralization plant consisting of mixing tanks and lime storage area (1948-1991).
CAMU C (SWMU 3)	Bar Finishing and Storage Pickle Facility	Caustic, nitric acid, sulfuric acid, hydrofluoric acid, lime, chromium, nickel, oxalic acid, and sodium thiosulfate	Current bar pickling operation consisting of 11 process tanks, a waste acid tank, and 2 acid storage tanks (1969-present).
CAMU D (SWMU 4)	Former Lucas Avenue Plant East Pickle Facility	Caustic, nitric acid, sulfuric acid, hydrofluoric acid, lime chromium, nickel, and trichloroethane	Abandoned fine wire pickling operation (1935-1972). Process and product storage tanks have been removed. Wastewater, acid, and neutralization pits were abandoned.
(SWMU 7)	Former Plating Operations (c) (SWMUs 7A and 7D)	Copper, lead, cyanide, and trichloroethane	Abandoned copper and lead coating operations (1909 - 1982).
SWMU 5	Former Grinding Room Pickling Process	Nitric acid, sulfuric acid, lime, chromium, and nickel	Abandoned grinding department pickling process consisted of 4 tanks and a neutralization pit (1951-1965).
SWMU 9	Former Trichloroethane Container Storage Area	Trichloroethane, oils, solvents, paints, and thinners	Temporary 55-gallon container storage area for various wastes awaiting offsite disposal (1968-1988).
SWMU 11	Shark Pit Residual Material Loading Area	Metal oxides, oil, oily sludges, and PCBs (d)	Rolloff container for temporary storage of oils and sludge from process areas (1940-present).
SWMU 12	Former Lime Disposal Area	Lime and slag	Lime (calcium and magnesium oxide).
SWMU 13	Crucible Disposal Area (SWMUs 13A, 13B, and 13C)	Crucibles, melted steel, metal salts, mill scale, and grinding dust/metals	Crucible from melt operations disposed in area and covered with soil (1908-1921; 1968 for SWMU 13B).

Table 1-3 (continued)

Summary of SWMU and AOC Information
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Unit No.	Description	Materials Handled/SOCs	Description (Period of Operation)
SWMU 14	Waste Disposal Facilities (SWMUs 14A, 14B, and 14C)	Grinding swarf, refractories slag, crucibles, and metals	Onsite fill areas used for solid waste disposal (1908-1970).
SWMU 15	Former Waste Acid Surface Impoundments	Nitric acid, sulfuric acid, hydrofluoric acid, lime, and metals	Abandoned earthen surface impoundments previously used to store waste acid from pickling processes (1950-1965).
SWMU 16	Willowbrook Pond	Cooling water, process water, condensate, stormwater runoff, groundwater, metals, and PCBs	Recirculation reservoir for cooling and process waters (1952-present).
SWMU 17	Closed Surface Impoundment	Caustic, sulfuric, nitric, and hydrofluoric acids, barium chloride, chromium, and nickel	RCRA pickle liquor surface impoundment (1976-1988); impoundment "clean closed" in 1989. (f)
SWMU 18	Grinding Dust Transfer Pile	Grinding wheel grit, metal grindings, oil, soap, and metals	Temporary outdoor storage area for grinding dust from the BFS plant (1948-present).
SWMU 19	Former Waste Pile	Grinding wheels, scrap metal, shavings and pile, general refuse, metals, coal, and oils	Abandoned outdoor waste storage. Trash and contaminated soils have been removed (1940-1967).
SWMU 20	Waste Asbetos Accumulation Area	Asbestos	Previous storage area for asbestos removal operation (1975-1978).
SWMU 21	Grinding Swarf Storage Area	Grinding wheels, scrap metal, and metals	Waste grinding swarf was previously placed on the ground. Swarf currently stored in rolloff transport boxes (1969-present).
SWMU 22	Wastewater Treatment Plant	Pickle liquor wastes, sulfuric acid, sulfur dioxide, lime, metal hydroxide sludge, and metals	Current WWTP consisting of chromium reduction, lime neutralization and metal hydroxide precipitation processes. The WWTP has 6 process tanks, 2 sulfanators, and lime storage.
SWMU 23	API Oil/Water Separator	Lubricating and hydraulic oils, mill scale, metals, and oil	100,000-gallon concrete tank for separating floating oil from HAP cooling waters (1976-present).
SWMU 24	Process Sewers	Contact, non-contact cooling waters/oils, and metals	Pipelines used to convey wastewaters to Willowbrook Pond, API Oil/Water Separator and Wastewater Treatment Plant.
AOC 1	Transformer Substations (T1 through T6)	PCBs and oil	Releases from the various units facility-wide (1920-present).
AOC 3	Cooling Towers AOC 3A - Rust Furnace Cooling Tower AOC 3B - HAP Cooling Tower	Coolants, oils, metals, soap, PCBs, and pesticides	Potential releases from the units facility-wide (1908-present).
	Process Pits	Various	

Table 1-3 (continued)

Summary of SWMU and AOC Information
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Unit No.	Description	Materials Handled/SOCs	Description (Period of Operation)
AOC 5	Lucas Avenue Oil Tanks	Drawing oil	
	AOC 5A - Lucas Avenue West Oil Tanks		12,000-gallon underground storage tanks for supplying LAP drawing machines (1940-1982).
	AOC 5B - Lucas Avenue East Oil Tanks		8,000-gallon underground storage tanks for supplying LAP drawing machines (1940-1982).
AOC 6	Former Aboveground Fuel Oil Tank	Fuel oil	Storage tank used to store No. 2 fuel oil used in plant operations (1967-1985).
AOC 7	Scrap Steel Storage Areas (AOC's 7A, 7B, and 7C)	Oils and metals	Scrap steel from finishing operations and purchased scrap for melting operations stored outdoors atop soil (1908-present).
AOC 8	Former Coal Storage Area	Aromatics	Former coal pile storage area used for the coal fired boilers (1908-1968).
AOC 9	Unnamed Tributary to Crooked Brook	Coolants, oils, metals, and metal salts	Early period process water and later period surface water (1942-present).
AOC 10	Oiled Roads	PCBs, and aromatic and halogenated compounds	Oil was laid on roads as a means of dust control (1940-1968).
AOC 11	Former Coal Gasification Plant	Coal derivatives and cyanide	Former coal gasification plant generated shield gas for carbon. All equipment has been removed.

a/ CAMU = corrective action management unit; SWMU = solid waste management unit; AOC = area of concern.
Unit numbers are as defined in the Order on Consent, and not necessarily as defined in the RCRA Faciltiy Assessment (RFA).
b/ SOC = substance of concern.
c/ As discussed in the Phase I RFI Work Plan, the non-electrolytic copper-coating unit (identified in the Order on Consent as SWMU 7E) was never constructed. Consequently, the unit was never operational and is not identified herein.
d/ PCB = polychlorinated biphenyl.

Table 1-4

Environmental Media Sample Applicability
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location	Applicable Units (a)	Sample Location	Applicable Units
Background Surface Soil Samples		**Surface Soil Samples (continued)**	
BS-01	Background	TP-08	SWMU 13A
BS-02	Background	TP-09	AOC 6
BS-03	Background	TP-10	AOC 7C
BS-04	Background	TP-11	SWMU 14C
BS-05	Background	RFI-01	General
BS-06	Background	RFI-02	SWMU 15
BS-07	Background	RFI-03	SWMU 23
		RFI-04	SWMUs 13B and 14B
Surface Soil Samples (b)		RFI-05	General
GS-01	SWMU 20	RFI-06	AOC 11
GS-02	SWMU 20	RFI-07	CAMU C
GS-03	General (c)	RFI-08	General
GS-04	General	RFI-09	SWMU 22
GS-05	General	RFI-10	SWMU 11
RB-01	SWMU 5	RFI-11	SWMU 13C
RB-02	SWMU 9	RFI-12	General
RB-03	AOC 8	RFI-13	CAMU B
RB-04	CAMU A	RFI-14	SWMU 16
RB-05	CAMU A	RFI-15	SWMU 16
RB-06	AOC 3B	RFI-16	General
RB-07	AOC 3A	RFI-17	CAMU C
TP-01	AOC 7A		
TP-02	SWMU 18	**Transformer Surface Soil Samples**	
TP-03	SWMU 21	T1-01	AOC 1/T1
TP-04	SWMUs 13B and 14B	T1-02	AOC 1/T1
TP-05	AOC 7B	T1-03	AOC 1/T1
TP-06	SWMU 19	T1-04	AOC 1/T1
TP-07	SWMU 14A	T1-05	AOC 1/T1

Table 1-4 (continued)

Environmental Media Sample Applicability
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

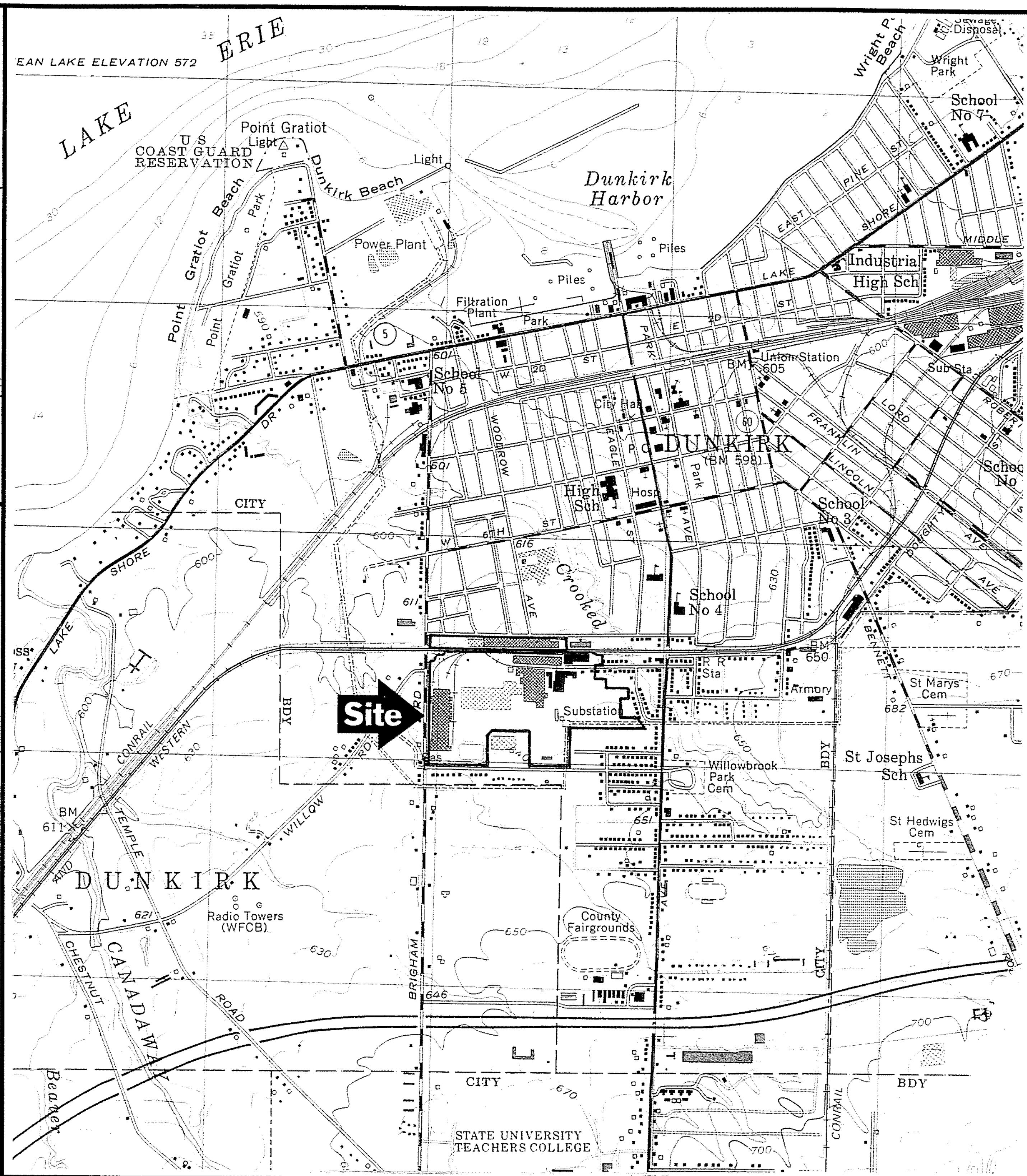
Sample Location	Applicable Units	Sample Location	Applicable Units
Transformer Surface Soil Samples (continued)		**Subsurface Soil Samples (continued)**	
T1-06	AOC 1/T1	BRB-03	CAMU B
T1-07	AOC 1/T1	TP-01	AOC 7A
T1-08	AOC 1/T1	TP-02	SWMU 18
T2-01	AOC 1/T2	TP-03	SWMU 21
T2-02	AOC 1/T2	TP-04	SWMUs 13B and 14B
T2-03	AOC 1/T2	TP-05	AOC 7B
T2-04	AOC 1/T2	TP-06	SWMU 19
T3-01	AOC 1/T3	TP-07	SWMU 14A
T3-02	AOC 1/T3	TP-08	SWMU 13A
T3-03	AOC 1/T3	TP-09	AOC 6
T3-04	AOC 1/T3	TP-10	AOC 7C
		TP-11	SWMU 14C
Subsurface Soil Samples		RFI-01	General
RB-01	SWMU 5	RFI-02	SWMU 15
RB-02	SWMU 9	RFI-03	SWMU 23
RB-03	AOC 8	RFI-04	SWMUs 13B and 14B
RB-04	CAMU A	RFI-05	CAMU D
RB-05	CAMU A	RFI-06	AOC 11
RB-06	AOC 3B	RFI-07	CAMU C
RB-07	AOC 3A	RFI-08	General
TP-01	CAMU D	RFI-09	SWMUs 13C, 17,and 22
LEB-02	CAMU D	RFI-10	SMWU 11
LEB-03	CAMU D	RFI-11	SWMU 13C
LWB-01	CAMU A	RFI-12	General
LWB-02	CAMU A	RFI-13	CAMU B
LWB-03	CAMU A	RFI-14	SWMU 16
LWB-04	CAMU A	RFI-15	SWMU 16
BRB-01	CAMU B	RFI-16	General
BRB-02	CAMU B	RFI-17	CAMU C

Table 1-4 (continued)

Environmental Media Sample Applicability
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location	Applicable Units	Sample Location	Applicable Units
Existing Monitoring Well Groundwater Samples (d)		**RFI Monitoring Well Groundwater Samples**	
B-1	Background	RFI-01	Background
WP-1	SWMU 16	RFI-02	SWMU 15
WP-2	SWMU 16	RFI-03	SWMU 23
WP-3	SWMU 16	RFI-04	SWMUs 13A and 14A
WP-4	SWMU 16	RFI-05	CAMU D
WP-5	SWMU 16	RFI-06	AOC 11
WP-6	SWMU 16	RFI-07	CAMU C
WP-7	SWMU 16	RFI-08	Perimeter
WP-8	SWMU 16	RFI-09	SWMU 13C and SWMU 22
MW-1	CAMU B	RFI-10	SWMU 11
MW-2	CAMU B	RFI-11	SWMU 13C
WT-1A	SWMU 17	RFI-12	Perimeter
WT-1B	SWMU 17	RFI-13	CAMU B
WT-2	SWMU 17	RFI-14	SWMU 16
WT-3	SWMU 17	RFI-15	SWMU 16
WT-4	SWMU 17	RFI-16	Perimeter
LAE-4	CAMU D	RFI-17	CAMU C
LAW-5	CAMU A		
LAW-6	CAMU A	**Surface Water and Sediment Samples (e)**	
		S-01	Immediately Upstream of Site
		S-02	Immediately Downstream of Site
		S-03	Downstream of Site

a/ CAMU = corrective action management unit; SWMU = solid waste management unit; AOC = area of concern.
Unit numbers are as defined in the Order on Consent, not necessarily defined in the RCRA Facility Assessment (RFA).
b/ Surface soil samples from indoor locations are not included.
c/ Surface soil samples were collected from the "general" locations to provide information on conditions not otherwise evaluated.
d/ Only existing wells which are deemed to be appropriate will be included in the groundwater sampling and analytical program.
e/ The applicability of these samples was modified from that identified in the Work Plan due to modifications in the sample locations.



REFERENCE:

USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, DUNKIRK, NY, DATED 1954, PHOTOREVISED 1979. SCALE 1:24000.

NEW YORK

QUADRANGLE LOCATION

SCALE, FEET

0 2000 4000

ENVIRONMENTAL STRATEGIES CORPORATION

Four Penn Center West, Suite 315
Pittsburgh, Pennsylvania 15276
(412) 787-5100

Figure 1-1

SITE LOCATION MAP

AL TECH SPECIALTY STEEL CORPORATION
DUNKIRK, NEW YORK

PHASE I RFI

Drawn By: 051398 Checked: 10/13/98 Approved:

Drawing Number: 483803-A8

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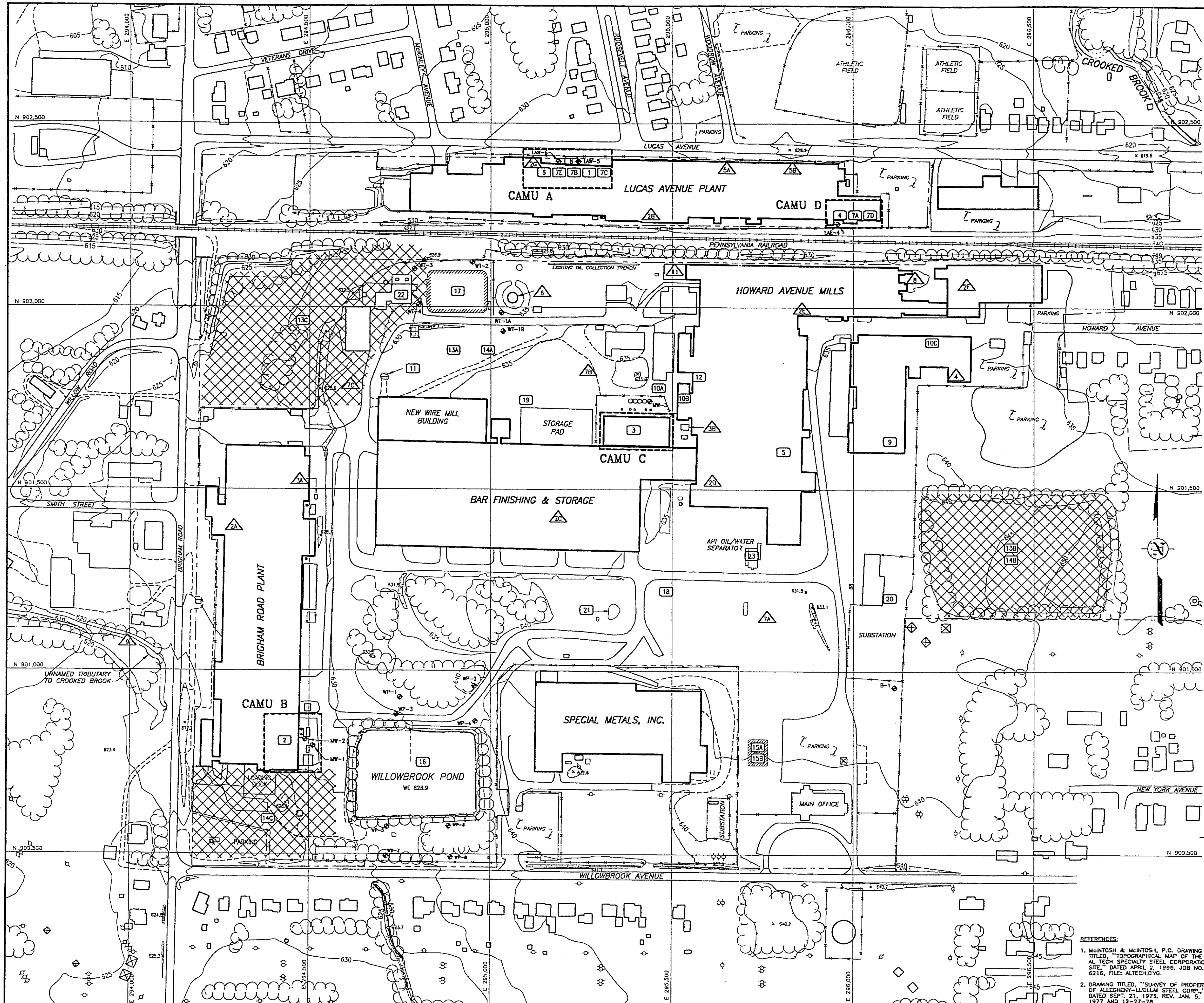


SWMUs

1. FORMER LUCAS AVENUE PLANT WEST PICKLE FACILITY
2. FORMER BRIGHAM ROAD PLANT PICKLE FACILITY
3. BAR FINISHING AND STORAGE PICKLE FACILITY
4. FORMER LUCAS AVENUE PLANT EAST PICKLE FACILITY
5. FORMER GRINDING ROOM PICKLING PROCESS
6. FORMER BARIUM CHLORIDE BATH
7. FORMER PLATING OPERATIONS [A through E]
8. FORMER LUCAS AVENUE PLANT ACID NEUTRALIZATION PLANT
9. FORMER TRICHLOROETHANE CONTAINER STORAGE AREA
10. WASTE CONTAINER STORAGE AREAS [A through C]
11. SHARK PIT RESIDUAL MATERIAL LOADING AREA
12. FORMER LIME DISPOSAL AREA
13. CRUCIBLE DISPOSAL AREAS [A through C]
14. WASTE DISPOSAL FACILITIES [A through C]
15. FORMER WASTE ACID SURFACE IMPOUNDMENTS [A and B]
16. WILLOWBROOK POND
17. CLOSED SURFACE IMPOUNDMENT
18. GRINDING DUST TRANSFER PILE
19. FORMER WASTE PILE
20. WASTE ASBESTOS ACCUMULATION AREA
21. GRINDING SWARF STORAGE AREA
22. WASTEWATER TREATMENT PLANT
23. API OIL/WATER SEPARATOR
24. PROCESS SEWERS (REFER TO FIGURE 3-6)

AOCs

1. TRANSFORMERS (REFER TO FIGURES 2-1 and 2-2)
2. BATTERY STORAGE AREAS [A through G]
3. COOLING TOWERS [A and B] AND PROCESS PITS (REFER TO FIGURES 2-1 and 2-2)
4. FORMER HEAT TREATING FACILITY
5. LUCAS AVENUE OIL TANKS [A and B]
6. FORMER ABOVEGROUND FUEL OIL TANK
7. SCRAP STEEL STORAGE AREAS [A through C]
8. FORMER COAL STORAGE AREA
9. UNNAMED TRIBUTARY TO CROOKED BROOK
10. OILED ROADS (LOCATIONS UNKNOWN)
11. FORMER COAL GASIFICATION PLANT

CAMUs

A FORMER LUCAS AVENUE PLANT WEST PICKLE FACILITY
B FORMER BRIGHAM ROAD PLANT PICKLE FACILITY
C BAR FINISHING AND STORAGE PICKLE FACILITY
D FORMER LUCAS AVENUE PLANT EAST PICKLE FACILITY

LEGEND

MW-1 EXISTING MONITORING WELL LOCATION AND DESIGNATION
APPROXIMATE AREA OF SWMUs
LOCATION OF FORMER IMPOUNDMENTS
FENCE LINE
PROPERTY LINE
UNPAVED ROADWAYS
CAMU LINES

NOTES:

1. ELEVATIONS SHOWN REFER TO NGVD 29.
2. THE LOCATION OF WELL MW-2 IS APPROXIMATE. THE WELL COULD NOT BE LOCATED AT THE TIME OF THE SURVEY.
3. PROPERTY LINE WAS ADJUSTED DUE TO NON-CLOSURE AND NO COORDINATES TO PLACE IT ON THE DRAWING.

REFERENCES:

1. McINTOSH & McINTOSH, P.C. DRAWING TITLED, "TOPOGRAPHICAL MAP OF THE AL TECH SPECIALTY STEEL CORPORATION SITE," DATED APRIL 2, 1996. JOB NO. 6216, FILE: ALTECH.DWG.
2. DRAWING TITLED, "SURVEY OF PROPERTY OF ALLEGHENY-LUDLUM STEEL CORP.," DATED SEPT. 21, 1975, REV. JAN. 5, 1977 AND 12-27-78.

SCALE, FEET
120 80 40 0 120 240

REVISIONS
DATE | DESCRIPTION | BY

DRAWN BY / CHECKED / APPROVED 10/13/98

SITE LAYOUT
AL TECH SPECIALTY STEEL CORPORATION
DUNKIRK, NEW YORK
PHASE I RFI

ENVIRONMENTAL STRATEGIES CORPORATION
Four Penn Center West
Suite 315
Pittsburgh, PA 15276
(412) 787-5100

Figure 1-2
Drawing Number
483803-E7

2.0 Phase I RFI Implementation

The methods and procedures that were followed during the implementation of the Phase I RFI are presented in the following sections. To the extent practicable, and unless otherwise identified below, all work was performed in accordance with the NYSDEC-approved Work Plan.

The scope of work for the RFI included the following:

- soils investigation
- hydrogeologic investigation
- surface water and sediment investigation
- process pit inspections
- process sewer identification
- Air Pathway Analysis
- miscellaneous investigation tasks
- miscellaneous activities

The objectives, scope of work, and means of implementation for each are provided in the following locations; the findings are presented in the subsequent sections.

2.1 Soils Investigation

The soils investigation included: (1) collection and analysis of surface soil samples and (2) collection and analysis of soil samples from subsurface locations, including soil and well borings and test pits.

The locations of four well borings, one soil boring, and four test pits were modified following NYSDEC approval of the Work Plan. The modifications to the well locations (RFI-04, RFI-05, RFI-10, and RFI-17) and soil boring location (LEB-04) were made on the basis of known or perceived site conditions. The locations identified for excavation of Test Pits TP-03, TP-07, TP-08 and TP-09 were modified in the field because of recent construction activities or underground utilities.

Two aliquots of each surface and subsurface soil sample were prepared for analysis of the TAL Inorganics plus molybdenum and hexavalent chromium by the analytical laboratory. One unsieved aliquot was used for analysis of hexavalent chromium, mercury, and cyanide. A second aliquot, sieved through a number 4 standard sieve, was used for analysis of the remaining constituents. Sieving was performed to eliminate potential interference from steel particles that were anticipated to be present throughout the site. Sieving of soils for mercury, cyanides, and hexavalent chromium was not appropriate due to potential inhalation hazards, volatility, and the absence of these constituents in the steel particles.

Three aliquots were prepared for each of the surficial soil samples (0 to 3 inches below ground surface [in-bgs]). Two aliquots were identical to those described above. The third aliquot was prepared for analysis of the TAL Inorganics (plus molybdenum and excluding hexavalent chromium, mercury, and cyanides) after sieving through a number 400 standard sieve. The results of analysis for the aliquots sieved using the number 400 sieve (and the unsieved results for mercury, cyanides, and hexavalent chromium) were used for the Air Pathway Analysis. The Air Pathway Analysis addressed potential airborne migration of soils. Consequently, it was necessary to quantify the concentrations of metals and cyanide which might be present in airborne-size particles (e.g., equated to soils passing the number 400 standard sieve).

Approximately 10 percent of the soil samples submitted for analysis of metals and cyanide were submitted for TCLP extraction and analysis of the extract for the toxicity characteristic (TC) metals. These samples were selected on the basis of elevated total concentrations for one or more of the TC metals (i.e., arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). NYSDEC also requested analysis of the TCLP extract for these facility-related metals:

- aluminum
- beryllium
- cobalt
- copper
- iron
- manganese
- magnesium
- molybdenum
- nickel
- vanadium
- zinc

The results were used to determine if the metals concentrations identified in the soil samples posed a potential to impact groundwater quality.

Eighteen soil samples were collected for geotechnical testing to evaluate general site conditions and evaluate the potential migration of substances of concern.

2.1.1 Surface Soil Sample Collection and Analysis

Surface soil samples were collected from two intervals: 0 to 3 in-bgs and 0 to 2 feet below ground surface (ft-bgs). All analytical and geotechnical results for both intervals were used to determine the presence and potential extent of potential substances of concern in the near surface and, in conjunction with subsurface data, to evaluate potential migration within the subsurface.

Samples were collected from the following areas:

- background locations
- transformer substation areas
- ground surface locations
- soil and well borings
- test pits

Each of the surface soil samples was analyzed for various analytical parameters which were selected on the basis of nearby areas (SWMUs, AOCs, and SWMUs), as identified in the Work Plan, necessary to support the Air Pathways Analysis, and to further evaluate subsurface conditions at the same locations.

2.1.1.1 Background

Background samples were collected from seven locations south of the site which were not believed to have been affected by migration from the facility with the prevailing wind. The sample locations, BS-01 through BS-07, are shown in Figure 2-1.

Each of the background soil samples was submitted for laboratory analysis of the following parameters:

- TAL Inorganics
- molybdenum
- hexavalent chromium
- free cyanide
- Target Compound List (TCL) semi-volatile organic compounds (SVOCs)

- pH
- total petroleum hydrocarbons/petroleum identification (TPH/Pet. I.D.)

Unlike the site soil samples, two aliquots were prepared for the surficial background soils samples: one which was not sieved and one which was sieved using a number 400 standard sieve. The data generated for metals and cyanide for the total aliquots were used to calculate background concentrations for comparison with the site sample data. The data generated for the number 400 sieve samples (and unsieved results for hexavalent chromium, mercury, and cyanide) were used only for the Air Pathway Analysis.

2.1.1.2 Transformer Areas

AOC 1 includes the facility transformers. There are six transformer areas located at the site within which equipment containing polychlorinated biphenyls (PCBs) in oil at concentrations of 50 parts per million (ppm) or greater is present. The locations of these transformers (T1 through T6) are shown in Figure 2-2; Transformers T1 through T3 are located outdoors and Transformers T4 through T6 are located indoors.

Visual inspections of each of the three indoor transformers were performed by representatives of the NYSDEC and ESC at the beginning of the Phase I RFI field investigation in October 1996. Although fine soil was present on the ground surface overlying the concrete floor no staining was evident on the floor in the vicinity of T4. The floor in the vicinity of T5 was stained in several locations. The concrete near T5 was intact and in good condition. The floor in the vicinity of T6 was also in good condition; a limited amount of sorbent material and a small stain were observed on the floor adjacent to the unit. NYSDEC and AL Tech agreed that the floors in these three areas were to be cleaned and that confirmatory wipe test samples from the concrete floors in T4, T5, and T6 would be collected and submitted for laboratory analysis of PCBs.

Cleaning and wipe test activities were performed by AL Tech personnel in T4, T5, and T6. The wipe test results are presented in Appendix A. A summary of the activities and findings is presented below.

- T4 - The floor in this area was scrubbed with kerosene twice and the material soaked up with clean absorbent scrubbing. The analysis of the standard wipe test from the concrete floor at T4 indicated Arolor 1254 was present at 740,000 milligrams per 100 square centimeters (mg/100 cm^2). This level exceeds the 50 mg/100cm^2 classification for a spill. A second wipe test has not yet been performed, but is scheduled to be done in the beginning of October 1998.

- T5 - The analysis of the standard wipe test from the concrete floor at T5 indicated Arochlor 1254 was present at 19 mg/100cm^2, which is below the spill classification level of 50 mg/100cm^2. No further action was taken.

- T6 - The floor in this area was scrubbed with kerosene twice and the material soaked up with clean absorbent scrubbing. The analysis of the standard wipe test from the concrete floor at T6 indicated Arolor 1254 was present at 3,100 mg/100cm^2, which exceeds the spill classification level. A second wipe test has not yet been performed, but is scheduled to be done in the beginning of October 1998.

During the Phase I RFI field investigation 16 surface soil samples were collected from the vicinity of the outdoor transformers, T1 through T3. Surface soil samples were collected from eight locations near T1 (01 through 08) and four locations each near T2 and T3 (01 through 04). Plan maps showing the approximate sample locations are presented in Appendix A.

An attempt was made to collect the surface soil samples from the ground surface to a depth of approximately 3 inches at each of these locations. Gravel and slag material had been placed on the surface in the T1 areas. This material was not collected or placed in the sample bottles because (1) these materials were inappropriate for analysis, (2) the soils that have been present for the longest period of time were below these materials, and (3) potential oil leakage from the transformers is more likely to accumulate in the fine-grained materials underlying the coarse fill.

These samples were collected for analysis of TCL PCBs, TPH/Pet. I.D., and total organic carbon (TOC). Approximately one-half of the samples from each transformer were submitted for analysis of TAL Inorganics (plus molybdenum). It was not necessary to prepare a sample from each location for inorganic analyses using the number 400 standard sieve for use in the Air Pathway Analysis. Therefore, only one sample from each transformer area was prepared for analysis using this step. One sample from each transformer area was also tested for pH.

Samples collected from Transformer T1, Location 03, and Transformer 3, Location 03, were submitted for TCLP extraction and analysis of the leachate.

A surface soil sample was collected from Transformer T1, Location 03, which was representative of grain-size conditions for these areas. Grain size analysis was performed to evaluate the potential mobility of the soil particles.

2.1.1.3 Ground Surface Locations

Surface soil samples (0 to 3 in-bgs) were collected from five locations (GS-01 through GS-05) (Figure 2-1). The locations were selected from areas otherwise not included in the investigation to provide supplemental area coverage of the site; Locations GS-01 and GS-02 were also selected to evaluate the potential presence of asbestos in surface soils in the vicinity of SWMU 20, Waste Asbestos Accumulation Area.

All of these samples were submitted for laboratory analysis of:

- TAL Inorganics (plus molybdenum, hexavalent chromium, and free cyanide)
- TPH/Pet. I.D.
- pH
- total phenols

Select samples were also submitted for analysis of TCL volatile organic compounds (VOCs) (refer to Section 4.0).

The sample collected from Location GS-03 was identified for TCLP extraction and analysis of the extract.

2.1.1.4 Soil and Well Borings

Surface soil samples were collected from the soil and well boring locations, as follows:

- 0 to 3 in-bgs (23 locations)
  - Soil Borings RB-03 through RB-07
  - Well Borings RFI-01 through RFI-16

- 0 to 2 ft-bgs (18 locations)
  - Soil Borings RB-01 through RB-07; BRB-01, LEB-03, LWB-02, LWB-03, and LWB-04
  - Well Borings RFI-02, RFI-03, RFI-04, RFI-09, RFI-10, and RFI-11

For most locations, samples from both 0 to 3 in-bgs and 0 to 2 ft-bgs were submitted for analysis of TAL Inorganics (plus molybdenum; and in some locations either hexavalent chromium or free cyanide, or both) (refer to Section 4.0). If samples were collected from both intervals, analysis for additional parameters were typically performed for samples collected from 0 to 2 ft-bgs.

Samples were collected from 0 to 3 in-bgs at RFI-03, RFI-13, RFI-14, and RFI-15 for grain-size analysis.

Surface soils from the following borings were selected for TCLP extraction and analysis of the extract:

- 0 to 3 in-bgs
  - RFI-8
  - RFI-9
  - RFI-11
- 0 to 2 ft-bgs
  - RB-4
  - RFI-4

2.1.1.5 <u>Test Pits</u>

Surface soil samples were collected from each of these test pit locations:

- 0 to 3 in-bgs (4 locations)
  - Test Pits TP-02, TP-05, TP-07, and TP-11

- 0 to 2 ft-bgs (10 locations)
  - Test Pits TP-01 through TP-08, TP-10, and TP-11

For most locations, samples from both 0 to 3 in-bgs and 0 to 2 ft-bgs were submitted for analysis of TAL Inorganics (plus molybdenum; and in some locations either hexavalent chromium or free cyanide, or both). If samples were collected from both intervals, analysis for additional parameters were typically performed for samples collected from 0 to 2 ft-bgs.

Surface soils from the following test pits were selected for TCLP extraction and analysis of the extract:

- 0 to 3 in-bgs
  - TP-02

- 0 to 2 ft-bgs
  - TP-03
  - TP-05
  - TP-11

In addition, surface soil samples were collected from two locations for grain-size analysis (TP-02 and TP-11).

2.1.2 Subsurface Soil Sample Collection and Analysis

Soil samples were collected from various intervals within the unsaturated subsurface to determine the presence and potential extent of SOCs in the soil and potential impact to groundwater quality. Sampling locations included soil and well borings and test pits.

The subsurface soil samples were submitted for analysis of various analytical parameters, as identified in the Work Plan and selected based on nearby potential source areas (SWMUs, AOCs, and CAMUs). In general, analysis for TAL Inorganics (plus molybdenum) was performed for all samples. Analysis typically also included one or more of the following parameters:

- TCL VOCs
- TCL SVOCs
- TCL PCBs
- hexavalent chromium
- free cyanide
- TPH/Pet. I.D.
- total phenols
- TOC
- pH

Subsurface soil sampling data generated during the Phase I RFI were used to evaluate the following issues.

- Potential migration of hazardous waste or hazardous waste constituents in the subsurface through comparison with analytical results for shallower and deeper sample intervals.

- Potential for migration of hazardous waste or hazardous waste constituents from the subsurface to groundwater based on the comparison of results for shallower and deeper soil intervals, groundwater quality immediately downgradient of the soil sample location, and TCLP results.

- Potential future action (no further action, Phase II RFI, ICM, or CMS) based on comparison of results with potentially applicable state or federal criteria.

2.1.2.1 Soil and Well Borings

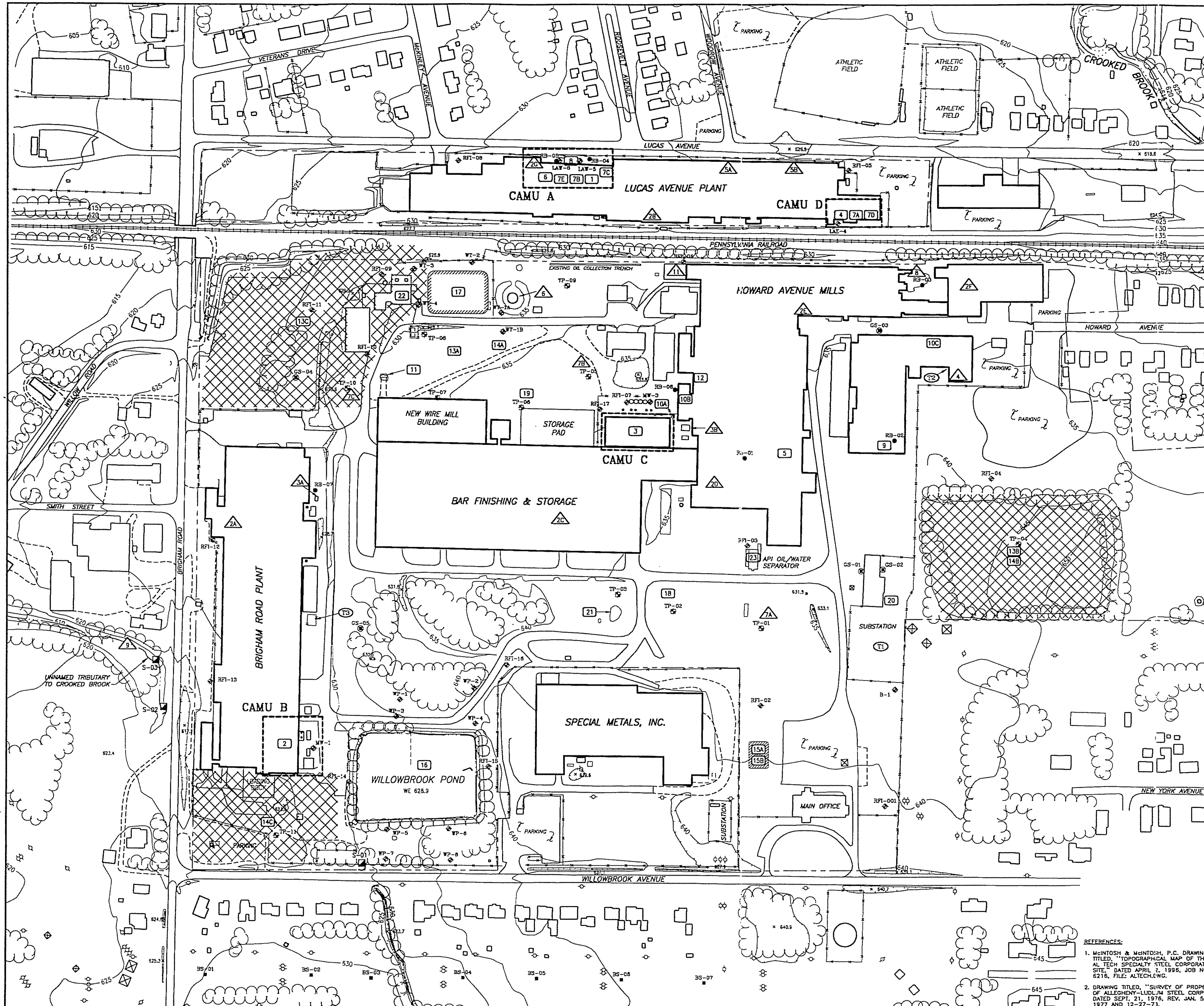
Seven soil borings (RB-01 through RB-07) were drilled and sampled as part of the Phase I RFI. The borings were completed in the approximate locations identified in the NYSDEC-approved Work Plan. Borings RB-01 and RB-02 were completed indoors (Figure 2-1).

Three series of borings were completed indoors at locations proximate to the three idled pickling areas (CAMUs A, B, and D). The exact locations of these borings were not identified in the Work Plan, but were selected in the field based on proximity to the former operations areas and overhead and underground constraints. The approximate locations of the CAMUs are shown in Figure 2-1; the approximate boring locations are shown on plan maps provided in Appendix B.

Four soil borings, LWB-01 through LWB-04, were completed in CAMU A, Former Lucas Avenue Plant (LAP) West Pickling Facility.

Three soil borings, LEB-01 through LEB-03, were completed in CAMU D, Former LAP East Pickling Facility. During the site visit of October 22 and 23, 1997, NYSDEC agreed that one of the CAMU D borings could be relocated from the area of the former pickle operations to the vicinity of the 1,1,1-trichloroethane degreaser tank (Appendix C, Project Status Report No. 1).

Three borings were intended to be completed in CAMU B, Former Brigham Road Plant (BRP) Pickling Facility. Due to the presence of 5-foot thick concrete foundation (6 to 11 ft-bgs) underlying much of the area immediately west of the former pickling area, only one boring (BRB-01) was completed to the intended depth and a second boring (BRB-03) was advanced only to the uppermost portion of the concrete foundation (Appendix C, Project Status Report No. 2).



LEGEND

- SWMU LOCATION AND UNIT DESIGNATION (REFER TO FIGURE 1–2 FOR DESCRIPTION)
- AOC LOCATION AND UNIT DESIGNATION (REFER TO FIGURE 1–2 FOR DESCRIPTION)
- RFI–11 MONITORING WELL LOCATION AND DESIGNATION
- RB–01 SOIL BORING LOCATION AND DESIGNATION
- TP–08 TEST PIT LOCATION AND DESIGNATION
- GS–01 GROUND SURFACE SOIL SAMPLE LOCATION AND DESIGNATION
- BS–08 BACKGROUND SURFACE SOIL SAMPLE LOCATION AND DESIGNATION
- S–01 SURFACE WATER AND SEDIMENT SAMPLING LOCATION AND DESIGNATION
- T1 TRANSFORMER LOCATION AND DESIGNATION

CAMUs

- A FORMER LUCAS AVENUE PLANT WEST PICKLE FACILITY
- B FORMER BRIGHAM ROAD PLANT PICKLE FACILITY
- C BAR FINISHING AND STORAGE PICKLE FACILITY
- D FORMER LUCAS AVENUE PLANT EAST PICKLE FACILITY

- APPROXIMATE AREA OF SWMUs
- LOCATION OF FORMER IMPOUNDMENTS
- FENCE LINE
- UNPAVED ROADWAYS
- CAMU LINES
- PROPERTY LINE

NOTES:

1. ELEVATIONS SHOWN REFER TO NGVD 29.
2. PROPERTY LINE WAS ADJUSTED DUE TO NON-CLOSURE AND NO COORDINATES TO PLACE IT ON THE DRAWING.
3. THE LOCATIONS OF TP–05, TP–06 AND TP–07 ARE APPROXIMATE.

REFERENCES:

1. McINTOSH & McINTOSH, P.C. DRAWING TITLED, "TOPOGRAPHICAL MAP OF THE AL TECH SPECIALTY STEEL CORPORATION SITE." DATED APRIL 2, 1996, JOB NO. 6216, FILE: ALTECH.DWG.
2. DRAWING TITLED, "SURVEY OF PROPERTY OF ALLEGHENY-LUDLUM STEEL CORP.," DATED SEPT. 21, 1976, REV. JAN. 5, 1977 AND 12-27-73.

SCALE, FEET
120 80 40 0 120 240

REVISIONS		
DATE	DESCRIPTION	BY

SEAL

DRAWN BY RSZ 071797
CHECKED
APPROVED 10/13/98

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SITE LAYOUT AND RFI LOCATIONS
AL TECH SPECIALTY STEEL CORPORATION
DUNKIRK, NEW YORK
PHASE I RFI

ENVIRONMENTAL STRATEGIES CORPORATION
Four Penn Center West
Suite 315
Pittsburgh, PA 15276
(412) 787-5100

Figure 2–1

Drawing Number
483803–E16

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Boring and well logs indicating stratigraphic information, standard penetration resistance, moisture content, and well construction details are presented in Appendix D. The intervals of subsurface soil sample collection depths are also shown on the boring logs.

Subsurface soil samples were collected from RFI-05 (6.5 to 6.9 ft-bgs) and RFI-10 (4 to 6 ft-bgs) for grain-size analysis.

Samples from the following borings were submitted for TCLP extraction and analysis of the extract.

- RB-4 - 7 to 9 ft-bgs
- RFI-11 - 4 to 6 ft-bgs
- LWB-3 - 6 to 8 ft-bgs

Headspace analysis was performed on a portion of each split-barrel sample to determine if VOCs were present. This information was then used to determine if samples were to be submitted for analysis of TCL VOCs and for waste characterization. For each sample, a sealable plastic bag was partially filled with a portion of the sample. The sample was heated to approximately 65 degrees Fahrenheit; an HNu photoionization detector (PID) was subsequently inserted into the bag to test for VOC vapors.

2.1.2.2 Test Pits

Eleven test pits were excavated at the Site as part of the Phase I RFI. The locations of the completed pits are shown in Figure 2-1. The test pits were excavated using a backhoe to the first saturated zone in the overburden or to the top of weathered bedrock. Impact to the excavated soils was not observed. Therefore, all soils were placed back in the open excavations in the reverse order of removal. The test pit logs are presented in Appendix E.

Samples from the following test pits were submitted for TCLP extraction and analysis of the leachate.

- TP-2 - 9 to 10 ft-bgs
- TP-5 - 8 to 9 ft-bgs
- TP-7 - 3 to 4 ft-bgs
- TP-10 - 8 to 9 ft-bgs

2.2 Hydrogeologic Investigation

The hydrogeologic investigation included the completion of the following tasks:

- installation of overburden monitoring wells
- groundwater sample collection and analytical events (Rounds 1 and 2)
- aquifer characterization
  - water-level measurements
  - in-situ hydraulic permeability tests
  - groundwater flow evaluation

2.2.1 Monitoring Well Installation

The RFI included the installation of overburden monitoring wells RFI-1 through RFI-17 (Figure 2-1). As discussed above, the locations of five wells were modified subsequent to approval of the Work Plan (Section 2.1).

The installation process consisted of borehole advancement, well construction, and well development. In general, the wells were positioned to screen the uppermost saturated zone encountered at each location. For almost every well location, saturated conditions were encountered near the interface between the overburden and weathered bedrock (refer to Section 3 for additional discussion of site geologic and hydrologic conditions). The well logs are presented in Appendix D.

The wells were constructed of 2-inch diameter, threaded, and flush-jointed, Schedule 40 polyvinyl chloride (PVC) screen and riser pipe. The slot size of the screen was based on field evaluation of the grain size of the overburden material and varied from 0.01- to 0.02-inch machine-slotted screen. The length of the filter packs (primary and secondary) and bentonite seals were modified as necessary to maintain the surficial integrity, i.e., allowed installation of all materials and a minimum 3-foot bentonite/cement grout. A permanent identification number was painted on each protective casing at the completion of well installation. Well construction details for the new and existing monitoring wells are provided in Table 2-1.

The newly installed monitoring wells were developed a minimum of 48 hours after completion. The wells were developed to remove materials that may have entered the borehole or well casing during drilling and installation activities and to ensure that hydraulic communication between the formation and screen was achieved. Each monitoring well was developed by removing between 10 to 20 well volumes using a submersible pump. Development was considered complete when field parameters (pH, temperature, and specific conductance) stabilized and a turbidity of 50 nephelometric turbidity units (NTUs) or less was obtained.

2.2.2 Groundwater Sample Collection and Analysis

Two rounds of groundwater samples were collected for laboratory analysis: November 1996 (Round 1) and March 1997 (Round 2). During both rounds, groundwater samples were collected from the following site wells:

- RFI-01 through RFI-17
- B-1
- MW-1 and MW-3
- WP-4 and WP-5[1]
- WT-1A, WT-1B, WT-2, WT-3, and WT-4
- LAE-4, LAW-5, and LAW-6

The collection of samples from the existing wells was contingent upon identification of their locations and their acceptable integrity, as determined during the well integrity evaluation (Section 2.6.2). Well MW-2 was never located.

The location of each of these wells (excluding MW-2) is shown in Figure 2-1.

2.2.2.1 Well Purging

Each monitoring well was purged before groundwater samples were collected to ensure that the water present in the well was representative of the formation. A minimum of three well volumes were removed from each well at a low pumping rate using a submersible pump with dedicated polyethylene tubing.

After removal of each well volume, pH, specific conductance, and temperature were measured in accordance with the Work Plan. Well purging was considered complete when consecutive readings of pH, specific conductivity, and temperature measurements were within

[1] The Work Plan stated that the NYSDEC would select two of the eight wells previously installed along the perimeter of SWMU 16, Willowbrook Pond, for inclusion in the RFI groundwater sampling and analytical program; Wells WP-4 and WP-5 were ultimately selected.

five percent variation and, if possible, turbidity levels of 50 NTUs or less were attained. Well purging was also considered complete if a well was pumped dry. Well purging information for both groundwater sampling rounds is presented in Appendix F.

2.2.2.2 Groundwater Sample Collection

Groundwater samples were collected from each of the wells immediately following completion of purging or after sufficient recovery had occurred in wells that had been pumped dry. The samples were collected using a submersible pump with dedicated polyethylene tubing. The wells were purged at a low pumping rate to reduce the turbidity of the water.

Sample aliquots were collected directly from the discharge tubing into the pre-labeled, laboratory preserved and prepared sample bottles in accordance with the Work Plan. For those wells in which the turbidity readings for the final purge volume were greater than 50 NTUs, aliquots for both total and dissolved metals analysis were prepared. The total aliquots were discharged directly to the preserved sample bottles; dissolved aliquots were discharged into unpreserved sample bottles and subsequently filtered in the field (using a 0.45-micron filter) into the appropriate preserved sample bottle.

2.2.2.3 Groundwater Analytical Program

Groundwater samples collected during Round 1, in November 1996, were submitted for analysis of the following parameters in accordance with the NYSDEC-approved Work Plan.

- TCL VOCs
- TCL SVOCs
- TCL PCBs
- TAL Inorganics
- molybdenum
- hexavalent chromium
- free cyanide
- total phenols
- fluoride, chloride, sulfate, nitrate, ammonia, pH, specific conductance, and alkalinity (miscellaneous parameters)

Analysis for total organic carbon (TOC), chemical oxygen demand (COD), and total suspended solids (TSS) was performed for groundwater samples collected from the WT-series wells (and

RFI-09) to maintain consistency with the periodic monitoring program for the Closed Surface Impoundment, SWMU 17.

Following receipt and review of the analytical results for Round 1 and in accordance with the Work Plan, AL Tech proposed a modified list of parameters for each well for use during the second groundwater sampling round. The modified program was as follows.

Parameters	Applicable Wells
TCL VOCs	select monitoring wells
TCL SVOCs	select monitoring wells
TCL PCBs	no wells
TAL Inorganics	all Round 1 monitoring wells
molybdenum	all Round 1 monitoring wells
hexavalent chromium	all Round 1 monitoring wells
free cyanide	all Round 1 monitoring wells
total phenols	select monitoring wells
miscellaneous parameters	all Round 1 monitoring wells

A detailed explanation for the modifications is provided in correspondence to NYSDEC (ESC 1997), which is presented in Appendix G. It should be noted that, due to the presence of VOCs in groundwater samples collected from Wells WP-4 and WP-5 during Round 1, three additional wells located along the perimeter of Willowbrook Pond were included in the Round 2 sampling program (WP-1, WP-2, and WP-3).

2.2.3 Aquifer Characterization

Aquifer characterization activities included:

- the collection of water-level measurements
- performance of in situ hydraulic conductivity tests (slug tests)
- evaluation of groundwater flow velocities and directions

Water-level measurements (and total well depths) were recorded for all site wells on three occasions:

- November 1996, during implementation of the first groundwater sampling round
- March 1997, during implementation of the second groundwater sampling round
- May 1997, during implementation of the in situ slug tests

The measurements were recorded from the surveyed measuring point for each well using an electronic water-level indicator.

The water-level data collected were used to generate potentiometric surface maps, evaluate groundwater flow directions in the overburden, and calculate hydraulic gradients. The gradients were subsequently used in conjunction with the slug test data to calculate horizontal flow velocities for the overburden.

In May 1997, falling- and rising-head slug tests were performed in seven of the newly installed monitoring wells (RFI-03, RFI-04, RFI-05, RFI-06, RFI-10, RFI-14, and RFI-17). A Model SE1000C Hermit Environmental Data Logger and downhole pressure transducer were used to measure and record changes in the groundwater levels. The rising-head tests were performed by completing the following procedures:

- measurement of the static water level with the pressure transducer
- gently submersing a 2- to 4-foot long solid PVC slug, depending on the length of the water column in the well to create a head difference in the well
- continuous monitoring of the water levels until static conditions were achieved or a sufficient length of time has passed to generate the necessary data

The falling-head test was then performed by removing the slug and recording falling water levels to near-static conditions. Due to variances in site conditions, each test required 0.5 to 2.5 hours for the static water level to return to near-static conditions. The data were downloaded to a computer and the hydraulic conductivities were then calculated.

2.3 Surface Water and Sediment Investigation

A surface water and sediment investigation was conducted for the unnamed creek that flows beneath the southwestern corner of the site and discharges to Crooked Brook approximately 0.75-mile northwest of the site.

The objectives of the investigation were as follows:

- identify the concentrations and distribution of potential substances of concern
- identify potential source areas of substances of concern
- evaluate the potential migration of substances of concern
- identify potential soil characteristics that may impact potential substances of concern migration or potential corrective measures

Surface water and sediment sample collection and analysis are addressed in the following two subsections.

During the October 1996 site visit, NYSDEC and AL Tech modified the locations of the surface water and sediment samples identified in the approved Work Plan, based on accessibility and identification of areas of sufficient potential deposition (Appendix C, Project Status Report No.1) (Figure 2-1). The surface water and sediment samples were collected concurrent with the drilling activities, excluding a surface water sample collected for analysis of TCL SVOCs from Location S-02 concurrent with Round 1 of the groundwater sampling program.

An evaluation of Crooked Brook, located east and north of the site and discharging to Lake Erie approximately 1 mile northwest of the site, was also performed.

2.3.1 Surface Water Sampling and Analysis

The surface water samples containers were filled from the approximate middle of the stream by tipping the opening of the sample container below the water surface and facing upstream. The samples were collected beginning at the downstream location (S-03) and proceeding to the upstream (S-01) location.

The analytical laboratory neglected to analyze the sample aliquot collected from Location S-02 for TCL SVOCs. Consequently, an additional sample was collected from this location for analysis of TCL SVOCs only, concurrent with the Round 1 groundwater sampling event in November 1996.

2.3.2 Sediment Sampling and Analysis

The Work Plan specified that samples were to be collected from up to three intervals at each location using a split-barrel sampler, Shelby tube, or similar sampling device:

- 0 to 3 inches (S-01, S-02, S-03)
- 3 to 12 inches (S-03; and, if there was no differentiation of the material, S-01 and S-02)
- appropriate intervals to be determined in the field based on differentiation of the material (S-02 and S-03)
- 12 to 24 inches (S-03)

Only one sediment sample was collected from Location S-01 for laboratory analysis. This sample was collected from the west bank of the stream at the approximate elevation of the water surface using a dedicated carbon-steel trowel. Sediment could not be collected from the stream bottom due to the presence of large cobbles, which also prevented penetration and the collection of material at depth.

The materials encountered during the collection of sediment samples from Locations S-02 and S-03 included a thin zone of sand and gravel mixed with an underlying silt and clay. Three attempts were made at Locations S-02 and S-03 (using a split-barrel sampler and sledge hammer) to collect samples at the depths identified in the Work Plan. The silty clay material, which was encountered in the onsite borings, was extremely dense and could not be penetrated sufficiently. Consequently, only one sample was collected from each of these locations for laboratory analysis.

Due to the extreme difficulty in collection of the sediment samples, sediment samples were not collected for grain-size analysis as had been anticipated in the Work Plan.

2.3.3 Crooked Brook Evaluation

An evaluation of Crooked Brook was performed to identify the location and nature of discharge sources to the underground section of the stream between the facility gate at Howard Avenue and the vicinity of Sixth Street where the stream resurfaces. The evaluation included a reconnaissance of the stream, mapping of potential discharges, and a review of available city and facility maps to identify such discharge points (Figure 2-3).

2.4 Air Pathway Analysis

A Baseline Air Pathway Analysis was conducted using the Industrial Source Complex Short-Term model – version 3 (ISCST3). The objective of the Air Pathway Analysis was to determine:

- Fenceline Impacts of Particulate Matter less than 10 microns (PM_{10})
- Impacts of PM_{10} on off-site sensitive receptors
- Fenceline impacts of TAL Inorganics
- Impacts of TAL Inorganics on off-site sensitive receptors.

Impacts were evaluated on a 1-hour, 24-hour, and annual basis and compared appropriate to state or federal ambient air levels.

2.5 Process Pit Inspection and Process Sewer Identification

This activity included the inspection of 14 process pits and the identification and description of the facility's process sewer lines. The process pits were visually inspected to evaluate the integrity of each pit and to determine if they pose a potential concern to adjacent soils and groundwater. The locations of the sewer lines were identified to determine the current uses of the lines and evaluate if the lines represent a potential concern to adjacent soils and groundwater. The scope of work for each of these tasks is presented in the following sections.

2.5.1 Process Pit Inspection

In the fall of 1996, a visual examination of 14 facility process pits was conducted. The Medart Straightener pits were inspected in the summer of 1997. Before the examination of each pit, the liquids contained in the pits were pumped out and the walls and floors were cleaned, as necessary. The inspection of the pits involved reviewing the historical uses of the pits and examining the walls and floors for fractures or cracks that could potentially result in a release of product. Pits that were easily accessible were inspected by an ESC engineer; those pits requiring confined space entry permits were inspected by AL Tech personnel with ESC oversight. Table 2-2 identifies the pits included in the inspection consistent with the approved Work Plan. The approximate locations of the pits are shown in Figure 2-2.

Documentation of conditions was supported through the use of sketches and an evaluation of the structural condition.

2.5.2 Process Sewers Identification

The current and former site process sewers were identified during the Phase I RFI. A site reconnaissance of the lines was performed during May 13 and 14, 1997. Information collected during the site visit and facility engineering drawings included:

- physical characterizations of the historic and current process sewers
  - age
  - location of process sewers including laterals
  - diameter and construction materials of pipes and manholes
  - previous repairs

- liquids conveyed by the process sewers
  - dates of operation of the system
  - hazardous constituents or hazardous waste transported by the system
  - concentration of constituents in process water
  - current volume handled by the system

- results of previous integrity evaluations of the historic and current process sewers (if any)
  - reason for evaluation
  - date of evaluation
  - results of evaluation

This information was compiled and used to generate a plan view of these lines and summarize construction information for the lines.

2.6 Miscellaneous Activities

Various miscellaneous activities were performed in order to complete the project in accordance with the Work Plan. Five of the significant activities include the performance of the well integrity evaluation, potable well survey, site survey, data validation, waste handling, and equipment decontamination. Each of these activities is addressed below.

The Work Plan also required evaluation of bedrock within 1,000 feet of the site. Due to the absence of bedrock outcrops in the area and the apparent absence of indications of bedrock structure in the area, no further evaluation was performed.

2.6.1 Well Integrity Evaluation

The previously installed wells at the facility were evaluated to assess the potential for inclusion, abandonment, or replacement in the groundwater monitoring system. The well evaluation consisted of the following tasks:

- assessing the integrity of the surface seal and protective casing
- reviewing the boring logs and construction procedures and diagrams
- reviewing historic groundwater sampling data, including field measurements and analytical results
- obtaining a complete round of groundwater levels and total depth soundings
- labeling each well correctly (as necessary).

Available boring logs and construction diagrams for the existing wells are also presented in Appendix D. The summary evaluation for the existing wells is provided as Table 2-3; well construction information was presented in Table 2-1.

2.6.2 Potable Well Survey

The approximate locations of 10 groundwater production wells in the vicinity of the site are identified in Figure 2-4. Only two of the wells identified are located within approximately 4,000 feet of the site boundary. A residential supply well was identified near Brigham Road, approximately 2,500 feet south-southwest of the site. A supply well was also identified at the Dunkirk Water Treatment Plant, approximately 4,000 feet north of the site. Both of these wells are presumed to be on a lateral hydraulic gradient to the site. The remaining eight identified wells are located a minimum of approximately 9,000 feet southeast and presumably hydraulically upgradient of the site.

The information presented in Figure 2-4 is identical to that presented in the RFA (McLaren/Hart 1992a). No new information, including well construction descriptions, was available through the NYSDEC, local department of health, or database searches.

2.6.3 Site Survey

McIntosh and McIntosh, P.C., of Rochester, New York, completed a topographic survey plan of the site, including the locations of existing site monitoring wells, which was presented in the Work Plan. Following implementation of the Phase I RFI field investigation, McIntosh and McIntosh, P.C., performed additional survey activities, including:

Location Type	Horizontal Coordinates (NYS)	Elevation Top-of-Casing	Elevation Ground Surface
soil borings	X	-	X
new and existing wells	X	X	X
test pits	X	-	X

The locations and elevations of the BRB-, LWB-, and LEB-series borings were estimated, as the locations are inside. Test pits for which the locations and elevations were estimated (due to regrading of the staked location during facility construction activities) included: TP-05, TP-06, and TP-07. The locations of the GS-series surface soil samples and surface water and sediment sample locations were not surveyed. The ground surface and top of well casing elevations for the newly installed wells are provided in Table 2-1 and on the boring logs (Appendix D). The top of the PVC casing (or other) for each well was permanently marked; this permanent mark provides a point of reference for surveying and water-level monitoring.

2.6.4 Data Validation

Approximately 20 percent of the analytical sample results for non-groundwater samples and all of the groundwater analytical sample results were validated in accordance with the Work Plan. Validation was performed by a third-party validator, Heartland Environmental Services, Inc. (Heartland), in accordance with applicable and appropriate protocols.[2] The

[2] U.S. Environmental Protection Agency, June 1994, "National Functional Guidelines for Inorganic Data Review." (U.S. EPA 1994a).

U.S. Environmental Protection Agency, June 1994, "National Functional Guidelines for Organic Data Review." (U.S. EPA 1994b).

Specific method requirements from OLM01.8, SW-846, EPA Level IV Data Quality Objectives, and best professional judgment were also applied as appropriate.

validation notations were subsequently transcribed from Heartland's reports to the data tables presented in Section 4.0.

2.6.5 Materials Handling

Materials managed during the Phase I RFI included:

- soil and rock cuttings generated during monitoring well and soil borings advancement
- groundwater generated during well development and purging activities
- sampling equipment decontamination fluids
- drilling equipment decontamination fluids.

All materials excavated from the test pits were placed back in the excavation on completion in the reverse order of removal, based on the absence of observable impact. Soil and rock cuttings generated during drilling with no apparent potential impact (staining, odors, or volatiles screening using a PID), were discarded to the ground surface. Soil cuttings from the following locations from soil and well borings were contained for the reasons noted:

Location	Reason for Containment
RFI-02	possible effect from former surface impoundment
LWB-borings/ CAMU A	odor, potential effect from hexavalent chromium
BRB-borings/ CAMU B	odor, potential effect from hexavalent chromium
RFI-13	obstruction in a parking lot
RB-series	inside borings, obstruction to operations

The soil cuttings mentioned above were contained in a plastic lined covered 55 gallon drums, which were moved to temporary storage area in the south end of the Warehouse. Subsequently, these drums were emptied into a lined 20 yard roll-off box designated as K062 debris, and disposed of through microencapsulation at Envotech Management Services, located in Bellville, Michigan.

All groundwater development and purge water was placed in labeled 55-gallon drums at the point of generation. The drums were then moved to the facility's wastewater treatment plant

(WWTP) where they were discharged for treatment prior to discharge to the City of Dunkirk sanitary sewer. Decontamination of the downhole drilling equipment was performed immediately adjacent to the WWTP building and discharged directly to the WWTP.

Table 2-1

Well Construction Summay
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Well No.	New York State Plane Coordinates Northing	Easting	Top-of-Casing Elevation (ft-msl) (a)	Ground Surface Elevation (ft-msl)	Drilling Method HSA (b)/ NX Core and Rotary Ream	Borehole Diameter Overburden/ Bedrock (inches)	Total Depth (ft-bgs)	Well Construction Material (c)	Screen Length/Slot Size (feet/inches)	Screen Interval (ft-bgs)	Installation Date	Material Screened
RFI Monitoring Wells												
RFI-01	900639.62	296086.64	640.72	640.88	X/- (d)	10.5	13.48	2", Sch. 40 PVC	5/0.010	8.5 - 13.5	10/21/96	Overburden
RFI-02	900912.23	295744.75	638.54	638.73	X/-	10.5	12.3	2", Sch. 40 PVC	5/0.010	7.5 - 12.5	10/22/96	Overburden
RFI-03	901349.23	295709.08	635.87	635.94	X/-	10.5	9.92	2", Sch. 40 PVC	5/0.010	5 - 10	10/25/96	Overburden
RFI-04	901533.42	296378.40	638.48	638.21	X/-	10.5	24.88	2", Sch. 40 PVC	10/0.010	15 - 25	10/29/96	Overburden
RFI-05	902372.58	295989.09	634.26	631.99	X/-	10.5	14.98	2", Sch. 40 PVC	8/0.010	7 - 15	10/28/96	Overburden
RFI-06	902124.68	295531.68	633.87	631.59	X/-	10.5	11.25	2", Sch. 40 PVC	7/0.010	4 - 11	10/25/96	Overburden
RFI-07	901742.05	295375.76	635.12	635.53	X/-	10.5	12.06	2", Sch. 40 PVC	5/0.010	7 - 12	10/28/96	Overburden
RFI-08	902397.15	294910.29	631.50	631.80	X/-	10.5	10.95	2", Sch. 40 PVC	5/0.010	5 - 11	10/29/96	Overburden
RFI-09	902089.56	294698.61	632.22	630.14	X/-	10.5	11.03	2", Sch. 40 PVC	5/0.010	6 - 11	10/24/96	Overburden
RFI-10	901871.44	294658.19	632.16	630.00	X/-	10.5	13.39	2", Sch. 40 PVC	7/0.010	6.5 - 13.5	10/24/96	Overburden
RFI-11	901992.94	294505.63	632.65	630.64	X/-	10.5	16.94	2", Sch. 40 PVC	8/0.020	9 - 17	10/25/96	Overburden
RFI-12	901364.00	294231.17	630.30	628.43	X/-	10.5	20	2", Sch. 40 PVC	10/0.010	10 - 20	10/23/96	Overburden
RFI-13	900975.33	294227.35	622.19	622.49	X/-	10.5	17.04	2", Sch. 40 PVC	10/0.010	7 - 17	10/24/96	Overburden
RFI-14	900703.50	294609.76	633.11	630.90	X/-	10.5	14.07	2", Sch. 40 PVC	7/0.010	7 - 14	10/23/96	Overburden
RFI-15	900745.06	294994.16	642.09	640.27	X/-	10.5	17.04	2", Sch. 40 PVC	10/0.01	7 - 17	10/23/96	Overburden
RFI-16	901021.40	295044.59	641.13	638.77	X/-	10.5	14.9	2", Sch. 40 PVC	10/0.010	5 - 15	10/22/96	Overburden
RFI-17	901723.24	295299.98	637.39	635.28	X/-	10.5	11.58	2", Sch. 40 PVC	5/0.010	6.5 - 11.5	10/28/96	Overburden
Existing Monitoring Wells												
B-1	900955.84	296113.95	638.54	638.80	X/X	10.5/6	20.38	3", Sch. 40 PVC	5/0.010	19 - 24	-	Bedrock
WP-1	900926.95	294748.88	639.51	637.78	X/-	-	16.44	2", Sch. 40 PVC	10/0.010	6.5 - 16.5	-	Bedrock
WP-2	900958.04	294954.38	639.51	641.72	X/-	-	18.27	2", Sch. 40 PVC	10/0.010	8 - 18	-	Bedrock
WP-3	900880.69	294729.02	643.61	635.17	X/-	-	14.58	2", Sch. 40 PVC	5/0.010	9.5 - 14.5	-	Bedrock
WP-4	900861.45	294957.61	637.11	640.37	X/-	-	18.66	2", Sch. 40 PVC	10/0.020	8.5 - 18.5	-	Bedrock
WP-5	900574.39	294714.11	641.90	633.59	X/-	-	15.78	2", Sch. 40 PVC	10/0.010	6 - 15	-	Bedrock
WP-6	900576.41	294883.93	635.69	636.57	X/-	-	15.14	2", Sch. 40 PVC	10/0.010	5 - 15	-	Bedrock
WP-7	900494.74	294711.32	638.22	633.06	X/-	-	18.55	2", Sch. 40 PVC	10/0.010	8.5 - 18.5	-	Bedrock
WP-8	900492.09	294889.14	635.11	636.79	X/-	-	17.48	2", Sch. 40 PVC	10/0.020	7.5 - 17.5	-	Bedrock
MW-1	900794.31	294510.48	638.75	~ 639	X/-	-	12.62	2", Sch. 40 PVC	5/0.01	7.5 - 12.5	-	Overburden
MW-3	901743.26	295439.16	629.38	~ 630	X/-	-	11.33	2", Sch. 40 PVC	5/0.01	6.5 - 11.5	-	Overburden
WT-1A	901985.49	2958029.84	635.17	633.70	X/X	8.5/3	15.63	2", Sch. 40 PVC	10/0.010	5.5 - 15.5	10/21/85	Bedrock
WT-1B	901934.02	295034.08	635.62	633.36	X/X	8.5/3	13.04	2", Sch. 40 PVC	10/0.010	3 - 13	10/21/85	Bedrock
WT-2	902122.49	294948.54	634.60	632.12	X/X	10.5/6	9.42	4", Sch. 40 PVC	5/0.010	4.5 - 9.5	10/15/81	Bedrock
WT-3	902103.94	294787.26	632.35	630.84	X/X	10.5/6	15.19	4", Sch. 40 PVC	10/0.010	5 - 15	10/15/81	Bedrock
WT-4	902006.05	294799.41	630.18	629.93	X/X	10.5/6	16.45	4", Sch. 40 PVC	10/0.010	6.5 - 16.5	10/15/81	Bedrock
LAE-4	902228.99	295957.82	632.28	632.31	X/X	10.5/6	19.84	2", Sch. 40 PVC	10/0.010	10 - 20	-	Bedrock
LAW-5	902397.41	295244.87	632.44	632.65	X/X	10.5/6	18.76	2", Sch. 40 PVC	10/0.010	9 - 19	-	Bedrock
LAW-6	902397.69	295188.60	632.31	632.48	X/X	10.5/6	18.05	2", Sch. 40 PVC	10/0.010	8 - 18	-	Bedrock

a/ ft-msl = feet above mean sea level; all elevations are in ft-msl.
ft-bgs = feet below ground surface.
b/ HSA = hollow-steam auger.
c/ 2", Sch. 40 PVC = indicates two-inch diameter, Schedule 40 polyvinyl chloride.
d/ "-" indicates not applicable/not available.

altech\4838\0\pit0006\.wk1

Table 2-2

Process Pits
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

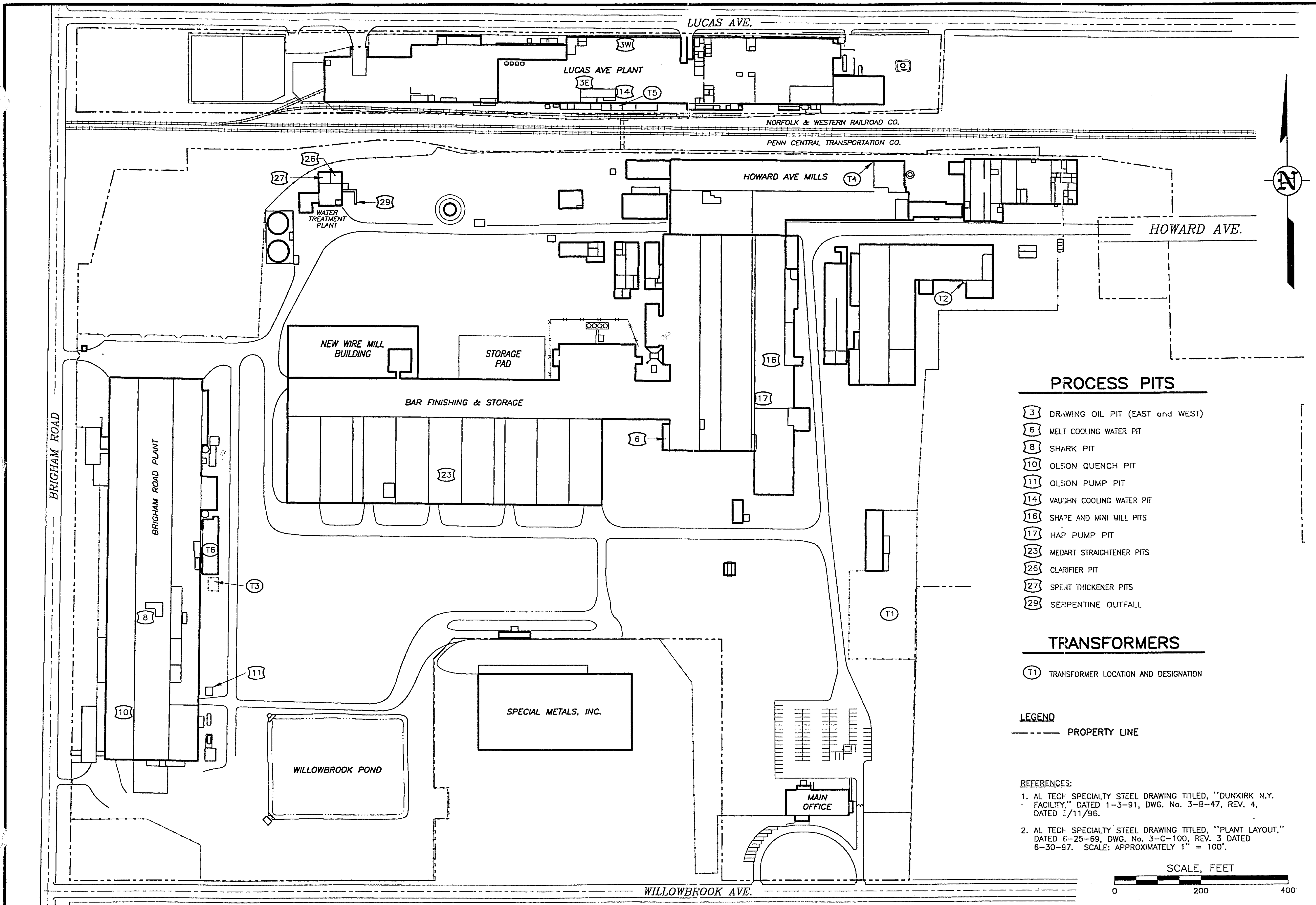
Pit Number	Pit Description	Pit Location (a)	Interior/ Exterior	Soil Boring/ Monitoring Well	Reason for Inspection
3	Drawing Oil Pit(s) (b)	SWMU 1/Former Lucas Avenue Plant West Pickle Facility	Interior	NA (c)	Risk of release
		SWMU 1/Former Lucas Avenue Plant East Pickle Facility	Interior	NA	Risk of release
6	Melt Cooling Water Pit	Southwest Howard Avenue Plant	Interior	NA	Low risk of release
8	Shark Pit	Central Brigham Road Plant	Interior	NA	Risk of release
10	Olson Quench Pit	Northeast of SWMU 2/Former Brigham Road Plant Pickle Facility	Interior	RFI-13	Risk of release Soil and groundwater evaluation as noted
11	Olson Pump Pit	West of SWMU 2/Former Brigham Road Plant Pickle Facility	Exterior	NA	Risk of release
14	Vaughn Cooling Water Pit	Central Lucas Avenue Plant	Interior	NA	Low risk of release
16	Shape- and Mini-Mill Pits	Southcentral Howard Avenue Plant	Interior	NA	Risk of release
17	HAP Pump Pit	Southcentral Howard Avenue Plant	Interior	NA	Risk of release
23	Medart Straightener Pits	Central Bar Finishing and Storage	Interior	NA	Little risk of release
26	Clarifier Pit	SWMU 22/ Wastewater Treatment Plant	Exterior	RFI-09	Risk of release Soil and groundwater evaluation as noted
27	Thickener Pit	SWMU 22/ Wastewater Treatment Plant	Exterior	RFI-09	Risk of release Soil and groundwater evaluation as noted
29	Serpentine Outfall	SWMU 22/ Wastewater Treatment Plant	Exterior	RFI-09	Risk of release Soil and groundwater evaluation as noted

a/ The approximate locations of the pits are shown in Figure 2-2.
SWMU = solid waste management unit.
AOC = area of concern.
b/ Only the LAP West Drawing Oil Pit was identified for inspection in the Phase I RFI Work Plan.
c/ NA = not applicable: there are no boring or well locations to evaluate soil or groundwater conditions as potentially impacted by these pits.

Table 2-3

Existing Well Evaluation
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Well No.	Properly Labeled?	Secured with Lock ?	Sufficient Well Pad?	Well Cap?	Protective Casing Integrity Intact?	Construction in Accordance with Industry Standards?	Comments
B-1	No	Yes	Yes	No	Yes	Unknown	labeled and cap added during Phase I RFI
WP-1	No	Yes	No	No	Yes	Yes	labeled and cap added during Phase I RFI
WP-2	No	Yes	No	No	Yes	Yes	labeled and cap added during Phase I RFI
WP-3	No	Yes	No	No	Yes	Yes	labeled and cap added during Phase I RFI
WP-4	No	No	Yes	No	Yes	Yes	labeled and cap and lock installed during Phase I RFI
WP-5	No	Yes	No	No	Yes	Yes	labeled and cap added during Phase I RFI
WP-6	No	Yes	No	No	Yes	Yes	labeled and cap added during Phase I RFI
WP-7	No	Yes	No	No	Yes	Yes	labeled and cap added during Phase I RFI
WP-8	No	Yes	No	No	Yes	Yes	labeled and cap added during Phase I RFI
WT-1A	No	Yes	Yes	No	Yes	Yes	labeled and cap added during Phase I RFI
WT-1B	No	Yes	No	No	Yes	Yes	labeled and cap added during Phase I RFI
WT-2	No	Yes	No	No	Yes	Yes	labeled and cap added during Phase I RFI
WT-3	No	Yes	No	No	Yes	Yes	labeled and cap added during Phase I RFI
WT-4	No	Yes	No	No	Yes	Yes	labeled and cap added during Phase I RFI
MW-1	No	Yes	No	No	Yes	Unknown	labeled and cap added during Phase I RFI
MW-2	No	NA	NA	NA	NA	NA	could not be located
MW-3	No	No	No	No	Yes	Unknown	labeled and cap added during Phase I RFI
LAW-5	No	No	Yes	No	Yes	Unknown	labeled and cap added during Phase I RFI
LAW-6	No	No	No	No	Yes	Unknown	labeled and cap added during Phase I RFI



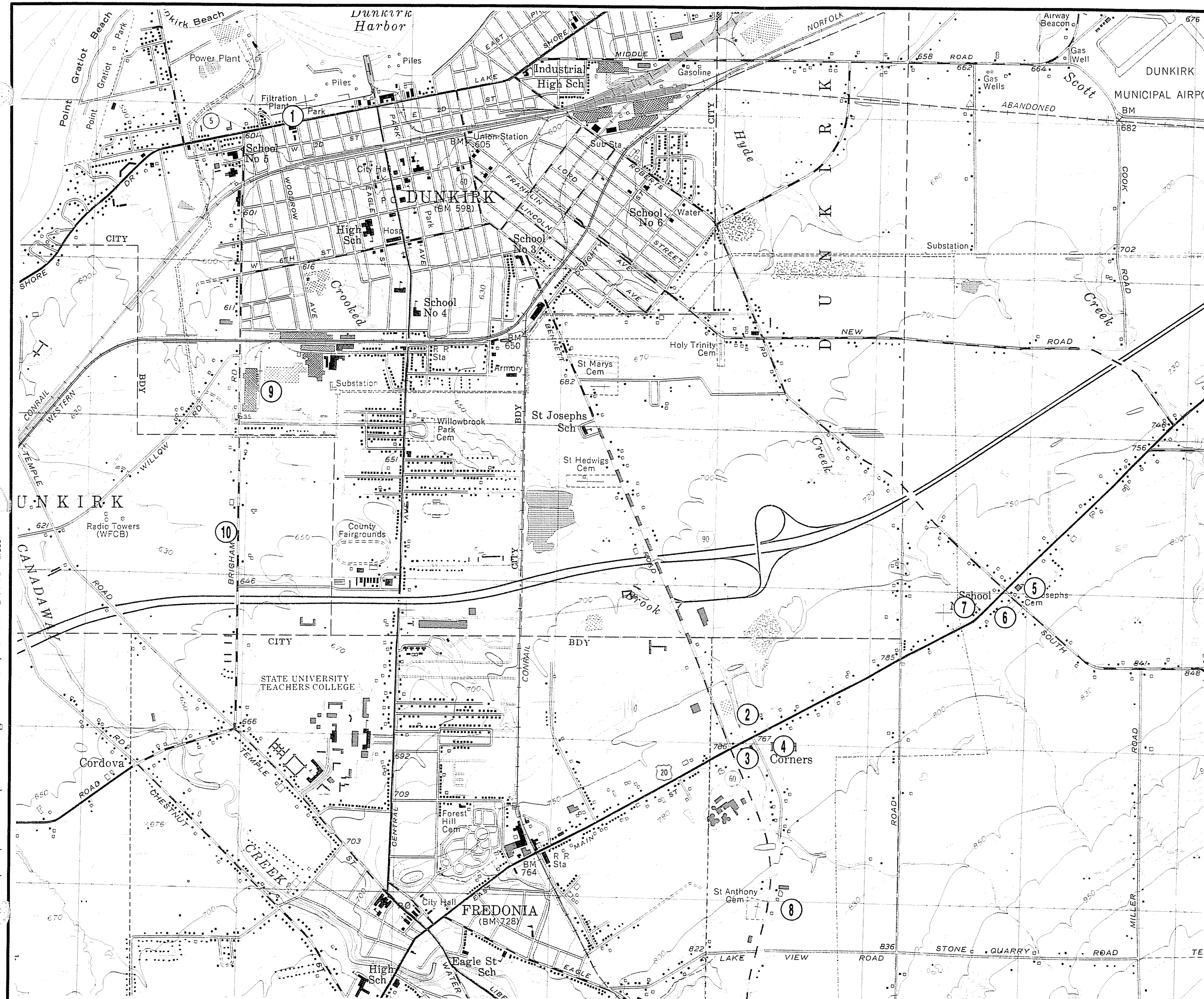
Drawn By: RHZ 061197
Checked: 10/13/98
Approved:
Drawing Number: 483803-B3

AL TECH SPECIALTY STEEL CORPORATION
DUNKIRK, NEW YORK
PHASE I RFI

Figure 2-2
TRANSFORMER AND PROCESS PIT LOCATIONS

ENVIRONMENTAL STRATEGIES CORPORATION
Four Penn Center West, Suite 315
Pittsburgh, Pennsylvania 15276
(412) 787-5100

Zdinak DWG\48\483803\ B03.dwg :Oct 12, 1998 10:19 am



LEGEND

1. DUNKIRK WATER TREATMENT PLANT
2. McLENATHAN'S MOBILE HOME PARK
3. WENDY'S
4. FARMLAND'S MOBILE HOME PARK
5. TIME MACHINE
6. ASTRO LAMP
7. SULLIVAN DRIVE-IN
8. ALDRICH DAIRY
9. AL TECH
10. RESIDENCE

NEW YORK

QUADRANGLE LOCATION

REFERENCE:

USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, DUNKIRK, NY, DATED 1954, PHOTOREVISED 1979.
SCALE: 1:24000

SCALE, FEET

0 2000 4000

Drawn By: 091997
Checked: 10/13/98
Approved:
Drawing Number: 483803-B7

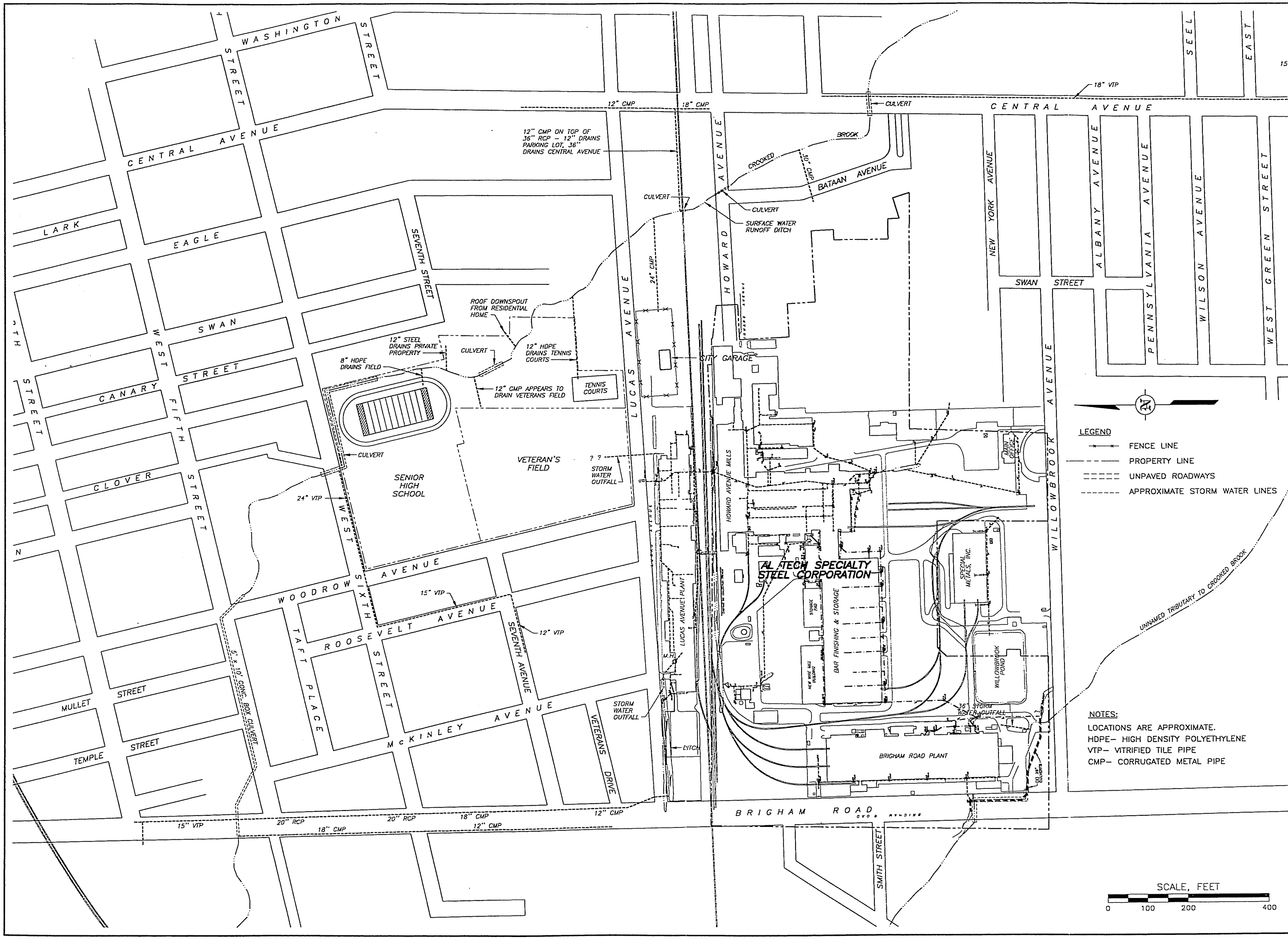
AL TECH SPECIALTY STEEL CORPORATION
DUNKIRK, NEW YORK
PHASE I RFI

Figure 2-4
POTABLE WELL LOCATIONS

ENVIRONMENTAL STRATEGIES CORPORATION
Four Penn Center West, Suite 315
Pittsburgh, Pennsylvania 15276
(412) 787-5100

ESC

Zdinak WG\48\483803\ B07.dwg :Oct 12, 1998 10:29 am



REVISIONS

DATE	DESCRIPTION	BY

DRAWN BY
CHECKED
APPROVED 10/13/98

STORM WATER DISCHARGE TO CROOKED BROOK

AL TECH SPECIALTY STEEL CORPORATION
DUNKIRK, NEW YORK
PHASE I RFI

ENVIRONMENTAL STRATEGIES CORPORATION
Four Penn Center West
Suite 315
Pittsburgh, PA 15276
(412) 787-5100

Figure 2-3

Drawing Number
483803-D08

3.0 Site Physical Conditions

The descriptions of general physical conditions of the site, presented in the following subsections, are based on information generated and compiled during implementation of the Phase I RFI. The conditions which are addressed include:

- regional and local geology
- site hydrology
- site hydrogeology
- process pits
- process sewers

3.1 Geologic Conditions

3.1.1 Regional Geology

The soils of the Dunkirk area are generally comprised of lacustrine silts and clays that were deposited during the formation of proglacial lakes in the Wisconsin glaciation period (McClaren/Hart 1992b).

The uppermost bedrock underlying the Dunkirk area is classified as the Canadaway group of Devonian Age (McClaren/Hart 1992b). This group is comprised of the Dunkirk, South Wales, and Gowanda Shale Members. The Dunkirk Shale is the upper bedrock unit and consists of massive gray to dark gray shale typically 40-feet thick. The South Wales Shale, present beneath the Dunkirk Shale, consists of light gray to dark gray shale with interbedded siltstone. The thickness of this unit ranges between 60 to 80 feet. The bottom member of the Canadaway Group is the Gowanda Shale. This unit consist of a 5- to 15-foot thick dark gray shale underlain by a gray shale with quartz and some interbedded layers of siltstone. The total thickness of Gowanda Shale ranges from 120 to 230 feet.

3.1.2 Site Geology

The geologic evaluation presented herein addresses the physical characteristics of the surface and subsurface conditions at the site interpreted using the geologic information generated and collected during implementation of the Phase I RFI.

Soil samples were collected from various locations and depths at the site for grain size analysis (Table 3-1 and Appendix H). Boring logs describing the lithology at each boring location are presented in Appendix D.

The surficial soils at the site are classified as the Niagara Silt Loam Unit (McClaren/Hart 1992b). This soil unit is characterized as being relatively thick and formed on moderately flat areas. The soil properties of this unit include a moderate permeability, high water capacity, slow runoff, and a high water table that may rise to 0.5 to 1.5 feet below the surface during the fall season. A typical soil profile for this unit includes a brown silt loam to 15 inches, dark silty clay to 37 inches, a brown to olive gray silt loam to 60 inches, and a dark gray gravelly silt loam to the top of bedrock.

3.1.2.1 Lithologic Units

The subsurface geologic data collected during implementation of the Phase I RFI indicate that there are generally four significant units underlying the facility. In descending sequence, these units include:

- fill
- lacustrine sediments
- weathered shale
- bedrock

The bedrock is differentiated between weathered shale and (competent) shale bedrock. Weathered bedrock includes the fractured rock zone between the unconsolidated deposits and the shale bedrock. The limit of the Phase I RFI investigation was the interface between the weathered shale and shale bedrock. An elevation contour map of the weathered shale surface is presented in Figure 3-1. Cross sections through the site, showing the unconsolidated materials, weathered shale, and shale bedrock, are shown in Figures 3-2 and 3-3.

Fill

The fill at the site varies between boring locations and reflects the various construction activities that were conducted. The fill is comprised of disturbed soil or mill debris (e.g., slag, metal fragments, brick, concrete, and coal) mixed with soil.

Surface samples of the fill were collected from 10 locations for grain size analysis. The geotechnical results indicate the fill is generally comprised of clay- and sand-sized material with gravel. The thickness of fill ranges from approximately 1 to 6 feet across much of the site. Greater thicknesses of fill were encountered proximate to RFI-15 (8 feet).

The fill was generally unsaturated.

Lacustrine Sediments

Two distinct zones of soil, which were deposited as lacustrine sediments, underlie the site: a fine-grained silt and clay zone, which was fairly consistently observed across the site, and a coarser-grained gravelly silt and clay, which was observed with similar frequency. The overall thickness of this lacustrine unit varied from approximately 6 to 10 feet across the site.

The finer-grained soils consist of clay, clayey-silt, and silt. These soils were encountered beneath the fill material and typically included a layer of clayey-silt or clay grading to a silt-rich layer with depth. This zone was typically 4 to 10 feet in thickness. Thicker areas were encountered to the east and west: RFI-05 (approximately 14 feet) and RFI-13 (approximately 15 feet) and reflects the greater depth to the weathered shale surface (Figure 3-1).

These soils vary in color from a brown, olive, and gray. The soils are stiff, and plasticity is typically proportional to the amount of clay (i.e., as the clay content increases the higher the degree of plasticity). The soils contained some mottling and iron staining which increased with depth.

Geotechnical results for grab samples collected from this zone typically were described as a lean clay with sand. Geotechnical testing results for an undisturbed sample (Shelby tube), collected at RFI-05 from 6 to 7.4 ft-bgs, indicate a vertical permeability for this material of 7.1 x 10^{-6} cm/sec (or 2.3 x 10^{-7} ft/sec)

The coarser-grained soils consist of very hard, non-plastic silt and clay with rounded gravel and shale fragments. The thickness of this zone ranges from 2 to 5 feet. Typically this zone is underlies or grades into the silt and clay zone and is present above the weathered shale. These soils are typically brown or olive where bedrock was encountered at a depth of 10 feet or less and gray to dark gray where bedrock was encountered below 10 feet.

Typically this material was encountered at or below the saturated zone and groundwater within this zone is semi-confined by the overlying finer-grained (silt and clay) soils.

Geotechnical results for grab samples collected from this zone were classified as a gravelly lean clay.

Weathered Shale

The weathered shale is part of the upper Dunkirk Shale Member. The material is very friable, weakly cemented, and ranges in color from gray to dark gray. Typically, groundwater was encountered above the weathered shale. This unit averages 1 to 3 feet in thickness across the site and was encountered at depths of 8 to 10 feet near the center and north-central portions of the facility, approximately 18 to 24 feet along the western boundary of the site, and greater than 24 feet at the location completed farthest east, RFI-04. The depth to bedrock along the northern site boundary varies from approximately 11 to 15 feet. As indicated by the elevations identified above and as illustrated in Figure 3-1, the weathered shale surface slopes to the north, east, and west from the central portion of the site.

Shale Bedrock

The shale bedrock beneath the site is part of the Dunkirk Shale Member. The color of the shale ranges from gray to dark gray; the shale is well cemented. This unit appears to be acting as a confining layer beneath the unconsolidated material and weathered shale. The thickness and lithogic characteristics of this unit were not investigated during this phase of the investigation.

3.1.2.2 Geologic Cross Sections

Four site-specific geologic cross sections, A-A' through D-D', were constructed to depict the general subsurface lithology at the site based on the geologic data collected during the RFI. The cross-sections present the total depth, well screen placement, and potentiometric groundwater surface for the overburden water-bearing zone. The cross sections are presented in Figures 3-2 and 3-3; key maps on both figures identify the locations of the sections in plan view.

Geologic cross-section A-A' is presented in Figure 3-2. This section is oriented approximately west to east along the northern boundary of the site (RFI-08 to RFI-05). Approximately 4 to 6 feet of fill is present in the western portion of the site, near RFI-08, RB-04, and RB-05; only a thin layer of fill (less than 1 foot) was encountered at RFI-05. The gravelly clay layer was encountered at RFI-08 and RB-05; to the east, this zone graded to a silt and clay at RB-04 and RFI-05. Along this line of section, the elevation of the weathered shale dips from the center to the west (623.5 to 622.5 ft-msl) and to the east (623.5 to 617 ft-msl) at a similar grade.

Geologic cross-section B-B' is also presented in Figure 3-2. This section is oriented northwest to southeast through the site (RFI-08 to RFI-01). The thickness of the fill unit along this traverse ranges from 0.5 foot at RFI-02 to 6 feet at RFI-03. The underlying unit in the southeastern portion consists of silt and clay, which grades into a gravelly clay at RFI-08 and RFI-17. This gravelly clay zone was not encountered at RFI-03, but this zone was present, beneath the silt and clay, at RFI-01 and RFI-02. As shown in Figure 3-1 and in this section, the elevation of the weathered shale surface is approximately 626 to 628 ft-msl across the southern and central portion of the site, but dips to approximately 622.5 ft-msl to north (RFI-08).

Geologic cross-section C-C' is presented in Figure 3-3. The section is oriented west to the east across the central portion of the site (RFI-11 to RFI-06). The thickness of the overburden (fill and lacustrine soils) increases from east to west; the lacustrine soils are dominated by the silt and clay, which grades to gravelly clay to the west. The elevation of the weathered shale dips from the center of the site to the west (627 to 619 ft-msl) and to the east (627 to 625.5 ft-msl).

Geologic cross-section D-D' is presented in Figure 3-3. This section is oriented from west to east along the southern portion of the site (RFI-13 to RFI-01). The thickness of the fill unit encountered along this section varied from 0.5 foot at RFI-02 to approximately 5 feet at other locations. The three overburden zones (fill, silt and clay, and gravelly clay) are present at the central and eastern locations. However, the gravelly clay zone was absent in the west (RFI-13). The weathered shale surface dips gently to the west across much of the site from 627.5 to 621.5 ft-msl (RFI-01 to RFI-14) and then dips steeply from 621.5 to 604 ft-msl from Willowbrook Pond to the western property boundary (RFI-14 to RFI-13).

3.2 Site Hydrology

The surface waters bodies in proximity to or within the site include the unnamed tributary to Crooked Brook, Crooked Brook, and Willowbrook Pond (Figures 1-1 and 2-3). Both portions of the unnamed tributary and Willowbrook Pond are located on the site.

The unnamed tributary is a perennial stream which flows northwest across the southwestern corner of the site. The tributary enters the site at the surface, travels underground for approximately 500 feet through a 36-inch diameter culvert, and resurfaces west of Brigham Road. One 36-inch diameter stormwater outfall from the site discharges to this tributary. The average water depth observed during implementation of the Phase I RFI was approximately 1 foot. The creek discharges to Crooked Brook approximately 0.75 mile northwest of the site.

Crooked Brook is rated as a Class D stream (recreational use), the nearest distance between the stream and the site is approximately 0.1 mile from the site's eastern property boundary. A field reconnaissance was performed during implementation of the Phase I RFI on a 0.5-mile portion of the stream to determine the general characteristics of the stream and associated outfalls. The stream appeared to have a sediment bottom. The stream flows through predominantly residential areas and discharges to Lake Erie located approximately 1 mile northwest of the site.

Willowbrook Pond is located in the southwestern portion of the site. The pond is an earthen reservoir which has been in use since 1952. The size of the pond is approximately 225 by 320 feet with an average distance of 10.5 feet from the top of the dike to the pond bottom. Overflow from the pond passes through an oil skimmer and collection system before being discharged to the city of Dunkirk's POTW.

3.3 Hydrogeology

Hydrogeologic conditions across the site were investigated during the Phase I RFI through the installation and evaluation of 17 monitoring wells and use of 18 existing site wells. The investigation included the collection of water-level measurements, performance of in situ permeability tests, and development of potentiometric surface maps.

In general, the unconsolidated deposits underlying the site consist of clay and silt that typically grades, with depth, into a gravelly clay zone. The unconsolidated deposits at the site range in thickness from 8 feet to 24 feet and are underlain by 1 to 3 feet of weathered shale, and shale bedrock. Typically, groundwater was encountered in the gravelly clay layer above the weathered shale. The depth to groundwater measured in the wells ranged from 1 to 8 ft-bgs. The depth to water encountered during drilling compared to the depth to water measured in the wells after installation indicates that the groundwater is under confined conditions (e.g., the fine grained, low permeability clay and silt zone).

Water level measurements were collected in all of the site wells using an electronic water-level indicator in November 1996 and March and May 1997. These data were used in conjunction with the surveyed top-of-casing elevations for the wells to calculate groundwater elevations for the wells. The depth to water and groundwater elevations are provided in Table 3-2; potentiometric surface maps developed using the data for November 1996 and March 1997 are presented in Figures 3-4 and 3-5. Because several of the existing wells were installed in the upper portion of the shale bedrock, typically only the groundwater elevations for the newly installed wells (RFI-series) were used to develop the potentiometric surface maps and to determine the direction of groundwater flow.

The direction of groundwater flow at the site appears to be influenced by the weathered shale surface. As shown in Figures 3-4 and 3-5, the highest groundwater elevations appear to be present in the central area of the site; the direction of groundwater flow radiates from this area. In the northern portion of the site, the direction of groundwater flow is north-northwest. In the southern portion of the site, the direction of groundwater flow is south, with a strong western component of flow in the southwest corner of the site where the bedrock elevations drops steeply.

The horizontal gradient at the site was measured along the northern, northwestern, southern, and southwestern groundwater flow directional arrows presented in Figures 3-4 and 3-5. Because the hydraulic gradient at the southwestern portion of the site is significantly different than the remainder of the site, the hydraulic gradient of this area was determined independently. The average hydraulic gradients across the site (excluding the southwestern portion) using the November 1996 and March 1997 data, were estimated at 0.00429 and 0.00580. The hydraulic gradients for the southwestern portion of the site for the same periods were estimated at 0.0514 and 0.514. These data were used to calculate the groundwater flow velocities for the site and the southwestern portion of the site.

The hydraulic conductivity of the unconsolidated water bearing zone was calculated using the Bouwer and Rice method (1976). The Bouwer and Rice methodology and calculations are presented in Appendix I.

The results of the Bouwer and Rice analysis of the slug test data indicate that the hydraulic conductivity of the unconsolidated water-bearing zone ranges from 0.048 to 11.189 ft/day for the rising-head tests and 0.072 to 8.261 ft/day for the falling-head tests (Table 3-3). The average hydraulic conductivity for both the rising- and falling-head tests is 3.509 ft/day. The groundwater velocities were calculated using the equation $V_s = Ki/n_e$, where,

V_s = seepage velocity
K = hydraulic conductivity
i = horizontal hydraulic gradient
n_e = effective porosity

The geotechnical sampling results for samples collected from the saturated zone at the site indicated the soil is generally described as a sandy clay. The average specific yield (effective porosity) value for a sandy clay soil of 0.12 was used to calculate the groundwater velocity (Walton 1988). The estimated velocities of groundwater flow at the site using the November 1996 and March 1997 data are 0.13 ft/day and 0.17 ft/day. The estimated velocity for the southwestern portion of the site using these data is 1.5 ft/day.

The higher seepage velocity values for the southwestern portion of the site are clearly due to the greater hydraulic gradient which reflects the steeper weathered shale topography in this area.

3.4 Process Pit Inspections

Twelve process pits (largely representing AOC 3) and two oil storage rooms (AOC 5) were inspected during the RFI to evaluate the integrity of the structures and to determine if any of the units posed the potential to affect adjacent soils or groundwater. The pits that required confined space entry were inspected by AL Tech personnel in the presence of an ESC representative. The Medart Straightener Pits were inspected by AL Tech personnel, following the protocols established by ESC during the summer of 1997. Other pits not requiring confined space entry were inspected directly by an ESC representative. Inspections were performed on the following process pits:

Pit	AOC No.	Pit No.
West Drawing Oil Storage Room	5	3W
East Drawing Oil Storage Room	5	3E
Melt Cooling Water Pit	3	6
Shark Pit	3	8
Olson Quench Pit	3	10
Olson Pump Pit	3	11
Vaughn Cooling Water Pit	3	14

Pit	AOC No.	Pit No.
Shape Mill Pit	3	16
Mini Mill Pit	3	16
HAP Pump Pit	3	17
Medart Straightener Pits	3	23
Clarifier Pit	3	26
Spent Thickener Pit	3	27
Serpentine Outfall	3	29

The approximate locations of these pits are shown in Figure 2-2. Detailed drawings or sketches of the pits that illustrate their structural integrity are presented in Appendix J.

3.4.1 Drawing Oil Storage Rooms

The West Drawing Oil Storage Room, located along the north wall of LAP (Figure 2-2, "3W"), is approximately 28 feet wide, 36 feet long, and 10 feet deep. Four open-top oil tanks, several pumps, and miscellaneous piping are present (Appendix J, Figure J-1). Although the tanks are no longer used, approximately 12 inches of oil is present in each.

The groundwater elevation in this area is higher than the bottom elevation of the room. A groundwater drainage/collection system, comprised of a slotted trough, is located along the perimeter of the room. The trough is sloped to drain toward a sump located along the south wall of the room. According to AL Tech personnel, the collected groundwater was pumped from the sump to control water in the room, the result is the groundwater elevation was maintained below the floor elevation. Because this storage room is no longer used, groundwater which accumulates in the room is no longer pumped. Before the inspection, approximately 18 inches of water were observed to be present on the floor of the room. This water was pumped out to facilitate the inspection.

A 0.5-inch thick oily sludge was present over the entire floor area and trough. According to AL Tech personnel, historic releases of oil (from leaking pipes, pumps, tanks, etc.) have occurred.

While the tanks are intact, the presence of groundwater in the storage room, the type of materials handled, and the presence of oily sludge on the floor of the storage room suggest the potential for this unit to affect adjacent subsurface soils and groundwater in this area.

The East Drawing Oil Storage Room, located along the north wall of LAP (Figure 2-2, "3E"), is approximately 19 feet wide, 30 feet long, and 6 feet deep. Similar to the West Drawing

Oil Storage Room, this storage room is no longer used. The room contains four open-top oil tanks, several pumps, and miscellaneous piping; less than 2 inches of oil remains in each tank (Appendix J, Figure J-2). The groundwater elevation in this area is also higher than the bottom elevation of the storage room. A groundwater drainage/collection system, similar to that in the West Drawing Oil Storage Room, is located along the perimeter of the room and was used to pump accumulated groundwater from the room.

A 0.5-inch thick oily sludge was observed on the floor area and trough. Historic releases appear to have occurred in the room.

While the tanks are intact, the presence of groundwater in the storage room, the type of materials handled, and the presence of oily sludge on the floor of the storage room suggest the potential for this unit to affect adjacent subsurface soils and groundwater in this area.

3.4.2 Melt Cooling Water Pit

The Melt Cooling Water Pit (Pit No. 6), which is no longer in use, was previously used to contain cooling water for melting operations at the facility. The pit, which is constructed of concrete, is approximately 10 feet wide, 13 feet long, and 10 feet deep. A sump is located along the west wall (Appendix J, Figure J-3).

No cracks were observed in the walls or floor during the inspection nor did the pit contain any water. The pit appeared very clean and in good condition. Based on these observations and because the pit contained only cooling water, it does not appear to pose a potential to affect adjacent subsurface soils or groundwater quality in this area.

3.4.3 Shark Pit

The Shark Pit (Pit No. 8) is a concrete structure used to collect cooling water generated from BRP. The pit is L-shaped; it is 30 feet wide, 50 feet long, and 15 feet deep.

The drains discharging to the Shark Pit include concrete channels and various types of piping. A sump, located along the south end of the pit with a 12-inch steel riser intake pipe, is used to convey spent cooling water to Willowbrook Pond.

The walls and floor of the Shark Pit were coated with oil and grease at the time of the inspection. One crack was identified in the wall of the northeast corner of the pit (Appendix J, Figure J-4) through which groundwater was observed to be infiltrating at an estimated rate of less than 0.5 gpm.

3.4.4 Olson Quench Pit

The Olson Quench Pit (Pit No. 10) is a 0.125-inch steel-lined tank that contains cooling water that is pumped from Willowbrook Pond. The pit is used for water quenching of steel coils that are exiting the Olson Annealing Furnace. The pit is approximately 6.5 feet wide, 10 feet long, and 4.5 feet deep (Appendix J, Figure J-5). Hot steel coils are mechanically lowered into the pit containing cooling water. The water is supplied to the pit through a 6-inch diameter steel supply pipe and spent cooling water is removed from the pit through a 6-inch diameter steel drain pipe. The pipes are welded to the steel liner of the pit at penetration locations.

Based on a visual inspection of the pit, no apparent cracks were observed in the steel liner. During the inspection no water was observed to be entering the pit; the pit is situated above the groundwater table.

3.4.5 Olson Pump Pit

The Olson Pump Pit (Pit No. 11) is a concrete pit that contains cooling water and acts as a reservoir for the Olson Quench Pit. The water is pumped from this pit to the Willowbrook Pond. The pit is approximately 8 feet wide, 9.5 feet long, and 9.5 feet deep (inside dimensions) (Appendix J, Figure J-6). The walls of the pit are composed of 12 inch thick concrete; the thickness of the base varies between 6 inches and 15 inches. Several pipes penetrate the walls of the pit and a 2-foot by 2-foot by 1.5-foot deep sump is located at the southwest corner of the pit.

The pit walls and floor appeared to be clean at the time of the inspection and there was no evidence of oil or grease observed. Two cracks were identified in the south and west walls; groundwater was observed to be infiltrating through each of these cracks at estimated rates of less than 1 gpm. The approximate location of the cracks are shown in the sketches provided in Appendix J (Figure J-6). The remaining portions of the pit appeared to be in good condition at the time of the inspection.

3.4.6 Vaughn Cooling Water Pit

The Vaughn Cooling Water Pit (Pit No. 14) is constructed of concrete and used for storing cooling water for the wire drawing operations. The pit is approximately 16 feet wide, 26.5 feet long, and 10 feet deep (Appendix J, Figure J-7). The walls and floor of the pit are lined with a tar-like coating.

No cracks were observed in the walls or floor during the inspection and the pit appeared very clean. However, the liner was peeling away from the wall at several locations.

3.4.7 Mill Pits

The Shape Mill Pit (Pit No. 16) is constructed of concrete and is located beneath the shape mill in Howard Avenue Plant (HAP). The pit is approximately 3 feet wide, 45 feet long, and 7 feet deep (Appendix J, Figure J-8). The pit is used to collect water and scale generated from the cooling of mill equipment and hot steel products. Cooling water is supplied to the shape mill from the HAP pump pit and Willowbrook Pond. Cooling water from the Shape Mill Pit gravity flows to the shape mill scale pit via a 16- inch diameter drain pipe located at the low end of the pit. The shape mill scale pit is divided into a scale settling area and a pump pit. The scale settling portion of the shape mill scale pit is approximately 4 feet wide, 10 feet long, and 20 feet deep and the pump area is approximately 10 feet wide, 10 feet long, and 20 feet deep.

The bottom and sides of the pits were covered with a thin oily residue. No cracks or leaks were observed in the concrete walls or floor. The pit is situated above the groundwater table and no water was observed leaking into the pit. However, water was observed leaking into the shape mill scale pit through a crack in the concrete floor of the pump area.

The Mini Mill Pit (Pit No. 16) is a concrete pit located in HAP. The pit is located beneath the mini mill and is used to collect water and scale generated while cooling the mill equipment and hot steel products. Cooling water is supplied to the mini mill from the HAP pump pit and Willowbrook Pond. Cooling water from the pit gravity flows to a scale pit at the low end of the pit. The pit is approximately 2.5 feet wide, 65 feet long, and 7 feet deep (Appendix J, Figure J-9).

The bottom and sides of the pit were covered with a thin oily residue. Several cracks were observed in the concrete walls and floors. However, the pit is located above the water table and no groundwater was observed entering the pit.

3.4.8 Howard Avenue Plant Pump Pit

The HAP Transfer Pit (Pit No. 17) is constructed of concrete and receives used cooling water from the Bosh Tank (reheat furnace charger cooling tank). The Bosh Tank water is supplied from the Willowbrook Pond, overflows to the HAP Transfer Pit which is pumped to the Willowbrook Pond, via pumps in the pit itself. The pit is approximately 5 feet wide, 10 feet long and 25 feet deep (Appendix J, Figure J-10a and J-10b).

The bottom and sides of the pit are heavily coated with an oily residue. No cracks were visible in the walls or floor of the pit. Water was observed leaking into the pit along a pipe inlet in the bottom of the pit.

3.4.9 Medart Straightener Pits

There are 5 medart straightener pits (Pit No. 23) located in BFS; each specific to a medart. Each is constructed of concrete. Each of the pits is located above the ground water table and without pipe intrusions. The pits serve as coolant reservoirs, containing a water soluble coolant and tramp oil. The bottom and sides of the pits were heavily coated with oily residue. There were no apparent cracks in any of the pits and no groundwater was observed entering any of the pits.

3.4.10 Clarifier Pit

The Clarifier Pit (Pit No. 26) is part of the facility's WWTP. The pit is approximately 25 feet wide, 25 feet long, and 17 feet deep. A sludge pocket (sump) is located in the center of the clarifier. The walls and floor of the clarifier are covered with a tar-like coating.

The configuration of the Clarifier Pit is that of a square bottom pit with the four corners rounded and tapered with a concrete filler. His leaves the bottom of the pit with a circular floor, allowing the rotating Clarifier rake to squeegee the sludge on the bottom of the pit, keeping it from solidifying. During construction, the pit was formed with a square bottom. Next the bottom corners were filled with concrete to shape the bottom of the pit like a flat bottom cone. It was at the seem between the filling and the actual pit wall that dampness was observed. The dampness was most likely effluent that was trapped between the concrete filling and the pit walls.

Groundwater was observed to be weeping from a small crack in the floor. The groundwater was present as dampness and no actual flow of water was observed. Also, a separation of approximately 0.125-inch was observed within a concrete joint in the east wall. However, no groundwater was observed flowing through the separation. The crack and joint separation are demarcated on the clarifier drawings presented in Appendix J (Figures J-11a and J-11b).

The pit is lined with a tar-like coating which is peeling and chipping away from the concrete walls and floor. Some weeping of liquid at the southwest corner of the clarifier was noted which appears to be attributed to liquid draining from the void/crack between the clarifier walls and grout chamfered corners.

The walls could not be visually inspected entirely due to solids adhering to the sides of the clarifier. Groundwater did not appear to be entering the pit through the walls. In addition, the sludge pocket could not be inspected due to the accumulation of precipitation that occurred during the night before the inspection. The water within the sludge pocket remained at a constant level during the inspection and indicates no groundwater is entering from significant cracks in the sludge pocket.

3.4.11 Spent Thickener Pit

The Spent Thickener (sludge) Pit (Pit No. 27) is part of the facility's WWTP. The pit is approximately 25 feet wide, 25 feet long, and 17 feet deep (Appendix J, Figures J-12a and J-12b). A sludge pocket (sump) is located in the center of the pit. The walls and floor of the pit are covered with a tar-like liner.

Several "hairline" cracks were observed throughout the floor during the inspection. However, no groundwater appeared to be entering through the cracks. Some weeping of liquid from the corners of the pit was observed and appeared to be attributed to liquid draining from the void/crack between the pit walls and grout chamfered corners.

Due to solids adhering to the sides of the pit, the walls could not be visually inspected entirely. However, groundwater did not appear to be flowing through walls. In addition, the sludge pocket could not be visually inspected due to the accumulation of precipitation that occurred during the night before the inspection. The water within the sludge pocket remained at a constant level during the inspection and indicates that no significant cracks are present.

3.4.12 Serpentine Outfall

The Serpentine Outfall (Pit No. 29) is a concrete trough system which is used to transfer the facility's WWTP effluent to the City of Dunkirk's POTW sewer line (Appendix J, Figures J-13a and J-13b). The outfall is comprised of two concrete troughs covered by a grate. The troughs are situated perpendicular to each other and are connected by a 10-inch diameter pipe. The effluent from the WWTP enters the first trough and flows over a weir. The first trough is approximately 3 feet wide, 22 feet long, and 5.5 feet deep. The effluent enters the second trough via a 10-inch diameter pipe. The second trough is approximately 3 feet in width, 20 feet in length, and 5.5 feet in depth. In the second trough, the effluent flow is induced into a serpentine motion created by baffles constructed of acid brick. The concrete walls and floor of this trough are covered with a protective coating. The effluent exits the second trough via a 10-inch diameter pipe which discharges to the POTW.

No cracks were observed in the walls or floors of either trough. Portions of the concrete floor of the first trough have begun to spall and portions of the protective coating of the second trough are beginning to chip and peel away from the concrete at pipe penetration locations. Also, several voids between the concrete walls and the pipe collars were noted at both troughs.

Based on the inspection, it appears that the integrity of the seals between the trough walls and penetrating pipes were in poor condition.

3.5 Process Sewer Identification

Historic and current process sewer lines at the facility were evaluated during the Phase I RFI. This activity included the identification of the locations and uses of the process sewer lines for the following operations.

- LAP pickling effluent (historic)
- BFS pickling effluent (current)
- BRP pickling effluent (historic)
- metallurgical laboratory discharge (current)
- shark pit effluent (current)
- Willowbrook Pond recirculating cooling water (current)

The approximate locations of the process sewer lines are shown in Figure 3-6. Descriptions of the piping and their operation are presented in the following sections.

3.5.1 <u>Lucas Avenue Plant Pickling Effluent</u>

The LAP, located within the northern portion of the facility, includes two historic pickling operation areas: LAP West and LAP East. The rate of effluent flow from these operations varied depending on the volume of pickling performed and operation schedules. There is no available information regarding integrity testing of the effluent pipelines.

The original LAP West pickling operations were conducted from 1921 to 1974. During this period, the system consisted of an integral neutralization system with subsequent discharge to the City of Dunkirk POTW sanitary sewer. The effluent was comprised of neutralized waste sulfuric, nitric, and nitric/hydrofluoric pickle liquor baths as well as acidic and caustic rinse water. The LAP west effluent was no longer neutralized at the Pickle House after the new spent pickle liquor transfer lines were installed. The effluent was comprised of spent sulfuric, nitric, nitric/hydrofluoric pickle liquor baths as well as acidic and caustic rinse waters. The effluent piping consisted of 6-inch diameter clay tile piping.

From 1974 until the operation was idled in 1989, the LAP West pickling effluent was rerouted to the facility's WWTP via two 4-inch diameter polyethylene pipes. The effluent continued to be comprised of neutralized waste sulfuric and nitric acid bath solutions. The nitric acid line discharged to the "octopus" manhole and the sulfuric acid line discharged to the waste sulfuric acid sump (Figure 3-6).

Similar operations were conducted at the LAP East pickle facility, which was operated from 1935 to 1972. Neutralized sulfuric and nitric acid bath solutions from this operation were conveyed and discharged to the City of Dunkirk POTW sanitary sewer system via 4-inch, 6-inch, and 8-inch clay tile pipes. Because this operation was idled in 1972, the effluent was never rerouted to the facility's WWTP.

3.5.2 Bar Finishing and Storage Pickling Effluent

The BFS plant is located within the central portion of the facility property; the BFS Pickle House is situated in the northeast section of the BFS building. Operations have been going on since 1969. Before February 1997, the effluent from the BFS pickling operation was conveyed to the WWTP via three 4-inch polyethylene (PE) lines. In February 1997, the rinsewater line was taken out of service. The following shows the transfer of wastes from the BFS Pickle House to the WWTP before and after February 1997:

Before February 1997

- 4-inch PE line, conveying rinsewater, comprised of acidic and caustic rinse waters and spent oxylic coat and degrease baths, from the BFS Pickle House to the "octopus."

- 4-inch PE line, conveying spent nitric/CLEANOX, comprised of spent nitric and sulfuric/hydrofluoric pickle liquor from the BFS Pickle House to the "octopus."

- 4-inch PE line, conveying spent sulfuric pickle liquor from the Pickle House to the "octopus."

After February 1997

- 4-inch PE line, conveying spent nitric, sulfuric/hydrofluoric pickle liquor, acidic and caustic rinse waters, and spent oxylic coat and degrease baths from the BFS Pickle House to the "octopus."

- 4-inch PE line, conveying spent sulfuric pickle liquor from the Pickle House to the WWTP spent sulfuric pit.

The "octopus" flows via a 12-inch PE line to the WWTP grit chamber and, subsequently, to the WWTP spent acid pit.

Flow rates for the effluent vary depending on the volume of pickling and the operations schedule. There is no information available regarding integrity testing of each of the in-service lines.

3.5.3 Brigham Road Plant Pickling Effluent

The BRP is located within the southwestern portion of the site. The BRP Pickle House, which operated from 1942 to 1992, was situated in the southeast section of the BRP. The pickling effluent flow rates varied depending on the volume of pickling and operations schedule. There is no information available regarding integrity testing of the effluent conveyance system.

Historically, the effluent system consisted of an integral neutralization system, with subsequent discharged to the City of Dunkirk's POTW sanitary sewer.

In 1974, a 6" polyethylene spent pickle liquor transfer line from the BRP Pickle House to the WTP "octopus" was installed. Prior to 1974, the effluent from the BRP pickling operation was neutralized at the BRP Neutralization Building and sent to the city sanitary sewer system. At that time, the BRP Pickle House effluent consisted of neutralized spent sulfuric, nitric, nitric/hydrofluoric pickle liquor baths as well as acidic and caustic rinse waters.

Following the 1974 installation of the 6" polyethylene, the effluent from the BRP Pickle House consisted of spent sulfuric, nitric, nitric/hydrofluoric pickle liquor baths as well as acidic and caustic rinse waters. The waste stream was transferred directly to the WTP for treatment prior to discharge to the city sanitary sewer.

3.5.4 Metallurgical Laboratory Discharge

The metallurgical laboratory is located north of BFS. Acid etching of finished products has been performed for quality control purposes at this location since approximately 1960. The acid baths are discharged from a batch process via 4-inch diameter PE and PVC pipe to the rinse water pit adjacent to the BFS Pickle House and then, via a 4-inch diameter PE pipe, to the octopus and grit chamber. The discharge is intermittent and flow rates vary depending on the etching operation schedule. There is no information available regarding integrity testing of the pipeline.

3.5.5 Shark Pit Effluent

The Shark Pit is located within the BRP and collects contact cooling water from the Bar and Rod Mill. The Shark Pit effluent discharges to Willowbrook Pond. Flow rates vary depending on the operation of the Bar and Rod Mill. There is no information available regarding integrity testing of the effluent lines.

3.5.6 Willowbrook Pond Recirculating Cooling Water

Willowbrook Pond is an onsite surface impoundment which recirculates contact and non-contact cooling water and stream condensate from various operations throughout the facility. The pond has been in use since 1952. The overflow from the pond is discharged to the City of Dunkirk's POTW.

Willowbrook Pond collects cooling water from five separate sewer mains. Discharges to the pond include contact and non-contact cooling water, steam condensate, and limited stormwater runoff. The sources of cooling water include the Olson Anneal quench tank, Shark Pits, the BRP and HAP milling and rolling operations, and the HAP charger boom cooling bosh. Waters from the HAP mill and bosh return to Willowbrook Pond via the oil water separators. BRP quench water also recirculates to and from the Willowbrook Pond. Constituents of concern include mill scale (heavy metals), oil, and grease.

Complete data pertaining to pipe sizes and material of construction is not readily available. The discharge to the pond is intermittent and flow rates vary depending on the operation schedule. There is no information available regarding integrity testing of the pipelines associated with this operation.

3.5.7 Outfall Monitoring Data

Three outfalls (5a, 5b, and 7) discharge from the AL Tech facility to the City of Dunkirk's POTW (Figure 3-6). These discharges include:

- the facility's WWTP (5a)
- non-contact cooling tower water (5b)
- Willowbrook Pond (7)

All discharges are transferred to the City of Dunkirk POTW for ultimate treatment. Recent monitoring data for these outfalls are presented in Appendix K.

3.5.8 Spill Reports

Recent spill reports associated with the process sewers have been included as Appendix L. A list of the reported spills are listed below.

- September 1982 - Overflow of manhole at the LAP (west??), approximately 20 gallons of caustic quench.

- January 1996 - Overflow of manhole at the south side of HAP, approximately 100 gallons.

- February 1986 - Broken spent pickle liquor at BRP, approximately 50 gallons.

- May 1992 - Blockage in spent pickle liquor line caused rupture at coupling in a manhole and caused a release of an undetermined amount to a stormwater ditch.

- January 1995 - Cracked polyethylene line (BFS plant), approximately 50 gallons of spent sulfuric acid.

- August 1996 - Overflow of temporary holding tank north of the BFS, approximately 50 gallons of 10 % sulfuric and 2% hydrofluoric acid wastewater.

- January and February 1997 - Ruptured underground pickle rinse water line (BFS), approximately 100 gallons.

- March 1997 - Valve malfunction associated with the grit chamber, approximately 1,500 gallons of pickle liquor.

The spill reports (associated with the process sewers) were made available by AL Tech from 1979 to the present.

Table 3-1

Geotechnical Testing Summary
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location	Sample Interval	Sample I.D.	USCS Classification/ Description (a)	USDA Grain Size				Percent Finer #200 (b)
				Gravel	Sand	Silt	Clay	
Transformer Areas								
T1	0 - 3 in-bgs (c)	T1-01-03	gp Poorly graded gravel	NA (d)	NA	NA	NA	0.2
Ground Surface Locations								
GS-05	0 - 3 in-bgs	GS-05-03	gc Clayey gravel	72.1	10.58	12.41	4.9	18.6
Soil Boring Locations								
RB-07	0 - 3 in-bgs	RB-07-03	gc Clayey gravel with sand	59.23	26.85	11.59	2.33	15.7
Monitoring Well Locations								
RFI-03	0 - 3 in-bgs	RFI-03-03	gp-gc Poorly graded gravel with clay and sand	60.39	29.72	7.81	2.07	11.4
RFI-05	6.5 - 6.9 ft-bgs	RFI-05-0674	ml Silty, clayey sand with gravel	0.77	9.16	77.9	12.16	94.8
RFI-10	4 - 6 ft-bgs	RFI-10-0406	sc Clayey sand	17.84	37.88	32.01	12.27	48.2
RFI-12	0 - 3 in-bgs	RFI-12-03	gp-gc Poorly graded gravel with clay and sand	78.01	17.44	3.71	0.83	5.7
RFI-13	0 - 3 in-bgs	RFI-13-03	gc Clayey gravel with sand	55.04	31.77	11	2.18	15.1
RFI-14	0 - 3 in-bgs	RFI-14-03	sc Clayey sand	5.63	75.88	14.47	4.02	22.5
RFI-15	0 - 3 in-bgs	RFI-15-03	sc Clayey sand	23.05	35.56	30	11.4	45.5
Test Pit Locations								
TP-01	5 - 6 ft-bgs	TP-01-0506	cl Sandy lean clay	12.02	25.96	48.26	13.75	67.5
TP-01	8 - 9 ft-bgs	TP-01-0809	cl Gravelly lean clay	23.93	10.21	43.03	22.82	69.4
TP-02	0 - 3 in-bgs	TP-02-03	sc Clayey sand	14.91	63.21	20.91	0.96	30.7
TP-02	5 - 6 ft-bgs	TP-02-0506	cl Lean clay	0.54	9.61	83.54	6.3	97.4
TP-03	1 - 2 ft-bgs	TP-03-0102	sc Clayey sand with gravel	38.29	29.5	25.12	7.08	35.7
TP-04	8 - 9 ft-bgs	TP-04-0809	cl Sandy lean clay with gravel	25.68	28.19	34.03	12.1	50.2
TP-05	3 - 4 ft-bgs	TP-05-0304	cl Sandy lean clay with gravel	31.56	21.23	33.49	13.73	51
TP-11	0 - 3 in-bgs	TP-11-03	sc Clayey sand with gravel	51.51	36.07	10	2.42	16

a/ USCS = Unified Soils Classification System; USDA = United States Department of Agriculture.
b/ Percent of soil passing the #200 sieve.
c/ in-bgs = inches below ground surface; ft-bgs = feet below ground surface.
d/ NA = not applicable; sample did not contain sufficient fines for performance of a hydrometer test.

Table 3-2

Groundwater Elevation Summary
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Well No.	Top-of-Casing Elevation (ft-msl) (a)	November 18, 1996		December 6, 1996		March 26, 1997		May 8, 1997	
		Depth to Water (ft)	Groundwater Elevation	Depth to Water (ft)	Groundwater Elevation	Depth to Water (ft)	Groundwater Elevation	Depth to Water (ft)	Groundwater Elevation
RFI Monitoring Wells									
RFI-01	640.72	9.90	630.82	10.23	630.49	10.45	630.27	10.23	630.49
RFI-02	638.54	6.18	632.36	6.50	632.04	7.00	631.54	6.77	631.77
RFI-03	635.87	3.30	632.57	3.70	632.17	3.52	632.35	3.54	632.33
RFI-04	638.48	5.04	633.44	4.90	633.58	5.30	633.18	5.15	633.33
RFI-05	634.26	5.00	629.26	6.37	627.89	6.54	627.72	6.08	628.18
RFI-06	633.87	7.96	625.91	6.45	627.42	6.89	626.98	6.69	627.18
RFI-07	635.12	4.00	631.12	4.80	630.32	4.75	630.37	4.68	630.44
RFI-08	631.50	2.27	629.23	2.92	628.58	2.95	628.55	2.89	628.61
RFI-09	632.22	2.43	629.79	3.80	628.42	4.30	627.92	3.81	628.41
RFI-10	632.16	2.75	629.41	3.05	629.11	3.59	628.57	3.37	628.79
RFI-11	632.65	3.70	628.95	4.35	628.30	5.18	627.47	4.81	627.84
RFI-12	630.30	7.48	622.82	8.75	621.55	8.70	621.60	8.15	622.15
RFI-13	622.19	6.95	615.24	7.16	615.03	7.63	614.56	7.37	614.82
RFI-14	633.11	3.95	629.16	4.41	628.70	4.67	628.44	5.15	627.96
RFI-15	642.09	11.00	631.09	11.20	630.89	11.15	630.94	10.87	631.22
RFI-16	641.13	6.92	634.21	7.30	633.83	7.53	633.60	7.10	634.03
RFI-17	637.39	7.41	629.98	7.85	629.54	7.84	629.55	7.78	629.61
Existing Monitoring Wells									
B-1	638.54	2.70	635.84	2.90	635.64	3.34	635.20	2.96	635.58
WP-1	639.51	8.76	630.75	8.89	630.62	8.00	631.51	7.47	632.04
WP-2	643.61	9.40	634.21	9.80	633.81	9.97	633.64	9.54	634.07
WP-3	637.11	7.73	629.38	7.85	629.26	7.95	629.16	7.93	629.18
WP-4	641.90	9.60	632.30	9.75	632.15	10.15	631.75	10.01	631.89
WP-5	635.69	10.86	624.83	11.19	624.50	11.34	624.35	11.15	624.54
WP-6	638.22	8.95	629.27	9.17	629.05	9.10	629.12	9.09	629.13
WP-7	635.11	10.67	624.44	11.06	624.05	11.21	623.90	11.01	624.10
WP-8	638.75	11.33	627.42	11.68	627.07	11.65	627.10	11.60	627.15
MW-1	629.38	5.22	624.16	5.45	623.93	6.10	623.28	5.90	623.48
MW-3	635.17	2.70	632.47	3.05	632.12	3.59	631.58	- (b)	-
WT-1A	635.62	3.62	632.00	4.80	630.82	5.07	630.55	5.06	630.56
WT-1B	634.60	3.67	630.93	3.20	631.40	3.65	630.95	3.52	631.08
WT-2	632.35	3.21	629.14	8.08	624.27	2.96	629.39	3.86	628.49
WT-3	631.35	2.27	629.08	3.00	628.35	3.40	627.95	3.22	628.13
WT-4	630.18	0.95	629.23	1.66	628.52	2.05	628.13	1.99	628.19
LAE-4	632.28	3.19	629.09	3.80	628.48	3.94	628.34	3.77	628.51
LAW-5	632.44	9.12	623.32	9.20	623.24	9.55	622.89	9.63	622.81
LAW-6	632.31	5.21	627.10	5.85	626.46	6.05	626.26	6.26	626.05

a/ ft-msl = feet above mean sea level, all elevations are in ft-msl
ft = feet, measurements taken from surveyed top-of-casing
b/ "-" indictes measurement not collected

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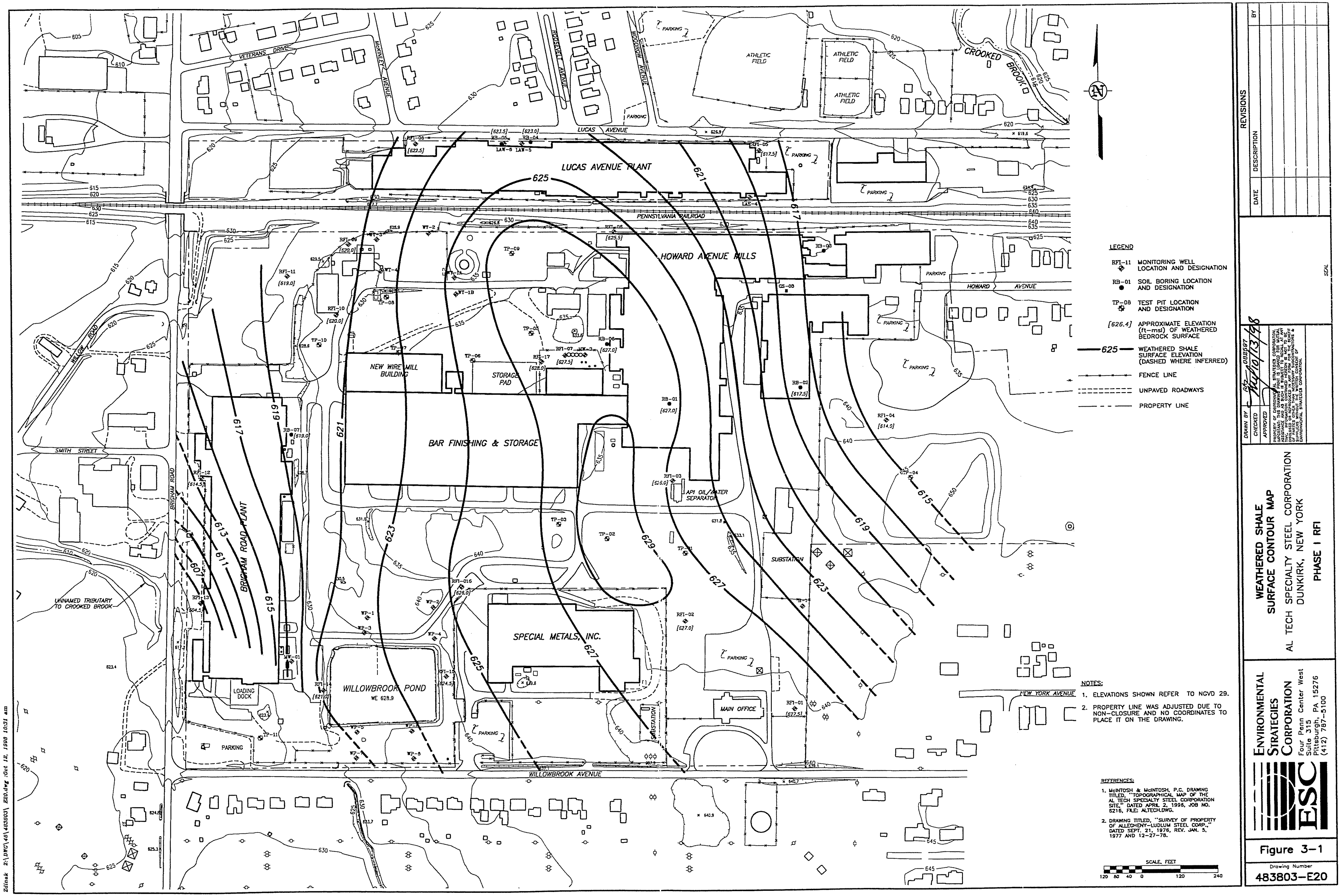
Table 3-3

In Situ Hydraulic Conductivity Test Results
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Well No.	Test (a)	Water Column (ft) (b)	Saturated Thickness (ft)	Initial Drawdown (ft)	Screen Length (ft)	Casing Radius (ft)	Effective Radius (ft)	Transmissivity (ft^2/min)	Storativity	Hydraulic Conductivity (K) (ft/day)	(ft/year)
RFI-03	RH	6.31	4.0	1.98	5	0.08	0.875	2.30E-02	1E-04	8.26	3015.63
	FH	6.31	4.0	1.60	5	0.08	0.875	1.57E-02	1E-04	5.65	2061.67
RFI-04	RH	22.0	6.0	1.48	10	0.08	0.875	4.66E-02	1E-04	11.19	4083.91
	FH	22.0	6.0	1.55	10	0.08	0.875	3.44E-02	1E-04	8.26	3015.19
RFI-05	RH	11.17	2.5	1.55	8	0.08	0.875	4.48E-04	1E-04	0.26	94.21
	FH	11.17	2.5	1.80	8	0.08	0.875	3.63E-03	1E-04	2.09	762.96
RFI-06	RH	6.84	2.0	1.36	7	0.08	0.875	9.99E-03	1E-04	7.19	2625.11
	FH	6.84	2.0	1.50	7	0.08	0.875	1.01E-04	1E-04	0.07	26.44
RFI-10	RH	12.24	1.5	1.41	8	0.08	0.875	5.53E-04	1E-04	0.53	193.84
	FH	12.24	1.5	1.81	8	0.08	0.875	9.06E-04	1E-04	0.87	317.36
RFI-14	RH	11.13	2.0	1.71	7	0.08	0.875	7.50E-05	1E-04	0.05	19.71
	FH	11.13	2.0	1.77	7	0.08	0.875	6.28E-03	1E-04	4.52	1649.07
RFI-17	RH	5.91	3.5	1.30	5	0.08	0.875	1.17E-04	1E-04	0.05	17.49
	FH	5.91	3.5	1.48	5	0.08	0.875	3.24E-04	1E-04	0.13	48.58
								Average K		3.509035	1280.798

a/ RH = rising-head test; FH = falling-head test.
b/ ft = feet; ft^2/min = square-feet per minute;
ft/min = feet per minute; ft/day = feet per day.


WEATHERED SHALE SURFACE CONTOUR MAP
AL TECH SPECIALTY STEEL CORPORATION
DUNKIRK, NEW YORK
PHASE I RFI
ENVIRONMENTAL STRATEGIES CORPORATION
Four Penn Center West
Suite 315
Pittsburgh, PA 15276
(412) 787-5100
ESC
Figure 3-1
Drawing Number
483803-E20
REVISIONS
DATE
DESCRIPTION
BY
DRAWN BY
CHECKED
APPROVED
SEAL
LEGEND
RFI-11 MONITORING WELL LOCATION AND DESIGNATION
RB-01 SOIL BORING LOCATION AND DESIGNATION
TP-08 TEST PIT LOCATION AND DESIGNATION
[626.4] APPROXIMATE ELEVATION (ft-msl) OF WEATHERED BEDROCK SURFACE
625 WEATHERED SHALE SURFACE ELEVATION (DASHED WHERE INFERRED)
FENCE LINE
UNPAVED ROADWAYS
PROPERTY LINE
NOTES:
1. ELEVATIONS SHOWN REFER TO NGVD 29.
2. PROPERTY LINE WAS ADJUSTED DUE TO NON-CLOSURE AND NO COORDINATES TO PLACE IT ON THE DRAWING.
REFERENCES:
1. McINTOSH & McINTOSH, P.C. DRAWING TITLED, "TOPOGRAPHICAL MAP OF THE AL TECH SPECIALTY STEEL CORPORATION SITE," DATED APRIL 2, 1996, JOB NO. 6216, FILE: ALTECH.DWG.
2. DRAWING TITLED, "SURVEY OF PROPERTY OF ALLEGHENY-LUDLUM STEEL CORP.," DATED SEPT. 21, 1976, REV. JAN. 5, 1977 AND 12-27-78.
SCALE, FEET
120 80 40 0 120 240
LUCAS AVENUE PLANT
HOWARD AVENUE MILLS
BAR FINISHING & STORAGE
NEW WIRE MILL BUILDING
STORAGE PAD
BRIGHAM ROAD PLANT
SPECIAL METALS, INC.
WILLOWBROOK POND
WE 628.9
LOADING DOCK
MAIN OFFICE
SUBSTATION
API OIL/WATER SEPARATOR
PENNSYLVANIA RAILROAD
LUCAS AVENUE
HOWARD AVENUE
WILLOWBROOK AVENUE
NEW YORK AVENUE
BRIGHAM ROAD
SMITH STREET
VETERANS DRIVE
McKINLEY AVENUE
ROOSEVELT AVENUE
WOODROW AVENUE
WILLOW ROAD
CROOKED BROOK
UNNAMED TRIBUTARY TO CROOKED BROOK
ATHLETIC FIELD
PARKING
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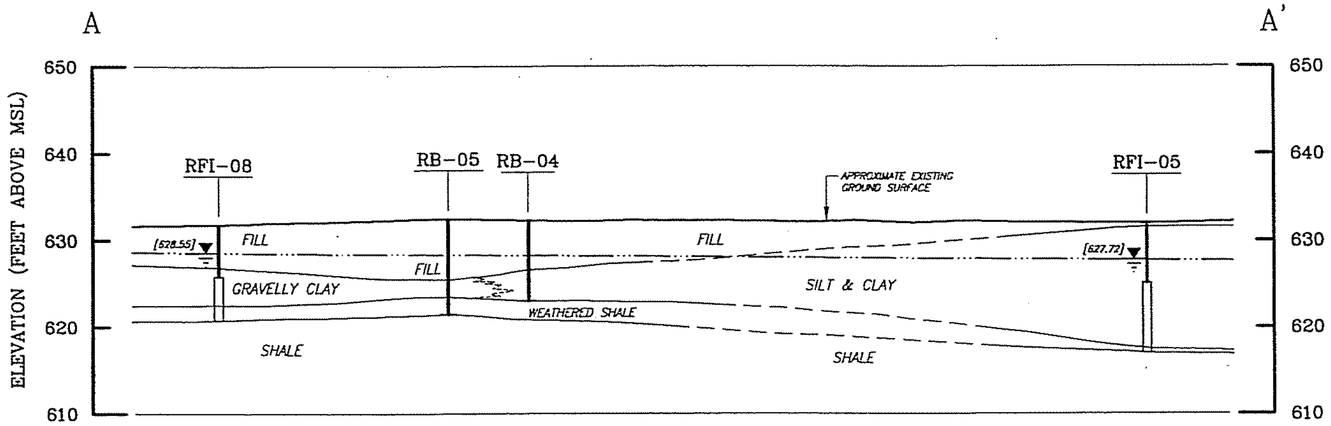
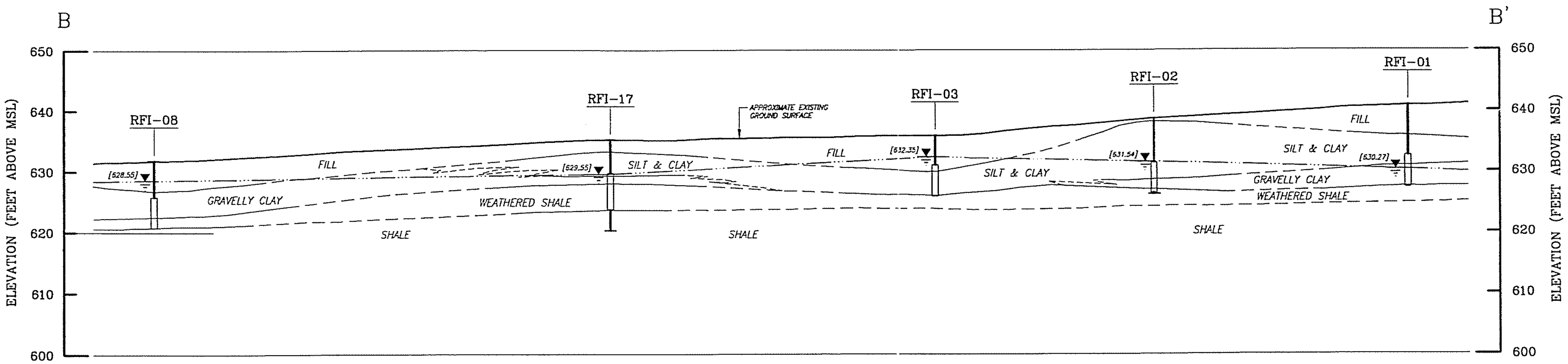


CROSS SECTION A-A'



CROSS SECTION B-B'

LEGEND

WELL SCREEN INTERVAL

BOTTOM OF BORING

[627.72] GROUNDWATER ELEVATION (MARCH 1997)

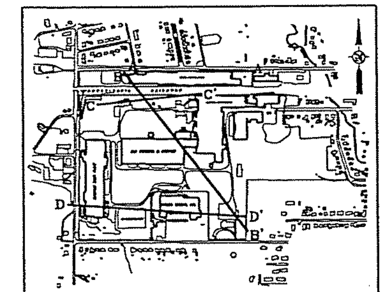
POTENTIOMETRIC SURFACE

NOTE:

THE BORING LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIED LOCATIONS. THE DEPTH AND THICKNESS OF THE SUBSURFACE STRATA AND WATER LEVELS HAVE BEEN INTERPOLATED BETWEEN THE BORINGS.

HORIZONTAL SCALE, FEET
100 0 100 200

VERTICAL SCALE, FEET
10 0 10 20



KEY - CROSS SECTION LOCATIONS

SCALE, FEET

DATE	DESCRIPTION	BY

REVISIONS

SEAL

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GEOLOGIC CROSS SECTIONS A-A' AND B-B'

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Figure 3-2

Drawing Number
483803-E17

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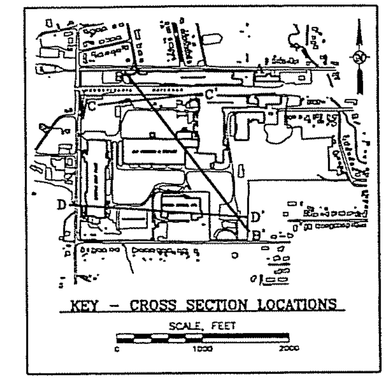
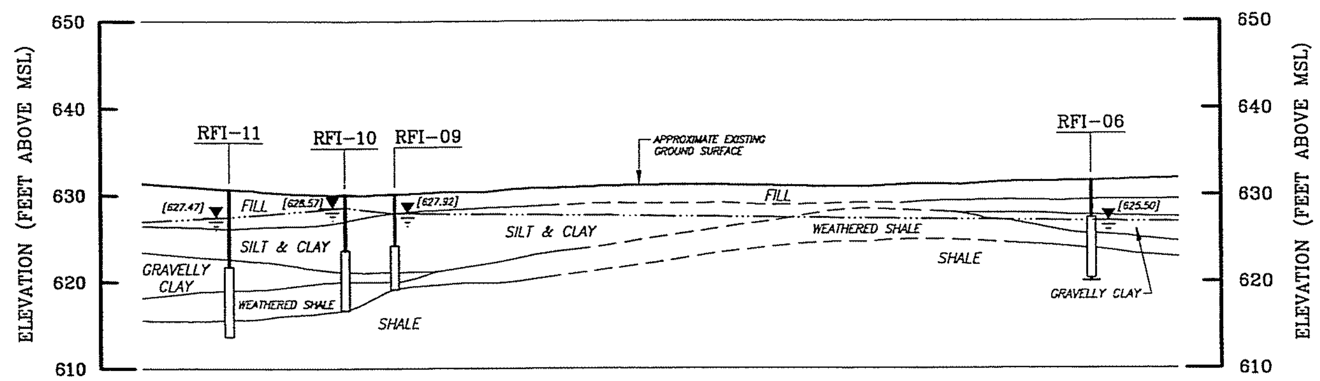




CROSS SECTION C-C'

LEGEND

WELL SCREEN INTERVAL

BOTTOM OF BORING

[630.27] GROUNDWATER ELEVATION (MARCH 1997)

POTENTIOMETRIC SURFACE

NOTE:

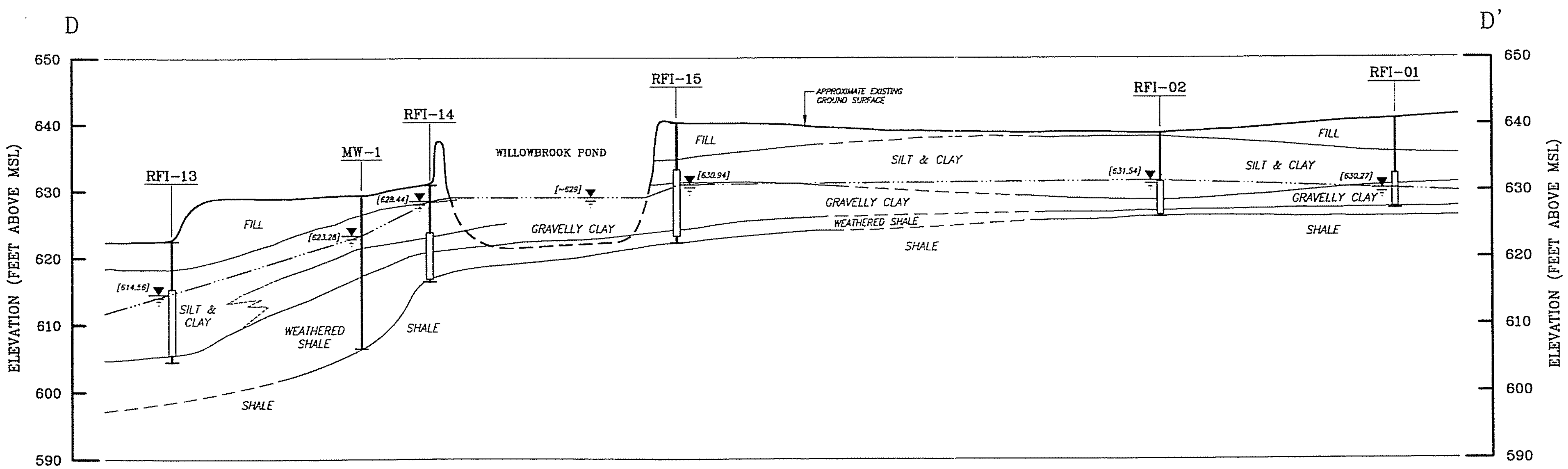
THE BORING LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIED LOCATIONS. THE DEPTH AND THICKNESS OF THE SUBSURFACE STRATA AND WATER LEVELS HAVE BEEN INTERPOLATED BETWEEN THE BORINGS.

HORIZONTAL SCALE, FEET

100 0 100 200

VERTICAL SCALE, FEET

10 0 10 20



CROSS SECTION D-D'

REVISIONS

DATE	DESCRIPTION	BY

SEAL

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CHECKED 10/13/98
APPROVED

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GEOLOGIC CROSS SECTIONS
C-C' AND D-D'

AL TECH SPECIALTY STEEL CORPORATION
DUNKIRK, NEW YORK

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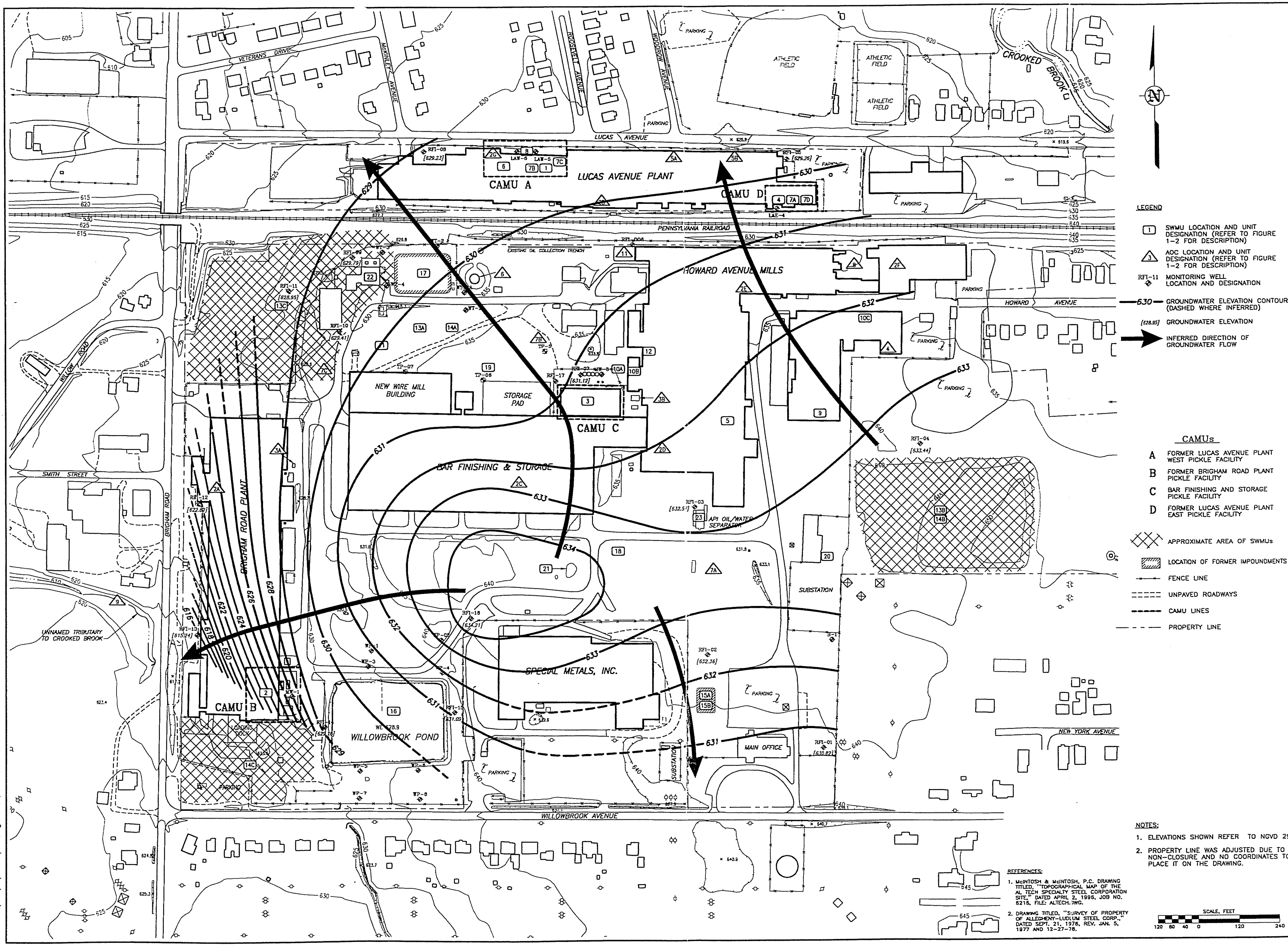
Figure 3-3

Drawing Number
483803-E18



REVISIONS

DATE	DESCRIPTION	BY

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SEAL

GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR MAP (NOVEMBER 1996)
AL TECH SPECIALTY STEEL CORPORATION
DUNKIRK, NEW YORK
PHASE I RFI

ENVIRONMENTAL STRATEGIES CORPORATION
Four Penn Center West
Suite 315
Pittsburgh, PA 15276
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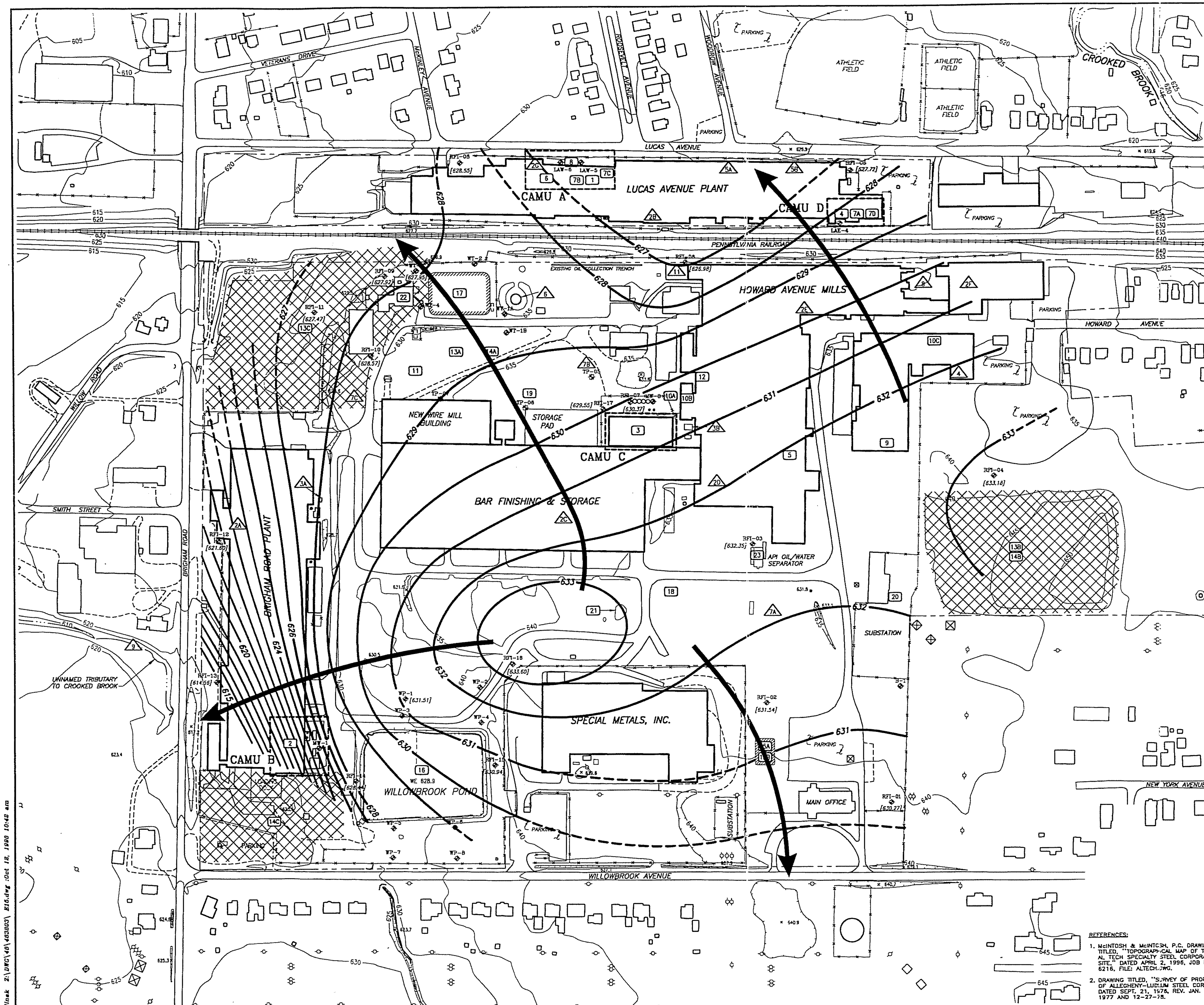
Figure 3–4

Drawing Number
483803–E14



LEGEND

- SWMU LOCATION AND UNIT DESIGNATION (REFER TO FIGURE 1-2 FOR DESCRIPTION)
- AOC LOCATION AND UNIT DESIGNATION (REFER TO FIGURE 1-2 FOR DESCRIPTION)
- RFI-11 MONITORING WELL LOCATION AND DESIGNATION
- 630 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- [627.49] GROUNDWATER ELEVATION
- INFERRED DIRECTION OF GROUNDWATER FLOW

CAMUs

- A FORMER LUCAS AVENUE PLANT WEST PICKLE FACILITY
- B FORMER BRIGHAM ROAD PLANT PICKLE FACILITY
- C BAR FINISHING AND STORAGE PICKLE FACILITY
- D FORMER LUCAS AVENUE PLANT EAST PICKLE FACILITY

- APPROXIMATE AREA OF SWMUs
- LOCATION OF FORMER IMPOUNDMENTS
- FENCE LINE
- UNPAVED ROADWAYS
- CAMU LINES
- PROPERTY LINE

NOTES:

1. ELEVATIONS SHOWN REFER TO NGVD 29.
2. PROPERTY LINE WAS ADJUSTED DUE TO NON-CLOSURE AND NO COORDINATES TO PLACE IT ON THE DRAWING.

REFERENCES:

1. McINTOSH & McINTOSH, P.C. DRAWING TITLED, "TOPOGRAPHICAL MAP OF THE AL TECH SPECIALTY STEEL CORPORATION SITE," DATED APRIL 2, 1996, JOB NO. 6216, FILE: ALTECH.DWG.
2. DRAWING TITLED, "SURVEY OF PROPERTY OF ALLEGHENY-LUDLUM STEEL CORP.," DATED SEPT. 21, 1976, REV. JAN. 5, 1977 AND 12-27-78.

SCALE, FEET

120 80 40 0 120 240

REVISIONS | DATE | DESCRIPTION | BY

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SEAL

GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR MAP (MARCH 1997)

AL TECH SPECIALTY STEEL CORPORATION
DUNKIRK, NEW YORK

PHASE I RFI

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Pittsburgh, PA 15276
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Figure 3-5

Drawing Number
483803-E15

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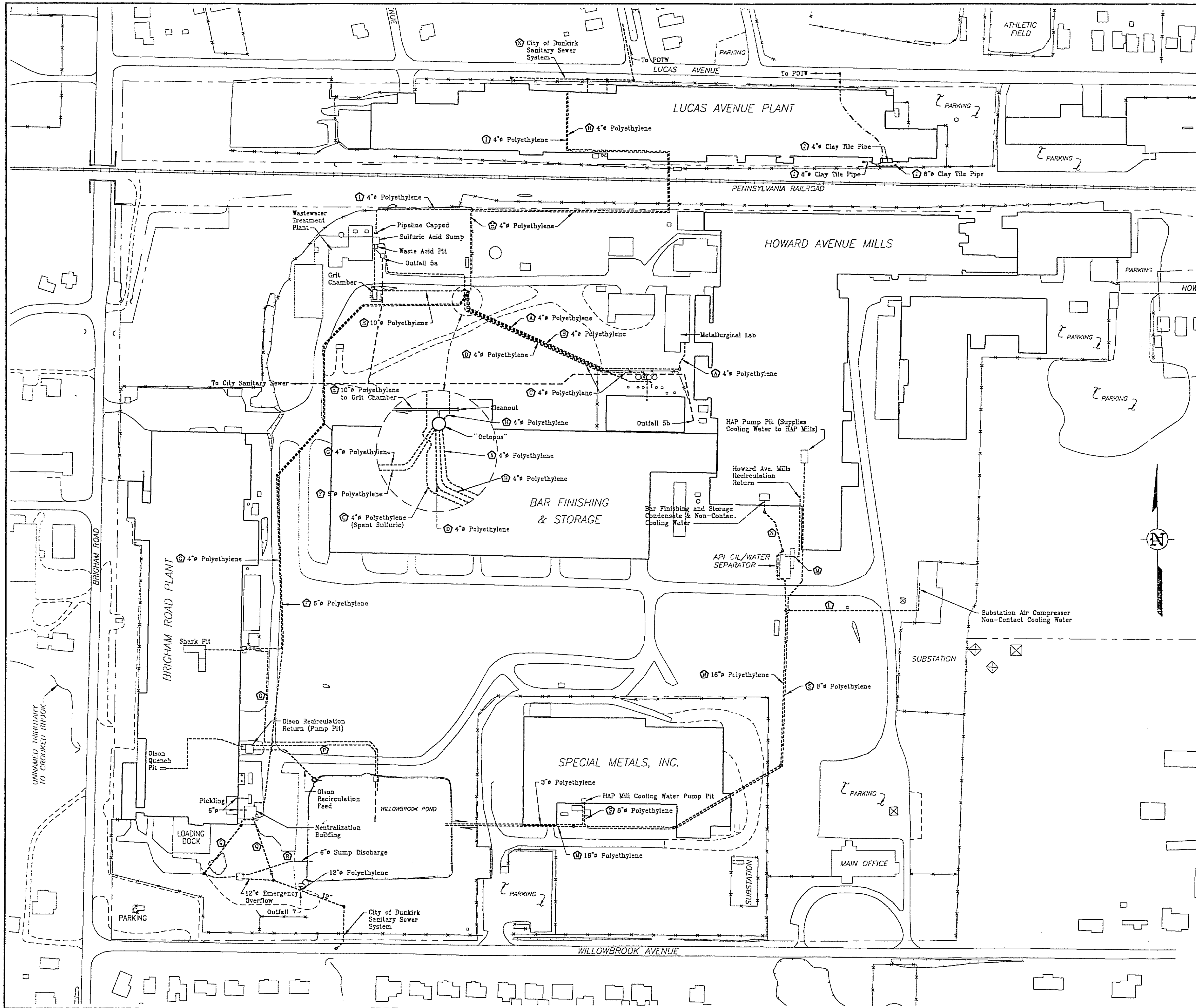

A METALLURGICAL LAB DRAIN, 10% MURIATIC ACID, 10% NITRIC ACID

B RINSE WATER FROM PICKLING, DILUTED ACIDS AND CAUSTICS

C BAR FINISHING PICKLING WASHWATER, 12% SULFURIC ACID, 2% HYDROFLUORIC ACID MIXTURE

D BAR FINISHING PICKLING WASHWATER, 12% NITRIC ACID, 2% HYDROFLUORIC ACID

E COMBINED WASTEWATER FLOW TO GRIT CHAMBER AND WASTEWATER TREATMENT PLANT

F BRIGHAM ROAD PICKLING WASTEWATER, 12% NITRIC ACID

G SHARK PIT EFFLUENT RINSE, MILL GREASE, OIL AND WATER

H WEST LUCAS AVENUE PICKLING WASTEWATER, NITRIC ACID

I WEST LUCAS AVENUE PICKLING WASTEWATER, SULFURIC ACID

J EAST LUCAS AVENUE PICKLING WASTEWATER, SULFURIC AND NITRIC ACID

K WEST LUCAS AVENUE PICKLING WASTEWATER, SULFURIC AND NITRIC ACID

L AIR COMPRESSOR NON-CONTACT COOLING WATER

M CONTACT COOLING WATER FROM MINI-, SHAPE-, AND ROUND-MILL OPERATIONS

N CONDENSATE AND NON-CONTACT COOLING WATER FROM BFS HYDRAULIC EQUIPMENT

O CONTACT COOLING WATER FROM BRP ROLLING MILLS

P CONTACT COOLING WATER FROM THE BRP COIL QUENCH TANKS

Q NEUTRALIZED PICKLE LIQUOR DISCHARGE TO POTW SANITARY SEWER

R WILLOWBROOK POND OVERFLOW DISCHARGE TO POTW SANITARY SEWER

S COOLING WATER SUPPLY TO MINI-, SHAPE-, AND ROUND-MILL OPERATIONS

LEGEND

FENCE LINE
PROPERTY LINE
UNPAVED ROADWAYS
APPROXIMATE UNDERGROUND PROCESS SEWER LOCATIONS
APPROXIMATE ABOVEGROUND PROCESS SEWER LOCATIONS

NOTES:

1. ELEVATIONS SHOWN REFER TO NGVD 29.
2. PROPERTY LINE WAS ADJUSTED DUE TO NON-CLOSURE AND NO COORDINATES TO PLACE IT ON THE DRAWING.
3. LOCATIONS OF PIPELINES ARE APPROXIMATE.

REFERENCES:

1. McINTOSH & McINTOSH, P.C. DRAWING TITLED, "TOPOGRAPHICAL MAP OF THE AL TECH SPECIALTY STEEL CORPORATION SITE," DATED APRIL 2, 1996, JOB NO. 6216, FILE: ALTECH.DWG.
2. DRAWING TITLED, "SURVEY OF PROPERTY OF ALLEGHENY-LUDLUM STEEL CORP.," DATED SEPT. 21, 1976, REV. JAN. 5, 1977 AND 12-27-78.
3. AL TECH SPECIALTY STEEL CORP. DRAWINGS:

DWG. NO.	DATE	SHEET	REV.	DATE
3-D-3	6-26-90	1 of 3	1	5-26-90
3-D-3	7-13-90	3 of 3	-	- -
3-D-253	8-8-88	- -	-	- -
3-D-254	7-85	- -	-	- -

4. ALLEGHENY-LUDLUM STEEL CORP. DRAWINGS:

DWG. NO.	DATE	REV.	DATE	THE CHESTER ENGINEERS DWG. NO.
3-D-151	4/75	1	8/1/75	2852-102
3-D-157	4/75	1	8/1/75	2852-108
3-D-158	4/75	3	5/1/76	2852-109
3-D-160	4/75	1	8/1/75	2852-111
3-D-161	4/75	3	11-28-95	2852-112
3-C-115	10-3-75	2	5-1-76	- -
3-D-39	10-17-75	5	7-7-77	- -
3-D-150	11-4-75	2	3-16-76	- -
3-D-220	9-10-52	2	11-28-88	- -
7-C-52	4-15-49	2	2-11-74	- -
7-C-38-SC	9-17-54	-	- -	- -
7-D-7	4-23-51	2	4-7-50	- -
7-D-16-SC	3-12-52	-	- -	- -
7-D-22-SC	1-14-53	-	- -	- -
7-D-51-SC	6-16-57	-	- -	- -
50-D-17	4-20-47	2	9-3-87	- -
50-D-40	1-16-43	1	7-28-51	- -

SCALE, FEET
100 0 100 200

REVISIONS
DATE	DESCRIPTION	BY

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NOTICE: THIS DRAWING HAS BEEN PREPARED UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER. IT IS A VIOLATION OF STATE LAW FOR ANY PERSONS, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT IN ANY WAY.

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AL TECH SPECIALTY STEEL CORPORATION
DUNKIRK, NEW YORK
PHASE I RFI

ENVIRONMENTAL STRATEGIES CORPORATION
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Figure 3-6

Drawing Number
483803-E21

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4.0 Chemical Analytical Data

The results of laboratory analysis for site environmental media samples are discussed in the following sections, as follows:

- Section 4.1 - Background Soils
- Section 4.2 - Transformer Area Soils
- Section 4.3 - Site Soils
- Section 4.4 - Site Groundwater
- Section 4.5 - Surface Water and Sediments

The analytical data, including data validation notes, are presented in Tables 4-1 through 4-14. Data validation reports for the project are presented in Appendix M.

For all analytical parameters, the text does not differentiate between concentrations reported at levels above the detection limits and those reported at levels below the detection limits (i.e., "J", "NJ", or "B" qualified data).

In most cases, the discussion of the TAL Inorganics (plus other metals) in soils is based on analytical data generated for samples which were sieved using a standard number 4 sieve. However, as discussed in Section 2.0, sample aliquots for analysis of mercury, cyanide (total and free), and hexavalent chromium were not sieved before analysis. Results of the analysis for the soil sample aliquots prepared using a standard number 400 sieve, for use in the Air Pathways Analysis, are presented in Section 6.0.

The TCL VOC and TCL SVOC tables have been abridged to reflect only those constituents which were detected in one or more of the samples, for each of the sample media. An unabridged set of data tables is presented in Appendix N.

The detection of common laboratory and field contaminants, although included in the data tables, are not discussed in the text as they are not believed to be indicative of site conditions. These contaminants include:

- TCL VOCs - acetone and methylene chloride
- TCL SVOCs - bis(2-ethylhexyl)phthalate, di-n-butyl phthalate, and di-n-octyl phthalate

Because the majority of TCL SVOCs detected in the site environmental media samples were polynuclear aromatic hydrocarbons (PAHs), the PAH constituent concentrations have been summed for presentation purposes in the text. The individual constituent concentrations are presented in the data tables. All other detected TCL SVOCs and reported concentrations are presented individually.

4.1 Background Soils

Surface soil samples were collected from seven background locations during implementation of the RFI. The sample locations were parallel to and approximately 260 feet south of Willowbrook Avenue (Figure 2-1). The depth from which the samples were collected was the ground surface to approximately 3 in-bgs.

Each of these soil samples was submitted for analysis of TAL Inorganics (plus molybdenum, hexavalent chromium, and free cyanide),[1] TCL SVOCs, and select miscellaneous parameters. The analytical results are presented in Table 4-1. This table also includes the calculated 95 percent upper confidence limit (95 UCL) for each of the metals and cyanide. These values represent the upper limit of concentrations anticipated to be reported for 95 percent of any background samples collected. These calculated values were used to aid in evaluating background conditions versus site conditions in the subsequent sections.

4.1.1 TAL Inorganics

Two sets of samples were collected from each of the seven background locations:

- one set was not sieved and was to be used exclusively to evaluate background conditions versus site conditions

- one set was sieved with a standard 400 sieve for use in the Air Pathway Analysis.

Only the unsieved results are discussed in this section; all subsequent soil discussions are based on data generated for samples prepared using a standard number 4 sieve.

[1] For presentation, the specific list of parameters is identified in the introductory sections for each area. Thereafter, the list is simply identified as TAL Inorganics.

The following metals were detected in each of the background samples:

- aluminum
- arsenic
- barium
- calcium
- cadmium
- cobalt
- total chromium
- copper
- iron
- potassium
- magnesium
- manganese
- molybdenum
- nickel
- lead
- antimony
- vanadium
- zinc

The following metals were detected in some of the samples as noted:

- beryllium was detected in each of the background samples, excluding those for BS-02 and BS-05
- silver was only detected in the sample collected from BS-01

Hexavalent chromium, mercury, sodium, selenium, thallium, and free cyanide were not detected in any of the background soil samples. The total cyanide data were rejected by the data validator. Consequently, the detection of any of these constituents in the site soil samples suggests an exceedance of background (i.e., there is no calculated 95 UCL).

In general, the data indicate similar concentrations of detected metals in the samples collected from the different background locations. The only notable difference in reported concentrations was for molybdenum. The molybdenum concentration for the soil sample collected from BS-05 was 30 milligrams per kilograms (mg/kg) (the concentration reported for the sieved sample was 3.4 mg/kg). For all other background samples the molybdenum concentrations ranged from 3 to 9.4 mg/kg.

No background soil samples were selected for TCLP extraction and analysis of the extract.

4.1.2 TCL SVOCs

TCL SVOCs were detected in only one sample collected from a background location: BS-01. As shown in Table 4-1, the detected TCL SVOCs included only PAHs at a total concentration of 3,640 μg/kg.

SVOC TICs were detected in each of the background surface soil samples. The total concentrations, representing a sum of the concentrations for all TICs detected in a single sample (and as shown in Table 4-1) ranged from 1,549 to 7,506 μg/kg.

4.1.3 Miscellaneous Parameters

Each background sample was submitted for analysis of TPH and pH. The data indicated:

- TPH was detected in each sample at concentrations of 12 to 21 mg/kg, excluding the sample collected from BS-05 in which TPH was not detected.
- the pH levels indicated slightly acidic conditions; the range was 4.74 to 5.95 standard units (s.u.).

4.2 Transformer Soil Sample Data

Sixteen surface soil samples (ground surface [0] to 3 in-bgs) were collected from Transformers T1, T2, and T3. The transformer locations are shown in Figures 2-1 and 2-2; specific transformer sample locations are presented in Figures A-1, A-2, and A-3 (Appendix A). Each of these samples was submitted for analysis of TCL PCBs and select miscellaneous parameters. Select samples from each area were also analyzed for TAL Inorganics (plus molybdenum). The analytical results are presented in Table 4-2.

As agreed with NYSDEC, AL Tech was to clean and collect confirmatory wipe samples at Transformers T4, T5, and T6. These activities and findings were presented in Section 2.1.1.2.

4.2.1 TAL Inorganics

Each of these constituents was detected in the eight transformer soil samples submitted for TAL Inorganics, except as follows:

- mercury, selenium, and thallium, which were not detected in any samples
- silver data were inconclusive: the results indicated an equal number of samples had either rejected silver results, silver was not detected, or silver was detected at similar concentrations
- total cyanide, which was detected at similar concentrations in the four samples collected from the T1 area and one of two samples collected from the T3 area (T3-03); data for the three remaining transformer samples were rejected by the data validator

Several metals were detected at similar concentrations in samples collected from different locations, including aluminum, cadmium, vanadium, and zinc. Cobalt and iron were detected at a wide range of concentrations, but no pattern in the distribution was observed. Notable differences were observed in the concentrations reported for various samples within one area, or between the three areas for these metals:

- arsenic
- barium
- beryllium
- total chromium
- potassium
- magnesium
- manganese
- molybdenum
- sodium
- nickel
- lead
- antimony

Two of the transformer area soil samples (from Locations T1-03 and T3-03) were selected for TCLP extraction and analysis of the extract based on higher total concentrations (Table 4-3). TC metals were typically not detected in the extract or the detected concentrations were well below the TCLP limits. Consequently, the presence of metals at elevated levels in these soils does not appear to indicate a significant potential to impact site groundwater quality.

4.2.2 TCL PCBs

TCL PCBs were not detected in samples collected from the Transformer T1 and T2 areas. PCB Aroclors were, however, were detected in three of the four samples collected from the T3 area:

Sample Location	Detected Aroclor	Reported Concentration (mg/kg)
T3-01	1248	87
T3-02	1242	3.9
	1260	6.4
T3-03	1254	1.1

It should be noted that the data validator rejected all of the results (which were all non-detects) for Aroclor 1232. Because this is a Aroclor which is rarely detected in environmental media samples and the results presented by the laboratory indicated the Aroclor was not detected in the samples, the data rejection is not considered to be of importance to the project. Rejection of data for this Aroclor for other site samples is, therefore, not discussed further.

4.2.3 Miscellaneous Parameters

Select samples from each area were submitted for analysis of TPH, one sample from each area was analyzed for pH, and all transformer soil samples were submitted for analysis of TOC.

- TPH was detected in five of the eight samples collected from the T1 area at concentrations of 23 to 97 mg/kg. TPH was detected in two samples collected from the T2 area at concentrations of 640 mg/kg (T2-01) and 23 mg/kg (T2-03). TPH was detected in three of four samples collected from the T3 area at concentrations ranging from 160 to 940 mg/kg

- The pHs reported for samples collected from these three areas were generally neutral:

  - T1 - 8.47 s.u.
  - T2 - 6.45 s.u.
  - T3 - 7.69 s.u.

- TOC was detected in each of the 16 transformer soil samples at similar concentrations of 1.1 to 3.7 milligrams per liter (mg/l). However, the sample and duplicate collected from T2-01 had TOC concentrations of 16 and 14 mg/l

4.3 Site-Wide Surface and Subsurface Soil Sample Data

To facilitate an understanding of conditions at each unit investigated during the RFI, soil data are presented on a unit-by-unit basis, in the following manner:

- SWMU-specific locations
- AOC-specific locations
- CAMU-specific locations
- general site locations

TAL Inorganic data (including results for molybdenum for all samples and results for hexavalent chromium and free cyanide for select samples) generated from a majority of these locations are presented in Table 4-4. TCL VOC and VOC TIC data are presented in Table 4-5, and TCL SVOC and SVOC TIC data are presented in Table 4-6. The TCL PCB data and data generated for miscellaneous parameters are presented in Table 4-7. Data for soil samples collected from indoors, in the immediate vicinity of the CAMUs (i.e., interior LEB-, BRB-, and LWB-series borings) are presented in Table 4-8.

4.3.1 SWMU Locations

4.3.1.1 SWMU 5 - Former Grinding Room Pickling Process

Boring RB-01 was completed indoors at the location shown in Figure 2-1. Soil samples were collected from this location at 0 to 2, 5 to 7, and 7 to 9 ft-bgs. Each of the samples was submitted for analysis of TAL Inorganics (plus molybdenum, hexavalent chromium, and free cyanide) and select miscellaneous parameters, except the 0 to 2 ft-bgs, which was analyzed for a limited number of TAL metals and total and free cyanide.

Each of the metals and cyanide were detected in all soil samples collected from this location, except:

- mercury, selenium, thallium, and free cyanide, which were not detected in any samples
- total cyanide, which was not detected in the samples collected from 0 to 2 or 5 to 7 ft-bgs but was detected in the sample collected from 7 to 9 ft-bgs

Hexavalent chromium was detected in the sample collected from 5 to 7 ft-bgs at a concentration of 3.46 mg/kg.

The concentrations of metals detected in the soils samples collected from 5 to 7 and 7 to 9 ft-bgs were similar. The 0 to 2 ft-bgs sample was submitted for analysis of 12 constituents. The concentrations of detected constituents in this shallow sample were similar to the deeper samples, except:

- arsenic, cadmium, total chromium, and copper, for which higher concentrations were reported in the surface sample
- barium, for which a notably lower concentration was reported in the surface sample

Each of these soil samples was analyzed for TPH and pH; the 0 to 2 ft-bgs sample was also analyzed for total phenols.

- TPH was not detected in the samples collected from 0 to 2 and 5 to 7 ft-bgs, but was detected in the sample collected from 7 to 9 ft-bgs at 12 mg/kg.

- pHs ranged widely:
  - 4.48 s.u. in the 0 to 2 ft-bgs sample
  - 7.37 s.u. in the 5 to 7 ft-bgs sample
  - 10.93 s.u. in the 7 to 9 ft-bgs sample

- total phenols was not detected in any samples

4.3.1.2 SWMU 9 - Former Trichloroethane Container Storage Area

Boring RB-02 was completed indoors at the location shown in Figure 2-1. Soil samples were collected from this location at 0 to 2 and 16 to 18 ft-bgs. Both samples were submitted for analysis of TAL Inorganics (plus molybdenum; the shallow sample was also analyzed for free cyanide), TCL VOCs, TCL SVOCs, TCL PCBs, and select miscellaneous parameters.

Each of the TAL Inorganics was detected in both samples, except:

- mercury, selenium, thallium, and total cyanide, which were not detected in either sample

- free cyanide, which was not detected in the 0 to 2 ft-bgs

The detected metals concentrations were generally similar. The only constituent for which there was notable change in concentration between samples was calcium, which increased in concentration with sample depth.

Three TCL VOCs were detected in the samples collected from this location:

- 0 to 2 ft-bgs
  - trichloroethene at 0.5 μg/kg
  - toluene at 3 μg/kg
  - styrene at 0.9 μg/kg

- 16 to 18 ft-bgs
  - toluene at 0.5 μg/kg

VOC TICs were not detected in the soil sample collected from 0 to 2 ft-bgs. VOC TICs were detected in the sample collected from 16 to 18 ft-bgs at a total concentration of 29 μg/kg.

TCL SVOCs were not detected in the samples collected from RB-02. SVOC TICs were detected in both samples at total concentrations of 2,164 and 4,684 μg/kg.

TCL PCBs were not detected in either of the samples collected from this location.

Each of these samples was analyzed for TPH and TOC; the 0 to 2 ft-bgs sample was also analyzed for pH and total phenols.

- TPH was not detected in the sample collected from 0 to 2, but was detected in the sample collected from 16 to 18 ft-bgs at 23 mg/kg.
- The pH for the 0 to 2 ft-bgs sample was 7.31 s.u.
- TOC was detected in both samples at concentrations of 2.7 and 2.3 mg/l.
- Total phenols was not detected in the 0 to 2 ft-bgs sample.

4.3.1.3 SWMU 11 - Shark Pit Residual Material Loading Area

Boring RFI-10 was completed proximate to this unit, as shown in Figure 2-1. Soil from this location at 0 to 3 in-bgs and 0 to 2, 2 to 4, and 8 to 10 ft-bgs. Each of the samples was submitted for analysis of TAL Inorganics (plus molybdenum, hexavalent chromium, and free cyanide), TCL PCBs, and select miscellaneous parameters; select samples were also analyzed for TCL SVOCs.

Each of the TAL Inorganics was detected in all of the soil samples collected from this location, except:

- selenium, thallium, total cyanide, and free cyanide, which were not detected in any samples
- the silver data were inconclusive: two of the silver results were rejected, silver was not detected in the 0 to 3 in-bgs sample but was detected in the 8 to 10 ft-bgs sample
- mercury, which was not detected in the samples collected from 0 to 3 in-bgs or 8 to 10 ft-bgs, but was detected in samples collected from 0 to 2 and 2 to 4 ft-bgs
- antimony, which was not detected in the sample collected from 0 to 2 ft-bgs

Hexavalent chromium was detected only in the surficial soil sample (0 to 3 in-bgs) collected at this location; the reported concentration was 9.95 mg/kg.

The concentrations reported for the detected metals were generally similar. However, notable changes in constituent concentrations with sample depth were observed:

- decrease in concentration with increased sample depth
  - cobalt
  - total chromium
  - copper
  - molybdenum
  - nickel
  - vanadium
  - zinc

- increase in concentration with increased sample depth
  - calcium
  - potassium
  - magnesium

The highest concentrations for approximately one-half of the detected metals were reported for the 0 to 3 in-bgs sample.

Analysis for TCL SVOCs was performed on samples collected from depths of 2 to 4 and 8 to 10 ft-bgs. TCL SVOCs were not detected in these samples, but SVOC TICs were reported at total concentrations of 17,980 and 34,090 μg/kg.

TCL PCBs were not detected in any of the samples collected from this location.

Each of these samples was submitted for analysis of total phenols and TOC; each of the samples, except the 8 to 10 ft-bgs sample, were also analyzed for TPH.

- TPH was not detected in any of the samples.
- Total phenols was not detected in any samples.
- TOC was detected in each of the samples at concentrations of 2.2 to 5.9 mg/l.

4.3.1.4 SWMUs 13 and 14 - Crucible Disposal Areas and Waste Disposal Facilities

Three crucible disposal areas and three waste disposal facilities were identified at the site. A minimum of one soil boring or test pit was completed proximate to each of these areas:

- SWMU 13 - Crucible Disposal Areas
  - SWMU 13A (near BFS) - TP-08
  - SWMU 13B (near HAP parking lot) - TP-04 and RFI-04
  - SWMU 13 C (near BRP) - RFI-09 and RFI-11

- SWMU 14 - Waste Disposal Facilities
  - SWMU 14A (near BFS) - TP-07
  - SWMU 14B (near HAP parking lot) - TP-04 and RFI-04
  - SWMU 14C (near BRP) - TP-11

Analytical results for soil samples collected from each of these locations are presented below, except for RFI-09 which was completed more to evaluate potential impact from SWMUs 17 and SWMU 22 and is, therefore, addressed in Section 4.3.1.7. To facilitate an understanding of conditions at each location, regardless of the source of potential impact (i.e., TP-04 and RFI-04, which are applicable to two units), data for each boring and test pit are discussed individually. The miscellaneous parameter data however, have been addressed in a comprehensive manner.

<u>TAL Inorganics</u>

Each of the samples collected from the locations identified above submitted for analysis of TAL Inorganics (plus molybdenum and free cyanide); analysis for hexavalent chromium was performed on all samples collected from the test pit locations.

<u>TP-08</u> - Each of these constituents detected in the three soil samples collected from this location, except:

- mercury, selenium, thallium, total cyanide, and free cyanide, which were not detected in any samples

- antimony, which was noted detected in the 0 to 2 ft-bgs sample

Hexavalent chromium was only detected in the 0 to 2 ft-bgs sample; the concentration was 5.92 mg/kg.

Similar concentrations were reported for several of the metals detected in soil samples collected from TP-08. However, an overwhelming number of the detected metals were detected at the highest concentrations in the sample collected from 0 to 2 ft-bgs. Notable changes in concentrations (i.e., decreased concentration with increased sample depth) were observed for several of these metals, including:

- barium
- cobalt
- total chromium
- copper
- molybdenum
- nickel
- vanadium

TP-04 - Each of these constituents was detected in both of the soil samples collected from this location, except mercury, selenium, thallium, total cyanide, and free cyanide (which were not detected in any samples). Hexavalent chromium was not detected in either sample. The concentrations reported for the detected metals in both samples were generally similar, although concentrations for most metals were slightly higher in the 0 to 2 ft-bgs sample. The only constituents for which there were notable changes in concentrations were calcium, total chromium, molybdenum, and nickel. Concentrations of these constituents decreased between the 0 to 2 and 11 to 12 ft-bgs samples.

TP-07 - Each of these constituents was detected in the four soil samples collected from this location, except:

- silver, mercury, thallium, total cyanide, and free cyanide, which were not detected in any samples
- antimony, which was not detected in the 0 to 2 ft-bgs sample
- selenium, which was only detected in the 3 to 4 ft-bgs sample

Hexavalent chromium was not detected in the soil samples collected from 0 to 3 in-bgs or 0 to 2 ft-bgs at this location, but was detected in samples collected from 3 to 4 and 8 to 9 ft-bgs at concentrations of 7.79 and 64.8 mg/kg.

The concentrations reported for detected metals in samples collected from this location were generally similar. The highest concentrations were equally divided amongst the samples collected from 0 to 2 ft-bgs, 3 to 4 ft-bgs, and 8 to 9 ft-bgs. However, some notable differences were observed. Specifically, concentrations decreased with increased sample depth for these parameters:

- cobalt
- total chromium
- copper
- molybdenum

The 3 to 4 ft-bgs sample collected from TP-07 was selected for TCLP extraction and analysis of the extract based on higher total concentrations of some metals (Table 4-3). TC metals were typically not detected in the extract or were detected at concentrations well below the TC limits. Consequently, the presence of metals at higher total concentrations does not appear to indicate a significant potential to impact site groundwater quality.

TP-11 - Each of these constituents was detected in the three soil samples collected from this location, except:

- mercury, selenium, thallium, total cyanide, and free cyanide, which were not detected in any samples

- manganese, which was not detected in the 0 to 2 ft-bgs sample but was detected in all other samples

Hexavalent chromium was not detected in the samples collected from this location.

The concentrations of 12 of the 21 metals detected in soil samples collected from TP-11 were either similar or did not consistently increase or decrease with depth. Concentrations for the remaining nine detected metals decreased notably with increased sample depth:

- barium
- beryllium
- calcium
- cobalt
- total chromium
- magnesium
- molybdenum
- nickel
- vanadium

The duplicate sample collected from 0 to 2 ft-bgs at TP-11 was selected for TCLP extraction and analysis of the extract based on higher total concentrations of some metals (Table 4-3). TC metals were not detected in the leachate. Consequently, the presence of metals at higher total concentrations does not appear to indicate a significant potential to impact site groundwater quality.

RFI-04 - Each of these constituents was detected in the four soil samples collected from this location, except:

- mercury, thallium, total cyanide, and free cyanide, which were not detected in any samples

- silver and selenium, which were only detected in the surface soil sample

Hexavalent chromium was not detected in the samples collected from RFI-04 at 2 to 4 and 20 to 22 ft-bgs, but was detected at concentrations of 12.5 and 3.29 mg/kg in the samples collected from 0 to 3 in-bgs and 0 to 2 ft-bgs.

The concentrations reported for metals detected in samples collected from RFI-04 were generally similar. The highest concentrations of detected metals were typically reported for the samples collected from 0 to 3 in-bgs and 0 to 2 ft-bgs. Notable differences were, however, observed. Specifically, concentrations of these metals decreased with increased sample depth:

- cobalt
- molybdenum
- nickel
- vanadium

An increase in concentration with sample depth was noted for calcium.

The 0 to 2 ft-bgs sample collected from RFI-04 was selected for TCLP extraction and analysis of the extract based on higher total concentrations of some metals (Table 4-3). TC metals were not detected. Consequently, the presence of metals at higher total concentrations does not appear to indicate a significant potential to impact site groundwater quality.

RFI-11 - Each of these constituents was detected in the eight soil samples collected from this location, except:

- selenium, thallium, total cyanide, and free cyanide, which were not detected

- mercury, which was only detected in the surficial soil sample

- manganese, which was detected in each of the samples except the surficial soil sample

- silver data were inconclusive: results for six samples were rejected by the data validator; silver was detected in the 0 to 2 ft-bgs sample, but was not detected at 0 to 3 in-bgs

Hexavalent chromium was not detected in soil samples collected from depths of greater than 4 ft-bgs, but was detected in the shallower samples:

- 0 to 3 in-bgs at 3.73 mg/kg
- 0 to 2 ft-bgs at 3.65 mg/kg
- 2 to 4 ft-bgs at 2.64 mg/kg.

Few of the concentrations reported for detected metals were similar in soil samples collected from this location. Notable changes with sample depth were observed:

- decrease in concentration with increased sample depth
  - arsenic
  - barium
  - cobalt
  - total chromium
  - copper
  - iron
  - manganese
  - molybdenum
  - vanadium

- increase in concentration with increased sample depth
  - calcium
  - potassium
  - magnesium

Two samples collected from RFI-11 (0 to 3 in-bgs and 4 to 6 ft-bgs) were selected for TCLP extraction and analysis of the extract based on higher total concentrations of some metals (Table 4-3). TC metals were not detected in the extract or were detected at concentrations well below the TC limits. Consequently, the presence of metals at higher total concentrations does not appear to indicate a significant potential to impact site groundwater quality.

<u>TCL SVOCs</u>

Analysis for TCL SVOCs was performed for each of the soil samples collected from the test pits and soil borings completed in these SWMUs, except the 0 to 3 in-bgs samples from RFI-

04 and RFI-11. The TCL SVOCs detected were exclusively comprised of PAHs, except for carbazole which was detected in the samples collected from TP-04. PAHs were detected in approximately one-half of the soil samples, and SVOC TICs were detected in all of the samples.

Sample Location	Sample (Interval)	Concentrations (μg/kg) Total PAHs	Carbazole	Total SVOC TICs
TP-04	0 to 2 ft-bgs	3,810	360	65,590
	11 to 12 ft-bgs	280	280	73,340
TP-07	0 to 3 in-bgs	5,690	ND (b)	52,120
	0 to 2 ft-bgs	590	ND	17,930
	3 to 4 ft-bgs	580	ND	12,420
	8 to 9 ft-bgs	ND	ND	28,540
TP-08	0 to 2 ft-bgs	ND	ND	19,380
	3 to 4 ft-bgs	ND	ND	25,660
	7 to 8 ft-bgs	ND	ND	27,150
TP-11	0 to 3 in-bgs	ND	ND	96,670
	0 to 2 ft-bgs	3,300	ND	31,180
	0 to 2D ft-bgs (b)	ND	ND	NA (c)
	10 to 11 ft-bgs	ND	ND	14,660
	11 to 12 ft-bgs	ND	ND	28,280
RFI-04	0 to 2 ft-bgs	ND	ND	23,440
	2 to 4 ft-bgs	ND	ND	9,030
	20 to 22 ft-bgs	ND	ND	22,170
RFI-11	0 to 2 ft-bgs	1,110	ND	2,513
	0 to 2D ft-bgs (b)	ND	ND	3,422
	2 to 4 ft-bgs	260	ND	1,426
	4 to 6 ft-bgs	ND	ND	1,234
	6 to 8 ft-bgs	ND	ND	1,204
	8 to 10 ft-bgs	ND	ND	1,436
	10 to 12 ft-bgs	ND	ND	1,457
	12 to 14 ft-bgs	ND	ND	1,421

a/ ND = constituent not detected.
b/ D = duplicate sample.
c/ NA = analysis not performed.

TCL PCBs

All soil samples collected from the test pits and soil borings completed in these SWMUs were submitted for analysis of TCL PCBs. PCBs were only detected in the sample collected at 8 to 10 ft-bgs from RFI-11. Aroclor 1260 was detected in this sample at a concentration of thirty-one mg/kg.

Miscellaneous Parameters

Each soil sample collected from the test pit and soil boring completed in these SWMUs was submitted for analysis of one or more of the miscellaneous parameters, including TPH, pH, total phenols, and TOC.

- TPH analysis was performed for samples collected from TP-07, TP-11, and RFI-11; TPH was detected in the subsurface soil samples collected from TP-07 (29 and 180 mg/kg) and TP-11 (10 to 59 mg/kg) and in the 0 to 3 in-bgs sample from RFI-11 (19 mg/kg).

- The pHs ranged from 6.85 to 8.91 s.u.

- Total phenols analysis was performed for all samples collected from TP-11 and RFI-11. Total phenols was not detected in any of the samples collected from either location.

- TOC analysis was performed for all samples collected from these locations; TOC was detected in all of the samples at concentrations of 1.6 to 8.9 mg/l.

4.3.1.5 SWMU 15 - Former Waste Acid Surface Impoundments

Boring RFI-02 was completed in an area proximate to this SWMU (Figure 2-1). Soil samples were collected from this location at 0 to 3 in-bgs and 0 to 2, 8 to 10, and 10 to 12 ft-bgs. Each of the samples was submitted for analysis of TAL Inorganics (plus molybdenum and free cyanide; the subsurface samples collected from 8 to 10 and 10 to 12 ft-bgs were also analyzed for hexavalent chromium) and select miscellaneous parameters.

Each of the TAL Inorganics was detected in all soil samples collected from this location, except mercury, selenium, thallium, total cyanide, and free cyanide which were not detected in any samples submitted for analysis. Hexavalent chromium was not detected in either of the subsurface soil samples submitted for analysis of this parameter.

The concentrations reported for detected metals in these samples were generally similar. Notable changes in concentration with sample depth were observed for four metals, including:

- decrease in concentration with increased sample depth
  - total chromium
  - nickel

- increase in concentration with increased sample depth
  - calcium
  - zinc

Each of the soil samples was analyzed for TPH, pH, and total phenols; the 0 to 3 in-bgs and 0 to 2 ft-bgs samples were also analyzed for TOC.

- TPH was detected in each of the samples at concentrations of 15 to 94 mg/kg (and indicated increasing concentrations with increased sample depth).

- pHs ranged from 7.62 to 8.24 s.u.

- Total phenols was detected in the subsurface samples at concentrations of 0.36 and 0.12 mg/kg.

- TOC was detected in the surface soil samples at concentrations of 3.8 and 3.4 mg/l.

4.3.1.6 <u>SWMU 16 - Willowbrook Pond</u>

Two soil borings were completed along the perimeter of Willowbrook Pond to facilitate subsequent installation of groundwater monitoring wells. The locations of these borings/wells (RFI-14 and RFI-15) are shown in Figure 2-1. A total of six soil samples were collected from RFI-14 (3 samples) and RFI-15 (3 samples) at depths from the ground surface to 16 ft-bgs.

Each of the soil samples was submitted for analysis of TAL Inorganics (plus molybdenum). Analysis for hexavalent chromium was performed for the surficial samples (0 to 3 in-bgs) from both locations; analysis for free cyanide was only performed on subsurface soil samples collected from RFI-15.

Each of these constituents was detected in all of the samples submitted for analysis, except:

- selenium, thallium, total cyanide, and free cyanide were not detected in any samples
- silver was not detected in the 0 to 3 in-bgs or 15 to 16 ft-bgs sample from RFI-15, but was detected in all other samples
- mercury was not detected in any of the samples, except for the 2 to 4 ft-bgs sample from RFI-14

Hexavalent chromium was not detected in either of the 0 to 3 in-bgs samples collected from these locations.

The metals concentrations reported for samples collected from Boring RFI-14 were generally consistent for all samples. Notable changes in concentration with sample depth included total chromium, molybdenum, and nickel, which decreased with increased sample depth. The 0 to 3 in-bgs sample typically contained the highest concentration of the detected metals.

The metals concentrations reported for samples collected from Boring RFI-15 were typically similar for all samples. Notable changes in concentration with sample depth were observed for cobalt, total chromium, molybdenum, and nickel, which decreased with increased sample depth; the calcium concentration increased with increased sample depth. Most metals were detected at their highest concentrations in the sample collected from 0 to 3 in-bgs.

The four subsurface samples collected from these locations was submitted for analysis of TCL SVOCs. TCL SVOCs were not detected in any of the samples. SVOC TICs were detected in each:

Sample Location	Sample Interval	Total SVOC TIC Concentration (µg/kg)
RFI-14	2 to 4 ft-bgs	61,280
	12 to 14 ft-bgs	82,880
RFI-15	6 to 8 ft-bgs	27,030
	15 to 16 ft-bgs	11,390

Each of the samples collected from these two locations was submitted for analysis of TCL PCBs. PCB Aroclors were not detected in any of the samples, except for the 0 to 3 in-bgs sample collected from RFI-15. Aroclor 1248 was detected at a concentration of 2.6 mg/kg in this sample.

Each of the samples collected from RFI-14 and RFI-15 was submitted for analysis of total phenols and TOC; the 0 to 3 in-bgs samples collected from these locations were also analyzed for TPH.

- TPH was detected at both locations at concentrations of 55 and 61 mg/kg.
- Total phenols was detected in the 0 to 3 ft-bgs sample from RFI-14 at a concentration of 0.12 mg/kg.
- TOC was detected in each of the samples at concentrations of 2.4 to 4.6 mg/l.

4.3.1.7 SWMU 17/Closed Surface Impoundment and SWMU 22/Wastewater Treatment Plant Areas

Boring RFI-09 was completed in an area proximate to both of these SWMUs (Figure 2-1). Soil samples were collected from this location at 0 to 3 in-bgs and continuously from 0 to 10 ft-bgs. Each of the samples was submitted for analysis of TAL Inorganics (plus molybdenum and free cyanide; the 0 to 3 in-bgs sample was also submitted for analysis of hexavalent chromium) and select miscellaneous parameters. Select samples were also submitted for analysis of TCL SVOCs and TCL PCBs.

Each of the TAL Inorganics was detected in all soil samples collected from this location, except:

- mercury, thallium, and free cyanide, which were not detected in any samples
- silver data were inconclusive: most of the results were rejected, but silver was detected in the 0 to 3 in-bgs sample
- selenium was not detected any of the samples, except that collected from 0 to 2 ft-bgs
- total cyanide data were also inconclusive: most of the results were rejected; however, this constituent was detected in the samples collected from 6 to 8 and 8 to 10 ft-bgs

Hexavalent chromium was not detected in the samples collected to depths of 4 ft-bgs, but was detected at concentrations ranging from 1.42 to 3.44 mg/kg in the samples collected from 4 to 10 ft-bgs.

The concentrations reported for approximately one-half of the detected metals were generally similar. Notable changes in concentrations with increased sample depth were observed for several metals, including:

- decrease in concentration with increased sample depth
  - cadmium
  - cobalt
  - total chromium
  - copper
  - iron
  - manganese
  - molybdenum
  - nickel
  - antimony

- increase in concentration with increased sample depth
  - calcium
  - magnesium

The 0 to 3 in-bgs sample collected from RFI-09 was selected for TCLP extraction and analysis of the extract based on higher total concentrations of some metals (Table 4-3). TC metals were typically not detected in the extract or were detected at concentrations well below the TC limits. Consequently, the presence of metals at higher total concentrations does not appear to indicate a significant potential to impact site groundwater quality.

Analysis for TCL SVOCs was performed for three samples collected from this location. TCL SVOCs were not detected. SVOC TICs were detected in each of the samples at these total concentrations:

- 0 to 2 ft-bgs at 12,760 μg/kg
- 4 to 6 ft-bgs at 9,560 μg/kg
- 8 to 10 ft-bgs at 11,030 μg/kg

Analysis for TCL PCBs was performed for samples collected from 0 to 3 in-bgs, 0 to 2 ft-bgs, 4 to 6 ft-bgs, and 8 to 10 ft-bgs. PCB Aroclors were not detected in these samples.

Each of the samples collected from RFI-09 was submitted for analysis of TPH, pH, and total phenols. Analysis for TOC was also performed on each of the samples, except those collected from 2 to 4 and 6 to 8 ft-bgs.

- TPH was only detected in the surficial soil sample, 0 to 3 in-bgs, at 12 mg/kg.
- pHs ranged from 7.36 to 8.39 s.u.
- Total phenols was not detected in any samples.
- TOC was detected in each of the samples at concentrations of 1.8 to 2.6 mg/l.

4.3.1.8 SWMU 18 - Grinding Dust Transfer Pile

Test Pit TP-02 was excavated proximate to the former location of the Grinding Dust Transfer Pile (Figure 2-1). Soil samples were collected from this test pit at 0 to 3 in-bgs and 0 to 2, 3 to 4, and 9 to 10 ft-bgs and submitted for analysis of TAL Inorganics (plus molybdenum), TCL SVOCs, and select miscellaneous parameters.

Each of the TAL Inorganics was detected in all of the samples, except:

- selenium, thallium, and total cyanide, which were not detected in any samples
- silver was not detected in the 0 to 2 ft-bgs sample, but was detected in all other samples
- mercury was not detected in the shallow samples (0 to 4 ft-bgs), but was detected in the 9 to 10 ft-bgs sample

The concentrations reported for many of the detected constituents in these samples were similar. However, notable changes in concentrations were observed for cobalt, total chromium, copper, iron, manganese, molybdenum, nickel, and vanadium, for which concentrations decreased with increased sample depth.

Two soil samples collected from TP-02 were selected for TCLP extraction and analysis of the extract based on higher total concentrations of some metals (Table 4-3). TC metals were not detected in the extract. Consequently, the presence of metals at higher total concentrations does not appear to indicate a significant potential to impact site groundwater quality.

Benzo(a)anthracene was the only TCL SVOC detected in TP-02. It was detected in the 9 to 10 ft-bgs sample from this location at a concentration of 280 µg/kg. SVOC TICs were detected in each of the samples collected from this location at these total concentrations:

- 0 to 3 in-bgs at 132,560 µg/kg
- 0 to 2 ft-bgs at 118,200 µg/kg
- 3 to 4 ft-bgs at 21,720 µg/kg
- 9 to 10 ft-bgs at 23,630 µg/kg

Each of the soil samples collected from TP-02 was submitted for analysis of pH. Analysis for total phenols was performed for samples collected from 0 to 3 in-bgs and 0 to 2 ft-bgs; analysis for TPH was performed for the sample collected from 0 to 3 in-bgs.

- TPH was detected in the 0 to 3 in-bgs sample at a concentration of 21 mg/kg.
- pHs ranged from 8.14 to 8.52 s.u.
- Total phenols was not detected in any samples.

4.3.1.9 SWMU 19 - Former Waste Pile

Test Pit TP-06 was excavated proximate to this SWMU (Figure 2-1). Soil samples were collected from this test pit at 0 to 2, 3 to 4, and 7 to 8 ft-bgs, and submitted for analysis of TAL Inorganics (plus molybdenum), TCL SVOCs, and total phenols.

Each of the TAL Inorganics was detected in all of the soil samples, except:

- mercury, selenium, and thallium, which were not detected in any samples

- antimony, which was not detected in the sample (or duplicate) collected from 0 to 2 ft-bgs but was detected in the samples collected from 3 to 4 and 7 to 8 ft-bgs

- total cyanide, which was not detected in the deeper samples but was detected in the sample (and duplicate) collected from 0 to 2 ft-bgs

The concentrations reported for approximately one-half of the detected constituents in these samples were similar. However, notable decreases in concentrations with increased sample depth occurred for several metals, including:

- cobalt
- total chromium
- copper
- iron
- molybdenum
- nickel
- lead
- vanadium

Potassium concentrations increased with increased sample depth.

TCL SVOCs were detected in the soil sample and duplicate collected from TP-06 at 0 to 2 ft-bgs. The total PAH concentrations for this sample and duplicate were 10,020 µg/kg and 7,940 µg/kg. Dibenzofuran was also detected in this sample and duplicate at concentrations of 430 and 350 µg/kg.

SVOC TICs were detected in each of the samples and duplicate at these total concentrations:

- 0 to 2 ft-bgs at 16,230 µg/kg
- 0 to 2 ft-bgs (duplicate) at 34,580 µg/kg
- 3 to 4 ft-bgs at 21,020 µg/kg
- 7 to 8 ft-bgs at 22,190 µg/kg

Total phenols were not detected in the three soil samples collected from TP-06. Analysis for other miscellaneous parameters was not required for this sample location.

4.3.1.10 SWMU 20 - Waste Asbestos Accumulation Area

Two surface soil samples were collected from the vicinity of SWMU 20: GS-01 and GS-02 (Figure 2-1). Both samples were submitted for analysis of asbestos, TAL Inorganics (plus molybdenum, hexavalent chromium, and free cyanide) and select miscellaneous parameters. A second sample was collected from GS-01 in November 1996 and inadvertently submitted for analysis of TAL Inorganics (plus molybdenum and free cyanide) and TCL VOCs.

The asbestos results indicated that asbestos was not present in either sample.

Each of the TAL Inorganics was detected in both of the samples collected from this location, except as follows:

- mercury, selenium, thallium, and free cyanide, which were not detected
- silver results for GS-01 and GS-02 were rejected by the data validator; silver was not detected in the second sample collected from GS-01 (this result was not validated)
- total cyanide results for GS-01 were rejected by the data validator; total cyanide was not detected in the second sample collected from GS-01, although this result was not validated, total cyanide was detected in the GS-02 sample.

Hexavalent chromium was not detected in sample collected from GS-01 but was detected in the sample collected from GS-02 at a concentration of 3.58 mg/kg.

For most constituents, the highest reported concentration was detected in the sample collected from GS-02.

The following TCL VOCs were detected at concentrations near the detection limits in the sample collected from GS-01: carbon disulfide, cis-1,2-dichloroethene, trichloroethene, and toluene. Identification of VOC TICs was not performed for this sample.

Samples from both of these locations were submitted for analysis for TPH, pH, and total phenols.

- TPH was detected in the sample collected from GS-01 in October at 14 mg/kg and 14 mg/kg in the sample collected in November. TPH was not detected in the sample collected from GS-02.
- pHs for these samples ranged from 7.74 to 8.46 s.u.
- Total phenols was not detected in the sample collected from GS-01 in October but was detected in the sample collected in November at 0.12 mg/kg. Total phenols was not detected in the sample collected from GS-02.

4.3.1.11 SWMU 21 - Grinding Swarf Storage Area

Test Pit TP-03 was excavated proximate to this former SWMU (Figure 2-1).[2] Soil samples were collected from this test pit at 0 to 2, 5 to 6, and 11 to 12 ft-bgs and submitted for analysis of TAL Inorganics (plus molybdenum), TCL SVOCs, and select miscellaneous parameters.

[2] The storage area for grinding swarf was relocated to an area under roof in BRP. Materials in the former storage area were transferred to this new location, as is all newly generated swarf.

Each of the TAL Inorganics was detected in all of the soil samples, except:

- selenium, thallium, and total cyanide, which were not detected in any samples

- cobalt, which was not detected in the 0 to 2 ft-bgs sample, but was detected in the two deeper samples

- mercury, which was not detected in the two deeper soil samples, but was detected in the 0 to 2 ft-bgs sample

The concentrations reported for several of the detected constituents were similar for all samples. The concentrations reported for the remaining samples changed notably with sample depth:

- decrease in concentration with increased sample depth
  - total chromium
  - copper
  - molybdenum
  - nickel
  - vanadium

- increase in concentration with increased sample depth
  - calcium
  - magnesium

Evaluation of the detected concentrations indicated that each was detected in one or more of these samples at a concentration above background.

The 0 to 2 ft-bgs sample collected from TP-03 was selected for TCLP extraction and analysis of the extract based on higher total concentrations of some metals (Table 4-3). TC metals were not detected in the leachate. Consequently, the presence of metals at higher total concentrations does not appear to indicate a significant potential to impact site groundwater quality.

TCL SVOCs were not detected in the soil samples collected from TP-03. SVOC TICs were detected in each of the samples at these total concentrations:

- 0 to 2 ft-bgs at 121,300 μg/kg
- 5 to 6 ft-bgs at 37,090 μg/kg
- 11 to 12 ft-bgs at 26,450 μg/kg

Each of the samples collected from TP-03 was submitted for analysis of pH. The reported pHs for these samples ranged from 7.93 to 8.23 s.u.

4.3.1.12 SWMU 23 - API Oil/Water Separator

Soil Boring RFI-03 was completed immediately adjacent to this unit (Figure 2-1). Soil samples were collected from this location at 0 to 3 in-bgs and 0 to 2 `and 4 to 6 ft-bgs. Each of the samples was submitted for analysis of TAL Inorganics (plus molybdenum), TCL SVOCs, TCL PCBs, and select miscellaneous parameters.

Each of the TAL Inorganics was detected in all of the soil samples, except mercury, selenium, and thallium which were not detected in any samples. The total cyanide and silver results were rejected for all samples, except the 0 to 3 in-bgs sample. Both total cyanide and silver were detected in this sample.

The concentrations reported for most of the detected constituents were similar and the highest concentrations of detected metals were evenly distributed between the 0 to 3 in-bgs and 4 to 6 ft-bgs samples. Notable changes in concentrations with sample depth were observed: magnesium and manganese concentrations decreased with increased sample depth and total chromium concentrations increased with increased sample depth.

TCL SVOCs (PAHs) were detected in the 0 to 2 and 4 to 6 ft-bgs soil samples collected from RFI-03. SVOC TICs were detected in all three soil samples:

- 0 to 3 in-bgs
  - total SVOC TICs at 102,160 μg/kg
- 0 to 2 ft-bgs
  - total PAHs at 1,660 μg/kg
  - total SVOC TICs at 1,907 μg/kg
- 4 to 6 ft-bgs
  - total PAHs at 1,130 μg/kg
  - total SVOC TICs at 3,056 μg/kg

TCL PCBs were not detected in any of the three soil samples collected from this location.

Each of the samples collected from this location was submitted for analysis of TOC. The surface soil samples (0 to 3 in-bgs and 0 to 2 ft-bgs) were also analyzed for pH and the 0 to 3 in-bgs was analyzed for TPH.

- TPH was detected in the 0 to 3 in-bgs sample at a concentration of 47 mg/kg.
- pHs ranged from 7.77 to 8.71 s.u.
- TOC was detected in all of the samples at concentrations ranging from 1.9 to 4.5 mg/l.

4.3.2 AOC Locations

4.3.2.1 AOC 3 - Process Pits and Cooling Towers

Several of the process pits, some of which were not included in the inspections (Section 3.4), were evaluated indirectly via investigation of an associated unit. The analytical results for these investigations are presented elsewhere in Section 4.0 and should be used to evaluate conditions as also potentially affected by the pits. The pits and the associated units include:

Pit No.	Pit Description	Associated Unit
1	BRP Pickle	SWMU 2/CAMU B
2	BRP Spent Acid	SWMU 2/CAMU B
4	LAP East Pickle Pits	SWMU 4/CAMU D
5	LAP West Pickle Pits	SWMU 1/CAMU A
7	Billet Pickle Pit	SWMU 5
9	Rust Furnace Cooling Tower Pit	AOC 3A
10	Olson Quench Pit	SWMU 2
12	Lime Pits	SWMU 1/CAMU A
13	Lime Pump Pits	SWMU 1/CAMU A
15	HAP Cooling Tower Pit	AOC 3B
18	API/Oil Water Separator	SWMU 23
24	BFS Pickle Pits	SWMU 3/CAMU C
26	Clarifier	SWMU 22

Both of the cooling towers were identified as process pits (nos. 9 and 15) and as individual AOCs (AOC 3A and AOC 3B). Consequently, potential effects from the cooling towers were investigated directly (i.e., borings were completed proximate to both). Boring RB-07 was completed adjacent to SWMU 3A, Rust Furnace Cooling Tower, and Boring RB-06 was completed adjacent to SWMU 3B, HAP Cooling Tower.

Four samples were collected from Borings RB-07 and RB-06 at depths ranging from the ground surface to a maximum of 10 ft-bgs. Each sample was submitted for analysis of the TAL

Inorganics (plus molybdenum), some of the samples were also submitted for analysis of TCL SVOCs, TCL PCBs, and TOC.

RB-07

Each of the TAL Inorganics was detected in the four soil samples collected from RB-07, except:

- mercury, selenium, thallium, and total cyanide, which were not detected in any samples
- silver, which was not only detected in the 0 to 2 ft-bgs (duplicate) and 6 to 8 ft-bgs sample

The metals concentrations reported for samples collected from Boring RB-07 were generally consistent for all samples. However, notable decreases in concentrations with increased sample depth were observed for approximately one-third of the constituents, including:

- cobalt
- total chromium
- copper
- iron
- manganese
- molybdenum
- vanadium
- zinc

Consistent with this observation, the highest reported concentrations of most constituents (11) were reported in the 0 to 3 in-bgs sample from this location.

TCL SVOCs were detected in two of three samples collected from Boring RB-07. SVOC TICs were detected in each of the samples:

- 0 to 2 ft-bgs
  - total PAHs at 21,690 μg/kg
  - 1,2,4-trichlorobenzene at 410 μg/kg
  - dibenzofuran at 260 μg/kg
  - carbazole at 520 μg/kg
  - total SVOC TICs at 7,630 μg/kg

- 6 to 8 ft-bgs
  - total PAHs at 12,130 µg/kg
  - 1,3-dichlorobenzene at 1,500 µg/kg
  - 1,4-dichlorobenzene at 2,800 µg/kg
  - 1,2,4-trichlorobenzene at 1,100 µg/kg
  - dibenzofuran at 260 µg/kg
  - carbazole at 270 µg/kg
  - total SVOC TICs at 31,140 µg/kg

- 8 to 10 ft-bgs
  - total SVOC TICs at 17,690 µg/kg

PCB Aroclor 1242 was detected in two samples collected from RB-07:

- 0 to 2 ft-bgs at 21 mg/kg
- 6 to 8 ft-bgs at 3.9 mg/kg

TOC was detected in each of the samples collected from RB-07 at concentrations of 3.2 to 3.8 mg/l.

RB-06

Each of the TAL Inorganics was detected in the four soil samples from RB-06, except:

- mercury, selenium, and thallium, which were not detected in any samples (the total cyanide result for the 0 to 3 in-bgs sample was rejected)

- silver, which was only detected in the 4 to 6 ft-bgs

The metals concentrations reported for samples collected from Boring RB-06 were generally consistent. The only notable changes in concentrations with sample depth included total chromium, molybdenum, and nickel (for which concentrations decreased with increased sample depth) and calcium and magnesium (for which concentrations increased with increased depth). The sample which contained the highest concentrations of metals was the 0 to 3 in-bgs sample.

One TCL SVOC was detected in the three samples collected from Boring RB-06. Fluoranthene was detected in the 6 to 8 ft-bgs sample at a concentration of 310 micrograms per kilograms (ug/kg). SVOC TICs were detected in each of these samples at these total concentrations:

- 0 to 2 ft-bgs at 15,260 µg/kg
- 4 to 6 ft-bgs at 6,160 µg/kg
- 6 to 8 ft-bgs at 6,800 µg/kg

TCL PCB Aroclors were not detected in the soil samples collected from Boring RB-06.

TOC was detected in each of the samples collected from RB-06 at concentrations of 3 to 5.5 mg/l.

4.3.2.2 AOC 6 - Former Aboveground Fuel Tank

Test Pit TP-09 was completed proximate to this AOC (Figure 2-1). Soil samples were collected from this location at 0 to 2, 2 to 3, and 7 to 8 ft-bgs. Each of the samples was submitted for analysis of TCL SVOCs and select miscellaneous parameters.

TCL SVOCs were only detected in the soil sample collected at this location from 0 to 2 ft-bgs. The total PAH concentration was 15,200 µg/kg; dibenzofuran was also detected at a concentration of 420 µg/kg.

SVOC TICs were detected in each of the samples at these total concentrations:

- 0 to 2 ft-bgs at 22,040 µg/kg
- 2 to 3 ft-bgs at 25,310 µg/kg
- 7 to 8 ft-bgs at 91,110 µg/kg

Each of the soil samples collected from this location was submitted for analysis of TPH and total phenols.

- TPH was detected in each of the samples at concentrations of 390, 20, and 25 mg/kg.

- Total phenols was not detected.

4.3.2.3 AOC 7 - Scrap Steel Storage Areas

Test pits were excavated during the RFI proximate to the three on-site scrap steel storage areas (Figure 2-1):

- Test Pit TP-01 at AOC 7A - HAP
- Test Pit TP-05 at AOC 7B - BFS (east)
- Test Pit TP-10 at AOC 7C - BFS (west)

Soil samples collected from each of these locations were submitted for analysis of TAL Inorganics (plus molybdenum; analysis for free cyanide was also performed for samples collected from TP-05) and TCL SVOCs. Soil samples collected from TP-05 and TP-10 were also analyzed for select miscellaneous parameters.

Each of the TAL Inorganics was detected in the soil samples collected from these locations, except:

- selenium and thallium, which were not detected
- silver, which was not detected in the 0 to 3 in-bgs sample collected from TP-05 (the result for the 2 to 3 ft-bgs sample was rejected)
- mercury, which was not detected in either of the samples collected from TP-10, but was detected in approximately one-half of the samples collected from TP-01 and TP-05
- total cyanide, which was not detected in the samples collected from TP-01 or TP-10 nor in the two deeper samples collected from TP-05, but was detected in the two shallow samples collected from TP-05 (0 to 3 in-bgs and 0 to 2 ft-bgs)
- manganese, which was not detected in the 0 to 3 in-bgs sample collected from TP-05
- free cyanide was not detected in the samples collected from TP-05

The concentrations reported for constituents detected in the samples collected from TP-01 were similar for all samples, although slightly higher concentrations were typically reported for samples collected from 0 to 2 ft-bgs. Notable decreases in concentrations with increased sample depth were observed for calcium, total chromium, molybdenum, and nickel.

The concentrations reported for constituents detected in samples collected from TP-05 were similar for all samples, although slightly higher concentrations were typically reported for samples collected from 0 to 2 ft-bgs (and not 0 to 3 in-bgs). Notable decreases in concentrations with increased sample depth were observed for calcium and lead.

Two soil samples collected from TP-05 were selected for TCLP extraction and analysis of the extract based on higher total concentrations of some metals (Table 4-3). TC metals were not detected in the extract. Consequently, the presence of metals at higher total concentrations does not appear to indicate a significant potential to impact site groundwater quality.

Concentrations for approximately one-half of constituents detected in samples collected from TP-10 were similar for both samples (0 to 2 ft-bgs and 8 to 9 ft-bgs). Notable changes in concentrations of detected constituents with sample depth were observed for some metals:

- decrease in concentration with increased sample depth
  - cadmium
  - cobalt
  - total chromium
  - copper
  - iron
  - manganese
  - molybdenum
  - nickel
  - vanadium

- increase in concentration with increased sample depth
  - barium
  - calcium
  - potassium

The 8 to 9 ft-bgs sample collected from TP-10 was selected for TCLP extraction and analysis of the extract based on higher total concentrations of some metals (Table 4-3). TC metals were not detected in the extract. Consequently, the presence of metals at higher total concentrations does not appear to indicate a significant potential to impact site groundwater quality.

TCL SVOCs were not detected in the samples collected from TP-01. SVOC TICs, however, were detected in each of the three samples at these total concentrations:

- 0 to 2 ft-bgs at 26,560 µg/kg
- 3 to 4 ft-bgs at 23,010 µg/kg
- 8 to 9 ft-bgs at 23,040 µg/kg

TCL SVOCs were detected in each of the samples collected from TP-05, except the deepest sample collected (from 8 to 9 ft-bgs). SVOC TICs were detected in each of the samples, except the 0 to 2 ft-bgs sample which was not evaluated for TICs:

- 0 to 3 in-bgs
  - total PAHs at 12,170 µg/kg
  - dimethyl phthalate at 2,600 µg/kg
  - total SVOC TICs at 36,490 µg/kg

- 0 to 2 ft-bgs
  - total PAHs at 12,750 µg/kg
  - dibenzofuran at 600 µg/kg

- 2 to 3 ft-bgs
  - total PAHs at 2,870 µg/kg
  - total SVOC TICs at 20,840 µg/kg

- 8 to 9 ft-bgs
  - total SVOC TICs at 25,980 µg/kg

Fluoranthene, a PAH, was the only TCL SVOC detected in the 0 to 2 ft-bgs sample collected from TP-10. No TCL SVOCs were detected in the 8 to 9 ft-bgs sample collected from this location. SVOC TICs were detected in both samples, however, at total concentrations of 20,080 and 25,730 µg/kg.

Soil samples collected from Test Pits TP-05 and TP-10 were each submitted for analysis of total phenols. Phenols were not detected in any of these samples.

4.3.2.4 AOC 8 - Former Coal Storage Area

Boring RB-03 was completed in the vicinity of the former coal pile storage area, as shown in Figure 2-1. Two soil samples were collected from this location: 0 to 3 in-bgs and 0 to 2 ft-bgs. Both samples were submitted for analysis of TAL Inorganics (plus molybdenum); the 0 to 2 ft-bgs sample was also submitted for analysis of TCL SVOCs.

Each of the TAL Inorganics was detected in both samples, except:

- selenium and thallium, which were not detected in any samples

- silver and total cyanide, which were not detected in the 0 to 2 ft-bgs sample; the results for the sample collected from 0 to 3 in-bgs were rejected

- mercury, which was not detected in the 0 to 2 ft-bgs sample, but was detected in the 0 to 3 in-bgs sample

The concentrations reported for detected metals in both samples were generally similar. Notable changes in constituent concentrations with sample depth were observed for some metals:

- decrease in concentration with increased sample depth
  - barium
  - calcium
  - potassium

- increase in concentration with increased sample depth
  - total chromium
  - lead
  - vanadium

TCL SVOCs were detected in the sample collected from RB-03 at 0 to 2 ft-bgs. PAHs were detected at a total concentration of 14,480 µg/kg and dibenzofuran was detected at a concentration of 1,000 µg/kg. The total SVOC TIC concentration in this sample was 8,960 µg/kg.

4.3.2.5 AOC 11 - Former Coal Gasification Plant

Soil Boring RFI-06 was completed proximate to this unit (Figure 2-1). Soil samples were collected from this location at 0 to 3 in-bgs and 2 to 4 and 4 to 6 ft-bgs. Each of the samples was submitted for analysis of TAL Inorganics (plus molybdenum and free cyanide), TCL SVOCs, and select miscellaneous parameters.

Each of the TAL Inorganics was detected in all of the soil samples, except silver, mercury, selenium, and thallium, and free cyanide (which were not detected in any samples). Total cyanide was not detected in the 0 to 3 in-bgs samples, and the total cyanide data for the two subsurface samples were rejected by the data validator.

The concentrations reported for most of the detected constituents were similar for all samples. Notable changes in concentration of detected metals with sample depth were observed. Total chromium, molybdenum, and nickel concentrations decreased with increased sample depth. Barium, calcium, and potassium concentrations increased with increased sample depth.

TCL SVOCs (PAHs) were detected in each of the samples collected from this location, excluding the deepest sample which was collected from 4 to 6 ft-bgs. SVOC TICs were detected in all of the samples.

- 0 to 3 in-bgs
  - total PAHs at 17,490 μg/kg
  - carbazole at 310 μg/kg
  - total SVOC TICs at 87,210 μg/kg

- 0 to 3 in-bgs (duplicate)
  - total PAHs at 20,050 μg/kg
  - carbazole at 370 μg/kg
  - total SVOC TICs at 90,840 μg/kg

- 2 to 4 ft-bgs
  - total PAHs at 2,600 μg/kg
  - total SVOC TICs at 4,599 μg/kg

- 4 to 6 ft-bgs
  - total SVOC TICs at 2,645 μg/kg

Each of the samples collected from this location was submitted for analysis of total phenols. Total phenols was not detected in any samples. The sample collected from 0 to 3 in-bgs was also analyzed for TPH. TPH was detected in this sample at a concentration of 15 mg/kg.

4.3.3 CAMU Locations

4.3.3.1 CAMU A - Former LAP West Pickling Facility

This CAMU includes the following units:

- SWMU 1 - Former LAP West Pickle Facility, including
  - Pit 3, Drawing Oil Pit
  - Pit 5, LAP West Pickle Pits
  - Pit 12, Lime Pits
  - Pit 13, Lime Pump Pits

- SWMU 6 - Former Barium Chloride Bath
  - SWMU 7B - Continuous Lead Coating (Plating) Operation
  - SWMU 7C - Batch Lead Coating
  - SWMU 8 - Former LAP Neutralization Plant
  - AOC 2G - Battery Storage Area

Both exterior and interior soil borings were completed in this area. Two soil borings (RB-04 and RB-05) were completed between the LAP building and Lucas Avenue and proximate to the processes waste handling areas (Figure 2-1). Four soil borings (LWB-01 through LWB-04) were completed within the building, proximate to the area of the former pickle tanks (Appendix B, Figure B-1).

Exterior Borings

Four samples were collected from each of the RB-series borings at depths ranging from the ground surface to a maximum of 10 ft-bgs. Each of these samples was submitted for analysis of the TAL Inorganics (plus molybdenum, hexavalent chromium, and free cyanide) and select miscellaneous parameters; the deepest sample collected from RB-04 (7 to 9 ft-bgs) was also submitted for analysis of TCL PCBs.

Each of the inorganics (metals and cyanide) was detected in all eight soil samples collected from this area, except as follows:

- selenium, thallium, and free cyanide, which were not detected in any samples
- silver, which was not detected in any of the samples collected from RB-04, but was detected in all of the samples collected from RB-05 (the silver results for both of the 0 to 3 in-bgs samples were rejected)
- mercury, which was not detected in any of the samples, except the 2 to 4 ft-bgs sample collected from RB-05
- total cyanide, which was not detected in any of the samples, except the 0 to 2 ft-bgs collected from RB-04 and the 0 to 3 in-bgs sample collected from RB-05 (the 0 to 3 in-bgs sample from RB-04 was rejected)

Hexavalent chromium was detected in the two shallow samples collected from RB-04 and in each of the samples collected from RB-05:

- RB-04
  - 0 to 3 in-bgs at 16.1 mg/kg
  - 0 to 2 ft-bgs at 7.8 mg/kg
- RB-05
  - 0 to 3 in-bgs at 3.97 mg/kg
  - 0 to 2 ft-bgs at 28.2 mg/kg
  - 2 to 4 ft-bgs at 42.4 mg/kg
  - 8 to 10 ft-bgs at 26.5 mg/kg

The concentrations reported for samples collected from Boring RB-04 were generally consistent. Notable changes in concentrations with sample depth were observed. Total and hexavalent chromium and antimony concentrations decreased with increased sample depth. Calcium and potassium concentrations increased with increased sample depth.

Two soil samples collected from RB-04 (0 to 2 and 7 to 9 ft-bgs) were selected for TCLP extraction and analysis of the extract based on higher total concentrations of some metals (Table 4-3). TC metals were typically not detected in the extract or were detected at concentrations well below the TC limits. Lead, however, was detected at a concentration of 97 mg/l in the sample collected from 0 to 2 ft-bgs which exceeds the TC limit of 5 mg/l. Groundwater data for nearby wells LAW-05 and LAW-06 indicate lead was not present at detectable concentrations, nor was it detected at the detection limit. Consequently, despite the presence of lead in the soil extract at a concentration above the TC limit, groundwater does not appear to be affected.

The concentrations reported for samples collected from Boring RB-05 were generally consistent. Notable changes in concentrations with sample depth were observed. Barium, calcium, and nickel concentrations decreased with increased sample depth. Sodium concentrations increased with increased sample depth.

TCL PCBs were not detected in the subsurface soil sample collected from RB-04 (7 to 9 ft-bgs).

Each of the samples collected from RB-04, excluding the 0 to 3 in-bgs sample, and each of the samples collected from RB-05 was submitted for analysis of pH and TOC. The results for samples collected from RB-04 were generally consistent, with a pH range of 7.54 to 8.48 s.u. and a TOC range of 2.5 to 3.2 mg/l. pHs for samples collected from RB-5 ranged from 4.03 to 9.93 s.u.

TOC concentrations for the RB-05 samples ranged from 2.5 to 10 mg/l. pH and TOC concentrations for samples collected from RB-05 increased with depth.

Interior Borings

Four borings were completed within the former LAP West Pickle Facility: LWB-1 through LWB-4. Two soil samples were collected from each of these locations at depths from the ground surface (immediately underlying the concrete floor) to 8 ft-bgs. Each of these samples was submitted for analysis of the TC metals (arsenic, barium, cadmium, total chromium, copper, mercury, lead, and selenium), hexavalent chromium, total and free cyanide, and pH (Table 4-8).

Each of the metals was detected in at least one of the samples collected from these borings, except:

- selenium and total and free cyanide, which were not detected in any of the samples
- mercury, which was only detected in the sample collected from LWB-04 at a depth of 0 to 2 ft-bgs
- silver, which was not detected in one-half of the samples collected

Similar concentrations of the detected constituents were reported for the two samples collected from LWB-01 (2 to 4 ft-bgs and 6 to 8 ft-bgs) and for the shallow samples collected from the remaining borings. For Borings LWB-02, LWB-03, and LWB-04, the highest concentrations reported in the deeper soil samples (i.e., 6 to 8 ft-bgs).

Hexavalent chromium was detected in each of the samples collected from LWB-01 and LWB-02. The hexavalent chromium concentrations for both locations increased with sample depth:

- concentrations in the LWB-01 samples increased with depth from 11.5 to 61.6 mg/kg
- concentrations in the LWB-02 samples increased from 11.4 mg/kg to 1,900 mg/kg

Hexavalent chromium was not detected in the shallow samples collected from LWB-03 and LWB-04 (0 to 2 ft-bgs), but was detected in the samples collected from 6 to 8 ft-bgs:

- LWB-03 at 3,510 mg/kg
- LWB-04 at 280 mg/kg

The 6 to 8 ft-bgs sample collected from LWB-03 was selected for TCLP extraction and analysis of the extract based on higher total concentrations of some metals (Table 4-3). TC metals were not detected in the extract or were detected at concentrations well below the TC limits, except for total chromium. Total chromium was detected in the extract at a concentration of 17 mg/l which exceeds the TC limit of 5 mg/l. Total chromium was detected in groundwater samples collected from downgradient wells LAW-05 and LAW-06. This suggests the presence of total chromium at higher concentrations in the soil may be affecting groundwater quality.

pHs for samples collected from these borings were typically basic, but increased significantly between sample depths. The range of pHs was as follows:

- LWB-01 - 7.92 to 11.06 s.u.
- LWB-02 - 3.52 to 10.89 s.u.
- LWB-03 - 8.56 to 10.73 s.u.
- LWB-04 - 8.11 to 10.04 s.u.

4.3.3.2 CAMU B - Former BRP Pickling Facility

This CAMU represents SWMU 2, Former BRP Pickle Facility, which includes:

- Pit 1, BRP Pickle Pit
- Pit 2, BRP Spent Acid Pit
- Pit 10, Olson Quench Pit
- Pit 11, Olson Pump Pit

Both exterior and interior soil borings were completed to evaluate this area. Boring RFI-13, the only exterior boring, was completed west of the Former BRP Pickle Facility (Figure 2-1). Two soil borings (BRB-01 and BRB-03) were completed immediately west of the former in-ground tank area within the pickling facility (Appendix B, Figure B-2).

Exterior Boring

Soil samples were collected from RFI-13 at depths of 0 to 3 in-bgs an 4 to 6 and 16 to 18 ft-bgs. Samples collected from these locations were submitted for analysis of TAL Inorganics (plus molybdenum and free cyanide; analysis for hexavalent chromium was only performed for the subsurface soil samples) and select miscellaneous parameters.

Each of the inorganic constituents was detected in all soil samples collected from this area, except mercury, selenium, thallium, and total and free cyanide (which were not detected in any of the samples). Silver was detected in three of the samples; however, silver data from the 4 to 6 ft-bgs sample was rejected.

Hexavalent chromium was detected in both subsurface soil samples: 2.91 mg/kg in the 4 to 6 ft-bgs sample, and 6.31 mg/kg in the 16 to 18 ft-bgs sample.

The concentrations reported for samples collected from Boring RFI-13 were generally consistent for approximately one-half of the detected metals. Notable changes in concentrations with sample depth included:

- decrease in concentration with increased sample depth
  - beryllium
  - calcium
  - total chromium
  - magnesium
  - manganese
  - nickel

- increase in concentration with increased sample depth
  - arsenic
  - iron

Each of the samples collected from this location was submitted for analysis of TPH; the subsurface samples were also analyzed for pH and the surficial soil sample (0 to 3 in-bgs) was analyzed for total phenols.

- TPH was only detected in the surficial soil sample (0 to 3 in-bgs) at 80 mg/kg.
- pHs ranged from 8.11 to 8.39 s.u.
- Total phenols was not detected.

Interior Borings

Soil samples were collected at BRB-01 from 0 to 2 (ground surface being immediately underlying the concrete flooring), 2 to 4, and 15 to 17 ft-bgs. One soil sample was collected from BRB-03 at 1 to 3 ft-bgs. Each of these samples was submitted for analysis of the TC metals (arsenic, barium, cadmium, total chromium, copper, mercury, lead, and selenium), hexavalent chromium, total and free cyanide, and pH.

Each of the metals was detected in all of the samples collected from borings, except for mercury and selenium and total and free cyanide (which were not detected in any of the samples). Hexavalent chromium was only detected in the 2 to 4 ft-bgs sample from BRB-01 (64.1 mg/kg) and the 1 to 3 ft-bgs sample from BRB-03 (3.86 mg/kg). The concentrations reported for samples collected from BRB-01 were generally consistent for approximately one-half of the detected metals. Notable changes in concentrations with sample depth were observed for two metals and total chromium. Cadmium, copper, and total chromium concentrations decreased with increased sample depth. There were no trends in sample concentrations between BRB-01 and BRB-03.

pHs for samples collected from these borings varied widely between sample depths and the two boring locations. pHs of 4.48 to 8.55 s.u. were reported for samples collected from BRB-01; a pH of 10.32 was reported for the single sample collected from BRB-03.

4.3.3.3 CAMU C - BFS Pickling Facility

This CAMU represents SWMU 3, BFS Pickling Facility, including Pit 25, BFS Pickle Pump Pits. Two soil borings were completed within the yard of the BFS Pickling Facility: RFI-07 and RFI-17 (Figure 2-1). A total of five soil samples were collected from these borings at depths ranging from ground surface to a maximum of 8 ft-bgs. Samples collected from these locations were submitted for analysis of TAL Inorganics (plus molybdenum, hexavalent chromium, and free cyanide) and select miscellaneous parameters.

Each of these constituents was detected in all soil samples collected from this area, except:

- mercury, selenium, thallium, and free cyanide, which were not detected in any samples
- total cyanide, which was not detected in the 6 to 8 ft-bgs sample collected from RFI-07 nor in the 2 to 4 ft-bgs sample from RFI-17 but was detected in the 0 to 3 in-bgs and 2 to 4 ft-bgs sample collected from RFI-07 and the 6 to 8 ft-bgs sample collected from RFI-17
- silver, which was detected in each of the samples, except the 2 to 4 ft-bgs sample collected from RFI-17 (the silver data for the 0 to 3 in-bgs sample from RFI-07 was rejected)

Hexavalent chromium was detected in the 0 to 3 in-bgs sample collected from RFI-07 at a concentration of 12.7 mg/kg, but was not detected in the two subsurface samples collected from this location nor the two samples collected from RFI-17.

The concentrations reported for samples collected from Boring RFI-07 were generally consistent. Notable changes in concentrations with sample depth were observed. Total chromium, manganese, molybdenum, nickel, and vanadium concentrations decreased with increased sample depth.

The concentrations reported for the two samples collected from Boring RFI-17 were consistent. Notable changes in concentrations with sample depth were observed for three metals.

Zinc concentrations decreased with increased sample depth. Sodium and magnesium concentrations increased with increased sample depth.

The 0 to 3 in-bgs sample collected from RFI-07 was analyzed for pH and TPH; the remaining two samples collected from RFI-07 and all of the samples collected from RFI-17 were analyzed for pH.

- TPH was detected in the surficial soil sample collected from RFI-07 at a concentration of 92 mg/kg.

- pHs for samples collected from both borings ranged from 7.94 to 8.27 s.u.

4.3.3.4 CAMU D - Former LAP East Pickling Facility

This CAMU includes:

- SWMU 4, Former LAP East Pickle Facility, including Pit 4, LAP East Pickle Pits
- SWMU 7A, Continuous Lead Coating
- SWMU 7D, Copper Coating

One exterior and three interior borings were completed in this general area. Boring RFI-05 was completed immediately northeast of this portion of LAP to facilitate the installation of a downgradient monitoring well (Figure 2-1). Two borings were completed indoors at locations proximate to the former coating operations (LEB-01 and LEB-02) and one was completed proximate to the former 1,1,1-trichloroethane degreaser (LEB-03) (Appendix B, Figure B-3)).

Exterior Boring

Soil samples were collected from RFI-05 at 0 to 3 in-bgs and 2 to 4 and 12 to 14 ft-bgs. Each of these samples was submitted for analysis of TAL Inorganics (plus molybdenum) and select miscellaneous parameters. Analysis for hexavalent chromium, free cyanide, and TCL VOCs was performed for the subsurface soil samples collected from this location.

Each of the inorganics (metals and cyanide) was detected in all soil samples collected from RFI-05, except:

- mercury, selenium, and thallium, which were not detected in any samples

- silver, which was not detected in the sample collected from 12 to 14 ft-bgs (nor the duplicate collected from 2 to 4 ft-bgs), but was detected in the 2 to 4 ft-bgs sample; the result for the 0 to 3 in-bgs sample was rejected

- total cyanide, which was not detected in the subsurface soil samples, but was detected in the 0 to 3 in-bgs sample

- free cyanide, which was not detected in the sample collected from 2 to 4 ft-bgs or duplicate, was detected in the sample collected from 12 to 14 ft-bgs

Hexavalent chromium was not detected in the soil samples collected from RFI-05.

The concentrations reported for samples collected from Boring RFI-05 were generally consistent. Notable decreases in concentrations with increased sample depth were observed for several metals, including:

- total chromium
- manganese
- molybdenum
- nickel
- lead

The sample which contained the highest concentrations of the majority of the detected metals was the 0 to 3 in-bgs sample. Each of the constituents detected in a sample collected from this location, was detected at concentrations above background in one or more samples, particularly for the 0 to 3 in-bgs sample.

TCL VOCs were detected in both of the subsurface samples from RFI-05 submitted for analysis:

- 2 to 4 ft-bgs
  - 2-butanone at 3 µg/kg
  - trichloroethene at 0.5 µg/kg
  - total xylenes at 0.3 µg/kg

- 12 to 14 ft-bgs
  - carbon disulfide at 9 µg/kg
  - 2-butanone at 8 µg/kg
  - trichloroethene at 1 µg/kg
  - chlorobenzene at 4 µg/kg
  - total xylenes at 1.1 µg/kg

VOC TICs were detected in the 2 to 4 ft-bgs sample at a total concentration of 10 µg/kg. No VOC TICs were detected in the sample collected from 12 to 14 ft-bgs.

Each of the samples collected from RFI-05 was submitted for analysis of TPH, total phenols; each of the subsurface samples was analyzed for pH and TOC.

- TPH was not detected. The results for the 2 to 4 and 12 to 14 ft-bgs samples were rejected.
- pHs in the subsurface samples ranged from 6.93 to 7.83 s.u.
- Total phenols were not detected in any samples.
- TOC was detected in the subsurface samples at concentrations of 2.9 to 4.3 mg/l.

Interior Borings

Two soil samples each were collected from LEB-01 (2 to 4 and 8 to 10 ft-bgs) and from LEB-02 (6 to 8 and 8 to 10 ft-bgs); three samples were collected from LEB-03 (0 to 2, 7 to 9, and 11 to 13 ft-bgs). Each of these samples was submitted for analysis of the TC metals (arsenic, barium, cadmium, total chromium, copper, mercury, lead, and selenium), hexavalent chromium, total and free cyanide, TCL VOCs, and select miscellaneous parameters.

Each of the TC metals and cyanide was detected in at least one of the samples collected from these borings, except:

- hexavalent chromium and selenium, which were not detected in any samples
- mercury, which was not detected in the majority of the samples; mercury was detected in the 7 to 9 ft-bgs sample collected from LEB-03, but was not detected in the duplicate of this sample
- silver, which was detected in approximately one-half of the samples
- total and free cyanide, which were only detected in the two samples collected from LEB-02

Samples collected from LEB-01 and LEB-03 indicated slight decreases in constituent concentrations with increased sample depth. Concentrations of constituents detected in the LEB-02 samples were similar to one another. Between the three locations there was little variation in constituent concentrations, except for a total chromium concentration of 2,300 mg/kg in the 0 to

2 ft-bgs sample collected from LEB-03; total chromium concentrations for other samples were ranged from 13 to 110 mg/kg.

TCL VOCs were detected in each of the samples collected from these borings, except for the 8 to 10 ft-bgs samples collected from LEB-01 and LEB-02. VOC TICs were detected in most samples. The TCL VOC and total VOC TIC concentrations were as follows:

- LEB-01
  - 2 to 4 ft-bgs
    - trichloroethene at 87 µg/kg (570 µg/kg for the duplicate)
    - total VOC TICs at 670 µg/kg
  - 8 to 10 ft-bgs
    - total VOC TICs at 260 µg/kg

- LEB-02
  - 6 to 8 ft-bgs
    - cis-1,2-dichloroethene at 39 µg/kg
    - trichloroethene at 110 µg/kg
    - total VOC TICs at 690 µg/kg
  - 8 to 10 ft-bgs
    - total VOC TICs at 130 µg/kg

- LEB-03
  - 0 to 2 ft-bgs
    - cis-1,2-dichloroethene at 28 µg/kg
    - trichloroethene at 97 µg/kg
    - total VOC TICs at 0 µg/kg
  - 7 to 9 ft-bgs
    - vinyl chloride at 24 µg/kg
    - cis-1,2-dichloroethene at 870 µg/kg
    - trichloroethene at 160 µg/kg
    - total VOC TICs at 16 µg/kg
  - 11 to 13 ft-bgs
    - vinyl chloride at 220 µg/kg
    - 1,1-dichloroethene at 41 µg/kg
    - trans-1,2-dichloroethene at 230 µg/kg
    - cis-1,2-dichloroethene at 1,500 µg/kg
    - trichloroethene at 17,000 µg/kg
    - total VOC TICs at 7,230 µg/kg

Each of the samples collected from these interior borings was analyzed for pH and TOC.

- pHs were fairly consistent with a range of 6.92 to 8.85 s.u. for most samples. A pH of 9.78 s.u. was reported in the 0 to 2 ft-bgs sample from LEB-03.

- TOC was detected in each sample with a range in concentrations of 2.4 to 7.7 mg/l.

4.3.4 General Site Locations

Ground surface and perimeter soil samples were collected from seven locations to provide supplemental areal coverage for the site. The ground surface locations (GS-03, GS-04, and GS-05) and perimeter locations (RFI-01, RFI-08, RFI-12, and RFI-16) are shown in Figure 2-1.

4.3.4.1 Ground Surface Locations

Each of the samples collected from these locations was analyzed for TAL Inorganic (plus molybdenum, hexavalent chromium, and free cyanide) and select miscellaneous parameters.

Each of the TAL Inorganics was detected in all three samples, except as follows:

- mercury, selenium, thallium, and free cyanide, which were not detected in any samples

- arsenic, which was not detected in the sample from GS-03

- silver and total cyanide, which were not detected in the samples from GS-04 and GS-05

Hexavalent chromium was detected in the samples collected from GS-03 and GS-04 at concentrations of 4.01 and 9.45 mg/kg.

The sample collected from GS-03 was selected for TCLP extraction and analysis of the extract based on higher total concentrations of some metals (Table 4-3). TC metals were typically not detected in the extract or were detected at concentrations well below the TCLP limits. Consequently, the presence of metals at higher total concentrations does not appear to indicate a significant potential to impact site groundwater quality.

Each of these samples was analyzed for TPH, pH, and total phenols.

- TPH results for GS-03 were rejected by the data validator. Concentrations of 20 and 32 mg/kg were detected in the samples collected from GS-04 and GS-05

- pHs for these samples ranged from 7.77 to 8.58 s.u.

- Total phenols was not detected in any of the samples.

4.3.4.2 Site and Perimeter Locations

Four soil borings were completed to facilitate the subsequent installation of a perimeter groundwater monitoring network and are therefore not associated with specific units. The locations of these borings/wells (RFI-01, RFI-08, RFI-12, and RFI-16) are shown in Figure 2-1.

TAL Inorganics

Soil samples collected from each of these four locations were submitted for analysis of TAL Inorganics (plus molybdenum); select samples from some locations were also analyzed for hexavalent chromium, free cyanide, or both.

RFI-01 - Soil samples were collected from RFI-01 at 0 to 3 in-bgs and 4 to 6 and 10 to 12 ft-bgs. All of the samples were analyzed for TAL Inorganics (plus molybdenum and hexavalent chromium); the subsurface samples were also analyzed for free cyanide. Each of these constituents was detected in all of these samples collected from this location, except:

- selenium, thallium, total and free cyanide, which were not detected in any samples
- mercury which was not detected in the subsurface samples but was detected in the 0 to 3 in-bgs sample

Hexavalent chromium was not detected in the samples collected from 0 to 3 in-bgs nor 10 to 12 ft-bgs. However, hexavalent chromium was detected at a concentration of 21.4 mg/kg in a fill sample collected from 4 to 6 ft-bgs.

The reported concentrations were similar for all samples, although the majority of constituents were detected at the highest concentration in the sample collected from 4 to 6 ft-bgs. Notable changes in concentrations with sample depth were observed, including:

- decrease in concentration with increased sample depth
  - total chromium
  - molybdenum
  - nickel
  - lead

- increase in concentration with increased sample depth
  - calcium
  - potassium
  - magnesium
  - sodium
  - zinc

RFI-08 - Soil samples were collected from RFI-08 at 0 to 3 in-bgs and 5 to 7 ft-bgs. Each sample was analyzed for the TAL Inorganics (plus molybdenum and free cyanide); the 5 to 7 ft-bgs sample was also submitted for analysis of hexavalent chromium. Each of these constituents was detected in all samples collected from this location, except as follows.

- mercury, thallium, and free cyanide, which were not detected
- silver, which was not detected in the 5 to 7 ft-bgs sample, but was detected in the sample and duplicate collected from 0 to 3 in-bgs
- arsenic, which was not detected in the 0 to 3 in-bgs sample or duplicate, but was detected in the 5 to 7 ft-bgs sample
- selenium, which was not detected in either of the samples, was detected in the 0 to 3 in-bgs duplicate
- total cyanide was not detected in the 5 to 7 ft-bgs sample or the duplicate 0 to 3 in-bgs; however, the total cyanide data for the 0 to 3 in-bgs sample was rejected by the data validator

Hexavalent chromium was not detected in the sample collected from 5 to 7 ft-bgs.

Similar concentrations were reported in both samples for approximately one-half of the metals. The majority of detected constituents were detected at the highest concentration in the sample or duplicate collected from 0 to 3 in-bgs. Notable changes in constituent concentrations with sample depth were observed, including:

- decrease in concentration with increased sample depth
  - cadmium
  - cobalt
  - total chromium
  - copper
  - manganese
  - molybdenum
  - nickel
  - lead
  - antimony

- increase in concentration with increased sample depth
  - arsenic
  - potassium

The 0 to 3 in-bgs sample collected from RFI-08 was selected for TCLP extraction and analysis of the extract based on higher total concentrations of some metals (Table 4-3). TC metals were typically not detected in the extract, except lead. Lead was detected in the extract at a concentration of 9.6 mg/l; the TC limit is 5 mg/l. Lead was detected in groundwater samples collected from RFI-08, although the reported concentrations were below all potentially applicable limits (Section 6.0)

RFI-12 - Soil samples were collected from RFI-12 at 0 to 3 in-bgs and 2 to 4 and 14 to 16 ft-bgs. Each sample was analyzed for the TAL Inorganics (plus molybdenum); analysis for hexavalent chromium and free cyanide was performed on the subsurface soil samples. Each of these constituents was detected in all samples collected from this location, except for silver, mercury, selenium, thallium, total and free cyanide (which were not detected in any samples). Hexavalent chromium was only detected in the 2 to 4 ft-bgs samples collected from this location; the reported concentration was 3.45 mg/kg.

Similar concentrations of these metals were reported for all collected samples from this location, except:

- manganese and nickel for which concentrations decreased with increased with sample depth

- iron and barium for which concentrations increased with increased sample depth.

RFI-16 - Soil samples were collected from RFI-16 at 0 to 3 in-bgs and 4 to 6 and 14 to 15 ft-bgs. Each sample was analyzed for the TAL Inorganics (plus molybdenum). Each of these constituents was detected in all samples collected from this location, except:

- mercury, selenium, thallium, and total cyanide, which were not detected in any samples

- silver, manganese, and antimony, which were not detected in the 0 to 3 in-bgs sample, but were detected in the samples collected from 4 to 6 and 14 to 15 ft-bgs

- vanadium, which was detected in all of the samples except that collected from 14 to 15 ft-bgs

Less than one-half of the detected constituents were detected at similar concentrations in each of the samples. The highest concentrations of detected constituents were detected in the sample collected from 0 to 3 in-bgs. Consistent with these observations, notable decreases in concentration with increased sample depth occurred for the following constituents:

- aluminum
- barium
- beryllium
- calcium
- cobalt
- total chromium
- copper
- magnesium
- molybdenum
- nickel
- vanadium

A notable increase in concentration with increased sample depth was only observed for arsenic.

TCL SVOCs

The only soil samples collected from these locations for analysis of TCL SVOCs were the surficial soil sample (and duplicate) from RFI-08 (0 to 3 in-bgs). The data indicated the presence of PAHs and SVOC TICs in both the sample and duplicate at these concentrations:

- 0 to 3 in-bgs (sample)
  - total PAHs at 37,500 µg/kg
  - total SVOC TICs at 3,545 µg/kg

- 0 to 3 in-bgs (duplicate)
  - total PAHs at 87,500 µg/kg
  - total SVOC TICs at 3,627 µg/kg

TCL SVOCs, other than PAHs, were not detected in this sample or duplicate.

TCL PCBs

The surficial soil sample from RFI-08 was the only perimeter soil sample collected for analysis of TCL PCBs. The results indicated that PCB Aroclors were not detected in the sample (the silver data for the 0 to 3 in-bgs sample and the 0 to 3 in-bgs duplicate were rejected).

Miscellaneous Parameters

Each perimeter soil sample was analyzed for select miscellaneous parameters.

RFI-01 - Each of the three soil samples collected from this location was analyzed for TPH and pH; the subsurface samples were also analyzed for total phenols.

- TPH was not detected in the sample collected from 4 to 6 and 10 to 12 ft-bgs, but was detected at concentration of 9.9 mg/kg in sample collected from 0 to 3 in-bgs.
- pHs ranged from 7.09 to 8.11 s.u.
- Total phenols was not detected in any samples.

RFI-08 - Both samples collected from this location were submitted for analysis of TPH, pH, and total phenols; analysis for TOC was also performed for the sample collected from 0 to 3 in-bgs.

- TPH was detected in the 0 to 3 in-bgs duplicate and the 5 to 7 ft-bgs sample at concentrations of 130 and 35 mg/kg, but was not detected in the sample collected from 0 to 3 in-bgs.
- pHs ranged from 8.03 to 8.73 s.u.
- Total phenols was not detected in any samples.
- TOC was detected in the sample and duplicate 0 to 3 in-bgs.

RFI-12 - Each of the three soil samples collected from RFI-12 was submitted for analysis of TPH and total phenols; the subsurface samples were also analyzed for pH.

- TPH was detected in each of the samples at concentrations of 10 to 97 mg/kg

- pHs ranged from 7.82 to 8.05 s.u.

- Total phenols was not detected in any samples.

RFI-16 - The subsurface soil samples collected from this location were submitted for analysis of TPH, pH, and total phenols; the surficial soil sample was only analyzed for total phenols.

- TPH was detected in the 4 to 6 and 14 to 15 ft-bgs samples at concentrations of 31 and 110 mg/kg, but was not detected in the surficial soil sample.

- pHs ranged from 8.45 to 8.77 s.u.

- Total phenols was detected in the 14 to 15 ft-bgs sample at a concentration of 0.11 mg/kg.

4.4 Site Groundwater

Groundwater samples were collected from each of the newly installed RFI-series wells and select existing site wells in November 1996 (Round 1) and March 1997 (Round 2). As stated previously, samples collected during Round 1 were submitted for analysis of TAL Inorganics (including hexavalent chromium, molybdenum, and free cyanide), [3] TCL VOCs, TCL SVOCs, TCL PCBs, and miscellaneous parameters (including pH, total alkalinity, total phenolics, chloride, fluoride, nitrate, sulfate, ammonia, and specific conductance and field testing for temperature and turbidity). The Round 2 analytical program was reduced based on the results of the Round 1 sampling event (Section 2). Generally, the Round 2 analytical program included TAL Inorganics and miscellaneous parameters for all samples and analysis for TCL VOCs and SVOCs for a limited number of samples.

The groundwater sample analytical results are discussed in the following sections. The various sections were developed based on the locations of the wells, as follows:

[3] All groundwater samples were analyzed for TAL Inorganics, plus molybdenum, hexavalent chromium, and free cyanide. For simplification, this list of parameters is subsequently referred to as TAL Inorganics.

- SWMU 16 - Willowbrook Pond
- SWMU 17/Closed Surface Impoundment and SWMU 22/Wastewater Treatment Plant Areas
- CAMU A - Former LAP West Pickling Facility
- CAMU B - Former BRP Pickling Facility
- CAMU C - BFS Pickling Facility
- CAMU D - Former LAP East Pickling Facility
- general site and perimeter monitoring wells

Abridged, validated groundwater analytical data are presented in Tables 4-9 through 4-12. All of the TAL Inorganic and TCL PCB results are presented in Tables 4-9 and 4-12. The TCL VOC and TCL SVOC tables (Tables 4-10 and 4-11) include only those constituents which were detected in one or more groundwater samples collected during the Phase I RI. Unabridged data tables are presented in Appendix N.

The TAL Inorganic discussions focus on the presence of anticipated site-related metals, including total and hexavalent chromium, molybdenum, and nickel.

The groundwater potentiometric surface maps indicate that there are no true background monitoring locations at the site.

4.4.1 SWMU 16 - Willowbrook Pond

Groundwater samples were collected from wells adjacent to Willowbrook Pond during both sampling events. Samples were collected from the two existing wells (WP-04 and WP-05) and two newly installed wells (RFI-14 and RFI-15) during Round 1. These samples were submitted for analysis of TAL Inorganics, TCL VOCs, TCL SVOCs, TCL PCBs, and miscellaneous parameters. Samples were also collected from WP-01, WP-02, RFI-14, and RFI-15 during Round 2 for analysis of TAL Inorganics and miscellaneous parameters and analysis of select samples for TCL VOCs, TCL SVOCs, and TCL PCBs. The Round 2 sampling program was expanded to include the collection of samples from WP-01, WP-02, and WP-03 due to the presence of TCL VOCs in the groundwater sample collected from WP-04, and an upgradient well, RFI-16, during Round 1.

Hexavalent chromium and total and free cyanide were only analyzed as total inorganics and are discussed concurrent with the dissolved inorganics results.

Groundwater samples collected during Round 1 were submitted for analysis of total metals; groundwater samples collected from RFI-14 and RFI-15 were also analyzed for dissolved metals. Only the results of analysis for the dissolved metals are discussed for these two wells, as these results are more representative of groundwater quality than those generated for the total aliquots having high turbidity.

Each of the TAL Inorganics was detected in one or more of the groundwater samples collected during Round 1, except:

- hexavalent chromium
- mercury
- thallium

These constituents were not detected in any Round 1 groundwater samples.

Total chromium was detected in groundwater samples collected from WP-04, RFI-14, and RFI-15 at concentrations of 0.028 mg/l, 0.022 mg/l, and 0.031 mg/l. Molybdenum was detected in groundwater samples collected from each of the wells:

- WP-04, at 0.48 mg/l
- WP-05, at 0.031 mg/l
- RFI-14, at 0.11 mg/l
- RFI-15, at 0.076 mg/l

Nickel was only detected in the groundwater samples collected from RFI-14 and RFI-15. The reported concentrations were 0.1 and 0.044 mg/l.

Groundwater samples collected during Round 2 were submitted for analysis of total metals; samples collected from RFI-14 and WP-05 were also analyzed for dissolved metals. Each of the TAL Inorganics was detected in the samples collected from these wells, except:

- silver
- total chromium
- hexavalent chromium
- cobalt
- mercury
- nickel
- antimony
- selenium
- vanadium

These constituents were not detected in any Round 1 groundwater samples.

Molybdenum was detected in the samples collected from RFI-14 and WP-04 at concentrations of 0.056 and 0.04 mg/l.

In comparing the November data to the March data, the concentrations generally decreased in the wells for almost every constituent. This appears to be a result of lower turbidity in the samples during Round 2.

Groundwater samples were collected for TCL VOC analysis during both sampling events: Round 1 (RFI-14, RFI-15, and WP-04) and Round 2 (RFI-15, WP-01 through WP-04). TCL VOCs were only detected in samples collected from RFI-15 and WP-04 and no VOC TICs were detected in any of the samples. The detected constituents were comprised of chlorinated compounds:

Location	Sample Event	Detected Constituent	Results (µg/l)
RFI-15	Round 2	trans-1,2-dichloroethene	2
		cis-1,2- dichloroethene	110
		trichloroethene	490
WP-04	Round 1	trans-1,2- dichloroethene	2
		cis-1,2- dichloroethene	130
		trichloroethene	190
	Round 2	trans-1,2- dichloroethene	2
		cis-1,2- dichloroethene	140
		trichloroethene	210

1,1-Dichloroethene, trans-1,2-dichloroethene, and cis-1,2-dichloroethene were detected at lower concentrations than trichloroethene and are, therefore, believed to be degradation products.

TCL SVOCs were not detected in the samples collected during Round 1 (RFI-14, RFI-15, WP-04, and WP-05) or in samples collected during Round 2 (WP-04). Total SVOC TICs were detected in all of the samples collected from these wells at concentrations of 13 µg/l to 644 µg/l.

TCL PCBs were not detected in the groundwater samples that were collected during Round 1 or in the sample collected from RFI-15 during Round 2.

The miscellaneous parameter data for Rounds 1 and 2 results indicated:

- pHs ranged from 7.13 to 7.78 s.u.
- total alkalinity concentrations ranged from 128 to 422 mg/l
- total phenols was not detected in any samples
- chloride was detected in all samples at concentrations ranging from 21 to 110 mg/l
- fluoride was detected in all samples at concentrations ranging from 0.22 to 0.59 mg/l
- nitrate was detected in samples collected from RFI-14 and WP-05 at 0.11 mg/l
- sulfate was detected in all samples at concentrations ranging from 59 to 260 mg/l
- ammonia was detected in all samples at concentrations ranging from 0.39 to 2.2 mg/l, except those collected from WP-04 and RFI-14 in which ammonia was not detected during Round 2
- specific conductance ranged from 489 to 1,220 µmhos/cm

4.4.2 SWMU 17/Closed Surface Impoundment and SWMU 22/Wastewater Treatment Plant Areas

Groundwater samples were collected from the following wells located proximate to these SWMUs during implementation of the Phase II RFI: WT-1A, WT-1B, WT-2, WT-3, WT-4, and RFI-09. The samples collected during Rounds 1 and 2 were submitted for analysis of TAL Inorganics, TCL VOCs, TCL SVOCs, and select miscellaneous parameters; samples collected during Round 1 were also analyzed for TCL PCBs.

All of the groundwater samples collected during Round 1 were analyzed for both total and dissolved TAL Inorganics. Each of these analyses was detected in one or more of the groundwater samples, except:

- arsenic
- hexavalent chromium
- mercury
- thallium
- free cyanide

These constituents were not detected in any Round 1 groundwater samples.

Total chromium, molybdenum, and nickel were detected in each of the groundwater samples collected from this SWMU during Round 1, except from RFI-09 (in which total chromium was not detected).

Reported Concentrations (mg/l)

Well	Total Chromium	Molybdenum	Nickel
RFI-09	not detected	0.42	0.022
WT-1A	0.026	0.32	0.066
WT-1B	0.022	0.05	80.03
WT-2	0.03	0.29	0.13
WT-3	0.032	2.4	0.049
WT-4	0.013	0.12	0.026

Groundwater samples collected during Round 2 were each analyzed for total metals; an aliquot was also collected from WT-1B for analysis of dissolved metals. Each of the TAL Inorganics analytes was detected in one or more of the groundwater samples, except:

- beryllium
- hexavalent chromium
- mercury
- vanadium
- total and free cyanide

These constituents were not detected in any Round 1 groundwater samples.

Molybdenum was the consistently detected in the groundwater samples collected from this SWMU during Round 2. Total chromium and nickel were detected with less frequency.

Reported Concentrations (mg/l)

Well	Total Chromium	Molybdenum	Nickel
RFI-09	not detected	0.41	0.031
WT-1A	0.01	0.27	0.038
WT-1B	not detected	0.092	not detected
WT-2	0.027	0.22	0.068
WT-3	0.013	1.7	0.05
WT-4	not detected	0.13	not detected

TCL VOCs and VOC TICs were detected in the groundwater samples collected from WT-2 during Rounds 1 and 2:

Sample Round	Detected Constituent	Concentration (μg/l)
Round 1	vinyl chloride	18
	cis-1,2-dichloroethene	51
	trichloroethene	8
	total VOC TICs	100
Round 2	vinyl chloride	21
	trans-1,2-dichloroethene	3
	cis-1,2-dichloroethene	64
	trichloroethene	9
	total VOC TICs	100

cis-1,2-Dichloroethene was also detected in the samples collected from WT-3 and WT-4 during Round 2. The reported concentrations were 1 and 2 μg/l.

The only TCL SVOC detected in groundwater samples collected from these wells during Rounds 1 and 2 was phenol. This constituent was detected in the samples collected from WT-2 at concentrations of 17 and 34 μg/l. SVOC TICs were detected in most of the groundwater samples collected from these wells, although TICs were not detected in the Round 1 samples collected from WT-1A and RFI-09. Total SVOC TIC concentrations ranged from 11 to 560 μg/l; the highest concentrations were reported for samples collected from WT-2.

TCL PCBs were not detected in any of the groundwater samples collected from this area.

The miscellaneous parameter results indicated:

- pHs ranged from 6.82 to 12.41 s.u.
- total alkalinity concentrations ranged from 49.6 to 1,020 mg/l
- total phenols was only detected in samples collected from WT-2 at concentrations of 54 and 29 μg/l
- chloride was detected in all samples at concentrations ranging from 10 to 280 mg/l

- fluoride was detected in all samples at concentrations ranging from 0.2 to 1.8 mg/l

- nitrate was only detected in samples collected from WT-1A at concentrations of 0.38 and 0.2 mg/l and in one sample collected from WT-4 at a concentration of 0.14 mg/l

- sulfate was detected in all samples at concentrations ranging from 8.3 to 620 mg/l

- ammonia was detected in all samples at concentrations ranging from 0.28 to 3.6 mg/l, except those collected from RFI-09 and WT-1A in which ammonia was not detected

- specific conductance ranged from 803 to 4,560 μmhos/cm

The parameters indicating the greatest range of reported levels included pH, chloride, fluoride, and sulfate:

- pHs reported for samples collected from these wells were typically around 7 s.u.; higher pH levels of 12.41 and 12.32 s.u. were reported for the samples collected from WT-2

- chloride concentrations in most samples ranged from 12 to 62 mg/l; chloride concentration in samples collected from WT-1A and WT-1B ranged from 110 to 280 mg/l

- fluoride was detected in samples collected from each of the wells in this area, concentrations of greater than 1 mg/l were only detected in samples collected from WT-3.

- sulfate was detected at:
  - concentrations of less than 10 mg/l in samples collected from WT-2
  - concentrations of approximately 100 to 200 mg/l in samples collected from RFI-09, WT-1A and WT-1B
  - concentrations of 300 to 620 mg/l in the samples collected from WT-3 and WT-4

Analysis for TOC, COD, and TSS was performed on samples collected from these wells during Round 1.[4] The results of these analysis indicated:

- TOC was detected in all samples at concentrations of 2.3 to 15 mg/l

- COD was only detected in samples collected fromWT-1A, WT-02, WT-03, and WT-04 at concentrations of 5.4 to 46 mg/l

[4] The analysis for additional parameters was performed to generate a set of data that were consistent with the ongoing post-closure monitoring program for the Closed Surface Impoundment.

- TSS was detected in all samples at concentrations of 11 to 300 mg/l, except that collected from RFI-09

4.4.3 CAMU A - Former LAP West Pickling Facility

Groundwater samples were collected from LAW-05 and LAW-06, located at CAMU A, during Rounds 1 and 2. Samples collected during Round 1 were submitted for analysis of TAL Inorganics, TCL VOCs, TCL SVOCs, TCL PCBs, and select miscellaneous parameters. Analysis for the Round 2 samples was limited to TAL Inorganics and select miscellaneous parameters for samples from both wells. Samples collected from LAW-06 were also analyzed TCL SVOCs.

Groundwater samples collected from LAW-05 and LAW-06 during Round 1 were submitted for analysis for TAL Inorganics. Each of these analytes was detected in at least one of the samples except as follows:

- silver
- barium
- cadmium
- cobalt
- mercury

These constituents were not detected in any Round 1 groundwater samples.

Hexavalent chromium was detected in the samples collected from LAW-05 and LAW-06 at concentrations of 5.24 and 36.1 mg/l. Total chromium and molybdenum were detected in samples collected from both wells and nickel was only detected in the groundwater sample collected from LAW-05.

	Reported Concentrations (mg/l)		
Well	Total Chromium	Molybdenum	Nickel
LAW-05	4.8	0.32	0.075
LAW-06	41	5.7	not detected

Each of the TAL Inorganics was detected in at least one of the groundwater samples collected from these wells during Round 2, except for beryllium, mercury, and lead. Hexavalent chromium was detected in the sample collected from LAW-05 at 3.96 mg/l and in the sample collected from LAW-06 at 54.5 mg/l. Total chromium, molybdenum, and nickel were detected in samples from both wells.

	Reported Concentrations (mg/l)		
Well	Total Chromium	Molybdenum	Nickel
LAW-05	3.1	0.33	0.085
LAW-06	43	6.2	0.055

The TAL Inorganics results for samples collected from both wells during both sampling rounds appear to be comparable.

Neither TCL VOCs, VOC TICs, TCL SVOCs nor TCL PCBs were detected in groundwater samples collected from these wells. SVOC TICs were detected in each of the samples analyzed. Total SVOC TICs were detected in the sample collected from LAW-05 during Round 1 at a total concentration of 473 µg/l and in the samples collected from LAW-06 during Rounds 1 and 2 at total concentrations of 640 and 414 µg/l.

The miscellaneous parameter results indicated:

- pH in the samples collected from LAW-05 ranged from 6.9 and 6.98 s.u.; total alkalinity ranged from 233 to 479 mg/l
- pH in the samples collected from LAW-06 ranged from 8.98 and 9.19 s.u.; total alkalinity ranged from 3,360 to 3,510 mg/l
- total phenols was not detected in any samples
- chloride was detected in all samples at concentrations ranging from 140 to 300 mg/l
- fluoride was detected in all samples at concentrations ranging from 0.18 to 6.3 mg/l
- nitrate was detected in all samples at concentrations ranging from 10 to 30 mg/l
- sulfate was detected in all samples at concentrations ranging from 880 to 2,900 mg/l
- ammonia was detected in all samples at concentrations ranging from 1.1 to 2.5 mg/l

- specific conductance ranged from 2,820 µmhos/cm (LAW-05) to 9,700 µmhos/cm (LAW-06)

Except for chloride, these analytes were detected at higher concentrations in at least one of the samples collected from LAW-06. Fluoride concentrations were notably higher in the samples collected from LAW-06 (6.2 mg/l and 3.8 mg/l) compared to the samples collected from LAW-05 (1.8 mg/l and 1.9 mg/l). The pH and total alkalinity of the samples collected from LAW-06 were also notably higher than the samples collected from LAW-05.

4.4.4 CAMU B - Former BRP Pickling Facility

Groundwater samples were collected for laboratory analysis from Wells MW-1 and RFI-13 at CAMU B during Rounds 1 and 2. Samples collected during Round 1 were submitted for analysis of TAL Inorganics, TCL VOCs, TCL SVOCs, TCL PCBs, and select miscellaneous parameters. Samples collected from both wells during Round 2 were analyzed for TAL Inorganics and miscellaneous parameters. The sample collected from MW-1 was also analyzed for TCL VOCs (and TCL SVOCs) due to its proximity to Willowbrook Pond and the detection of VOCs in groundwater samples collected from this area.

TAL Inorganics were each detected in one or both of the groundwater samples collected during Round 1, except:

- hexavalent chromium
- mercury
- antimony
- selenium
- thallium
- free cyanide

The constituents were not detected in any Round 1 groundwater samples.

Total chromium and nickel were only detected in the groundwater sample collected from RFI-13. The reported concentrations were 0.035 and 0.039 mg/l. Molybdenum was detected in samples from both MW-1 and RFI-13. The reported concentrations were 0.6 and 0.036 mg/l.

TAL Inorganics were each detected in one or both of the groundwater samples collected during Round 2, except as follows:

- silver
- arsenic
- beryllium
- cobalt
- hexavalent chromium
- mercury
- selenium
- thallium
- vanadium
- total and free cyanide

These constituents were not detected in any Round 1 groundwater samples.

Total chromium was detected in groundwater samples collected from MW-1 and RFI-13 at concentrations of 0.022 and 0.0093 mg/l. Molybdenum and nickel were only detected in the sample collected from MW-1. The reported concentrations were 0.38 and 0.039 mg/l.

The results for samples collected from both wells varied during each sampling event and no general comparison can be made between the Round 1 and Round 2 data.

Neither TCL VOCs, VOC TICs, TCL SVOCs, nor TCL PCBs were detected in groundwater samples collected from these wells. SVOC TICs were detected in the samples collected from MW-1 during Rounds 1 and 2 at total concentrations of 530 and 15 µg/l and in the sample collected from RFI-13 during Round 1 at a total concentration of 414 µg/l.

The miscellaneous parameter results indicated:

- pH ranged from 7.17 to 7.94 s.u.
- total alkalinity concentrations ranged from 216 to 549 mg/l
- total phenols was not detected in any samples
- chloride was detected in all samples at concentrations ranging from 42 to 86 mg/l
- fluoride was detected in one of the samples collected from MW-1 (at 0.56 mg/l) and in both samples collected from RFI-13 (at 0.25 mg/l and 0.29 mg/l)
- nitrate was detected in all samples at concentrations ranging from 0.11 to 6.4 mg/l
- sulfate was detected in all samples at concentrations ranging from 150 to 350 mg/l

- ammonia was detected in all samples at concentrations ranging from 0.22 to 0.63 mg/l

- specific conductance ranged from 1,000 to 1,340 µmhos/cm

The data for the samples collected from MW-1 and RFI-13 appear to be generally consistent with other samples collected at the site. However, nitrate was detected at higher concentrations than typically observed in the sample collected from RFI-13 during Round 2 (6.4 mg/l) and sulfate was detected at higher concentrations than typically observed in both samples collected from MW-1 (280 mg/l to 350 mg/l).

4.4.5 CAMU C - BFS Pickling Facility

Groundwater samples were collected from MW-3, RFI-07, and RFI-17 located at CAMU C, during Rounds 1 and 2. Samples collected during Round 1 were submitted for analysis of TAL Inorganics, TCL VOCs, TCL SVOCs, TCL PCBs, and select miscellaneous parameters. Samples collected during Round 2 were all analyzed for TAL Inorganics and miscellaneous parameters. The sample collected from RFI-07 was also analyzed for TCL SVOCs.

Groundwater samples collected during Round 1 were each analyzed for total metals; samples collected from MW-3 and RFI-17 were also analyzed for dissolved metals. Each of the TAL Inorganics was detected in at least one of the groundwater samples collected during Round 1, except as follows:

- silver
- arsenic
- mercury
- lead
- thallium
- free cyanide

These constituents were not detected in any Round 1 groundwater samples.

Hexavalent chromium was only detected in the groundwater sample collected from MW-3. The reported concentration was 7.54 mg/l. Total chromium was detected in the samples from MW-3 and RFI-07. Molybdenum was detected in samples from each of these wells. Nickel was only detected in the sample collected from RFI-07.

Reported Concentrations (mg/l)

Well	Total Chromium	Molybdenum	Nickel
MW-3	6.6	0.39	not detected
RFI-07	0.033	1.2	0.089
RFI-17	not detected	0.36	not detected

Groundwater samples collected during Round 2 were each analyzed for total metals, the sample collected from RFI-07 was also analyzed for dissolved metals. Each of the TAL Inorganics was detected in at least one of the groundwater samples collected during Round 2, except as follows:

- arsenic
- beryllium
- mercury
- selenium
- thallium
- total and free cyanide

These constituents were not detected in any Round 1 groundwater samples.

Hexavalent chromium was only detected in the groundwater sample collected from MW-3. The reported concentration was 8.05 mg/l. Total chromium, molybdenum, and nickel were detected in each of the groundwater samples collected from these wells.

Reported Concentrations (mg/l)

Well	Total Chromium	Molybdenum	Nickel
MW-3	6	0.3	0.039
RFI-07	0.024	0.79	0.051
RFI-17	0.089	0.27	0.04

Chloroform was the only TCL VOC detected in the groundwater samples collected from this CAMU. Chloroform was detected in the groundwater sample collected from MW-3 during Round 1 at a concentration of 6 µg/l. VOC TICs were also only detected in a groundwater sample collected from this well. A total concentration of 15 µg/l was reported.

No TCL SVOCs were detected in the groundwater samples collected from this CAMU. SVOC TICs were detected in the groundwater samples collected from Wells MW-3, RFI-07, and RFI-17 during Round 1 at total concentrations ranging from 326 to 554 µg/l. SVOC TICs were also detected in the groundwater sample collected from RFI-07 during Round 3 at a total concentration of 81 µg/l.

The miscellaneous parameter results indicated:

- pHs ranged from 7.03 to 7.27 s.u.
- total alkalinity ranged from 111 to 396 mg/l
- total phenols was not detected in any samples
- chloride was detected in all samples at concentrations ranging from 150 to 480 mg/l
- fluoride was detected in all samples at concentrations ranging from 0.49 to 0.76 mg/l
- nitrate was detected in all samples at concentrations ranging from 2 to 83 mg/l
- sulfate was detected in all samples at concentrations ranging from 330 to 1,500 mg/l
- ammonia was detected in samples collected from RFI-07 and RFI-17 at concentrations ranging from 0.21 to 2 mg/l
- specific conductance ranged from 2,060 to 4,130 µmhos/cm

The analytical results were generally consistent. Nitrate, which was typically not detected in site wells, was present in each of the CAMU C wells. Nitrate concentrations for samples collected from RFI-17 were notably lower than those for samples collected from MW-3 and RFI-07.

4.4.6 CAMU D - Former LAP East Pickling Facility

Groundwater samples collected from LAE-4 and RFI-5 at CAMU D during Round 1 were submitted for analysis of TAL Inorganics, TCL VOCs, TCL SVOCs, TCL PCBs, and select miscellaneous parameters. Samples collected during Round 2 were analyzed for TAL Inorganics, TCL VOCs, and miscellaneous parameters; the sample collected from LAE-4 during Round 2 was also analyzed for TCL SVOCs.

The groundwater samples collected from LAE-4 during Rounds 1 and 2 were analyzed for both total and dissolved metals; both samples collected from RFI-05 were only analyzed for total metals.

Each TAL Inorganics was detected in one or both samples collected during Round 1, except as follows:

- silver
- arsenic
- hexavalent chromium
- mercury
- antimony
- thallium

Total chromium and nickel were only detected in the groundwater sample collected from RFI-05 during Round 1 at concentrations of 0.04 and 0.017 mg/l. Molybdenum was detected in the samples collected from LAE-4 and RFI-05 during Round 1 at concentrations of 0.01 and 0.049 mg/l.

Each of the TAL Inorganics was detected in one or both samples collected during Round 2, except as follows:

- silver
- arsenic
- beryllium
- cadmium
- cobalt
- total chromium
- hexavalent chromium
- mercury
- molybdenum
- nickel
- antimony
- thallium
- vanadium
- total and free cyanide

These constituents were not detected in any Round 1 groundwater samples.

TCL VOCs and VOC TICs were not detected in the groundwater samples collected from RFI-05. TCL VOCs were detected in the groundwater samples collected from LAE-4 during both rounds.

Sample Round	Detected Constituent	Reported Concentration (µg/l)
1	vinyl chloride	97
	1,1-dichloroethene	13
	trans-1,2-dichloroethene	27
	cis-1,2-dichloroethene	790
	trichloroethene	6,900
2	vinyl chloride	100
	1,1-dichloroethene	11
	trans-1,2-dichloroethene	21
	cis-1,2-dichloroethene	860
	trichloroethene	7,300
	Total VOC TICs	1,020

Naphthalene was the only TCL SVOC detected in the groundwater samples collected from this area. This constituent was detected at a concentration of 14 µg/l in the groundwater sample collected from LAE-4 during Round 2. SVOC TICs were detected in samples collected from LAE-4 and RFI-5 during Round 1 at total concentrations of 510 and 198 µg/l. Total SVOC TICs were not detected in the groundwater sample collected from LAE-4 during Round 2.

TCL PCBs were not detected in groundwater samples collected from either of these wells.

The miscellaneous parameter results indicate:

- pHs ranged from 7.05 to 7.43 s.u.
- total alkalinity ranged from 160 to 444 mg/l
- total phenols were not detected in any samples
- chloride was detected in all samples at concentrations ranging from 12 to 19 mg/l
- fluoride was detected in all samples at concentrations ranging from 0.21 to 0.31 mg/l

- nitrate was detected in samples collected from RFI-05 at concentrations of 2.4 and 2.5 mg/l

- sulfate was detected in all samples at concentrations ranging from 110 to 150 mg/l

- ammonia was detected in samples collected from LAE-04 at concentrations of 0.78 and 0.79 mg/l

- specific conductance ranged from 621 to 892 μmhos/cm.

The results for these miscellaneous parameters indicate conditions at LAE-4 and RFI-05 are consistent with general site conditions. However, nitrate which was typically not detected in site wells, was present in the groundwater samples collected from these wells.

4.4.7 Site Groundwater

Groundwater quality at the site and perimeter was evaluated via the collection and analysis of groundwater samples collected from the remaining site wells, including B-1, RFI-01, RFI-02, RFI-03, RFI-04, RFI-06, RFI-08, RFI-10, RFI-11, RFI-12, and RFI-16. Samples were collected from these locations during Round 1 for analysis of TAL Inorganics, TCL VOCs, TCL SVOCs, TCL PCBs, and select miscellaneous parameters. Groundwater samples collected during Round 2 were submitted for analysis of TAL Inorganics and miscellaneous parameters; a limited number of samples collected during Round 2 were also analyzed for TCL SVOCs.

4.4.7.1 TAL Inorganics

A total of 22 groundwater samples were collected during both sampling rounds. The results for the detected analytes in the total or dissolved sample aliquots (as appropriate) are summarized below. Mercury was the only analyte which was not detected in any of the groundwater samples collected from these wells.

Analytes which were detected infrequently (in 5 or fewer of the groundwater samples) included cobalt, hexavalent chromium, selenium, thallium, total cyanide and free cyanide. The concentrations reported for samples in which selenium, thallium, and total cyanide were detected were fairly consistent; free cyanide was only detected in one sample (collected from RFI-12 during Round 1). Hexavalent chromium was detected in the samples collected during Round 2 from B-1 and RFI-03 at concentrations of 0.02 and 0.05 mg/l. Because hexavalent chromium was not anticipated to be present at these locations, an additional set of samples was collected from these wells (also during Round 2). Hexavalent chromium was not detected, at a detection limit of 0.01 mg/l, in either of the second set of samples from these wells.

Several metals, some of which are not typically present in natural or background groundwater, were detected with moderate frequency in the site groundwater samples (6 to 15 detections in 22 samples). These metals included:

- silver
- arsenic
- beryllium
- cadmium
- total chromium
- copper
- molybdenum
- nickel
- lead
- antimony

Total chromium was detected in 9 of 22 groundwater samples at concentrations of 0.011 to 0.045 mg/l. The groundwater samples in which this metal was detected were collected from RFI-01, RFI-04, RFI-06, RFI-08, RFI-10, RFI-11, and RFI-12. The highest concentrations were reported for a total aliquot sample collected from RFI-12.

Molybdenum was detected in 15 of 22 groundwater samples at concentrations of 0.01 to 1.3 mg/l. This metal was detected in samples collected from each site well for one or both sampling rounds. The highest concentrations of molybdenum were reported in total sample aliquots collected from wells located in the center of the site: RFI-03 (1.3 and 1.2 mg/l) and RFI-16 (0.71 and 0.59 mg/l). Concentrations for samples collected from the remaining wells were less than 0.1 mg/l.

Nickel was detected in 7 of 22 samples at concentrations of 0.024 to 0.21 mg/l. The groundwater samples in which this metal was detected were collected from RFI-04, RFI-06, RFI-08, RFI-10, RFI-11, and RFI-12. The highest concentrations of molybdenum were reported in total sample aliquots collected from RFI-12.

Metals which were typically detected in each of the site groundwater samples (18 to 22 detections) include those which would be anticipated to be present in natural (background) groundwater. These analytes included:

- aluminum
- barium
- calcium
- iron
- potassium
- magnesium
- manganese
- sodium
- zinc

The range of reported concentrations for each of these metals was fairly wide.

4.4.7.2 TCL VOCs

The only TCL VOCs detected in the groundwater samples collected from the site and parameter wells during Rounds 1 and 2. cis-1,2-Dichloroethene and trichloroethene were detected at concentrations of 130 µg/l and 480 µg/l in the groundwater sample collected from RFI-16, located near the center of the site. VOC TICs were only detected in the groundwater sample collected from RFI-08 at a total concentration of 7 µg/l.

4.4.7.3 TCL SVOCs

Only one TCL SVOC was detected in groundwater samples collected from the site and perimeter wells during Rounds 1 and 2. 2,4-Dinitrophenol was detected at a concentration of 26 µg/l in the groundwater sample collected from RFI-04 during Round 1. SVOC TICs were detected in all of the groundwater samples collected during Rounds 1 and 2, except for the sample collected from RFI-11 during Round 1. The total SVOC TIC concentrations in these groundwater samples ranged from 14 to 556 µg/l.

4.4.7.4 TCL PCBs

TCL PCBs were not detected in any of the groundwater samples collected from these site wells.

4.4.7.5 Miscellaneous Parameters

Samples collected from the 11 wells during Round 1 and Round 2 were analyzed for select miscellaneous parameters. The results for both sampling events are summarized below.

- pHs ranged from 7.03 to 8.03 s.u.
- total alkalinity ranged from 76 to 444 mg/l
- total phenols was not detected in any of the samples
- chloride was detected in all samples at concentrations ranging from 3.3 to 290 mg/l
- fluoride was detected in all samples at concentrations ranging from 0.18 to 1.9 mg/l
- nitrate was detected in samples from 4 of the 11 site wells concentrations ranging from 0.11 to 4.9 mg/l
- sulfate was detected in all samples at concentrations ranging from 57 to 1,500 mg/l
- ammonia was detected in 16 of the 22 samples at concentrations ranging from 0.1 to 1.9 mg/l
- specific conductance of the samples ranged from 352 to 1,760 µmhos/cm.

These analytes were generally detected in the samples collected from these wells at consistent concentrations. However, several of the analytes were detected at or above the typical range of concentrations in samples collected from some wells:

- chloride and sulfate were detected at higher concentrations in samples collected from RFI-10
- fluoride was detected at higher concentrations in the samples collected from RFI-03
- nitrate was detected in samples collected from RFI-01, RFI-08, RFI-10, and RFI-12; this compound was typically not detected in site groundwater samples.

4.5 Surface Water and Sediment

Surface water and sediment samples were collected from three locations in the unnamed tributary to Crooked Brook; the locations (S-01, S-02, and S-03) are shown in Figure 2-1. Each of the samples was submitted for analysis of various parameters in accordance with the Phase I RFI

Work Plan. The analytical results are discussed in Sections 4.5.1 and 4.5.2 and the data are summarized in Tables 4-13 and 4-14; unabridged data tables are presented in Appendix N.

4.5.1 Surface Water

Surface water samples collected from Locations S-01, S-02, and S-03 were submitted for analysis of TAL Inorganics (plus molybdenum, free cyanide, and hexavalent chromium), TCL SVOCs, TCL PCBs, and select miscellaneous parameters.

Each of the TAL Inorganics was detected in at least one of the surface water samples, except for the following analytes:

- silver
- arsenic
- cadmium
- cobalt
- hexavalent chromium
- nickel
- selenium
- thallium
- vanadium
- total cyanide

These constituents were not detected in any of the surface water samples.

Typically, the concentrations of constituents detected in the sample collected from the upstream location (S-01) were similar to those reported in the samples collected from the downstream locations (S-02 and S-03). Aluminum and copper were only detected in the sample collected from S-02 and lead was only detected in the sample collected from S-03.

Total chromium was detected in the sample collected from S-02 (0.0089 mg/l) and in the duplicate from S-03 (0.0089 mg/l). Molybdenum was detected in each of the surface water samples. The reported concentrations were 0.021 mg/l (S-01), 0.054 mg/l (S-02), and 0.039 mg/l (S-03).

TCL SVOCs, SVOC TICs, and TCL PCBs were not detected in any of the surface water samples.

The surface water samples were submitted for analysis of TPH, pH, total alkalinity, total phenols, chloride, fluoride, sulfate, and specific conductance. The results are summarized below.

- TPH and total phenols were not detected in any samples.
- pHs ranged from 8.14 to 8.19.
- Total alkalinity concentrations ranged from 175 to 231 mg/l.
- Chloride was detected in all samples at concentrations ranging from 83 to 97 mg/l.
- Fluoride was detected in all samples at concentrations ranging from 0.23 to 0.34 mg/l.
- Sulfate was detected in all samples at concentration ranging from 49 to 110 mg/l.
- Specific conductance ranged from 636 µmhos/cm to 735 µmhos/cm.

4.5.2 Sediments

Sediment samples collected from Locations S-01, S-02, and S-03 were submitted for analysis of TAL Inorganics (plus molybdenum, hexavalent chromium, and free cyanide), TCL SVOCs, TCL PCBs, and select miscellaneous parameters.

Each of the TAL Inorganics was detected in at least one of the sediment samples, except for the following:

- silver
- selenium
- thallium
- total cyanide
- free cyanide

The results for all three samples were generally similar. However, the concentrations for some of the detected metals were highest in the sample collected from Location S-02. And mercury was only detected in the sample collected from S-02.

Hexavalent chromium was only detected in the sediment sample collected from S-02 (3.64 mg/kg). Total Chromium, molybdenum, and nickel were detected in each of the sediment samples.

	Reported Concentrations (mg/kg)		
Location	Total Chromium	Molybdenum	Nickel
S-01	25	7.4	24
S-02	430	20	240
S-03 (a)	47	18	39

a/ The results for the duplicate collected from S-03 for analysis of these parameters were 560 mg/kg (total chromium), 51 mg/kg (molybdenum), and 420 mg/kg (nickel).

TCL SVOCs, comprised entirely of PAHs, were detected in the sediment samples collected from S-01 and S-03. Thirteen PAH constituents were detected in the sample collected from S-01. The total PAH concentration reported for this sample was 16,070 µg/kg. Chrysene was the only TCL SVOC detected in the sample collected from S-03; the reported concentration was 2,500 µg/kg. Benzo(b)fluranthene, benzo(k)fluoranthene, and benzo(a)pyrene were each detected in the duplicate sample collected from S-03 at concentrations of 1,500 µg/kg.

The sediment samples were submitted for analysis of TCL PCBs, TPH, total phenols, chloride, fluoride, nitrate, sulfate, and TOC. The results are as follows.

- TCL PCBs, TPH, total phenols, and fluoride were not detected in any samples.
- Chloride was detected in all samples at concentrations ranging from 1.8 to 39 mg/l.
- Nitrate was detected in the sample from S-01 at a concentration of 0.13 mg/l.
- Sulfate was detected in samples collected from S-01 and S-02 at concentrations of 6.2 mg/l to 42 mg/l.
- TOC was detected in all samples at concentrations ranging from 2.9 to 3.4 mg/l.

Table 4-1

Background Soil Sample Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	BS-01		BS-02		BS-03	
Sample I.D.:	SS-BS-01-03		SS-BS-02-03		SS-BS-03-03	
Laboratory Project No.:	96-5102		96-5102		96-5102	
Sample Interval:	0-3 inches		0-3 inches		0-3 inches	
Sample Date:	10/25/96		10/25/96		10/25/96	
	Unsieved	#400 Sieve	Unsieved	#400 Sieve	Unsieved	#400 Sieve
TAL Inorganics plus Molybdenum (mg/kg)(a)						
Silver	0.97 J(b)	0.73 U	1 UJ	0.75 U	0.87 UJ	0.8 U
Aluminum	7500	11000	9400	10000	9500	10000
Arsenic	6.6 J	7.2	7.8 J	6.8	6.1 J	6 J
Barium	34 J	52	41 J	50	45 J	53
Beryllium	0.21 J	0.29	0.08 UJ	0.36	0.14 J	0.28 J
Calcium	500 J	720	520 J	350	420	360
Cadmium	1.9 J	3	1.1 J	2.9	2 J	2.9 J
Cobalt	1.6 J	2.6	3 J	5.4	4.6 J	4.3 J
Chromium (Total)	19 J	31	42 J	41	41 J	45
Chromium (Hexavalent)	11.7	NA (c)	3.05 U	NA	13.4	NA
Copper	16 J	76	18 J	40	19 J	36
Iron	11000	17000	13000	15000	13000	15000
Mercury	0.08 U	NA	0.09 U	NA	0.08 U	NA
Potassium	550	730	850	780	710	760
Magnesium	970 J	1500	1500 J	1700	1500	1700
Manganese	97	130	160	120	260	210
Molybdenum	5.4 J	8	3 J	7.5	7.2 J	6.7 J
Sodium	46 UJ	45	52 UJ	43	44 U	43
Nickel	21 J	25	36 J	36	35 J	40
Lead	24	33	27	32	29	23
Antimony	0.73	0.61	1	0.71	0.59	0.89
Selenium	0.3 U	0.24 U	0.27 U	0.27 U	0.28 U	0.25 U
Thallium	0.26 U	0.2 U	0.23 U	0.24 U	0.24 U	0.21 U
Vanadium	11 J	15	9.4 J	15	14 J	16
Zinc	49 J	85	69 J	74	54 J	67
Cyanide (Total)	R	NA	R	NA	R	NA
Cyanide (Free) (mg/l)	0.005 U	NA	0.005 U	NA	0.005 U	NA

Bad Cr 6 probable not in 0-3

Table 4-1 (continued)

Background Soil Sample Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	**BS-04**		**BS-05**			
Sample I.D.:	**SS-BS-04-03**		**SS-BS-05-03**		**SS-BS-05-03D (d)**	
Laboratory Project No.:	**96-5102**		**96-5102**		**96-5102**	
Sample Interval:	**0-3 inches**		**0-3 inches**		**0-3 inches**	
Sample Date:	**10/25/96**		**10/25/96**		**10/25/96**	
	Unsieved	**#400 Sieve**	**Unsieved**	**#400 Sieve**	**Unsieved**	**#400 Sieve**
TAL Inorganics plus Molybdenum (mg/kg)(a)						
Silver	1 UJ	1.8 J	0.88 UJ	0.69 U	NA	1.2
Aluminum	5900	8500	7700	8600	NA	10000
Arsenic	6.7 J	5.9 J	4.8 J	4.7 J	NA	5.5
Barium	49 J	49	42 J	53	NA	58
Beryllium	0.09 J	0.33 J	0.06 UJ	0.14 J	NA	0.28
Calcium	1000	970	740	750	NA	870
Cadmium	1.9 J	3 J	1.1 J	2.1 J	NA	3
Cobalt	4.9 J	3.8 J	13 J	1.7 J	NA	3.2
Chromium (Total)	21 J	24	30 J	18 J	NA	23
Chromium (Hexavalent)	7.92	NA	15	NA	NA	NA
Copper	21 J	36	14 J	25	NA	32
Iron	11000	13000	12000	14000	NA	15000
Mercury	0.08 U	NA	0.1 U	NA	0.1 U	NA
Potassium	590	830	670	610	NA	780
Magnesium	1300	1800	1200	1500	NA	1700
Manganese	160	160	120	120	NA	130
Molybdenum	5.8 J	5.2 J	30	3.4 J	NA	4.8
Sodium	51 U	47	44 U	35 U	NA	51
Nickel	33 J	27	24 J	18	NA	24
Lead	22	28	15	16	NA	14
Antimony	0.84	0.68	0.69	0.55	NA	0.6
Selenium	0.33 U	0.25 U	0.29 U	0.23 U	NA	0.27 U
Thallium	0.28 U	0.21 U	0.25 U	0.19 U	NA	0.23 U
Vanadium	9 J	14 J	16 J	12 J	NA	16
Zinc	74 J	74	49 J	56	NA	65
Cyanide (Total)	R	NA	R	NA	1 U	NA
Cyanide (Free) (mg/l)	0.005 U	NA	0.005 U	NA	0.005 U	NA

Table 4-1 (continued)

Background Soil Sample Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	BS-06		BS-07		
Sample I.D.:	SS-BS-06-03		SS-BS-07-03		
Laboratory Project No.:	96-5102		96-5102		95 UCL (e)
Sample Interval:	0-3 inches		0-3 inches		Background
Sample Date:	10/25/96		10/25/96		Concentrations
	Unsieved	#400 Sieve	Unsieved	#400 Sieve	
TAL Inorganics plus Molybdenum (mg/kg)(a)					
Silver	0.89 UJ	0.69 U	1.1 UJ	0.8 U	0.70
Aluminum	6600	8700	7800	10000	8956.34
Arsenic	5.9 J	5.3 J	7 J	6 J	7.28
Barium	26 J	35	56 J	43	52.37
Beryllium	0.06 J	0.15 J	0.18 J	0.23 J	0.21
Calcium	550 J	370	400	360	784.07
Cadmium	1.9 J	2.1 J	2.8 J	2.4 J	2.46
Cobalt	1.5 J	2.1 J	4.9 J	2.4 J	11.99
Chromium (Total)	54 J	36	44 J	36	52.70
Chromium (Hexavalent)	7.55	NA	13.5	NA	15.00
Copper	15 J	54	29 J	31	23.08
Iron	12000	14000	14000	15000	13164.79
Mercury	0. 1 U	NA	0.1 U	NA	- (e)
Potassium	500	600	470	610	736.20
Magnesium	1100 J	1300	1100	1400	1418.27
Manganese	81	62	68	63	217.83
Molybdenum	6.8 J	7.8 J	9.4 J	7.3 J	22.16
Sodium	45 UJ	35 U	54 U	46	-
Nickel	41 J	31	34 J	30	39.08
Lead	23	44	33	34	30.93
Antimony	0.71	0.54	0.85	0.63	0.89
Selenium	0.27 U	0.23 U	0.35 U	0.26 U	-
Thallium	0.23 U	0.19 U	0.23 UJ	0.22 UJ	-
Vanadium	10 J	14 J	15 J	17 J	14.67
Zinc	51 J	100	68 J	55	68.55
Cyanide (Total)	R	NA	R	NA	-
Cyanide (Free) (mg/l)	0.005 U	NA	0.005 U	NA	-

Table 4-1 (continued)

Background Soil Sample Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	BS-01	BS-02	BS-03	BS-04
Sample I.D.:	SS-BS-01-03	SS-BS-02-03	SS-BS-03-03	SS-BS-04-03
Laboratory Project No.:	96-5102	96-5102	96-5102	96-5102
Sample Interval:	0-3 inches	0-3 inches	0-3 inches	0-3 inches
Sample Date:	10/25/96	10/25/96	10/25/96	10/25/96
TCL Volatile Organic Compounds	NA	NA	NA	NA
TCL Semi-Volatile Organic Compounds (µg/kg)(f)				
Phenanthrene	480 J	410 UJ	410 UJ	410 UJ
Fluoranthene	860 J	410 UJ	410 UJ	410 UJ
Pyrene	620 J	410 UJ	410 UJ	410 UJ
Benzo(a)anthracene	310 J	410 UJ	410 UJ	410 UJ
Chrysene	400 J	410 UJ	410 UJ	410 UJ
Benzo(b)fluoranthene	330 J	410 UJ	410 UJ	410 UJ
Benzo(k)fluoranthene	320 J	410 UJ	410 UJ	410 UJ
Benzo(a)pyrene	320 J	410 UJ	410 UJ	410 UJ

Very high detection limits
not good

Table 4-1 (continued)

Background Soil Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	BS-01		BS-02		BS-03		BS-04	
Sample I.D.:	SS-BS-01-03		SS-BS-02-03		SS-BS-03-03		SS-BS-04-03	
Laboratory Project No.:	96-5102		96-5102		96-5102		96-5102	
Sample Interval:	0-3 inches		0-3 inches		0-3 inches		0-3 inches	
Sample Date:	10/25/96		10/25/96		10/25/96		10/25/96	
Semi-Volatile Organics								
Tentatively Identified Compounds (µg/kg)								
	Unknown Hydrocarbon	110 NJ	Unknown Hydrocarbon	59 NJ	Unknown Hydrocarbon	120 NJ	Unknown Hydrocarbon	87 NJ
	Unknown Hydrocarbon	33 NJ	Unknown Hydrocarbon	24 NJ	Unknown Hydrocarbon	81 NJ	Unknown Hydrocarbon	130 NJ
	Unknown Hydrocarbon	110 NJ	Unknown Hydrocarbon	61 NJ	Unknown Hydrocarbon	160 NJ	Unknown Hydrocarbon	110 NJ
	Unknown Hydrocarbon	57 NJ	Unknown Hydrocarbon	62 NJ	Unknown Hydrocarbon	120 NJ	Unknown Hydrocarbon	180 NJ
	Unknown Hydrocarbon	110 NJ	Unknown Hydrocarbon	78 NJ	Unknown Hydrocarbon	78 NJ	Unknown Hydrocarbon	60 NJ
	Unknown Hydrocarbon	450 NJ	Unknown Hydrocarbon	54 NJ	Unknown Hydrocarbon	410 NJ	Unknown Hydrocarbon	120 NJ
	Unknown Hydrocarbon	290 NJ	Unknown Hydrocarbon	100 NJ	Unknown Hydrocarbon	160 NJ	Unknown Hydrocarbon	250 NJ
	Unknown Hydrocarbon	210 NJ	Unknown Hydrocarbon	110 NJ	Unknown Hydrocarbon	170 NJ	Unknown Hydrocarbon	82 NJ
	Unknown Hydrocarbon	130 NJ	Unknown Hydrocarbon	91 NJ	Unknown Hydrocarbon	87 NJ	Unknown Hydrocarbon	290 NJ
	Unknown Hydrocarbon	45 NJ	Unknown Hydrocarbon	70 NJ	Unknown	150 NJ	Unknown Hydrocarbon	97 NJ
	Unknown	63 NJ	Unknown Hydrocarbon	45 NJ	Unknown	130 NJ	Unknown Hydrocarbon	290 NJ
	Unknown	31 NJ	Unknown Hydrocarbon	62 NJ	Unknown	130 NJ	Unknown	110 NJ
	Unknown	82 NJ	Unknown Hydrocarbon	29 NJ	Unknown	95 NJ	Unknown	160 NJ
	Unknown	110 NJ	Unknown	22 NJ	Unknown	100 NJ	Unknown	98 NJ
	Unknown	47 NJ	Unknown	66 NJ	Unknown	380 NJ	Unknown	130 NJ
	Unknown	47 NJ	Unknown	31 NJ	Unknown	670 NJ	Unknown	110 NJ
	Unknown	650 NJ	Unknown	28 NJ	Unknown	930 NJ	Unknown	480 NJ
	Unknown	33 NJ	Unknown	130 NJ	Unknown	240 NJ	Unknown	650 NJ
	Unknown	460 NJ	Unknown	31 NJ	Unknown	290 NJ	Unknown	260 NJ
	Unknown	130 NJ	Unknown	70 NJ	Unknown	170 NJ	Unknown	200 NJ
	Unknown	34 NJ	Unknown	30 NJ	Unknown	280 NJ	Unknown	130 NJ
	Unknown	170 NJ	Unknown	140 NJ	Unknown	95 NJ	Unknown	98 NJ
	Unknown	580 NJ	Unknown	43 NJ	Unknown	120 NJ	Unknown	82 NJ
	Unknown	77 NJ	Unknown	91 NJ	Unknown	210 NJ	Unknown	69 NJ
	Unknown	100 NJ	Unknown	22 NJ	Unknown	900 NJ	Unknown	73 NJ
	Total SVOC TICs (g)	4159	**Total SVOC TICs**	1549	**Total SVOC TICs**	6276	**Total SVOC TICs**	4346

Table 4-1 (continued)

Background Soil Sample Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	BS-05	BS-06	BS-07
Sample I.D.:	SS-BS-05-03	SS-BS-06-03	SS-BS-07-03
Laboratory Project No.:	96-5102	96-5102	96-5102
Sample Interval:	0-3 inches	0-3 inches	0-3 inches
Sample Date:	10/25/96	10/25/96	10/25/96
TCL Volatile Organic Compounds	NA	NA	NA
TCL Semi-Volatile Organic Compounds (µg/kg)(f)			
Phenanthrene	390 UJ	390 UJ	450 UJ
Fluoranthene	390 UJ	390 UJ	450 UJ
Pyrene	390 UJ	390 UJ	450 UJ
Benzo(a)anthracene	390 UJ	390 UJ	450 UJ
Chrysene	390 UJ	390 UJ	450 UJ
Benzo(b)fluoranthene	390 UJ	390 UJ	450 UJ
Benzo(k)fluoranthene	390 UJ	390 UJ	450 UJ
Benzo(a)pyrene	390 UJ	390 UJ	450 UJ

Table 4-1 (continued)

Background Soil Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	BS-05		BS-06		BS-07	
Sample I.D.:	SS-BS-05-03		SS-BS-06-03		SS-BS-07-03	
Laboratory Project No.:	96-5102		96-5102		96-5102	
Sample Interval:	0-3 inches		0-3 inches		0-3 inches	
Sample Date:	10/25/96		10/25/96		10/25/96	
Semi-Volatile Organics						
Tentatively Identified Compounds (µg/kg)						
	Unknown Hydrocarbon	83 NJ	Unknown Hydrocarbon	130 NJ	Unknown Hydrocarbon	120 NJ
	Unknown Hydrocarbon	110 NJ	Unknown Hydrocarbon	95 NJ	Unknown Hydrocarbon	330 NJ
	Unknown Hydrocarbon	75 NJ	Unknown Hydrocarbon	150 NJ	Unknown Hydrocarbon	330 NJ
	Unknown Hydrocarbon	180 NJ	Unknown Hydrocarbon	120 NJ	Unknown Hydrocarbon	120 NJ
	Unknown Hydrocarbon	72 NJ	Unknown Hydrocarbon	230 NJ	Unknown Hydrocarbon	100 NJ
	Unknown Hydrocarbon	150 NJ	Unknown Hydrocarbon	93 NJ	Unknown	220 NJ
	Unknown	190 NJ	Unknown Hydrocarbon	230 NJ	Unknown	190 NJ
	Unknown	260 NJ	Unknown Hydrocarbon	120 NJ	Unknown	170 NJ
	Unknown	170 NJ	Unknown	88 NJ	Unknown	170 NJ
	Unknown	100 NJ	Unknown	100 NJ	Unknown	190 NJ
	Unknown	150 NJ	Unknown	150 NJ	Unknown	140 NJ
	Unknown	120 NJ	Unknown	95 NJ	Unknown	620 NJ
	Unknown	99 NJ	Unknown	91 NJ	Unknown	120 NJ
	Unknown	300 NJ	Unknown	73 NJ	Unknown	120 NJ
	Unknown	430 NJ	Unknown	220 NJ	Unknown	660 NJ
	Unknown	290 NJ	Unknown	320 NJ	Unknown	1000 NJ
	Unknown	330 NJ	Unknown	320 NJ	Unknown	480 NJ
	Unknown	150 NJ	Unknown	390 NJ	Unknown	660 NJ
	Unknown	75 NJ	Unknown	98 NJ	Unknown	290 NJ
	Unknown	160 NJ	Unknown	180 NJ	Unknown	160 NJ
	Unknown	140 NJ	Unknown	650 NJ	Unknown	210 NJ
	Unknown	87 NJ	Unknown	170 NJ	Unknown	96 NJ
	Unknown	160 NJ	Unknown	320 NJ	Unknown	240 NJ
	Unknown	76 NJ	Unknown	59 NJ	Unknown	630 NJ
			Unknown Aromatic Hydrocarbon	58 NJ	Unknown	140 NJ
	Total SVOC TICs	3957	**Total SVOC TICs**	4550	**Total SVOC TICs**	7506

Table 4-1 (continued)

Background Soil Sample Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	**BS-01**	**BS-02**	**BS-03**	**BS-04**	**BS-05**	**BS-06**	**BS-07**
Sample I.D.:	**SS-BS-01-03**	**SS-BS-02-03**	**SS-BS-03-03**	**SS-BS-04-03**	**SS-BS-05-03**	**SS-BS-06-03**	**SS-BS-07-03**
Laboratory Project No.:	**96-5102**	**96-5102**	**96-5102**	**96-5102**	**96-5102**	**96-5102**	**96-5102**
Sample Interval:	**0-3 inches**	**0-3 inches**	**0-3 inches**	**0-3 inches**	**0-3 inches**	**0-3 inches**	**0-3 inches**
Sample Date:	**10/25/96**	**10/25/96**	**10/25/96**	**10/25/96**	**10/25/96**	**10/25/96**	**10/25/96**
TCL Polychlorinated Biphenyls (mg/kg)	NA	NA	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Total Petroleum Hydrocarbons (mg/kg)	17 J	12 J	21 J	12 J	10 UJ	12 J	15
pH (s.u.)	5.15	4.84	4.80	5.95	5.56	4.98	4.74

a/ TAL = Target Analyte List. This list also includes hexavalent chromium and free cyanide (TCL and TICs do not include chromium and cyanide).
TCL = Target Compound List; mg/kg = milligrams per kilogram; TIC = Tentatively Identified Compounds; ug/kg = micrograms per kilogram;
mg/l = milligrams per liter; s.u. = standard units.

b/ Data Qualifiers:
U = constituent not detected at the noted detection limit.
J = constituent detected at an estimated concentration less than the method detected limit.
UJ = constituent not detected at the estimated detection limit noted.
NJ = presumptive evidence of detection at an estimated concentration.
R = data rejected.

c/ NA = not analyzed.

d/ D = duplicate sample.

e/ 95 UCL = 95 percent upper confidence limit for unsieved data. See text for explanation and Appendix O for calculation. Because mercury, sodium, selenium, thallium, and free cyanide were not detected in the background samples, calculation of their 95 UCL was not possible. Detection of any of these constituents in site soil samples has been considered to represent exceedance of background conditions. All total cyanide results were rejected by the data validator. This constituent is not anticipated to be present in background soils. Therefore, detection of this constituent in site soil samples has been considered to represent exceedance of background conditions.

f/ Only those TCL SVOCs detected in one or more of the background soil samples have been retained in this table. Unabridged analytical results are presented in Appendix N.

g/ Total SVOC TICs represent the sum of all detected TICs.

Table 4-2

Transformer Soil Sample Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Transformer:	**T1**				
Sample Location:	**T1-01**		**T1-03**	**T1-05**	**T1-07**
Sample I.D.:	**SS-T1-01-03**		**SS-T1-03-03**	**SS-T1-05-03**	**SS-T1-07-03**
Laboratory Project No.:	**96-5102**		**96-5102**	**96-5102**	**96-5102**
Sample Interval:	**0-3 inches**		**0-3 inches**	**0-3 inches**	**0-3 inches**
Sample Date:	**10/25/96**		**10/25/96**	**10/25/96**	**10/25/96**
	#4 Sieve	**#400 Sieve**	**#4 Sieve**	**#4 Sieve**	**#4 Sieve**
TAL Inorganics plus Molybdenum (mg/kg)(a)					
Silver	R (b)	1.3 J	2.4 J	R	R
Aluminum	32000 J	8600	15000 J	19000 J	28000 J
Arsenic	5.4 J	11 J	12 J	7.6 J	4 J
Barium	580 J	390	400 J	250 J	620 J
Beryllium	10 J	4.4	5.6 J	5.2 J	9.1 J
Calcium	150000 J	54000	70000 J	74000 J	130000 J
Cadmium	12 J	14	25 J	8.9 J	8.6 J
Cobalt	27 J	150	70 J	41 J	34 J
Chromium (Total)	310 J	2000	870 J	400 J	420 J
Chromium (Hexavalent)	NA (c)	NA	NA	NA	NA
Copper	520 J	1100	520	560 J	350 J
Iron	33000 J	45000	120000 J	22000 J	20000 J
Mercury (d)	0.1 U	NA	0.1 U	0.10 U	0.05 U
Potassium	3300 J	1400	1800 J	1600 J	3800 J
Magnesium	17000 J	4500	8200 J	8900 J	14000 J
Manganese	5500 J	4800	4200 J	2800 J	5200 J
Molybdenum	84 J	400 J	260 J	70 J	92 J
Sodium	1000 J	370	570 J	480 J	1000 J
Nickel	270 J	1700	770 J	450 J	370 J
Lead	520 J	1000	1500 J	18 J	540 J
Antimony	1.3 J	1.7	5.6 J	2 J	1.8 J
Selenium	0.25 U	0.24 U	0.24 U	0.27 U	0.26 U
Thallium	0.22 UJ	0.21 U	0.21 UJ	0.2 UJ	0.23 UJ
Vanadium	42 J	120	87 J	30 J	38 J
Zinc	1200 J	2300	1500 J	1000 J	1200 J
Cyanide (Total)(d)	5.8 J	NA	3.8 J	4.9 J	4.5 J
Cyanide (Free) (mg/l)	NA	NA	NA	NA	NA

Table 4-2 (continued)

Transformer Soil Sample Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Transformer:	T2				T3		
Sample Location:	T2-01			T2-03	T3-01		T3-03
Sample I.D.:	SS-T2-01-03	SS-T2-01-03D (e)	SS-T2-01-03	SS-T2-03-03	SS-T3-01-03	SS-T3-01-03	SS-T3-03-03
Laboratory Project No.:	96-5102	96-5102	96-5102	96-5102	96-5102	96-5102	96-5102
Sample Interval:	0-3 inches	0-3 inches	0-3 inches	0-3 inches	0-3 inches	0-3 inches	0-3 inches
Sample Date:	10/25/96	10/25/96	10/25/96	10/25/96	10/25/96	10/25/96	10/25/96
	#4 Sieve	#4 Sieve	#400 Sieve	#4 Sieve	#4 Sieve	#400 Sieve	#4 Sieve
TAL Inorganics plus Molybdenum (mg/kg)(a)							
Silver	R	0.77 U	0.69 U	0.93 J	R	0.74 U	1.6 J
Aluminum	6900 J	7100	7800	3500 J	7500 J	9600	6100 J
Arsenic	32 J	32	16 J	96 J	8.6 J	13 J	3.2 J
Barium	240 J	340	120	160 J	80 J	99	57 J
Beryllium	0.78 J	1	0.49 J	2.5 J	1.5 J	1.3 J	1.7 J
Calcium	2000 J	2300	2000	3300 J	16000 J	16000	14000 J
Cadmium	11 J	14	5.5	17 J	14 J	7.8	21 J
Cobalt	150 J	160	84	760 J	42 J	58	160 J
Chromium (Total)	680 J	880	460	1300 J	3800 J	1900	8100 J
Chromium (Hexavalent)	NA	NA	NA	NA	NA	NA	NA
Copper	370 J	460	210	320 J	290 J	290	420 J
Iron	45000 J	55000	22000	89000 J	75000 J	41000	110000 J
Mercury (d)	0.08 U	0.09 U	NA	0.08 U	0.07 U	NA	0.1 U
Potassium	630	590	600	300 J	1000 J	1400	460 J
Magnesium	2000 J	2000	2300	1100 J	5500 J	7200	4300 J
Manganese	500 J	550	340	770 J	1400 J	930	1700 J
Molybdenum	240 J	360	110 J	1500 J	540 J	210 J	790 J
Sodium	110	84	37	90 J	130 J	120	190 J
Nickel	430 J	410	360	1100 J	2600 J	1800	8800 J
Lead	330 J	300	130	130 J	80 J	110	110 J
Antimony	4.5 J	4.7	0.99	7.9 J	15 J	2.6	27 J
Selenium	0.26 U	0.25 U	0.23 U	0.25 U	0.26 UJ	0.24 U	0.26 U
Thallium	0.23 UJ	0.21 U	0.19 U	0.22 U	0.22 UJ	0.21 U	0.22 UJ
Vanadium	130 J	140	55	430 J	79 J	62	140 J
Zinc	800 J	1000	530	400 J	450 J	590	1600 J
Cyanide (Total)(d)	R	1 U	NA	R	R	NA	1.1 J
Cyanide (Free) (mg/l)	NA	NA	NA	NA	NA	NA	NA

Table 4-2 (continued)

Transformer Soil Sample Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Transformer:	T1					
Sample Location:	T1-01	T1-02	T1-03	T1-04	T1-05	T1-06
Sample I.D.:	SS-T1-01-03	SS-T1-02-03	SS-T1-03-03	SS-T1-04-03	SS-T1-05-03	SS-T1-06-03
Laboratory Project No.:	96-5102	96-5102	96-5102	96-5102	96-5102	96-5102
Sample Interval:	0-3 inches	0-3 inches	0-3 inches	0-3 inches	0-3 inches	0-3 inches
Sample Date:	10/25/96	10/25/96	10/25/96	10/25/96	10/25/96	10/25/96
TCL Volatile Organic Compounds (µg/kg)	NA	NA	NA	NA	NA	NA
TCL Semi-Volatile Organic Compounds (µg/kg)	NA	NA	NA	NA	NA	NA
TCL Polychlorinated Biphenyls (mg/kg)						
Aroclor 1016	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1221	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1232	R	R	R	R	R	R
Aroclor 1242	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1248	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1254	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1260	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Miscellaneous Parameters						
Total Petroleum Hydrocarbons (mg/kg)	97 J	25 J	100 UJ	100 UJ	34 J	23 J
pH (s.u.)	8.47	NA	NA	NA	NA	NA
Total Organic Carbon (mg/l)	1.8 J	2 J	3.1 J	1.3 J	2.1 J	2.6 J

Table 4-2 (continued)

Transformer Soil Sample Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Transformer:	**T1 (continued)**		**T2**			
Sample Location:	**T1-07**	**T1-08**	**T2-01**		**T2-02**	**T2-03**
Sample I.D.:	**SS-T1-07-03**	**SS-T1-08-03**	**SS-T2-01-03**	**SS-T2-01-03D**	**SS-T2-02-03**	**SS-T2-03-03**
Laboratory Project No.:	**96-5102**	**96-5102**	**96-5102**	**96-5102**	**96-5102**	**96-5102**
Sample Interval:	**0-3 inches**	**0-3 inches**	**0-3 inches**	**0-3 inches**	**0-3 inches**	**0-3 inches**
Sample Date:	**10/25/96**	**10/25/96**	**10/25/96**	**10/25/96**	**10/25/96**	**10/25/96**
TCL Volatile Organic Compounds (μg/kg)	NA	NA	NA	NA	NA	NA
TCL Semi-Volatile Organic Compounds (μg/kg)	NA	NA	NA	NA	NA	NA
TCL Polychlorinated Biphenyls (mg/kg)						
Aroclor 1016	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1221	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1232	R	R	R	R	R	R
Aroclor 1242	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1248	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1254	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1260	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Miscellaneous Parameters						
Total Petroleum Hydrocarbons (mg/kg)	75 J	100 UJ	640 J	470 J	110 UJ	23 J
pH (s.u.)	NA	NA	6.45	6.44	NA	NA
Total Organic Carbon (mg/l)	1.1 J	2.6 J	16 J	14	3.4 J	2.2 J

Table 4-2 (continued)

Transformer Soil Sample Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Transformer:	T2 (continued)	T3			
Sample Location:	T2-04	T3-01	T3-02	T3-03	T3-04
Sample I.D.:	SS-T2-04-03	SS-T3-01-03	SS-T3-02-03	SS-T3-03-03	SS-T3-04-03
Laboratory Project No.:	96-5102	96-5102	96-5102	96-5102	96-5102
Sample Interval:	0-3 inches	0-3 inches	0-3 inches	0-3 inches	0-3 inches
Sample Date:	10/25/96	10/25/96	10/25/96	10/25/96	10/25/96
TCL Volatile Organic Compounds (µg/kg)	NA	NA	NA	NA	NA
TCL Semi-Volatile Organic Compounds (µg/kg)	NA	NA	NA	NA	NA
TCL Polychlorinated Biphenyls (mg/kg)					
Aroclor 1016	1 UJ	30 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1221	1 UJ	30 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1232	R	R	R	R	R
Aroclor 1242	1 UJ	30 UJ	3.9 J	1 UJ	1 UJ
Aroclor 1248	1 UJ	87 J	1 UJ	1 UJ	1 UJ
Aroclor 1254	1 UJ	30 UJ	1 UJ	1.1 J	1 UJ
Aroclor 1260	1 UJ	30 UJ	6.4 J	1 UJ	1 UJ
Miscellaneous Parameters					
Total Petroleum Hydrocarbons (mg/kg)	100 UJ	310 J	160 J	110 UJ	940 J
pH (s.u.)	NA	7.69	NA	NA	NA
Total Organic Carbon (mg/l)	1.9 J	3.7 J	2.6 J	2.5 J	3 J

a/ TAL = Target Analyte List, this list includes hexavalent chromium and free cyanide; TCL = Target Compound List;
mg/kg = milligrams per kilogram; ug/kg = micrograms per kilogram; mg/l = micrograms per liter; s.u. = standard units.
b/ Data Qualifiers:
U = constituent not detected at the noted detection limit.
J = constituent detected at an estimated concentration less than the method detected limit.
UJ = constituent not detected at the estimated detection limit noted.
R = data rejected.
c/ NA = not analyzed.
d/ Analysis for mercury and total cyanide was performed on unsieved sample aliquots, consistent with the work plan.
e/ D = duplicate sample.

Table 4-3

TCLP Metals Data for Soils (a)
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:		T1-03	T3-03	GS-03	RB-04		TP-02	
Sample I.D.:		ALT-SS-T1-03	ALT-SS-T3-03	ALT-SS-GS03-03	ALT-SB-RB04-0002	ALT-SB-RB04-0709	ALT-SS-TP02-03	ALT-SB-TP02-0910
Laboratory Project No.:		97-1274	97-1274	97-1274	97-1274	97-1274	97-1274	97-1274
Sample Interval:		0 - 3 inches	0 - 3 inches	0 - 3 inches	0 - 2 feet	7 - 9 feet	0 - 3 inches	9 - 10 feet
Sample Date:		10/25/96	10/25/96	10/25/96	10/30/96	10/30/96	10/22/96	10/22/96
Total Metals (mg/kg) (b)								
Silver		2.4 J (c)	1.6 J	0.85 J	0.8 U	0.78 U	5.6	2.1
Aluminum		15000 J	6100 J	9200 J	3900	7900	1900	6600
Arsenic		12 J	3.2 J	0.17 U	1.2	7.6	4.1	9.2
Barium		400 J	57 J	120 J	140	150	26	74
Beryllium		5.6 J	1.7 J	3 J	0.42	0.93	3.2	1.2
Cadmium		25 J	21 J	9.4 J	5.4	3.7	27	4.4
Cobalt		70 J	160 J	53 J	28	13	830	27
Chromium		870 J	8100 J	3900 J	3400	22	23000	960
Copper		520	420 J	350 J	110	36	2400	81
Iron		120000 J	110000 J	52000 J	34000	20000	180000	27000
Magnesium		8200 J	4300 J	9700 J	2300	8800	2800	9300
Manganese		4200 J	1700 J	1600 J	400	340	3400	400
Mercury		0.1 U	0.1 U	0.09 U	0.1 U	0.09 U	0.11 U	0.19
Molybdenum		260 J	790 J	430 J	130	18	2900	140
Nickel		770 J	8800 J	2500 J	1800	300	17000	500
Lead		1500 J	110 J	61 J	2800	63	47	14
Selenium		0.24 U	0.26 U	0.25 U	0.26 U	0.25 U	0.25 U	0.25 U
Vanadium		87 J	140 J	80 J	32	17	640	41
Zinc		1500 J	1600 J	170 J	820	110	97	63
TCLP Metals (mg/l)	**TCLP Limit (mg/l) (d)**							
Silver	5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aluminum	- (e)	10 U	10	10 U	10 U	10 U	10 U	10 U
Arsenic	5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Barium	100	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Beryllium	-	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cadmium	1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cobalt	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chromium	5	0.1 U	0.1 U	0.1 U	0.17	0.1 U	0.1 U	0.1 U
Copper	-	1 U	1 U	1 U	1 U	1 U	1.2	1 U
Iron	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Magnesium	-	12	40	17	12	140	31	110
Manganese	-	11	2.4	7.2	3.8	7.4	1.5	7.6
Mercury	0.2	0.01 U	0.01	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Molybdenum	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Nickel	-	0.1 U	1.1	0.28	1.7	0.21	3.9	0.68
Lead	5	1.1	0.1 U	0.1 U	97	0.45	0.1 U	0.1 U
Selenium	1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Vanadium	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Zinc	-	5.6	11	1.6	44	1.3	1 U	1 U

Table 4-3 (continued)

TCLP Metals Data for Soils
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:		TP-03	TP-05		TP-07	TP-10	TP-11	RFI-04
Sample I.D.:		ALT-SB-TP03-0002	ALT-SB-TP05-0002	ALT-SB-TP05-0809	ALT-SB-TP07-0304	ALT-SB-TP10-0809	ALT-SB-TP11-0002D (f)	ALT-SB-RFI04-0002
Laboratory Project No.:		97-1274	97-1274	97-1274	97-1274	97-1274	97-1274	97-1274
Sample Interval:		0 - 2 feet	0 - 2 feet	8 - 9 feet	3 - 4 feet	8 - 9 feet	0 - 2 feet	0 - 2 feet
Sample Date:		10/22/96	10/24/96	10/24/96	10/24/96	10/23/96	10/23/96	10/29/96
Total Metals (mg/kg)								
Silver		2.1	0.77 J	0.89 J	R	2.1	3.6	1.1
Aluminum		7900	12000 J	8200 J	6700 J	6000	9600	9800
Arsenic		8.7	7.1 J	13 J	19 J	9	6.6	11
Barium		59	120 J	120 J	88 J	110	140	87
Beryllium		1.4	2.7 J	1 J	0.61 J	1	5.5	1.2
Cadmium		8	6.5 J	7.7 J	14 J	4.9	6.6	6.4
Cobalt		0.52 U	40 J	41 J	39 J	28	75	63
Chromium		3100	3000 J	2500 J	1700	1900	1900	2500
Copper		500	120 J	100 J	120 J	120	110	77
Iron		55000	41000 J	51000 J	45000 J	32000	36000	38000
Magnesium		4200	2200 J	4000 J	1800 J	6600	9300	5000
Manganese		720	980 J	680 J	450 J	440	0.11 U	530
Mercury		0.1	0.10	0.11	0.08 U	0.1 U	0.08 U	0.09 U
Molybdenum		600	290 J	180 J	360 J	130	1600	320
Nickel		1800	1400 J	1200 J	1400 J	2100	840	1500
Lead		51	3300 J	32 J	310 J	39	50	27
Selenium		0.25 U	0.24 U	0.26 U	0.36	0.25 U	0.25 U	0.25 U
Vanadium		190	70 J	81 J	94 J	37	530	100
Zinc		84	140 J	89 J	97 J	56	77	100
TCLP Metals (mg/l)	**TCLP Limit**							
Silver	5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aluminum	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Arsenic	5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Barium	100	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Beryllium	-	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cadmium	1	0.1 U	0.1 U	0.1 U	0.17	0.1 U	0.1 U	0.1 U
Cobalt	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chromium	5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Copper	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Iron	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Magnesium	-	32	19	43	10 U	79	17	33
Manganese	-	5.1	18	3.8	4.9 U	6.2	4.8	2
Mercury	0.2	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Molybdenum	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Nickel	-	0.59	0.34	0.27	1.3	1.6	0.1 U	0.22
Lead	5	0.1 U	0.1 U	0.1 U	0.28	0.1 U	0.1 U	0.1 U
Selenium	1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Vanadium	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Zinc	-	1 U	1.4	3.1	2	1 U	1 U	1 U

Table 4-3 (continued)

TCLP Metals Data for Soils
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:		RFI-08	RFI-09	RFI-11		LWB-03
Sample I.D.:		ALT-SS-RFI08-03	ALT-SS-RFI09-03	ALT-SS-RFI11-03	ALT-SB-RFI11-0406	ALT-SB-LWB03-0608
Laboratory Project No.:		97-1274	97-1274	97-1274	97-1274	97-1274
Sample Interval:		0 - 3 inches	0 - 3 inches	0 - 3 inches	4 - 6 feet	6 - 8 feet
Sample Date:		10/24/96	10/23/96	10/23/96	10/24/96	10/30/96
Total Metals (mg/kg)						
Silver		5.5 J	4.1	0.77 U	R	0.96
Aluminum		3800 J	2400	170	9700 J	NA (g)
Arsenic		0.16 UJ	15	26	5.2 J	5.3
Barium		240 J	54	6200	2900 J	180
Beryllium		1.2 J	3.3	1.2	0.99 J	NA
Cadmium		25 J	26	13	3.8 J	4.4
Cobalt		130 J	34	120	8.3 J	NA
Chromium		20000 J	10000	5500	20 J	510
Copper		640 J	620	180	30 J	48
Iron		13000 J	100000	110000	19000 J	NA
Magnesium		2100 J	1300	1900	5900 J	NA
Manganese		2200 J	3200	0.11 U	390 J	NA
Mercury		0.06 U	0.06 U	53	0.08 U	0.1 U
Molybdenum		660 J	2400	330	3.8 J	NA
Nickel		14000 J	21000	5700	30 J	NA
Lead		24000 J	59	100	94 J	82
Selenium		0.24 UJ	0.25 U	0.25 U	0.27 U	0.23 U
Vanadium		99 J	340	120	19 J	NA
Zinc		340 J	150	110	67 J	NA
TCLP Metals (mg/l)	**TCLP Limit**					
Silver	5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aluminum	-	10 U	10 U	10 U	10 U	10 U
Arsenic	5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Barium	100	10 U	10 U	25	63	10 U
Beryllium	-	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cadmium	1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cobalt	-	1 U	10 U	1 U	1 U	1 U
Chromium	5	0.1 U	0.13	0.1 U	0.1 U	17
Copper	-	1 U	1 U	1 U	1 U	1 U
Iron	-	10 U	10 U	10 U	10 U	10 U
Magnesium	-	10 U	10 U	10	12	44
Manganese	-	2.4	1.6	2.6	9.1	4.4
Mercury	0.2	0.01 U	0.01 U	0.01 U	NA	0.01 U
Molybdenum	-	1 U	1 U	1 U	1 U	1 U
Nickel	-	0.77	1.9	1.2	0.1 U	0.1 U
Lead	5	9.6	0.1 U	0.1 U	0.1 U	0.1 U
Selenium	1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Vanadium	-	1 U	1 U	1 U	1 U	1 U
Zinc	-	2.7	1 U	1 U	1 U	1 U

Table 4-3 (continued)

TCLP Metals Data for Soils
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

a/ TCLP = Toxicity Characteristic Leaching Procedure.
All total metals results represent sample aliquots sieved using a number 4 standard sieve, except for mercury (which is representative of unsieved aliquots).
b/ mg/kg = milligram per kilogram; mg/l = milligrams per liter.
c/ Data Qualifiers:
U = constituent not detected at the noted detection limit.
J = constituent detected at an estimated concentration less than the method detected limit.
UJ = constituent not detected at the estimated detection limit noted.
R = data rejected.
d/ TCLP limits as promulgated by 40 CFR 261.24 Table 1. Maximum Concentration of Contaminants for the Toxicity Characteristic.
Limits are only established for those metals indicated. Analysis for other facility-related metals is consistent with the work plan.
e/ "-" indicates TCLP limit has not been established.
f/ D = duplicate sample.
g/ NA = not analyzed.

Table 4-4

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data (a)
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	**GS-01 (b)**		**GS-02**	**GS-03**	**GS-04**	**GS-05**	**RB-01**
Sample I.D.:	**SS-GS-01-03**	**SS-GS-01-03**	**SS-GS-02-03**	**SS-GS-03-03**	**SS-GS-04-03**	**SS-GS-05-03**	**SB-RB-01-0002**
Laboratory Project No.:	**96-5102**	**96-5209**	**96-5102**	**96-5102**	**96-5077**	**96-5077**	**96-5200**
Sample Interval:	**0 - 3 inches**	**0 - 3 inches**	**0 - 3 inches**	**0 - 3 inches**	**0 - 3 inches**	**0 - 3 inches**	**0 - 2 feet**
Sample Date:	**10/25/96**	**11/1/96**	**10/25/96**	**10/25/96**	**10/23/96**	**10/23/96**	**10/31/96**
TAL Inorganics plus Molybdenum (mg/kg)(c)							
Silver	R (d)	0.77 U	R	0.85 J	0.75 U	0.78 U	1
Aluminum	5900 J	5700	18000 J	9200 J	8900	6500	NA (e)
Arsenic	11 J	11	13 J	0.17 U	10	6.1	21
Barium	68 J	97	380 J	120 J	88	63	21
Beryllium	0.65 J	0.91	5.1 J	3 J	0.59	0.48	NA
Calcium	6100 J	3900	68000 J	49000 J	8800	13000	NA
Cadmium	5.9 J	7.9	8.5 J	9.4 J	3.8	1.9	45
Cobalt	29 J	47	45 J	53 J	21	9.1	NA
Chromium (Total)	490 J	730	750 J	3900 J	1100	300	230
Chromium (Hexavalent)(f)	2.11 U	NA	3.58	4.01	9.45	2.04 U	2 U
Copper	180 J	190	250 J	350 J	50	28	110
Iron	31000 J	40000	40000 J	52000 J	3200	16000	NA
Mercury(f)	0.09 U	0.1 U	0.06 U	0.09 U	0.09 U	0.09 U	0.1 U
Potassium	680 J	580	1100 J	730	1100	1000	NA
Magnesium	2700 J	2300	13000 J	9700 J	3400	4900	NA
Manganese	560 J	520	1700 J	1600 J	420	290	NA
Molybdenum	140 J	170	240 J	430 J	42	25	NA
Sodium	86 J	84	470 J	310	78	74	NA
Nickel	530 J	480	1300 J	2500 J	750	200	NA
Lead	130 J	15	160 J	61 J	26	12	12
Antimony	2.8 J	1.1	2.2 J	9.1 J	0.72	0.81	NA
Selenium	0.24 UJ	0.25 U	0.24 UJ	0.25 U	0.24 U	0.25 U	0.24 U
Thallium	0.21 UJ	0.21 U	0.2 UJ	0.22 U	0.21 U	0.22 U	NA
Vanadium	51 J	83	81 J	80 J	28	14	NA
Zinc	460 J	550	120 J	170 J	87	54	NA
Cyanide (Total) (f)	R	1 U	2.9 J	1.8 J	1 U	1 U	1 U
Cyanide (Free) (mg/l)(f)	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

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Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data (a)
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RB-01 (continued)		RB-02		RB-03		RB-04
Sample I.D.:	SB-RB-01-0507	SB-RB-01-0709	SB-RB-02-0002	SB-RB-02-1618	SS-RB-03-03	SB-RB-03-0002	SS-RB-04-03
Laboratory Project No.:	96-5200	96-5200	96-5200	96-5200	96-5102	96-5210	96-5102
Sample Interval:	5 - 7 feet	7 - 9 feet	0 - 2 feet	16 - 18 feet	0 - 3 inches	0 - 2 feet	0 - 3 inches
Sample Date:	10/31/96	10/31/96	10/31/96	10/31/96	10/25/96	11/01/96	10/24/96
TAL Inorganics plus Molybdenum (mg/kg)							
Silver	1.1	1.6	1.1	1	R	0.81 U	R
Aluminum	7700	9100	9900	6000	4100 J	3400	4800 J
Arsenic	7	11	12	8.5	21 J	16	3.5 J
Barium	190	110	98	95	130 J	59	120 J
Beryllium	1.2	0.8	0.68	0.86	1 J	1.1	0.48 J
Calcium	32000	12000	2300	21000	15000 J	3500	3400 J
Cadmium	4.5	5.4	5	3.5	7.5 J	4.9	5 J
Cobalt	17	23	13	8.7	95 J	35	21 J
Chromium (Total)	23	19	22	12	380 J	1000	1600 J
Chromium (Hexavalent)	3.46	1.96 U	NA	NA	NA	NA	16.1
Copper	40	40	34	31	93 J	81	86 J
Iron	25000	30000	29000	17000	45000 J	30000	26000 J
Mercury	0.06 U	0.08 U	0.08 U	0.06 U	0.13	0.07 U	0.08 U
Potassium	1300	1600	1100	1200	1200	560	510
Magnesium	7300	7500	3700	6500	1700 J	1400	2400 J
Manganese	550	540	510	240	310 J	250	380 J
Molybdenum	9.6	13	6.6	8.8	240 J	130	79 J
Sodium	150	230	130	120	370	260	100
Nickel	64	46	37	28	240 J	240	680 J
Lead	12	16	14	12	41 J	160	460 J
Antimony	0.92	1.4	1.1	0.93	2.4 J	1.2	5.5 J
Selenium	0.22 U	0.26 U	0.24 U	0.24 U	0.25 U	0.26 U	0.23 U
Thallium	0.19 U	0.22 U	0.21 U	0.2 U	0.22 U	0.23 U	0.19 U
Vanadium	14	15	18	10	87 J	150	32 J
Zinc	110	140	81	82	190 J	130	220 J
Cyanide (Total) (mg/kg)	1 U	21	1 U	1 U	R	1 U	R
Cyanide (Free) (mg/l)	0.005 U	0.005 U	0.005 U	NA	NA	NA	0.005 U

Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RB-04 (continued)			RB-05			
Sample I.D.:	SB-RB-04-0002	SB-RB-04-0406	SB-RB-04-0709	SS-RB-05-03	SB-RB-05-0002	SB-RB-05-0204	SB-RB-05-0810
Laboratory Project No.:	96-5198	96-5198	96-5198	96-5102	96-5167	96-5167	96-5167
Sample Interval:	0 - 2 feet	4 - 6 feet	7 - 9 feet	0 - 3 inches	0 - 2 feet	2 - 4 feet	8 - 10 feet
Sample Date:	10/30/96	10/30/96	10/30/96	10/24/96	10/28/96	10/28/96	10/28/96
TAL Inorganics plus Molybdenum (mg/kg)							
Silver	0.8 U	0.8 U	0.78 U	R	0.9 J	1.1 J	1.4
Aluminum	3900	3800	7900	9000 J	14000 J	17000 J	6400
Arsenic	1.2	3.6	7.6	3.6 J	3.8 J	4.8 J	8.3 J
Barium	140	32	150	490 J	200 J	190 J	92 J
Beryllium	0.42	0.52	0.93	6.2 J	0.68 J	0.74 J	1.2
Calcium	6700	14000	20000	140000 J	9000 J	7000 J	31000 J
Cadmium	5.4	2.3	3.7	4.5 J	5.8 J	7.3 J	3.9 J
Cobalt	28	6	13	12 J	2.6 J	3.6 J	11 J
Chromium (Total)	3400	280	22	600 J	370 J	500 J	68
Chromium (Hexavalent)	7.8	2.07 U	1.98 U	3.97	28.2	42.4 J	26.5
Copper	110	25	36	74 J	60 J	59 J	32 J
Iron	34000	13000	20000	15000 J	37000 J	44000 J	18000 J
Mercury	0.1 U	0.05 U	0.09 U	0.09 U	0.09 UJ	0.49 J	0.07 UJ
Potassium	460	550	1400	1300 J	1200 J	1700 J	1200
Magnesium	2300	3300	8800	3800 J	2300 J	2600 J	8300
Manganese	400	210	340	3700 J	84 J	95 J	360 J
Molybdenum	130	26	18	39 J	5.3 J	11 J	11
Sodium	110	140	240	420 J	100 J	140 J	3200
Nickel	1800	110	300	250 J	32 J	33 J	30
Lead	2800	93	63	16 J	29 J	62 J	19 J
Antimony	9.3	0.73	0.94	1.6 J	2 J	2.1 J	0.86
Selenium	0.26 U	0.26 U	0.25 U	0.27 U	0.23 UJ	0.22 UJ	0.23 U
Thallium	0.22 U	0.22 U	0.22 U	0.23 U	0.19 UJ	0.19 UJ	0.19 U
Vanadium	32	11	17	25 J	41 J	70 J	18
Zinc	820	68	110	120 J	84 J	82 J	89
Cyanide (Total) (mg/kg)	1.8	1 U	1 U	3.7 J	1 U	1 U	1 U
Cyanide (Free) (mg/l)	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

CRC

Sample Location:	RB-06				RB-07		
Sample I.D.:	SS-RB-06-03	SB-RB-06-0002	SB-RB-06-0406	SB-RB-06-0608	SS-RB-07-03	SB-RB-07-0002	SB-RB-07-0002D (g)
Laboratory Project No.:	96-5102	96-5198	96-5198	96-5198	96-5077	96-5198	96-5198
Sample Interval:	0 - 3 inches	0 - 2 feet	4 - 6 feet	6 - 8 feet	0 - 3 inches	0 - 2 feet	0 - 2 feet
Sample Date:	10/25/96	10/29/96	10/29/96	10/29/96	10/23/96	10/30/96	10/30/96
TAL Inorganics plus Molybdenum (mg/kg)							
Silver	R	0.8 U	0.91	0.8 U	0.78 U	0.75 U	0.97
Aluminum	6600 J	11000	7600	7800	890	7600	7500
Arsenic	5.7 J	6.7	7.1	5.4	8.7	7.5	8.4
Barium	36 J	120	120	160	51	98	110
Beryllium	0.48 J	0.83	1.5	1.2	1.2	1.1	1.2
Calcium	7100 J	12000	42000	36000	10000	25000	28000
Cadmium	3.5 J	3.9	3.8	3.3	11	5.4	5
Cobalt	7.2 J	7.2	9.8	9.6	840	20	23
Chromium (Total)	190 J	29	17	17	21000	940	780
Chromium (Hexavalent)	NA	NA	NA	NA	NA	NA	NA
Copper	47 J	34	33	31	400	110	84
Iron	22000 J	20000	18000	18000	430000	32000	32000
Mercury	0.07 U	0.1 U	0.1 U	0.07 U	0.08 U	0.1 U	0.05 U
Potassium	660	1000	1100	1600	590	1300	1400
Magnesium	4000 J	3900	15000	9200	2200	7600	8200
Manganese	360 J	350	400	380	8800	690	570
Molybdenum	27 J	25	7.2	4.8	760	110	100
Sodium	130	180	170	230	97	170	180
Nickel	130 J	26	33	30	6100	750	760
Lead	10 J	27	12	9	55	31	26
Antimony	1.3 J	0.87	0.84	0.73	0.27	0.89	1.2
Selenium	0.26 U	0.26 U	0.26 U	0.26 U	0.25 U	0.24 U	0.25 U
Thallium	0.22 U	0.22 U	0.23 U	0.22 U	0.22 U	0.21 U	0.22 U
Vanadium	14 J	21	18	17	780	31	32
Zinc	120 J	97	81	71	130	88	90
Cyanide (Total) (mg/kg)	R	1 U	1 U	1 U	1 U	1 U	1 U
Cyanide (Free) (mg/l)	NA	NA	NA	NA	NA	NA	NA

Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RB-07 (continued)		TP-01			TP-02	
Sample I.D.:	SB-RB-07-0608	SB-RB-07-0810	SB-TP01-0002	SB-TP01-0304	SB-TP01-0809	SS-TP-02-03	SB-TP-02-0002
Laboratory Project No.:	96-5198	96-5198	96-5053	96-5053	96-5053	96-5053	96-5053
Sample Interval:	6 - 8 feet	8 - 10 feet	0 - 2 feet	3 - 4 feet	8 - 9 feet	0 - 3 inches	0 - 2 feet
Sample Date:	10/30/96	10/30/96	10/22/96	10/22/96	10/22/96	10/22/96	10/22/96
TAL Inorganics plus Molybdenum (mg/kg)							
Silver	0.86	0.83 U	1.7	2.2	1.1	5.6	0.77 U
Aluminum	8100	7500	8000	11000	7900	1900	720
Arsenic	7.4	9.1	9.5	11	11	4.1	15
Barium	160	97	97	93	32	26	40
Beryllium	1.3	0.84	1.3	0.82	0.57	3.2	0.52
Calcium	33000	21000	21000	2100	2900	11000	1800
Cadmium	4.5	4	4.7	5.3	3.2	27	2.5
Cobalt	11	9.8	34	15	11	830	13
Chromium (Total)	55	14	450	23	89	23000	120
Chromium (Hexavalent)	NA	NA	NA	NA	NA	NA	NA
Copper	40	39	61	29	26	2400	460
Iron	22000	21000	27000	31000	19000	180000	13000
Mercury	0.09 U	0.06 U	0.11 U	0.16	0.11 U	0.11 U	0.1 U
Potassium	1500	1400	780	830	990	200	190
Magnesium	8900	7000	7200	3400	3900	2800	310
Manganese	370	270	440	400	200	3400	89
Molybdenum	27	9.4	120	9.8	9.7	2900	460
Sodium	220	170	120	100	89	99	82
Nickel	120	35	330	35	70	17000	1100
Lead	18	13	37	13	5.8	47	63
Antimony	0.98	1.1	1.2	1.3	1.3	3	0.7
Selenium	0.25 U	0.27 U	0.26 U	0.24 U	0.25 U	0.25 U	0.25 U
Thallium	0.22 U	0.23 U	0.22 U	0.2 U	0.21 U	0.21 U	0.21 U
Vanadium	22	12	61	21	11	640	61
Zinc	77	72	86	76	42	97	38
Cyanide (Total) (mg/kg)	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cyanide (Free) (mg/l)	NA	NA	NA	NA	NA	NA	NA

Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	TP-02 (continued)		TP-03			TP-04	
Sample I.D.:	SB-TP-02-0304	SB-TP-02-0910	SB-TP-03-0002	SB-TP-03-0506	SB-TP-03-1112	SB-TP-04-0002	SB-TP-04-1112
Laboratory Project No.:	96-5053	96-5053	96-5053	96-5053	96-5053	96-5077	96-5077
Sample Interval:	3 - 4 feet	9 - 10 feet	0 - 2 feet	5 - 6 feet	11 - 12	0 - 2 feet	11 - 12 feet
Sample Date:	10/22/96	10/22/96	10/22/96	10/22/96	10/22/96	10/22/96	10/22/96
TAL Inorganics plus Molybdenum (mg/kg)							
Silver	1.7	2.1	2.1	1.2	1.1	1.1	1.3
Aluminum	9100	6600	7900	10000	8400	8800	12000
Arsenic	11	9.2	8.7	9.9	7.9	11	12
Barium	100	74	59	97	89	90	110
Beryllium	0.78	1.2	1.4	0.97	1.1	1.1	0.71
Calcium	7400	27000	8900	11000	23000	14000	2700
Cadmium	4.4	4.4	8 ✓	4.9	3.9	5.1	4.6
Cobalt	9	27	0.52 U	23	14	35	14
Chromium (Total)	20	960	3100 ✓	350	92	890	20
Chromium (Hexavalent)	NA	NA	NA	NA	NA	1.88 U	1.96 U
Copper	34	81	500	46	36	90	42
Iron	27000	27000	55000	32000	25000	33000	31000
Mercury	0.11 U	0.19	0.1	0.08 U	0.1 U	0.09 U	0.09 U
Potassium	750	870	810	750	1100	940	1100
Magnesium	5300	9300	4200	6100	8600	6300	4600
Manganese	280	400	720	470	370	600	520
Molybdenum	15	140	600	57	11	140	5.8
Sodium	96	130	160	140	150	190	120
Nickel	32	500	1800 ✓	220	68	660	37
Lead	18	14	51	17	12	29	14
Antimony	0.92	1.2	1.5	1.3	1.1	0.93	1.3
Selenium	0.24 U	0.25 U	0.25 U	0.26 U	0.25 U	0.27 U	0.25 U
Thallium	0.21 U	0.22 U	0.21 U	0.23 U	0.21 U	0.23 U	0.22 U
Vanadium	16	41	190	33	19	95	24
Zinc	72	63	84	72	63	87	80
Cyanide (Total) (mg/kg)	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cyanide (Free) (mg/l)	NA	NA	NA	NA	NA	0.005 U	0.005 U

Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:		TP-05				TP-06	
Sample I.D.:	SS-TP-05-03	SB-TP-05-0002	SB-TP-05-0203	SB-TP-05-0809	SB-TP-06-0002	SB-TP-06-0002D	SB-TP-06-0304
Laboratory Project No.:	96-5077	96-5092	96-5092	96-5092	96-5092	96-5092	96-5092
Sample Interval:	0 - 3 inches	0 - 2 feet	2 - 3 feet	8 - 9 feet	0 - 2 feet	0 - 2 feet	3 - 4 feet
Sample Date:	10/23/96	10/24/96	10/24/96	10/24/96	10/24/96	10/24/96	10/24/96
TAL Inorganics plus Molybdenum (mg/kg)							
Silver	0.8 U	0.77 J	R	0.89 J	1.7 J	1.9	R
Aluminum	4500	12000 J	8200 J	8200 J	5900 J	4600	8800 J
Arsenic	8	7.1 J	8.9 J	13 J	11 J	15	11 J
Barium	120	120 J	96 J	120 J	91 J	77	120 J
Beryllium	2.3	2.7 J	0.76 J	1 J	2.9 J	3.1	0.85 J
Calcium	37000	49000 J	5600 J	9100 J	19000 J	14000	16000 J
Cadmium	6.4	6.5 J	5.1 J	7.7 J	12 J	13	4.5 J
Cobalt	82	40 J	27 J	41 J	340 J	290	12 J
Chromium (Total)	540	3000 J	1500 J	2500 J	3200 J	5000	19 J
Chromium (Hexavalent)	NA	NA	NA	NA	NA	NA	NA
Copper	130	120 J	70 J	100 J	310 J	340	43 J
Iron	50000	41000 J	32000 J	51000 J	60000 J	73000	26000 J
Mercury	0.12	0.10	0.07 U	0.11	0.09 U	0.0833 U	0.08 U
Potassium	870	1000 J	880 J	1100 J	570 J	460	1100 J
Magnesium	7100	2200 J	3300 J	4000 J	3800 J	2900	4900 J
Manganese	0.12 U	980 J	530 J	680 J	670 J	710	360 J
Molybdenum	350	290 J	98 J	180 J	3200 J	5000	15 J
Sodium	570	1300 J	330 J	260 J	140 J	140	94 J
Nickel	1600	1400 J	830 J	1200 J	1900 J	2500	44 J
Lead	27	3300 J	19 J	32 J	91 J	100	15 J
Antimony	0.81	0.44	1.1 J	1.2	0.14 U	0.15 U	1.0
Selenium	0.26 U	0.24 U	0.24 UJ	0.26 U	0.22 U	0.25 U	0.24 U
Thallium	0.22 U	0.22 U	0.21 UJ	0.23 U	0.19 U	0.21 U	0.21 U
Vanadium	130	70 J	32 J	81 J	520 J	690	11 J
Zinc	76	140 J	110 J	89 J	170 J	160	140 J
Cyanide (Total) (mg/kg)	1.1	4.4	1 U	1 U	1.1	1.2	1 U
Cyanide (Free) (mg/l)	0.005 U	0.005 U	0.005 U	0.005 U	NA	NA	NA

Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Cr6 Cr Cr6 Vn

Sample Location:	TP-06 (continued)	TP-07				TP-08	
Sample I.D.:	SB-TP-06-0708	SS-TP-07-03	SB-TP-07-0002	SB-TP-07-0304	SB-TP-07-0809	SB-TP-08-0002	SB-TP-08-0304
Laboratory Project No.:	96-5092	96-5077	96-5092	96-5092	96-5092	96-5077	96-5077
Sample Interval:	7 - 8 feet	0 - 3 inches	0 - 2 feet	3 - 4 feet	8 - 9 feet	0 - 2 feet	3 - 4 feet
Sample Date:	10/24/96	10/23/96	10/24/96	10/24/96	10/24/96	10/23/96	10/23/96
TAL Inorganics plus Molybdenum (mg/kg)							
Silver	R	0.8 U	R	R	R	3.4	2.4
Aluminum	8000 J	7900	8100 J	6700 J	7500	6000	7700
Arsenic	11 J	11	9.7 J	19 J	6 J	20	5
Barium	110 J	170	800 J	88 J	190 J	670	160
Beryllium	0.72 J	0.99	1.4 J	0.61 J	0.99 J	1.7	1.1
Calcium	10000 J	10000	15000 J	2200 J	25000 J	6100	25000
Cadmium	4.6 J	4.8	6.1 J	14 J	3.5 J	9.3	3.7
Cobalt	18 J	80	57 J	39 J	9 J	180	8.7
Chromium (Total)	270 J	2100	1900 J	1700	38 J	3100	17
Chromium (Hexavalent)	NA	2.41 U	2.19 U	7.79	64.8	5.92	2.34 U
Copper	60 J	120	150 J	120 J	32 J	150	36
Iron	27000 J	42000	37000 J	45000 J	18000	55000	18000
Mercury	0.08 U	0.11 U	0.1 U	0.08 U	0.1 U	0.08 U	0.1 U
Potassium	1200 J	880	910 J	610 J	1200	800	870
Magnesium	5400 J	4800	4600 J	1800 J	7100 J	3100	6000
Manganese	350 J	630	700 J	450 J	360 J	610	310
Molybdenum	69 J	370	380 J	360 J	7.1 J	1300	53
Sodium	110 J	84	720 J	160 J	150	150	130
Nickel	290 J	1200	1300 J	1400 J	46 J	1600	29
Lead	22 J	32	29 J	310 J	12 J	40	9.4
Antimony	0.77	0.81	0.14 U	0.4	0.81	0.15 U	0.76
Selenium	0.25 U	0.26 U	0.24 U	0.36	0.27 U	0.26 U	0.22 U
Thallium	0.22 U	0.22 U	0.2 U	0.2 U	0.23 U	0.22 U	0.19 U
Vanadium	23 J	120	150 J	94 J	15 J	280	19
Zinc	84 J	70	76 J	97 J	69 J	110	58
Cyanide (Total) (mg/kg)	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cyanide (Free) (mg/l)	NA	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	**TP-08 (continued)**	**TP-10**		**TP-11**				
Sample I.D.:	**SB-TP-08-0708**	**SB-TP-10-0002**	**SB-TP-10-0809**	**SS-TP-11-03**	**SB-TP-11-0002**	**SB-TP-11-0002D**	**SB-TP-11-1011**	**SB-TP-11-1112**
Laboratory Project No.:	**96-5077**	**96-5077**	**96-5077**	**96-5053**	**96-5077**	**96-50767**	**96-5077**	**96-5077**
Sample Interval:	**7 - 8 feet**	**0 - 2 feet**	**8 - 9 feet**	**0 - 3 inches**	**0 - 2 feet**	**0 - 2 feet**	**10 - 11 feet**	**11 - 12 feet**
Sample Date:	**10/23/96**	**10/23/96**	**10/23/96**	**10/22/96**	**10/23/96**	**10/23/96**	**10/23/96**	**10/23/96**
TAL Inorganics plus Molybdenum (mg/kg)								
Silver	2.1	5.9	2.1	2.2	3.7	3.6	4.4	2.3
Aluminum	5500	3100	6000	10000	8300	9600	6400	8100
Arsenic	16	11	9	0.89	8.1	6.6	3.7	11
Barium	71	39	110	140	130	140	57	38
Beryllium	0.68	2.1	1	6.5	4.2	5.5	0.37	0.75
Calcium	12000	3500	22000	190000	68000	61000	1100	9700
Cadmium	3.6	27	4.9	4.5	7.3	6.6	2.7	4.6
Cobalt	17	380	28	7.2	370	75	6.8	11
Chromium (Total)	93	36000	1900	610	35000	1900	20	40
Chromium (Hexavalent)	2.35 U	NA	NA	1.99 U	2.11 U	2.14 U	1.97 U	1.91 U
Copper	39	1500	120	35	99	110	14	37
Iron	20000	220000	32000	20000	31000	36000	11000	27000
Mercury	0.08 U	0.08 U	0.1 U	0.09 U	0.08 U	0.08 U	0.09 U	0.1 U
Potassium	850	370	1000	1100	1000	1000	480	1100
Magnesium	4900	2100	6600	17000	11000	9300	1600	5200
Manganese	320	2900	440	7200	0.12 U	0.11 U	260	350
Molybdenum	40	1700	130	26	350	1600	11	17
Sodium	87	84	120	590	530	520	100	130
Nickel	96	20000	2100	340	1000	840	20	50
Lead	22	76	39	2.2	51	50	9.1	12
Antimony	1	1.1	0.64	0.38	0.82	0.62	0.73	1.3
Selenium	0.23 U	0.26 U	0.25 U	0.27 U	0.27 U	0.25 U	0.25 U	0.24 U
Thallium	0.22 U	0.22 U	0.22 U	0.23 U	0.23 U	0.21 U	0.21 U	0.22 U
Vanadium	15	410	37	74	400	530	13	15
Zinc	110	78	56	120	87	77	39	100
Cyanide (Total) (mg/kg)	1 U	1 U	1 U	1 U	1 U	1	1 U	1 U
Cyanide (Free) (mg/l)	0.005 U	NA	NA	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Cr6 √

Sample Location:	RFI-01			RFI-02			
Sample I.D.:	SS-RFI-001-03	SB-RFI-001-0406	SB-RFI-001-1012	SS-RFI-002-03	SB-RFI-002-0002	SB-RFI-002-0810	SB-RFI-002-1012
Laboratory Project No.:	96-5053	96-5053	96-5053	96-5053	96-5053	96-5053	96-5053
Sample Interval:	0 - 3 inches	4 - 6 feet	10 - 12 feet	0 - 3 inches	0 - 2 feet	8 - 10 feet	10 - 12 feet
Sample Date:	10/22/96	10/21/96	10/21/96	10/22/96	10/22/96	10/22/96	10/22/96
TAL Inorganics plus Molybdenum (mg/kg)							
Silver	1.4	1.2	1.4	1.8	1.3	1.4	1.3
Aluminum	7300	8600	5300	8800	9100	8000	5400
Arsenic	5	10	6.5	11	12	10	9
Barium	53	110	77	74	100	92	25
Beryllium	0.54	0.66	1.8	0.71	0.91	1.3	0.92
Calcium	2300	2200	61000	3400	12000	30000	23000
Cadmium	3.1	4	3.1	3.9	4.2	3.7	10
Cobalt	9.8	11	7.2	28	17	11	13
Chromium (Total)	93	16	16	120	150	23	14
Chromium (Hexavalent)	3.12 U	21.4	2.03 U	NA	NA	1.85 U	2.11 U
Copper	23	34	24	29	36	32	41
Iron	14000	22000	13000	22000	26000	19000	34000
Mercury	0.33	0.1 U	0.1 U	0.09 U	0.1 U	0.08 U	0.1 U
Potassium	470	510	1200	1000	950	1500	1000
Magnesium	1400	3100	16000	3400	6400	11000	6400
Manganese	240	290	280	210	270	300	260
Molybdenum	51	5	3.3	25	36	7.3	12
Sodium	77	74	170	95	88	140	110
Nickel	70	30	22	180	120	38	43
Lead	20	13	8.8	23	23	13	12
Antimony	0.93	1.2	0.92	1.5	1.4	1.3	1.1
Selenium	0.23 U	0.27 U	0.25 U	0.28 U	0.28 U	0.28 U	0.26 U
Thallium	0.2 U	0.23 U	0.22 U	0.24 U	0.23 U	0.24 U	0.22 U
Vanadium	20	15	15	17	20	15	6.9
Zinc	64	65	180	93	75	49	680
Cyanide (Total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cyanide (Free) (mg/l)	NA	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-03			RFI-04			
Sample I.D.:	SS-RFI-003-03	SB-RFI-003-0002	SB-RFI-003-0406	SS-RFI-004-03	SB-RFI-004-0002	SB-RFI-004-0002D	SB-RFI-004-0204
Laboratory Project No.:	96-5053	96-5102	96-5102	96-5102	96-5198	96-5198	96-5198
Sample Interval:	0 - 3 inches	0 - 2 feet	4 - 6 feet	0 - 3 inches	0 - 2 feet	0 - 2 feet	2 - 4 feet
Sample Date:	10/22/96	10/25/96	10/25/96	10/25/96	10/29/96	10/29/96	10/29/96
TAL Inorganics plus Molybdenum (mg/kg							
Silver	2	R	R	R	1.1	1.3	0.8 U
Aluminum	14000	8300 J	8500 J	6100 J	9800	9900	11000
Arsenic	2.3	7 J	9.3 J	15 J	11	13	14
Barium	220	92 J	150 J	110 J	87	13	94
Beryllium	4.6	0.98 J	1.2 J	1 J	1.2	0.95	0.72
Calcium	81000	18000 J	15000 J	3900 J	7700	8600	2500
Cadmium	3.9	5.6 J	7.4 J	6.1 J	6.4	5.8	5.3
Cobalt	21	23 J	61 J	49 J	63	43	9.1
Chromium (Total)	230	440 J	1000 J	1700 J	2500	1500	22
Chromium (Hexavalent)	NA	NA	NA	12.5	3.29	NA	2.23 U
Copper	210	65 J	100 J	74 J	77	61	41
Iron	15000	25000 J	32000 J	34000 J	38000	32000	32000
Mercury	0.1 U	0.08 U	0.11 U	0.08 U	0.09 U	NA	0.09 U
Potassium	1200	1200	1000	860	1100	1100	1100
Magnesium	10000	5100 J	5400 J	1900 J	5000	4700	3500
Manganese	2800	390 J	430 J	470 J	530	460	400
Molybdenum	120	89 J	320 J	290 J	320	130	6.4
Sodium	640	180	130	200	110	100	94
Nickel	690	310 J	420 J	1100 J	1500	830	37
Lead	7.3	33 J	33 J	31 J	27	25	14
Antimony	0.59	1.8 J	3.6 J	5.7 J	1.4	1.5	1.3
Selenium	0.27 U	0.25 U	0.25 U	0.64 J	0.25 U	0.26 U	0.26 U
Thallium	0.23 U	0.21 U	0.22 U	0.23 UJ	0.21 U	0.23 U	0.22 U
Vanadium	35	42 J	100 J	110 J	100	50	20
Zinc	30	95 J	120 J	77 J	100	93	100
Cyanide (Total)	1.2	R	R	1 U	1 U	NA	1 U
Cyanide (Free) (mg/l)	NA	NA	NA	0.005 U	0.005 U	NA	0.005 U

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Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-04 (continued)		RFI-05				RFI-06
Sample I.D.:	SB-RFI-004-0204D	SB-RFI-004-2022	SS-RFI-005-03	SB-RFI-005-0204	SB-RFI-005-0204D	SB-RFI-005-1214	SS-RFI-006-03
Laboratory Project No.:	96-5198	96-5198	96-5102	96-5167	96-5167	96-5167	96-5077
Sample Interval:	2 - 4 feet	20 - 22 feet	0 - 3 inches	2 - 4 feet	2 - 4 feet	12 - 14 feet	0 - 3 inches
Sample Date:	10/29/96	10/29/96	10/25/96	10/28/96	10/28/96	10/28/96	10/23/96
TAL Inorganics plus Molybdenum (mg/kg							
Silver	0.81 U	0.81 U	R	0.99	0.81 U	0.72 UJ	0.78 U
Aluminum	6300	9200	9400 J	13000	12000	6300 J	2900
Arsenic	9	15	7.4 J	7.7 J	9.2	7.9 J	5
Barium	52	82	100 J	81 J	77	68 J	34
Beryllium	0.42	0.82	1.8 J	0.72	0.65	1 J	0.27
Calcium	1400	14000	31000 J	3200 J	1700	29000 J	6300
Cadmium	3.1	4.7	5.1 J	5 J	4.5	3.3 J	1.8
Cobalt	6.5	13	20 J	10 J	12	7 J	26
Chromium (Total)	9.1	32	760 J	17	17	14 J	780
Chromium (Hexavalent)	NA	2 U	NA	2.39 U	2.32 U	2.2 U	NA
Copper	28	39	56 J	40 J	47	30 J	64
Iron	18000	29000	22000 J	23000 J	23000	20000 J	17000
Mercury	0.1 U	0.08 U	0.06 U	0.1 U	0.087 U	0.09 U	0.08 U
Potassium	560	1700	810 J	1300	1100	960 J	370
Magnesium	1900	6500	6000 J	3900	3400	9800 J	2000
Manganese	280	290	1000 J	330 J	260	340 J	240
Molybdenum	3.9	8.2	100 J	4.1	4.4	4 J	81
Sodium	66	140	210 J	110	110	110 J	50
Nickel	19	38	340 J	32	28	24 J	450
Lead	10	14	110 J	12 J	13	9.7 J	34
Antimony	0.98	1.2	2.5 J	1	1	0.91	1
Selenium	0.26 U	0.26 U	0.23 UJ	0.26 U	0.26 U	0.23 U	0.25 U
Thallium	0.23 U	0.23 U	0.2 UJ	0.23 U	0.23 U	0.19 U	0.21 U
Vanadium	12	11	42 J	15	19	9.8 J	32
Zinc	69	67	88 J	77	71	57 J	80
Cyanide (Total)	1 U	1 U	1.6 J	1 U	1 U	1 U	1 U
Cyanide (Free) (mg/l)	0.005 U	0.005 U	NA	0.005 U	0.005 U	0.056	0.005 U

Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-06 (continued)			RFI-07			RFI-08
Sample I.D.:	SS-RFI-006-03D	SB-RFI-006-0204	SB-RFI-006-0406	SS-RFI-007-03	SB-RFI-007-0204	SB-RFI-007-0608	SS-RFI-008-03
Laboratory Project No.:	96-5077	96-5102	96-5102	96-5102	96-5167	96-5167	96-5102
Sample Interval:	0 - 3 inches	2 - 4 feet	4 - 6 feet	0 - 3 inches	2 - 4 feet	6 - 8 feet	0 - 3 inches
Sample Date:	10/23/96	10/25/96	10/25/96	10/25/97	10/28/96	10/28/96	10/24/96
TAL Inorganics plus Molybdenum (mg/kg							
Silver	0.81 U	R	R	R	1.2 J	0.96 J	5.5 J
Aluminum	2400	5800 J	9300 J	14000 J	9800 J	7400 J	3800 J
Arsenic	5.7	8.4 J	13 J	3.4 J	7.4 J	9.9 J	0.16 UJ
Barium	30	78 J	110 J	170 J	180 J	140 J	240 J
Beryllium	0.35	0.81 J	0.92 J	3.5 J	0.83 J	0.76 J	1.2 J
Calcium	7200	13000 J	23000 J	58000 J	6900 J	13000 J	8500 J
Cadmium	2.2	4.4 J	4.2 J	4.5 J	4.4 J	5.1 J	25 J
Cobalt	34	34 J	14	23 J	22 J	10 J	130 J
Chromium (Total)	820	600 J	15 J	1200 J	400 J	16 J	20000 J
Chromium (Hexavalent)	NA	NA	NA	12.7	2.36 U	2.33 U	NA
Copper	96	100 J	44 J	90 J	35 J	48 J	640 J
Iron	18000	24000 J	26000 J	25000 J	21000 J	28000 J	13000 J
Mercury	0.09 U	0.1 U	0.1 U	0.09 U	0.11 U	0.08 U	0.06 U
Potassium	320	840	1400	1300	740 J	1200 J	420 J
Magnesium	2000	3700 J	6600 J	9700 J	4100 J	5600 J	2100 J
Manganese	280	580 J	540 J	2000 J	390 J	280 J	2200 J
Molybdenum	140	130 J	9.1	160 J	65 J	27 J	660 J
Sodium	51	120	97	430 J	480 J	220 J	160 J
Nickel	540	490 J	45 J	820 J	240 J	38 J	14000 J
Lead	44	60 J	19 J	18 J	13 J	19 J	24000 J
Antimony	0.4	2.7 J	0.98 J	3.5 J	1 J	1.1 J	65 J
Selenium	0.27 U	0.25 U	0.25 U	0.22 U	0.26 UJ	0.26 UJ	0.24 UJ
Thallium	0.23 U	0.22 U	0.22 U	0.19 U	0.23 UJ	0.23 UJ	0.2 UJ
Vanadium	41	56 J	13 J	46 J	33 J	9.6 J	99 J
Zinc	81	350 J	140 J	89 J	65 J	91 J	340 J
Cyanide (Total)	1 U	R	R	1.4 J	1.2	1 U	R
Cyanide (Free) (mg/l)	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-08 (continued)		RFI-09				
Sample I.D.:	SS-RFI-008-03D	SB-RFI-008-0507	SS-RFI-009-03	SB-RFI-009-0002	SB-RFI-009-0002D	SB-RFI-009-0204	SB-RFI-009-0406
Laboratory Project No.:	96-5102	96-5198	96-5077	96-5102	96-5102	96-5102	96-5102
Sample Interval:	0 - 3 inches	5 - 7 feet	0 - 3 inches	0 - 2 feet	0 - 2 feet	2 - 4 feet	4 - 5 feet
Sample Date:	10/24/96	10/29/96	10/23/96	10/24/96	10/24/96	10/24/96	10/24/96
TAL Inorganics plus Molybdenum (mg/kg							
Silver	3.6	0.78 U	4.1	R	0.78 U	R	R
Aluminum	3900	9800	2400	5800 J	7100	10000 J	11000 J
Arsenic	0.18 U	11	15	1.1 J	3.1	7.4 J	7.6 J
Barium	320	120	54	85 J	93	53 J	170 J
Beryllium	1.4	0.79	3.3	1.7 J	1.7	0.42 J	0.6 J
Calcium	9100	10000	29000	38000 J	36000	2300 J	2200 J
Cadmium	25	4.5	26	8.4 J	7.5	3.1 J	3.9 J
Cobalt	160	17	34	70 J	75	3.9 J	5.3 J
Chromium (Total)	25000	30	10000	5600 J	4900	16 J	16 J
Chromium (Hexavalent)	NA	1.98 U	NA	2.46 U	0.09 U	2.33 U	3.34
Copper	630	47	620	130 J	120	18 J	39 J
Iron	160000	27000	100000	46000 J	48000	18000 J	22000 J
Mercury	0.07 U	0.09 U	0.06 U	0.08 U	NA	0.09 U	0.09 U
Potassium	430	1800	190	690 J	740	580	1200
Magnesium	2400	6100	1300	2500 J	2900	1700 J	2800 J
Manganese	2000	410	3200	790 J	800	110 J	190 J
Molybdenum	790	12	2400	390 J	400	54 J	46 J
Sodium	190	190	77	100 J	85	77	83
Nickel	16000	45	21000	3800 J	2900	15 J	29 J
Lead	1700	310	59	33 J	41	15 J	10 J
Antimony	70	1.1	1.2	16 J	14	0.83 J	0.93 J
Selenium	0.93	0.25 U	0.25 U	0.47 J	0.25 U	0.26 U	0.27 U
Thallium	0.27 U	0.22 U	0.21 U	0.21 UJ	0.22 U	0.23 U	0.23 U
Vanadium	140	25	340	100 J	110	15 J	17 J
Zinc	390	160	150	100 J	97	64 J	69 J
Cyanide (Total)	1 U	1 U	1 U	R	R	R	R
Cyanide (Free) (mg/l)	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-09 (continued)		RFI-010				RFI-11
Sample I.D.:	SB-RFI-009-0608	SB-RFI-009-0810	SS-RFI-010-03	SB-RFI-010-0002	SB-RFI-010-0204	SB-RFI-010-0810	SS-RFI-011-03
Laboratory Project No.:	96-5102	96-5102	96-5077	96-5092	96-5092	96-5092	96-5077
Sample Interval:	6 - 8 feet	8 - 10 feet	0 - 3 inches	0 - 2 feet	2 - 4 feet	8 - 10 feet	0 - 3 inches
Sample Date:	10/24/96	10/24/96	10/23/96	10/23/96	10/24/96	10/23/96	10/23/96
TAL Inorganics plus Molybdenum (mg/kg							
Silver	R	R	0.74 U	R	R	0.97 J	0.77 U
Aluminum	5800 J	4700 J	4600	5100	7600	7100	170
Arsenic	6.1 J	10 J	5.5	8.1 J	6.7 J	9.5 J	26
Barium	73 J	120 J	63	66 J	82 J	210 J	6200
Beryllium	1.1 J	1.5 J	0.73	0.81 J	1.1 J	1.2 J	1.2
Calcium	32000 J	45000 J	8900	6700 J	31000 J	31000 J	20000
Cadmium	3 J	3 J	6.2	5.3 J	3.7 J	3.8 J	13
Cobalt	7.7 J	8.5 J	63	56 J	8.6 J	6.8 J	120
Chromium (Total)	14 J	55 J	6600	1700 J	15 J	110 J	5500
Chromium (Hexavalent)	3.44	1.42	9.95	2.21 U	2.23 U	1.9 U	3.73
Copper	30 J	27 J	200	170 J	40 J	42 J	180
Iron	17000 J	16000 J	48000	31000	19000	20000	110000
Mercury	0.08 U	0.06 U	0.1 U	0.13	0.16	0.1 U	53
Potassium	940	930	410	510	1100	1500	500
Magnesium	8500 J	16000 J	3700	2900 J	7600 J	15000 J	1900
Manganese	420 J	430 J	860	640 J	360 J	310 J	0.11 U
Molybdenum	14 J	13 J	440	410 J	7.6 J	9.9 J	330
Sodium	110	130	130	180	260	150	130
Nickel	30 J	47 J	3200	950 J	29 J	78 J	5700
Lead	12 J	7.8 J	15	36 J	8.3 J	11 J	100
Antimony	0.69 J	0.68 J	0.38	0.15 U	0.96	1.1 J	3
Selenium	0.26 U	0.24 U	0.24 U	0.25 U	0.23 U	0.25 UJ	0.25 U
Thallium	0.22 U	0.21 U	0.22 U	0.21 U	0.19 U	0.21 UJ	0.21 U
Vanadium	11 J	15 J	76	94 J	17 J	8.4 J	120
Zinc	90 J	54 J	200	86 J	64 J	53 J	110
Cyanide (Total)	1.5 J	1 J	1 U	1 U	1 U	1 U	1 U
Cyanide (Free) (mg/l)	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-11 (continued)						
Sample I.D.:	SB-RFI-011-0002	SB-RFI-011-0002D	SB-RFI-011-0204	SB-RFI-011-0406	SB-RFI-011-0608	SB-RFI-011-0810	SB-RFI-011-1012
Laboratory Project No.:	96-5102	96-5102	96-5102	96-5102	96-5102	96-5102	96-5102
Sample Interval:	0 - 2 feet	0 - 2 feet	2 - 4 feet	4 - 6 feet	6 - 8 feet	8 - 10 feet	10 - 12 feet
Sample Date:	10/24/96	10/24/96	10/24/96	10/24/96	10/24/96	10/24/96	10/24/96
TAL Inorganics plus Molybdenum (mg/kg							
Silver	1.5 J	1.1	R	R	R	R	R
Aluminum	8000 J	7800	8900 J	9700 J	8700 J	8200 J	8200 J
Arsenic	230 J	290	10 J	5.2 J	9.8 J	8.8 J	10 J
Barium	3200 J	3100	3000 J	2900 J	200 J	160 J	120 J
Beryllium	1.1 J	0.94	0.88 J	0.99 J	0.96 J	0.98 J	0.88 J
Calcium	6500 J	5300	13000 J	20000 J	21000 J	20000 J	18000 J
Cadmium	14 J	11	7.3 J	3.8 J	4.2 J	4.4 J	4.4 J
Cobalt	79 J	42	14 J	8.3 J	10 J	15 J	16 J
Chromium (Total)	5900 J	1700	440 J	20 J	41 J	16 J	16 J
Chromium (Hexavalent)	3.65	2.09 U	2.64	2.27 U	2.16 U	2.07 U	2.18 U
Copper	140 J	110	53 J	30 J	40 J	35 J	40 J
Iron	89000 J	69000	40000 J	19000 J	24000 J	22000 J	24000 J
Mercury	0.09 U	0.1 U	0.08 U	0.08 U	0.1 U	0.06 U	0.08 U
Potassium	880	890	1100	990	1300	1400	1300 J
Magnesium	3700 J	3600	5300 J	5900 J	6500 J	7800 J	6800 J
Manganese	1900 J	1000	490 J	390 J	350 J	450 J	400 J
Molybdenum	190 J	120	22 J	3.8 J	8 J	7.8 J	9.5 J
Sodium	100 J	92	110	120	120	110	89 J
Nickel	4800 J	2200	390 J	30 J	49 J	44 J	44 J
Lead	28 J	19	14 J	94 J	15 J	11 J	16 J
Antimony	17 J	8.2	2.6 J	0.62 J	1 J	7.1 J	0.99 J
Selenium	0.23 U	0.23 U	0.27 U	0.27 U	0.26 U	0.27 U	0.25 U
Thallium	0.19 U	0.19 U	0.23 U	0.23 U	0.23 U	0.23 U	0.21 U
Vanadium	110 J	81	43 J	19 J	14 J	14 J	13 J
Zinc	93 J	93	77 J	67 J	110 J	100 J	93 J
Cyanide (Total)	R	1 U	R	R	R	R	R
Cyanide (Free) (mg/l)	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-11 (continued)	RFI-12					RFI-13
Sample I.D.:	SB-RFI-011-1214	SS-RFI-012-03	SS-RFI-012-03D	SB-RFI-012-0204	SB-RFI-012-0204D	SB-RFI-012-1416	SS-RFI-013-03
Laboratory Project No.:	96-5102	96-5053	96-5053	96-5077	96-5077	96-5077	96-5053
Sample Interval:	12 - 14 feet	0 - 3 inches	0 - 3 inches	2 - 4 feet	2 - 4 feet	14 - 16 feet	0 - 3 inches
Sample Date:	10/24/96	10/22/96	10/22/96	10/23/96	10/23/96	10/23/96	10/22/96
TAL Inorganics plus Molybdenum (mg/kg							
Silver	R	0.73 U	0.86 U	0.78 U	0.8 U	0.7 U	0.97
Aluminum	7800 J	4700	2200	9300	9600	6500	11000
Arsenic	8.3 J	2.1	4.4	8.3	8.9	6.6	0.75
Barium	190 J	39	89	140	150	130	110
Beryllium	1.3 J	1	2.3	0.63	0.67	0.93	5.5
Calcium	33000 J	27000	66000	6800	9100	23000	98000
Cadmium	3.7 J	1.9	1.1	3.5	3.5	3.6	2.7
Cobalt	8.9 J	6.7	1.8	9.2	10	12	4.8
Chromium (Total)	14 J	190	51	15	15	17	120
Chromium (Hexavalent)	2.17 U	NA	NA	3.45	2.16 U	2.09 U	NA
Copper	50 J	22	15	58	62	60	29
Iron	20000 J	10000	3900	22000	22000	23000	7800
Mercury	0.08 U	0.1 U	0.08 U	0.08 U	0.1 U	0.08 U	0.08 U
Potassium	1700	520	520	870	860	1300	1100
Magnesium	9000 J	14000	4800	4200	4900	7000	18000
Manganese	310 J	370	1500	430	440	240	2000
Molybdenum	6.3 J	25	7.1	4.1	3.9	8.5	13
Sodium	170	120	210	68	74	130	540
Nickel	31 J	110	40	32	33	29	110
Lead	13 J	19	36	13	14	10	6.5
Antimony	0.9 J	0.62	1.3	1.1	1	0.51	0.37
Selenium	0.28 U	0.24 U	0.28 U	0.25 U	0.26 U	0.22 U	0.27 U
Thallium	0.23 U	0.2 U	0.24 U	0.22 U	0.22 U	0.19 U	0.23 U
Vanadium	15 J	15	5.9	17	17	17	12
Zinc	79 J	60	34	74	79	56	75
Cyanide (Total)	R	1 U	1 U	1 U	1 U	1 U	1 U
Cyanide (Free) (mg/l)	0.005 U	NA	NA	0.005 U	0.005 U	0.005 U	0.005 U

Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-13 (continued)		RFI-14			RFI-15	
Sample I.D.:	SB-RFI-013-0406	SB-RFI-013-1618	SS-RFI-014-03	SB-RFI-014-0204	SB-RFI-014-1214	SS-RFI-015-03	SB-RFI-015-0608
Laboratory Project No.:	96-5092	96-5092	96-5053	96-5077	96-5077	96-5053	96-5077
Sample Interval:	4 - 6 feet	16 - 18 feet	0 - 3 inches	2 - 4 feet	12 - 14 feet	0 - 3 inches	6 - 8 feet
Sample Date:	10/24/96	10/24/96	10/22/96	10/22/96	10/22/96	10/22/96	10/23/96
TAL Inorganics plus Molybdenum (mg/kg							
Silver	R	1.1 J	0.77	1.1	0.78	0.75 U	0.99
Aluminum	7700 J	7400	8200	8900	6400	8500	9700
Arsenic	11 J	11 J	3.6	11	11	10	15
Barium	65 J	98 J	62	82	53	83	110
Beryllium	0.85 J	0.78 J	2.1	0.69	1.1	0.73	0.6
Calcium	18000 J	15000 J	31000	9000	30000	2800	1700
Cadmium	3.9 J	4.3 J	3.9	3.9	3.3	5.3	4.6
Cobalt	11 J	11 J	57	13	16	34	25
Chromium (Total)	17 J	17 J	1100	150	57	450	18
Chromium (Hexavalent)	2.91	6.31	2.2 U	NA	NA	2.12 U	NA
Copper	35 J	42 J	73	38	50	54	46
Iron	23000 J	26000	26000	23000	19000	30000	28000
Mercury	0.1 U	0.09 U	0.1 U	0.083	0.09 U	0.08 U	0.09 U
Potassium	1200 J	1300	770	1000	1100	1000	1400
Magnesium	6700 J	5800 J	7800	4800	7700	3200	4000
Manganese	410 J	250 J	690	370	320	360	650
Molybdenum	7.7 J	8.1 J	170	19	19	130	7.8
Sodium	170 J	110	300	72	110	110	60
Nickel	37 J	34 J	860	180	51	350	51
Lead	10 J	11 J	23	15	13	29	18
Antimony	0.83 J	1 J	0.85	1.3	0.98	1.2	1.6
Selenium	0.25 UJ	0.23 UJ	0.25 U	0.25 U	0.25 U	0.25 U	0.23 U
Thallium	0.21 UJ	0.19 UJ	0.21 U	0.22 U	0.22 U	0.21 U	0.19 U
Vanadium	13 J	8.3 J	60	18	15	64	14
Zinc	81 J	71 J	130	71	69	120	64
Cyanide (Total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cyanide (Free) (mg/l)	0.005 U	0.005 U	NA	NA	NA	NA	0.005 U

Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-15 (continued)	RFI-16			RFI-17	
Sample I.D.:	SB-RFI-015-1516	SS-RFI-016-03	SB-RFI-016-0406	SB-RFI-016-1415	SB-RFI-017-0204	SB-RFI-017-0608
Laboratory Project No.:	96-5077	96-5077	96-5053	96-5053	96-5167	96-5167
Sample Interval:	15 - 16 feet	0 - 3 inches	4 - 6 feet	14 - 15 feet	2 - 4 feet	6 - 8 feet
Sample Date:	10/23/96	10/23/96	10/22/96	10/22/96	10/28/96	10/28/96
TAL Inorganics plus Molybdenum (mg/kg						
Silver	0.72 U	0.68 U	1.2	1.4	0.72 UJ	0.99 J
Aluminum	7800	12000	5300	6200	7700 J	7200 J
Arsenic	8.7	3	6.8	9.8	8.2 J	9.8 J
Barium	99	130	52	27	110 J	140 J
Beryllium	0.8	5.5	1.1	0.47	0.79 J	0.93 J
Calcium	17000	94000	29000	1700	16000 J	20000 J
Cadmium	3.6	5.9	2.8	5.5	3.8 J	3.9 J
Cobalt	7.3	50	8.3	9.8	9.5 J	16 J
Chromium (Total)	12	4800	13	11	13 J	14 J
Chromium (Hexavalent)	NA	NA	NA	NA	2.27 U	2.2 U
Copper	34	310	24	24	33 J	36 J
Iron	24000	41000	14000	37000	18000 J	19000 J
Mercury	0.1 U	0.07 U	0.08 U	0.09 U	0.05 U	0.08 U
Potassium	1400	1000	880	1100	760 J	1200 J
Magnesium	6800	23000	7800	3400	3600 J	6000 J
Manganese	230	0.1 U	290	120	420 J	400 J
Molybdenum	6.8	260	6.6	13	26 J	18 J
Sodium	120	490	140	120	88 J	150 J
Nickel	29	2200	25	34	34 J	36 J
Lead	11	16	9.5	12	14 J	12 J
Antimony	1	0.13 U	1.1	1.4	1 J	1 J
Selenium	0.23 U	0.22 U	0.25 U	0.25 U	0.26 UJ	0.23 UJ
Thallium	0.19 U	0.19 U	0.21 U	0.21 U	0.23 UJ	0.22 UJ
Vanadium	7.1	64	12	2.5 U	11 J	13 J
Zinc	49	31	49	34	120 J	68 J
Cyanide (Total)	1 U	1 U	1 U	1 U	1 U	1.5
Cyanide (Free) (mg/l)	0.005 U	NA	NA	NA	0.005 U	0.005 U

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Table 4-4 (continued)

Surface and Subsurface Soil
TAL Inorganic Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

a/ Two sample aliquots were inadvertently collected from Location GS-01 for analysis of some parameters.
b/ TAL = Target Analyte List.
This list also includes hexavalent chromium and free cyanide.
All results presented below represent data generated for sample aliquots sieved using a number 4 standard sieve, except for hexavalent chromium, mercury, total cyanide, and free cyanide (which are representative of unsieved aliquots).
c/ mg/kg = milligrams per kilogram; mg/l = milligrams per liter.
d/ Data Qualifiers:
U = constituent not detected at the noted detection limit.
J = constituent detected at an estimated concentration less than the method detected limit.
UJ = constituent not detected at the estimated detection limit noted.
R = data rejected.
e/ NA = not analyzed.
f/ Analysis for hexavalent chromium, mercury, total cyanide, and free cyanide was performed on unsieved sample aliquots, consistent with the Work Plan.
g/ D = duplicate sample.

Table 4-5

Surface and Subsurface Soil
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	GS-01	GS-03	RB-02		RB-04
Sample I.D.:	SS-GS-01-03	SS-GS-03-03	SB-RB-02-0002	SB-RB-02-1618	SB-RB-04-0002
Laboratory Project No.:	96-5209	96-5210	96-5200	96-5200	96-5198
Sample Interval:	0 - 3 inches	0 - 3 inches	0 - 2 feet	16 - 18 feet	0 - 2 feet
Sample Date:	11/01/96	11/01/96	10/31/96	10/31/96	10/30/96
TCL Volatile Organic Compounds (µg/kg)(a, b)					
Methylene chloride	6 J (c)	12 U	9 J	4 J	98 B
Acetone	12 U	12 U	1 J	11 U	70 B
Carbon disulfide	0.7 J	12 U	11 U	11 U	11 U
cis-1,2-Dichloroethene	6 J	12 U	11 U	11 U	11 U
2-Butanone	12 U	12 U	11 U	11 U	11 U
Trichloroethene	14	12 U	0.5 J	11 U	11 U
Benzene	12 U	12 U	11 U	11 U	11 U
2-Hexanone	12 U	12 U	11 U	11 U	11 U
Tetrachloroethene	12 U	14	11 U	11 U	11 U
Toluene	0.5 J	12 U	3 J	0.5 J	6 J
Chlorobenzene	12 U	12 U	11 U	11 U	11 U
Ethylbenzene	12 U	12 U	11 U	11 U	11 U
Styrene	12 U	12 U	0.9 J	11 U	2 J
Xylene (Total)	12 U	12 U	11 U	11 U	11 U

Table 4-5 (continued)

Surface and Subsurface Soil
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	**GS-01**	**GS-03**		**RB-02**				**RB-04**	
Sample I.D.:	**SS-GS-01-03**	**SS-GS-03-03**		**SB-RB-02-0002**		**SB-RB-02-1618**		**SB-RB-04-0002**	
Laboratory Project No.:	**96-5209**	**96-5077**		**96-5200**		**96-5200**		**96-5198**	
Sample Interval:	**0 - 3 inches**	**0 - 3 inches**		**0 - 2 feet**		**16 - 18 feet**		**0 - 2 feet**	
Sample Date:	**11/1/96**	**10/23/96**		**10/31/96**		**10/31/96**		**10/30/96**	
Volatile Organics									
Tentatively Identified Compounds (μg/kg)	NA					Unknown Hydrocarbon	7 J	Unknown Hydrocarbon	40 J
						Unknown Hydrocarbon	6 J	Unknown	7 J
						Unknown	10 J	Unknown	50 J
						Unknoown Aromatic Hydrocarbon	6 J	Unknown	9 J
		Total VOC TICs (d)	0	**Total VOC TICs**	0	**Total VOC TICs**	29	**Total VOC TICs**	106

Table 4-5 (continued)

Surface and Subsurface Soil
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	**RB-04 (continued)**		**RB-05**		
Sample I.D.:	**SB-RB-04-0406**	**SB-RB-04-0709**	**SB-RB-05-0002**	**SB-RB-05-0204**	**SB-RB-05-0810**
Laboratory Project No.:	**96-5198**	**96-5198**	**96-5167**	**96-5167**	**96-5167**
Sample Interval:	**4 - 6 feet**	**7 -9 feet**	**0 - 2 feet**	**2 - 4 feet**	**8 - 10 feet**
Sample Date:	**10/30/96**	**10/30/96**	**10/28/96**	**10/28/96**	**10/28/96**
TCL Volatile Organic Compounds (µg/kg)					
Methylene chloride	51 B	70 B	12 U	12 U	14 U
Acetone	150 B	53 B	64	65	10 U
Carbon disulfide	11 U	11 U	0.6 J	12 U	10 U
cis-1,2-Dichloroethene	11 U	11 U	12 U	12 U	10 U
2-Butanone	11 U	11 U	6 J	4 J	10 U
Trichloroethene	11 U	11 U	12 U	2 J	10 U
Benzene	11 U	11 U	2 J	2 J	10 U
2-Hexanone	11 U	11 U	1 J	12 U	10 U
Tetrachloroethene	11 U	11 U	12 U	4 J	10 U
Toluene	4 J	8 J	12 U	12 U	10 U
Chlorobenzene	11 U	11 U	0.2 J	12 U	10 U
Ethylbenzene	11 U	0.5 J	12 U	0.4 J	10 U
Styrene	3 J	3 J	12 U	0.4 J	10 U
Xylene (Total)	11 U	1.6 J	0.5 J	0.3 J	10 U

Table 4-5 (continued)

Surface and Subsurface Soil
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

	RB-04 (continued)				RB-05					
	SB-RB-04-0406		SB-RB-04-0709		SB-RB-05-0002		SB-RB-05-0204		SB-RB-05-0810	
	96-5198		96-5198		96-5167		96-5167		96-5167	
	4 - 6 feet		7 - 9 feet		0 - 2 feet		2 - 4 feet		8 - 10 feet	
	10/30/96		10/30/96		10/28/96		10/28/96		10/28/96	
Volatile Organics										
Tentatively Identified Compounds (µg/kg)	Unknown Hydrocarbon	30 J	Unknown Hydrocarbon	30 J						
	Unknown Hydrocarbon	6 J	Unknown	40 J						
	Unknown Hydrocarbon	20 J	Unknown	8 J						
	Unknown	70 J								
	Unknown	40 J								
	Unknown Aromatic Hydrocarbon	6 J								
	Total VOC TICs	172	**Total VOC TICs**	78	**Total VOC TICs**	0	**Total VOC TICs**	0	**Total VOC TICs**	0

Table 4-5 (continued)

Surface and Subsurface Soil
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation-
Dunkirk, New York Facility

Sample Location:	**RFI-05**	
Sample I.D.:	**SB-RFI-005-0204**	**SB-RFI-005-1214**
Laboratory Project No.:	**96-5167**	**96-5167**
Sample Interval:	**2 - 4 feet**	**12 - 14 feet**
Sample Date:	**10/28/96**	**10/28/96**
TCL Volatile Organic Compounds (µg/kg)		
Methylene chloride		
Acetone	11 U	11 U
Carbon disulfide	11 U	73 B
cis-1,2-Dichloroethene	11 U	9 J
2-Butanone	11 U	11 U
Trichloroethene	3 J	8 J
Benzene	0.5 J	1 J
2-Hexanone	11 U	11 U
Tetrachloroethene	11 U	11 U
Toluene	11 U	11 U
Chlorobenzene	11 U	11 U
Ethylbenzene	11 U	4 J
Styrene	11 U	11 U
Xylene (Total)	11 U	11 U
	0.3 J	1.1 J

Table 4-5 (continued)

Surface and Subsurface Soil
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

	RFI-05			
	SB-RFI-005-0204 96-5167 2 - 4 feet 10/28/96		SB-RFI-005-1214 96-5167 12 - 14 feet 10/28/96	
Volatile Organics **Tentatively Identified Compounds (µg/kg)**	Unkown Hydrocarbon	10 J		
	Total VOC TICs	10	**Total VOC TICs**	0

a/ TCL = Target Compound List; VOC = Volatile Organic Compound; TIC = Tentatively Identified Compound.
Only those TCL VOCs detected in one or more of the soil samples have been retained in this table. Unabridged analytical results are presented in Appendix N.
b/ µg/kg = micrograms per kilogram.
c/ Data Qualifiers:
U = constituent not detected at the noted detection limit.
J = constituent detected at an estimated concentration less than the method detected limit.
B = constituent also detected in an associated blank.
d/ Total VOC TICs represent the sum of all detected TICs.

Table 4-6

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RB-02		RB-03	RB-06		
Sample I.D.:	SB-RB-02-0002	SB-RB-02-1618	SB-RB-03-0002	SB-RB-06-0002	SB-RB-06-0406	SB-RB-06-0608
Laboratory Project No.:	96-5200	96-5200	96-5210	96-5198	96-5198	96-5198
Sample Interval:	0 - 2 feet	16 - 18 feet	0 - 2 feet	0 - 2 feet	4 - 6 feet	6 - 8 feet
Sample Date:	10/31/96	10/31/96	11/01/96	10/29/96	10/29/96	10/29/96
TCL Semi-Volatile Organic Compounds (µg/kg) (a, b)						
1,3-Dichlorobenzene	360 U (c)	350 U	360 U	350 U	340 U	340 U
1,4-Dichlorobenzene	360 U	350 U	360 U	350 U	340 U	340 U
1,2,4-Trichlorobenzene	360 U	350 U	360 U	350 U	340 U	340 U
Naphthalene	360 U	350 U	1800	350 U	340 U	340 U
2-Methylnaphthalene	360 U	350 U	3200	350 U	340 U	340 U
Dimethyl phthalate	360 U	350 U	360 U	350 U	340 U	340 U
Acenaphthylene	360 U	350 U	360 U	350 U	340 U	340 U
Acenaphthene	360 U	350 U	360 U	350 U	340 U	340 U
Dibenzofuran	360 U	350 U	1000	350 U	340 U	340 U
Fluorene	360 U	350 U	360 U	350 U	340 U	340 U
Phenanthrene	360 U	350 U	2600	350 U	340 U	860 U
Anthracene	360 U	350 U	360 U	350 U	340 U	340 U
Carbazole	360 U	350 U	360 U	350 U	340 U	340 U
Di-n-butyl phthalate	360 U	350 U	360 U	330 J	340 U	340 U
Fluoranthene	360 U	350 U	1300	350 U	340 U	310 J
Pyrene	360 U	350 U	1100	350 U	340 U	340 U
Butyl benzyl phthalate	360 U	350 U	360 U	350 U	340 U	340 U
Benzo(a)anthracene	360 U	350 U	560	350 U	340 U	340 U
Bis(2-ethylhexyl)phthalate	360 U	510	440	350 U	340 U	340 U
Chrysene	360 U	350 U	1100	350 U	340 U	280 J
Di-n-octyl phthalate	360 U	350 U	360 U	350 U	340 U	340 U
Benzo(b)fluoranthene	360 U	350 U	930	350 U	340 U	340 U
Benzo(k)fluoranthene	360 U	350 U	530	350 U	340 U	340 U
Benzo(a)pyrene	360 U	350 U	540	350 U	340 U	340 U
Indeno(1,2,3-cd)pyrene	360 U	350 U	410	350 U	340 U	340 U
Dibenzo(a,h)anthracene	360 U	350 U	360 U	350 U	340 U	340 U
Benzo(ghi)perylene	360 U	350 U	410	350 U	340 U	340 U

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RB-02				RB-03		RB-06					
Sample I.D.:	SB-RB-02-0002		SB-RB-02-1618		SB-RB-03-0002		SB-RB-06-0002		SB-RB-06-0406		SB-RB-06-0608	
Laboratory Project No.:	96-5200		96-5200		96-5210		96-5198		96-5198		96-5198	
Sample Interval:	0 - 2 feet		16 - 18 feet		0 - 2 feet		0 - 2 feet		4 - 6 feet		6 - 8 feet	
Sample Date:	10/31/96		10/31/96		11/01/96		10/29/96		10/29/96		10/29/96	
Semi-Volatile Organics	Unknown Hydrocarbon	30 J	Unknown Hydrocarbon	120 J	Unknown Hydrocarbon	150 J	Unknown Hydrocarbon	710 J	Unknown Hydrocarbon	380 J	Unknown Hydrocarbon	280 J
Tentatively Identified Compounds (µg/kg)	Unknown Hydrocarbon	46 J	Unknown Hydrocarbon	120 J	Unknown Hydrocarbon	340 J	Unknown Hydrocarbon	380 J	Unknown Hydrocarbon	320 J	Unknown Hydrocarbon	300 J
	Unknown Hydrocarbon	70 J	Unknown Hydrocarbon	82 J	Unknown Hydrocarbon	360 J	Unknown Hydrocarbon	350 J	Unknown Hydrocarbon	290 J	Unknown Hydrocarbon	240 J
	Unknown Hydrocarbon	160 J	Unknown Hydrocarbon	88 J	Unknown Hydrocarbon	670 J	Unknown Hydrocarbon	340 J	Unknown Hydrocarbon	350 J	Unknown Hydrocarbon	270 J
	Unknown Hydrocarbon	120 J	Unknown Hydrocarbon	94 J	Unknown Hydrocarbon	120 J	Unknown Hydrocarbon	390 J	Unknown Hydrocarbon	550 J	Unknown Hydrocarbon	330 J
	Unknown Hydrocarbon	120 J	Unknown Hydrocarbon	91 J	Unknown Hydrocarbon	580 J	Unknown	1100 J	Unknown Hydrocarbon	430 J	Unknown Hydrocarbon	430 J
	Unknown Hydrocarbon	150 J	Unknown Hydrocarbon	82 J	Unknown Hydrocarbon	570 J	Unknown	660 J	Unknown Hydrocarbon	350 J	Unknown Hydrocarbon	370 J
	Unknown Hydrocarbon	150 J	Unknown Hydrocarbon	99 J	Unknown Hydrocarbon	810 J	Unknown	3300 J	Unknown Hydrocarbon	370 J	Unknown Hydrocarbon	330 J
	Unknown Hydrocarbon	120 J	Unknown Hydrocarbon	140 J	Unknown Hydrocarbon	510 J	Unknown	1500 J	Unknown Hydrocarbon	320 J	Unknown Hydrocarbon	280 J
	Unknown Hydrocarbon	100 J	Unknown Hydrocarbon	130 J	Unknown Hydrocarbon	240 J	Unknown	1700 J	Unknown Hydrocarbon	350 J	Unknown Hydrocarbon	270 J
	Unknown Hydrocarbon	75 J	Unknown Hydrocarbon	300 J	Unknown Hydrocarbon	280 J	Unknown	2600 J	Unknown Hydrocarbon	300 J	Unknown Hydrocarbon	210 J
	Unknown Hydrocarbon	32 J	Unknown Hydrocarbon	230 J	Unknown	140 J	Unknown	630 J	Unknown Hydrocarbon	380 J	Unknown Hydrocarbon	270 J
	Unknown	22 J	Unknown Hydrocarbon	200 J	Unknown	260 J	Unknown	300 J	Unknown Hydrocarbon	400 J	Unknown Hydrocarbon	300 J
	Unknown	18 J	Unknown Hydrocarbon	350 J	Unknown	150 J	Unknown	580 J	Unknown Hydrocarbon	450 J	Unknown Hydrocarbon	340 J
	Unknown	20 J	Unknown Hydrocarbon	320 J	Unknown	160 J	Unknown	350 J	Unknown	600 J	Unknown	350 J
	Unknown	19 J	Unknown Hydrocarbon	210 J	Unknown	130 J	Unknown	370 J	Unknown	320 J	Unknown	1500 J
	Unknown	380 J	Unknown Hydrocarbon	210 J	Unknown	1400 J					Unknown	730 J
	Unknown	100 J	Unknown Hydrocarbon	120 J	Unknown	240 J						
	Unknown	15 J	Unknown	79 J	Unknown	160 J						
	Unknown	280 J	Unknown	680 J	Unknown	210 J						
	Unknown	46 J	Unknown	200 J	Unknown	130 J						
	Unknown	24 J	Unknown	450 J	Unknown	910 J						
	Unknown	40 J	Unknown	110 J	Unknown	110 J						
	Unknown	27 J	Unknown	97 J	Unknown	220 J						
			Unknown	82 J	Unknown	110 J						
	Total SVOC TICs (d)	2164	**Total SVOC TICs**	4684	**Total SVOC TICs**	8960	**Total SVOC TICs**	15260	**Total SVOC TICs**	6160	**Total SVOC TICs**	6800

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	**RB-07**			**TP-01**		
Sample I.D.:	**SB-RB-07-0002**	**SB-RB-07-0608**	**SB-RB-07-0810**	**SB-TP01-0002**	**SB-TP01-0304**	**SB-TP01-0809**
Laboratory Project No.:	**96-5198**	**96-5198**	**96-5198**	**96-5053**	**96-5053**	**96-5053**
Sample Interval:	**0 - 2 feet**	**6 - 8 feet**	**8 - 10 feet**	**0 - 2 feet**	**3 - 4 feet**	**8 - 9 feet**
Sample Date:	**10/30/96**	**10/30/96**	**10/30/96**	**10/22/96**	**10/22/96**	**10/22/96**
TCL Semi-Volatile Organic Compounds (µg/kg)						
1,3-Dichlorobenzene	360 U	1500	350 U	330 U	350 U	340 U
1,4-Dichlorobenzene	360 U	2800	350 U	330 U	350 U	340 U
1,2,4-Trichlorobenzene	410	1100	350 U	330 U	350 U	340 U
Naphthalene	360 U	360 U	350 U	330 U	350 U	340 U
2-Methylnaphthalene	360 U	360 U	350 U	330 U	350 U	340 U
Dimethyl phthalate	360 U	360 U	350 U	330 U	350 U	340 U
Acenaphthylene	360 U	360 U	350 U	330 U	350 U	340 U
Acenaphthene	290 J	360 U	350 U	330 U	350 U	340 U
Dibenzofuran	260 J	260 J	350 U	330 U	350 U	340 U
Fluorene	370	330 J	350 U	330 U	350 U	340 U
4-Nitroaniline	890 U	900 U	870 U	830 U	880 U	840 U
Phenanthrene	3200	1600	350 U	330 U	350 U	340 U
Anthracene	930	440	350 U	330 U	350 U	340 U
Carbazole	520	270 J	350 U	330 U	350 U	340 U
Di-n-butyl phthalate	360 U	280 J	350 U	330 U	350 U	340 U
Fluoranthene	3400	2300	350 U	330 U	350 U	340 U
Pyrene	3200	2100	350 U	330 U	350 U	340 U
Butyl benzyl phthalate	360 U	360 U	350 U	330 U	350 U	340 U
Benzo(a)anthracene	1700	990	350 U	330 U	350 U	340 U
Bis(2-ethylhexyl)phthalate	360 U	330 J	290 J	330 U	350 U	340 U
Chrysene	1900	1100	350 U	330 U	350 U	340 U
Di-n-octyl phthalate	360 U	360 U	350 U	340	350 U	340 U
Benzo(b)fluoranthene	1700	870	350 U	330 U	350 U	340 U
Benzo(k)fluoranthene	1100	710	350 U	330 U	350 U	340 U
Benzo(a)pyrene	1400	700	350 U	330 U	350 U	340 U
Indeno(1,2,3-cd)pyrene	940	480	350 U	330 U	350 U	340 U
Dibenzo(a,h)anthracene	460	360 U	350 U	330 U	350 U	340 U
Benzo(ghi)perylene	1100	510	350 U	330 U	350 U	340 U

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RB-07						TP-01					
Sample I.D.:	SB-RB-07-0002		SB-RB-07-0608		SB-RB-07-0810		SB-TP01-0002		SB-TP01-0304		SB-TP01-0809	
Laboratory Project No.:	96-5198		96-5198		96-5198		96-5053		96-5053		96-5053	
Sample Interval:	0 - 2 feet		6 - 8 feet		6 - 8 feet		0 - 2 feet		3 - 4 feet		8 - 9 feet	
Sample Date:	10/30/96		10/30/96		10/30/96		10/22/96		10/22/96		10/22/96	
Semi-Volatile Organics	Unknown Hydrocarbon	580 J	Unknown Hydrocarbon	1400 J	Unknown Hydrocarbon	1100 J	Unknown Hydrocarbon	170 J	Unknown Hydrocarbon	150 J	Unknown Hydrocarbon	750 J
Tentatively Identified Compounds (µg/kg)	Unknown Hydrocarbon	670 J	Unknown Hydrocarbon	1400 J	Unknown Hydrocarbon	1400 J	Unknown Hydrocarbon	300 J	Unknown Hydrocarbon	280 J	Unknown Hydrocarbon	630 J
	Unknown Hydrocarbon	670 J	Unknown Hydrocarbon	1700 J	Unknown Hydrocarbon	1400 J	Unknown Hydrocarbon	610 J	Unknown Hydrocarbon	590 J	Unknown Hydrocarbon	810 J
	Unknown	1300 J	Unknown Hydrocarbon	2200 J	Unknown Hydrocarbon	1300 J	Unknown Hydrocarbon	400 J	Unknown Hydrocarbon	430 J	Unknown Hydrocarbon	830 J
	Unknown	1400 J	Unknown	3600 J	Unknown Hydrocarbon	1700 J	Unknown Hydrocarbon	570 J	Unknown Hydrocarbon	590 J	Unknown Hydrocarbon	940 J
	Unknown	590 J	Unknown	1900 J	Unknown Hydrocarbon	1400 J	Unknown Hydrocarbon	340 J	Unknown Hydrocarbon	850 J	Unknown Hydrocarbon	890 J
	Unknown	570 J	Unknown	1200 J	Unknown Hydrocarbon	1500 J	Unknown Hydrocarbon	810 J	Unknown Hydrocarbon	940 J	Unknown Hydrocarbon	2800 J
	Unknown	1200 J	Unknown	2300 J	Unknown Hydrocarbon	890 J	Unknown Hydrocarbon	950 J	Unknown Hydrocarbon	830 J	Unknown Hydrocarbon	2100 J
	Unknown	650 J	Unknown	2400 J	Unknown Hydrocarbon	1200 J	Unknown Hydrocarbon	1000 J	Unknown Hydrocarbon	2100 J	Unknown Hydrocarbon	1600 J
			Unknown	1300 J	Unknown Hydrocarbon	1000 J	Unknown Hydrocarbon	3200 J	Unknown Hydrocarbon	1500 J	Unknown Hydrocarbon	960 J
			Unknown	3400 J	Unknown Hydrocarbon	830 J	Unknown Hydrocarbon	2100 J	Unknown Hydrocarbon	1000 J	Unknown Hydrocarbon	710 J
			Unknown	1100 J	Unknown Hydrocarbon	770 J	Unknown Hydrocarbon	1700 J	Unknown Hydrocarbon	720 J	Unknown	5900 J
			Unknown	1500 J	Unknown	890 J	Unknown Hydrocarbon	1200 J	Unknown Hydrocarbon	170 J	Unknown	650 J
			Unknown	1100 J	Unknown	1600 J	Unknown Hydrocarbon	650 J	Unknown Hydrocarbon	220 J	Unknown	1400 J
			Unknown	1100 J	Unknown	710 J	Unknown Hydrocarbon	180 J	Unknown	420 J	Unknown	870 J
			Unknown	1500 J			Unknown Hydrocarbon	360 J	Unknown	6700 J	Unknown	1200 J
			Unknown	1100 J			Unknown Hydrocarbon	150 J	Unknown	150 J		
			Unknown	940 J			Unknown Hydrocarbon	1300 J	Unknown	590 J		
							Unknown Hydrocarbon	400 J	Unknown	150 J		
							Unknown	400 J	Unknown	2300 J		
							Unknown	5900 J	Unknown	390 J		
							Unknown	650 J	Unknown	180 J		
							Unknown	1700 J	Unknown	870 J		
							Unknown	170 J	Unknown	560 J		
							Unknown	140 J	Unknown	140 J		
							Unknown	150 J	Unknown Aromatic Hydrocarbon	190 J		
							Unknown	250 J				
							Unknown	390 J				
							Unknown Aromatic Hydrocarbon	230 J				
							Unknown Sulfanated Compound	190 J				
	Total SVOC TICs	7630	Total SVOC TICs	31140	Total SVOC TICs	17690	Total SVOC TICs	26560	Total SVOC TICs	23010	Total SVOC TICs	23040

XS Diesel
Total

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	TP-02				TP-03	
Sample I.D.:	SS-TP-02-03	SB-TP-02-0002	SB-TP-02-0304	SB-TP-02-0910	SB-TP-03-0002	SB-TP-03-0506
Laboratory Project No.:	96-5053	96-5053	96-5053	96-5053	96-5053	96-5053
Sample Interval:	0 - 3 inches	0 - 2 feet	3 - 4 feet	9 - 10 feet	0 - 2 feet	5 - 6 feet
Sample Date:	10/22/96	10/22/96	10/22/96	10/22/96	10/22/96	10/22/96
TCL Semi-Volatile Organic Compounds (µg/kg)						
1,3-Dichlorobenzene	1900 U	1700 U	340 U	330 U	1800 U	360 U
1,4-Dichlorobenzene	1900 U	1700 U	340 U	330 U	1800 U	360 U
1,2,4-Trichlorobenzene	1900 U	1700 U	340 U	330 U	1800 U	360 U
Naphthalene	1900 U	1700 U	340 U	330 U	1800 U	360 U
2-Methylnaphthalene	1900 U	1700 U	340 U	330 U	1800 U	360 U
Dimethyl phthalate	1900 U	1700 U	340 U	330 U	1800 U	360 U
Acenaphthylene	1900 U	1700 U	340 U	330 U	1800 U	360 U
Acenaphthene	1900 U	1700 U	340 U	330 U	1800 U	360 U
Dibenzofuran	1900 U	1700 U	340 U	330 U	1800 U	360 U
Fluorene	1900 U	1700 U	340 U	330 U	1800 U	360 U
4-Nitroaniline	4800 U	4200 U	840 U	330 U	1800 U	360 U
Phenanthrene	1900 U	1700 U	340 U	330 U	1800 U	360 U
Anthracene	1900 U	1700 U	340 U	330 U	1800 U	360 U
Carbazole	1900 U	1700 U	340 U	330 U	1800 U	360 U
Di-n-butyl phthalate	1900 U	1700 U	340 U	330 U	1800 U	360 U
Fluoranthene	1900 U	1700 U	340 U	330 U	1800 U	360 U
Pyrene	1900 U	1700 U	340 U	330 U	1800 U	360 U
Butyl benzyl phthalate	1900 U	1700 U	340 U	330 U	1800 U	360 U
Benzo(a)anthracene	1900 U	1700 U	340 U	280 J	1800 U	360 U
Bis(2-ethylhexyl)phthalate	1900 U	1700 U	340 U	330 U	1800 U	360 U
Chrysene	1900 U	1700 U	340 U	330 U	1800 U	360 U
Di-n-octyl phthalate	1900 U	1700 U	340 U	330 U	1800 U	360 U
Benzo(b)fluoranthene	1900 U	1700 U	340 U	330 U	1800 U	360 U
Benzo(k)fluoranthene	1900 U	1700 U	340 U	330 U	1800 U	360 U
Benzo(a)pyrene	1900 U	1700 U	340 U	330 U	1800 U	360 U
Indeno(1,2,3-cd)pyrene	1900 U	1700 U	340 U	330 U	1800 U	360 U
Dibenzo(a,h)anthracene	1900 U	1700 U	340 U	330 U	1800 U	360 U
Benzo(ghi)perylene	1900 U	1700 U	340 U	330 U	1800 U	360 U

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	TP-02								TP-03			
Sample I.D.:	SS-TP-02-03		SB-TP-02-0002		SB-TP-02-0304		SB-TP-02-0910		SB-TP-03-0002		SB-TP-03-0506	
Laboratory Project No.:	96-5053		96-5053		96-5053		96-5053		96-5053		96-5053	
Sample Interval:	0 - 3 inches		0 - 2 feet		3 - 4 feet		9 - 10 feet		0 - 2 feet		5 - 6 feet	
Sample Date:	10/22/96		10/22/96		10/22/96		10/22/96		10/22/96		10/22/96	
Semi-Volatile Organics	Unknown Hydrocarbon	1400 J	Unknown Hydrocarbon	3100 J	Unknown Hydrocarbon	160 J	Unknown Hydrocarbon	160 J	Unknown Hydrocarbon	3600 J	Unknown Hydrocarbon	780 J
Tentatively Identified Compounds (µg/kg)	Unknown Hydrocarbon	3400 J	Unknown Hydrocarbon	1900 J	Unknown Hydrocarbon	280 J	Unknown Hydrocarbon	190 J	Unknown Hydrocarbon	2100 J	Unknown Hydrocarbon	680 J
	Unknown Hydrocarbon	2100 J	Unknown Hydrocarbon	2800 J	Unknown Hydrocarbon	160 J	Unknown Hydrocarbon	190 J	Unknown Hydrocarbon	2600 J	Unknown Hydrocarbon	900 J
	Unknown Hydrocarbon	3400 J	Unknown Hydrocarbon	3800 J	Unknown Hydrocarbon	670 J	Unknown Hydrocarbon	180 J	Unknown Hydrocarbon	4300 J	Unknown Hydrocarbon	930 J
	Unknown Hydrocarbon	4300 J	Unknown Hydrocarbon	4200 J	Unknown Hydrocarbon	370 J	Unknown Hydrocarbon	340 J	Unknown Hydrocarbon	4500 J	Unknown Hydrocarbon	1000 J
	Unknown Hydrocarbon	5200 J	Unknown Hydrocarbon	4500 J	Unknown Hydrocarbon	580 J	Unknown Hydrocarbon	690 J	Unknown Hydrocarbon	5100 J	Unknown Hydrocarbon	930 J
	Unknown Hydrocarbon	4600 J	Unknown Hydrocarbon	4200 J	Unknown Hydrocarbon	800 J	Unknown Hydrocarbon	420 J	Unknown Hydrocarbon	4600 J	Unknown Hydrocarbon	2600 J
	Unknown Hydrocarbon	15000 J	Unknown Hydrocarbon	13000 J	Unknown Hydrocarbon	880 J	Unknown Hydrocarbon	620 J	Unknown Hydrocarbon	14000 J	Unknown Hydrocarbon	1900 J
	Unknown Hydrocarbon	10000 J	Unknown Hydrocarbon	9400 J	Unknown Hydrocarbon	770 J	Unknown Hydrocarbon	790 J	Unknown Hydrocarbon	10000 J	Unknown Hydrocarbon	1400 J
	Unknown Hydrocarbon	8600 J	Unknown Hydrocarbon	7200 J	Unknown Hydrocarbon	1900 J	Unknown Hydrocarbon	870 J	Unknown Hydrocarbon	7300 J	Unknown Hydrocarbon	930 J
	Unknown Hydrocarbon	4800 J	Unknown Hydrocarbon	4900 J	Unknown Hydrocarbon	1300 J	Unknown Hydrocarbon	790 J	Unknown Hydrocarbon	5100 J	Unknown	6700 J
	Unknown Hydrocarbon	1200 J	Unknown Hydrocarbon	2900 J	Unknown Hydrocarbon	900 J	Unknown Hydrocarbon	2300 J	Unknown Hydrocarbon	1900 J	Unknown	730 J
	Unknown Hydrocarbon	2300 J	Unknown	1900 J	Unknown Hydrocarbon	510 J	Unknown Hydrocarbon	1600 J	Unknown	2000 J	Unknown	15000 J
	Unknown Hydrocarbon	1200 J	Unknown	11000 J	Unknown Hydrocarbon	150 J	Unknown Hydrocarbon	1200 J	Unknown	33000 J	Unknown	580 J
	Unknown	2300 J	Unknown	3200 J	Unknown Hydrocarbon	190 J	Unknown Hydrocarbon	820 J	Unknown	3600 J	Unknown	1200 J
	Unknown	35000 J	Unknown	8900 J	Unknown	280 J	Unknown Hydrocarbon	190 J	Unknown	8400 J	Unknown	830 J
	Unknown	3900 J	Unknown	2000 J	Unknown	500 J	Unknown Hydrocarbon	290 J	Unknown	9200 J		
	Unknown	9800 J	Unknown	5700 J	Unknown	6700 J	Unknown Hydrocarbon	140 J				
	Unknown	1900 J	Unknown	3600 J	Unknown	630 J	Unknown	160 J				
	Unknown	1900 J			Unknown	2100 J	Unknown	450 J				
	Unknown	890 J			Unknown	360 J	Unknown	6500 J				
	Unknown	3100 J			Unknown	170 J	Unknown	580 J				
	Unknown	4400 J			Unknown	700 J	Unknown	1700 J				
	Unknown	1100 J			Unknown	460 J	Unknown	330 J				
	Unknown Aromatic Hydrocarbon	770 J			Unknown	200 J	Unknown	340 J				
							Unknown	170 J				
							Unknown	1100 J				
							Unknown	370 J				
							Unknown	150 J				
	Total SVOC TICs	132560	Total SVOC TICs	118200	Total SVOC TICs	21720	Total SVOC TICs	23630	Total SVOC TICs	121300	Total SVOC TICs	37090

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	TP-03 (continued)	TP-04		TP-05		
Sample I.D.:	SB-TP-03-1112	SB-TP-04-0002	SB-TP-04-1112	SS-TP-05-03	SB-TP-05-0002	SB-TP-05-0203
Laboratory Project No.:	96-5053	96-5077	96-5077	96-5077	96-5092	96-5092
Sample Interval:	11 - 12	0 - 2 feet	11 - 12 feet	0 - 3 inches	0 - 2 feet	2 - 3 feet
Sample Date:	10/22/96	10/22/96	10/22/96	10/23/96	10/24/96	10/24/96
TCL Semi-Volatile Organic Compounds (µg/kg)						
1,3-Dichlorobenzene	360 U	360 U	370 U	360 U	370 U	360 U
1,4-Dichlorobenzene	360 U	360 U	370 U	360 U	370 U	360 U
1,2,4-Trichlorobenzene	360 U	360 U	370 U	360 U	370 U	360 U
Naphthalene	360 U	360 U	370 U	360 U	1700	360 U
2-Methylnaphthalene	360 U	360 U	370 U	360 U	2400	260 J
Dimethyl phthalate	360 U	360 U	370 U	2600	370 U	360 U
Acenaphthylene	360 U	360 U	370 U	360 U	370 U	360 U
Acenaphthene	360 U	360 U	370 U	360 U	290 J	360 U
Dibenzofuran	360 U	360 U	370 U	360 U	600	360 U
Fluorene	360 U	360 U	370 U	360 U	370 U	360 U
Phenanthrene	360 U	360 U	370 U	1700	1800	430
Anthracene	360 U	360 U	370 U	440	260 J	360 U
Carbazole	360 U	360	280 J	360 U	370 U	360 U
Di-n-butyl phthalate	360 U	590	470	360 U	370 U	360 U
Fluoranthene	360 U	490	370 U	2500	1100	460
Pyrene	360 U	400	370 U	1800	1600	510 J
Butyl benzyl phthalate	360 U	360 U	300 J	360 U	370 U	360 U
Benzo(a)anthracene	360 U	390	370 U	990	790	250 J
Bis(2-ethylhexyl)phthalate	360 U	1600	1500	680	370 U	360 U
Chrysene	360 U	430	280 J	1100	1000	340 J
Di-n-octyl phthalate	360 U	360 U	370 U	360 U	370 U	360 U
Benzo(b)fluoranthene	360 U	410	370 U	840	700	320 J
Benzo(k)fluoranthene	360 U	390	370 U	700	500	360 U
Benzo(a)pyrene	360 U	340 J	370 U	860	610	300 J
Indeno(1,2,3-cd)pyrene	360 U	330 J	370 U	470	370 U	360 U
Dibenzo(a,h)anthracene	360 U	300 J	370 U	270 J	370 U	360 U
Benzo(ghi)perylene	360 U	330 J	370 U	500	370 U	360 U

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	TP-03 (continued)		TP-04				TP-05				
Sample I.D.:	SB-TP-03-1112		SB-TP-04-0002		SB-TP-04-1112		SS-TP-05-03		SB-TP-05-0002	SB-TP-05-0203	
Laboratory Project No.:	96-5053		96-5077		96-5077		96-5077		96-5092	96-5092	
Sample Interval:	11 - 12		0 - 2 feet		11 - 12 feet		0 - 3 inches		0 - 2 feet	2 - 3 feet	
Sample Date:	10/22/96		10/22/96		10/22/96		10/23/96		10/24/96	10/24/96	
Semi-Volatile Organics	Unknown Hydrocarbon	800 J	Unknown Hydrocarbon	270 J	Unknown Hydrocarbon	230 J	Unknown Hydrocarbon	380 J	NA (I)	Unknown Hydrocarbon	690 NJ
Tentatively Identified Compounds (µg/kg)	Unknown Hydrocarbon	690 J	Unknown Hydrocarbon	270 J	Unknown Hydrocarbon	310 J	Unknown Hydrocarbon	460 J		Unknown Hydrocarbon	610 NJ
	Unknown Hydrocarbon	880 J	Unknown Hydrocarbon	210 J	Unknown Hydrocarbon	540 J	Unknown Hydrocarbon	440 J		Unknown Hydrocarbon	1400 NJ
	Unknown Hydrocarbon	870 J	Unknown Hydrocarbon	300 J	Unknown Hydrocarbon	380 J	Unknown Hydrocarbon	420 J		Unknown Hydrocarbon	1100 NJ
	Unknown Hydrocarbon	1000 J	Unknown Hydrocarbon	230 J	Unknown Hydrocarbon	1300 J	Unknown Hydrocarbon	260 J		Unknown Hydrocarbon	1800 NJ
	Unknown Hydrocarbon	1000 J	Unknown Hydrocarbon	6500 J	Unknown Hydrocarbon	2000 J	Unknown Hydrocarbon	240 J		Unknown Hydrocarbon	2000 NJ
	Unknown Hydrocarbon	3200 J	Unknown Hydrocarbon	10000 J	Unknown Hydrocarbon	12000 J	Unknown Hydrocarbon	840 J		Unknown Hydrocarbon	1700 NJ
	Unknown Hydrocarbon	2500 J	Unknown Hydrocarbon	10000 J	Unknown Hydrocarbon	12000 J	Unknown Hydrocarbon	2200 J		Unknown Hydrocarbon	1700 NJ
	Unknown Hydrocarbon	1900 J	Unknown Hydrocarbon	9500 J	Unknown Hydrocarbon	11000 J	Unknown Hydrocarbon	2500 J		Unknown Hydrocarbon	1600 NJ
	Unknown Hydrocarbon	1400 J	Unknown Hydrocarbon	820 J	Unknown Hydrocarbon	9300 J	Unknown Hydrocarbon	1500 J		Unknown Hydrocarbon	1400 NJ
	Unknown Hydrocarbon	940 J	Unknown Hydrocarbon	5300 J	Unknown Hydrocarbon	5500 J	Unknown Hydrocarbon	1400 J		Unknown Hydrocarbon	760 NJ
	Unknown	6700 J	Unknown Hydrocarbon	320 J	Unknown Hydrocarbon	790 J	Unknown Hydrocarbon	2000 J		Unknown Hydrocarbon	1700 NJ
	Unknown	730 J	Unknown Hydrocarbon	1200 J	Unknown Hydrocarbon	2200 J	Unknown Hydrocarbon	1400 J		Unknown Hydrocarbon	1700 NJ
	Unknown	1500 J	Unknown Hydrocarbon	790 J	Unknown	210 J	Unknown Hydrocarbon	1100 J		Unknown Hydrocarbon	1500 NJ
	Unknown	640 J	Unknown Hydrocarbon	280 J	Unknown	280 J	Unknown	290 J		Unknown Hydrocarbon	760 NJ
	Unknown	1700 J	Unknown	200 J	Unknown	540 J	Unknown	270 J		Unknown	420 NJ
			Unknown	140 J	Unknown	1600 J	Unknown	5000 J			
			Unknown	840 J	Unknown	150 J	Unknown	250 J			
			Unknown	220 J	Unknown	1600 J	Unknown	310 J			
			Unknown	1500 J	Unknown	1300 J	Unknown	2000 J			
			Unknown	420 J	Unknown	3600 J	Unknown	1800 J			
			Unknown	230 J	Unknown	6300 J	Unknown	5300 J			
			Unknown	900 J	Unknown Phthalate	210 J	Unknown	540 J			
			Unknown	790 J			Unknown	420 J			
			Unknown	1800 J			Unknown	3900 J			
			Unknown	1000 J			Unknown Aromatic Hydrocarbon	290 J			
			Unknown	9800 J			Unknown Aromatic Hydrocarbon	370 J			
			Unknown Phthalate	1500 J			Methyl Naphthalene	290 J			
			Benzyl Butyl Phthalate	260 J			Dimethyl Naphthalene	320 J			
	Total SVOC TICs	26450	Total SVOC TICs	65590	Total SVOC TICs	73340	Total SVOC TICs	36490		Total SVOC TICs	20840

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	TP-05 (continued)	TP-06				TP-07
Sample I.D.:	SB-TP-05-0809	SB-TP-06-0002	SB-TP-06-0002D (e)	SB-TP-06-0304	SB-TP-06-0708	SS-TP-07-03
Laboratory Project No.:	96-5092	96-5092	96-5092	96-5092	96-5092	96-5077
Sample Interval:	8 - 9 feet	0 - 2 feet	0 - 2 feet	3 - 4 feet	7 - 8 feet	0 - 3 inches
Sample Date:	10/24/96	10/24/96	10/24/96	10/24/96	10/24/96	10/23/96
TCL Semi-Volatile Organic Compounds (µg/kg)						
1,3-Dichlorobenzene	350 U	360 U	360 U	360 U	350 U	360 U
1,4-Dichlorobenzene	350 U	360 U	360 U	360 U	350 U	360 U
1,2,4-Trichlorobenzene	350 U	360 U	360 U	360 U	350 U	360 U
Naphthalene	350 U	880	700	360 U	350 U	360 U
2-Methylnaphthalene	350 U	1500	1200	360 U	350 U	360 U
Dimethyl phthalate	350 U	360 U	360 U	360 U	350 U	360 U
Acenaphthylene	350 U	360 U	360 U	360 U	350 U	360 U
Acenaphthene	350 U	360 U	360 U	360 U	350 U	360 U
Dibenzofuran	350 U	430	350 J	360 U	350 U	360 U
Fluorene	350 U	360 U	360 U	360 U	350 U	360 U
Phenanthrene	350 U	1500	1300	360 U	350 U	670
Anthracene	350 U	360 U	360 U	360 U	350 U	360 U
Carbazole	350 U	360 U	360 U	360 U	350 U	360 U
Di-n-butyl phthalate	350 U	360 U	360 U	360 U	350 U	360 U
Fluoranthene	350 U	1200	1000	360 U	350 U	1200
Pyrene	350 U	1300 J	1100 J	360 U	350 U	840
Butyl benzyl phthalate	350 U	360 U	360 U	360 U	350 U	360 U
Benzo(a)anthracene	350 U	650	560	360 U	350 U	480
Bis(2-ethylhexyl)phthalate	350 U	360 U	360 U	360 U	350 U	390
Chrysene	350 U	890	750	360 U	350 U	550
Di-n-octyl phthalate	350 U	360 U	360 U	360 U	350 U	360 U
Benzo(b)fluoranthene	350 U	620	470	360 U	350 U	460
Benzo(k)fluoranthene	350 U	430	410	360 U	350 U	440
Benzo(a)pyrene	350 U	540	450	360 U	350 U	450
Indeno(1,2,3-cd)pyrene	350 U	250 J	360 U	360 U	350 U	300 J
Dibenzo(a,h)anthracene	350 U	360 U	360 U	360 U	350 U	360 U
Benzo(ghi)perylene	350 U	260 J	360 U	360 U	350 U	300 J

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	TP-05 (continued)			TP-06												TP-07		
Sample I.D.:	SB-TP-05-0809			SB-TP-06-0002			SB-TP-06-0002D			SB-TP-06-0304			SB-TP-06-0708			SS-TP-07-03		
Laboratory Project No.:	96-5092			96-5092			96-5092			96-5092			96-5092			96-5077		
Sample Interval:	8 - 9 feet			0 - 2 feet			0 - 2 feet			3 - 4 feet			7 - 8 feet			0 - 3 inches		
Sample Date:	10/24/96			10/24/96			10/24/96			10/24/96			10/24/96			10/23/96		
Semi-Volatile Organics	Unknown Hydrocarbon	1800	NJ	Unknown Hydrocarbon	1100	NJ	Unknown Hydrocarbon	740	NJ	Unknown Hydrocarbon	1300	NJ	Unknown Hydrocarbon	970	NJ	Unknown Hydrocarbon	330	J
Tentatively Identified Compounds (µg/kg)	Unknown Hydrocarbon	1300	NJ	Unknown Hydrocarbon	1300	NJ	Unknown Hydrocarbon	700	NJ	Unknown Hydrocarbon	1000	NJ	Unknown Hydrocarbon	2100	NJ	Unknown Hydrocarbon	420	J
	Unknown Hydrocarbon	2300	NJ	Unknown Hydrocarbon	1800	NJ	Unknown Hydrocarbon	600	NJ	Unknown Hydrocarbon	1800	NJ	Unknown Hydrocarbon	1300	NJ	Unknown Hydrocarbon	620	J
	Unknown Hydrocarbon	2100	NJ	Unknown Hydrocarbon	1200	NJ	Unknown Hydrocarbon	1100	NJ	Unknown Hydrocarbon	1700	NJ	Unknown Hydrocarbon	2400	NJ	Unknown Hydrocarbon	550	J
	Unknown Hydrocarbon	1500	NJ	Unknown	1400	NJ	Unknown Hydrocarbon	1400	NJ	Unknown Hydrocarbon	1400	NJ	Unknown Hydrocarbon	2100	NJ	Unknown Hydrocarbon	460	J
	Unknown Hydrocarbon	1500	NJ	Unknown	1200	NJ	Unknown Hydrocarbon	1300	NJ	Unknown Hydrocarbon	1300	NJ	Unknown Hydrocarbon	1600	NJ	Unknown Hydrocarbon	530	J
	Unknown Hydrocarbon	1000	NJ	Unknown	1900	NJ	Unknown Hydrocarbon	510	NJ	Unknown Hydrocarbon	960	NJ	Unknown Hydrocarbon	1300	NJ	Unknown Hydrocarbon	340	J
	Unknown Hydrocarbon	1200	NJ	Unknown	1000	NJ	Unknown Hydrocarbon	560	NJ	Unknown Hydrocarbon	1200	NJ	Unknown Hydrocarbon	1000	NJ	Unknown Hydrocarbon	100	J
	Unknown Hydrocarbon	1300	NJ	Unknown	1100	NJ	Unknown Hydrocarbon	550	NJ	Unknown Hydrocarbon	1300	NJ	Unknown Hydrocarbon	1100	NJ	Unknown Hydrocarbon	1400	J
	Unknown Hydrocarbon	1200	NJ	Unknown	930	NJ	Unknown Hydrocarbon	640	NJ	Unknown Hydrocarbon	1200	NJ	Unknown Hydrocarbon	1100	NJ	Unknown Hydrocarbon	920	J
	Unknown Hydrocarbon	980	NJ	Unknown	1000	NJ	Unknown Hydrocarbon	500	NJ	Unknown Hydrocarbon	1100	NJ	Unknown Hydrocarbon	1100	NJ	Unknown Hydrocarbon	6500	J
	Unknown Hydrocarbon	980	NJ	Unknown	1200	NJ	Unknown Hydrocarbon	490	NJ	Unknown Hydrocarbon	1100	NJ	Unknown Hydrocarbon	1200	NJ	Unknown Hydrocarbon	2200	J
	Unknown Hydrocarbon	830	NJ	Unknown	1100	NJ	Unknown Hydrocarbon	560	NJ	Unknown Hydrocarbon	850	NJ	Unknown Hydrocarbon	980	NJ	Unknown Hydrocarbon	6700	J
	Unknown Hydrocarbon	810	NJ				Unknown Hydrocarbon	550	NJ	Unknown Hydrocarbon	910	NJ	Unknown Hydrocarbon	850	NJ	Unknown Hydrocarbon	7900	J
	Unknown Hydrocarbon	1800	NJ				Unknown Hydrocarbon	600	NJ	Unknown Hydrocarbon	1500	NJ	Unknown Hydrocarbon	1200	NJ	Unknown Hydrocarbon	6000	J
	Unknown Hydrocarbon	1600	NJ				Unknown Hydrocarbon	5900	NJ	Unknown Hydrocarbon	1300	NJ	Unknown Hydrocarbon	960	NJ	Unknown Hydrocarbon	4500	J
	Unknown Hydrocarbon	1600	NJ				Unknown Hydrocarbon	5600	NJ	Unknown Hydrocarbon	1100	NJ	Unknown	930	NJ	Unknown Hydrocarbon	660	J
	Unknown Hydrocarbon	1400	NJ				Unknown Hydrocarbon	5400	NJ							Unknown Hydrocarbon	360	J
	Unknown Hydrocarbon	780	NJ				Unknown	420	NJ							Unknown Hydrocarbon	1600	J
							Unknown	1100	NJ							Unknown Hydrocarbon	1100	J
							Unknown	740	NJ							Unknown	490	J
							Unknown	810	NJ							Unknown	530	J
							Unknown	1400	NJ							Unknown	820	J
							Unknown	410	NJ							Unknown	1200	J
							Naphthalene	2000	NJ							Unknown	1100	J
																Unknown	3500	J
																Unknown	960	J
																Unknown Phthalate	330	J
	Total SVOC TICs	25980		**Total SVOC TICs**	16230		**Total SVOC TICs**	34580		**Total SVOC TICs**	21020		**Total SVOC TICs**	22190		**Total SVOC TICs**	52120	

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	TP-07 (continued)			TP-08		
Sample I.D.:	SB-TP-07-0002	SB-TP-07-0304	SB-TP-07-0809	SB-TP-08-0002	SB-TP-08-0304	SB-TP-08-0708
Laboratory Project No.:	96-5092	96-5092	96-5092	96-5077	96-5077	96-5077
Sample Interval:	0 - 2 feet	3 - 4 feet	8 - 9 feet	0 - 2 feet	3 - 4 feet	7 - 8 feet
Sample Date:	10/24/96	10/24/96	10/24/96	10/23/96	10/23/96	10/23/96
TCL Semi-Volatile Organic Compounds (µg/kg)						
1,3-Dichlorobenzene	360 U	380 U	360 U	350 U	360 U	360 U
1,4-Dichlorobenzene	360 U	380 U	360 U	350 U	360 U	360 U
1,2,4-Trichlorobenzene	360 U	380 U	360 U	350 U	360 U	360 U
Naphthalene	360 U	380 U	360 U	350 U	360 U	360 U
2-Methylnaphthalene	360 U	380 U	360 U	350 U	360 U	360 U
Dimethyl phthalate	360 U	380 U	360 U	350 U	360 U	360 U
Acenaphthylene	360 U	380 U	360 U	350 U	360 U	360 U
Acenaphthene	360 U	380 U	360 U	350 U	360 U	360 U
Dibenzofuran	360 U	380 U	360 U	350 U	360 U	360 U
Fluorene	360 U	380 U	360 U	350 U	360 U	360 U
Phenanthrene	360 U	380 U	360 U	350 U	360 U	360 U
Anthracene	360 U	380 U	360 U	350 U	360 U	360 U
Carbazole	360 U	380 U	360 U	350 U	360 U	360 U
Di-n-butyl phthalate	360 U	380 U	360 U	350 U	360 U	360 U
Fluoranthene	290 J	280 J	360 U	350 U	360 U	360 U
Pyrene	300 J	300 J	360 U	350 U	360 U	360 U
Butyl benzyl phthalate	360 U	380 U	360 U	350 U	360 U	360 U
Benzo(a)anthracene	360 U	380 U	360 U	350 U	360 U	360 U
Bis(2-ethylhexyl)phthalate	360 U	590	360 U	350 U	360 U	250 J
Chrysene	360 U	380 U	360 U	350 U	360 U	360 U
Di-n-octyl phthalate	360 U	380 U	360 U	350 U	360 U	360 U
Benzo(b)fluoranthene	360 U	380 U	360 U	350 U	360 U	360 U
Benzo(k)fluoranthene	360 U	380 U	360 U	350 U	360 U	360 U
Benzo(a)pyrene	360 U	380 U	360 U	350 U	360 U	360 U
Indeno(1,2,3-cd)pyrene	360 U	380 U	360 U	350 U	360 U	360 U
Dibenzo(a,h)anthracene	360 U	380 U	360 U	350 U	360 U	360 U
Benzo(ghi)perylene	360 U	380 U	360 U	350 U	360 U	360 U

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	TP-07 (continued)						TP-08					
Sample I.D.:	SB-TP-07-0002		SB-TP-07-0304		SB-TP-07-0809		SB-TP-08-0002		SB-TP-08-0304		SB-TP-08-0708	
Laboratory Project No.:	96-5092		96-5092		96-5092		96-5077		96-5077		96-5077	
Sample Interval:	0 - 2 feet		3 - 4 feet		8 - 9 feet		0 - 2 feet		3 - 4 feet		7 - 8 feet	
Sample Date:	10/25/96		10/24/96		10/24/96		10/23/96		10/23/96		10/23/96	
Semi-Volatile Organics Tentatively Identified Compounds (µg/kg)	Unknown Hydrocarbon	1200 NJ	Unknown Hydrocarbon	410 NJ	Unknown Hydrocarbon	760 NJ	Unknown Hydrocarbon	200 J	Unknown Hydrocarbon	170 J	Unknown Hydrocarbon	190 J
	Unknown Hydrocarbon	1500 NJ	Unknown Hydrocarbon	460 NJ	Unknown Hydrocarbon	1200 NJ	Unknown Hydrocarbon	320 J	Unknown Hydrocarbon	320 J	Unknown Hydrocarbon	330 J
	Unknown Hydrocarbon	1200 NJ	Unknown Hydrocarbon	620 NJ	Unknown Hydrocarbon	1000 NJ	Unknown Hydrocarbon	700 J	Unknown Hydrocarbon	200 J	Unknown Hydrocarbon	660 J
	Unknown Hydrocarbon	830 NJ	Unknown Hydrocarbon	590 NJ	Unknown Hydrocarbon	1800 NJ	Unknown Hydrocarbon	390 J	Unknown Hydrocarbon	670 J	Unknown Hydrocarbon	420 J
	Unknown Hydrocarbon	960 NJ	Unknown Hydrocarbon	480 NJ	Unknown Hydrocarbon	1800 NJ	Unknown Hydrocarbon	510 J	Unknown Hydrocarbon	450 J	Unknown Hydrocarbon	560 J
	Unknown Hydrocarbon	750 NJ	Unknown Hydrocarbon	490 NJ	Unknown Hydrocarbon	1300 NJ	Unknown Hydrocarbon	840 J	Unknown Hydrocarbon	560 J	Unknown Hydrocarbon	850 J
	Unknown Hydrocarbon	940 NJ	Unknown Hydrocarbon	290 NJ	Unknown Hydrocarbon	780 NJ	Unknown Hydrocarbon	930 J	Unknown Hydrocarbon	890 J	Unknown Hydrocarbon	990 J
	Unknown Hydrocarbon	790 NJ	Unknown Hydrocarbon	500 NJ	Unknown Hydrocarbon	1400 NJ	Unknown Hydrocarbon	840 J	Unknown Hydrocarbon	980 J	Unknown Hydrocarbon	910 J
	Unknown Hydrocarbon	710 NJ	Unknown Hydrocarbon	670 NJ	Unknown Hydrocarbon	1300 NJ	Unknown Hydrocarbon	2500 J	Unknown Hydrocarbon	880 J	Unknown Hydrocarbon	2500 J
	Unknown Hydrocarbon	750 NJ	Unknown Hydrocarbon	460 NJ	Unknown Hydrocarbon	1200 NJ	Unknown Hydrocarbon	1900 J	Unknown Hydrocarbon	2200 J	Unknown Hydrocarbon	1900 J
	Unknown Hydrocarbon	1900 NJ	Unknown	340 NJ	Unknown Hydrocarbon	780 NJ	Unknown Hydrocarbon	1400 J	Unknown Hydrocarbon	1800 J	Unknown Hydrocarbon	1400 J
	Unknown Hydrocarbon	1500 NJ	Unknown	660 NJ	Unknown Hydrocarbon	740 NJ	Unknown Hydrocarbon	1100 J	Unknown Hydrocarbon	1200 J	Unknown Hydrocarbon	710 J
	Unknown Hydrocarbon	2500 NJ	Unknown	610 NJ	Unknown Hydrocarbon	940 NJ	Unknown Hydrocarbon	490 J	Unknown Hydrocarbon	880 J	Unknown Hydrocarbon	340 J
	Unknown Hydrocarbon	1300 NJ	Unknown	3900 NJ	Unknown Hydrocarbon	3600 NJ	Unknown Hydrocarbon	200 J	Unknown Hydrocarbon	370 J	Unknown Hydrocarbon	630 J
	Unknown	1100 NJ	Unknown	440 NJ	Unknown Hydrocarbon	2900 NJ	Unknown	470 J	Unknown Hydrocarbon	150 J	Unknown Hydrocarbon	300 J
			Unknown	1500 NJ	Unknown Hydrocarbon	3000 NJ	Unknown	200 J	Unknown Hydrocarbon	150 J	Unknown Hydrocarbon	150 J
					Unknown Hydrocarbon	1700 NJ	Unknown	710 J	Unknown	480 J	Unknown	480 J
					Unknown Hydrocarbon	940 NJ	Unknown	1800 J	Unknown	7200 J	Unknown	170 J
					Unknown	1400 NJ	Unknown	400 J	Unknown	760 J	Unknown	7200 J
							Unknown	350 J	Unknown	2300 J	Unknown	730 J
							Unknown	180 J	Unknown	350 J	Unknown	2300 J
							Unknown	240 J	Unknown	200 J	Unknown	350 J
							Unknown	340 J	Unknown	270 J	Unknown	190 J
							Unknown	620 J	Unknown	350 J	Unknown	310 J
							Unknown	170 J	Unknown	620 J	Unknown	370 J
							Unknown	910 J	Unknown	410 J	Unknown	850 J
							Unknown	510 J	Unknown	700 J	Unknown	180 J
							Unknown	160 J	Unknown	150 J	Unknown	310 J
											Unknown	550 J
											Unknown	320 J
	Total SVOC TICs	17930	Total SVOC TICs	12420	Total SVOC TICs	28540	Total SVOC TICs	19380	Total SVOC TICs	25660	Total SVOC TICs	27150

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	TP-09			TP-10		TP-11
Sample I.D.:	SB-TP-09-0002	SB-TP-09-0203	SB-TP-09-0708	SB-TP-10-0002	SB-TP-10-0809	SS-TP-11-03
Laboratory Project No.:	96-5077	96-5077	96-5077	96-5077	96-5077	96-5053
Sample Interval:	0 - 2 feet	2 - 3 feet	7 - 8 feet	0 - 2 feet	8 - 9 feet	0 - 3 inches
Sample Date:	10/23/96	10/23/96	10/23/96	10/23/96	10/23/96	10/22/96
TCL Semi-Volatile Organic Compounds (µg/kg)						
1,3-Dichlorobenzene	380 U	460 U	380 U	350 U	350 U	1500 U
1,4-Dichlorobenzene	380 U	460 U	380 U	350 U	350 U	1500 U
1,2,4-Trichlorobenzene	380 U	460 U	380 U	350 U	350 U	1500 U
Naphthalene	1000	460 U	380 U	350 U	350 U	1500 U
2-Methylnaphthalene	1500	460 U	380 U	350 U	350 U	1500 U
Dimethyl phthalate	380 U	460 U	380 U	350 U	350 U	1500 U
Acenaphthylene	380 U	460 U	380 U	350 U	350 U	1500 U
Acenaphthene	380 U	460 U	380 U	350 U	350 U	1500 U
Dibenzofuran	420	460 U	380 U	350 U	350 U	1500 U
Fluorene	380 U	460 U	380 U	350 U	350 U	1500 U
Phenanthrene	2200	460 U	380 U	350 U	350 U	1500 U
Anthracene	340 J	460 U	380 U	350 U	350 U	1500 U
Carbazole	380 U	460 U	380 U	350 U	350 U	1500 U
Di-n-butyl phthalate	380 U	460 U	380 U	350 U	350 U	1500 U
Fluoranthene	2300	460 U	380 U	250 J	350 U	1500 U
Pyrene	2000	460 U	380 U	350 U	350 U	1500 U
Butyl benzyl phthalate	380 U	460 U	380 U	350 U	350 U	1500 U
Benzo(a)anthracene	960	460 U	380 U	350 U	350 U	1500 U
Bis(2-ethylhexyl)phthalate	380 U	460 U	530	350 U	350 U	1500 U
Chrysene	1100	460 U	380 U	350 U	350 U	1500 U
Di-n-octyl phthalate	380 U	460 U	380 U	350 U	350 U	1500 U
Benzo(b)fluoranthene	920	460 U	380 U	350 U	350 U	1500 U
Benzo(k)fluoranthene	920	460 U	380 U	350 U	350 U	1500 U
Benzo(a)pyrene	890	460 U	380 U	350 U	350 U	1500 U
Indeno(1,2,3-cd)pyrene	540	460 U	380 U	350 U	350 U	1500 U
Dibenzo(a,h)anthracene	380 U	460 U	380 U	350 U	350 U	1500 U
Benzo(ghi)perylene	530	460 U	380 U	350 U	350 U	1500 U

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	TP-09						TP-10				TP-11	
Sample I.D.:	SB-TP-09-0002		SB-TP-09-0203		SB-TP-09-0708		SB-TP-10-0002		SB-TP-10-0809		SS-TP-11-03	
Laboratory Project No.:	96-5077		96-5077		96-5077		96-5077		96-5077		96-5053	
Sample Interval:	0 - 2 feet		2 - 3 feet		7 - 8 feet		0 - 2 feet		8 - 9 feet		0 - 3 inches	
Sample Date:	10/23/96		10/23/96		10/23/96		10/23/96		10/23/96		10/22/96	
Semi-Volatile Organics	Unknown Hydrocarbon	330 J	Unknown Hydrocarbon	150 J	Unknown Hydrocarbon	1100 J	Unknown Hydrocarbon	150 J	Unknown Hydrocarbon	160 J	Unknown Hydrocarbon	1100 J
Tentatively Identified Compounds (µg/kg)	Unknown Hydrocarbon	390 J	Unknown Hydrocarbon	300 J	Unknown Hydrocarbon	590 J	Unknown Hydrocarbon	160 J	Unknown Hydrocarbon	650 J	Unknown Hydrocarbon	2500 J
	Unknown Hydrocarbon	440 J	Unknown Hydrocarbon	700 J	Unknown Hydrocarbon	710 J	Unknown Hydrocarbon	170 J	Unknown Hydrocarbon	330 J	Unknown Hydrocarbon	1700 J
	Unknown Hydrocarbon	560 J	Unknown Hydrocarbon	450 J	Unknown Hydrocarbon	1200 J	Unknown Hydrocarbon	160 J	Unknown Hydrocarbon	650 J	Unknown Hydrocarbon	2700 J
	Unknown Hydrocarbon	570 J	Unknown Hydrocarbon	610 J	Unknown Hydrocarbon	1300 J	Unknown Hydrocarbon	150 J	Unknown Hydrocarbon	770 J	Unknown Hydrocarbon	3400 J
	Unknown Hydrocarbon	640 J	Unknown Hydrocarbon	840 J	Unknown Hydrocarbon	970 J	Unknown Hydrocarbon	230 J	Unknown Hydrocarbon	690 J	Unknown Hydrocarbon	4000 J
	Unknown Hydrocarbon	590 J	Unknown Hydrocarbon	960 J	Unknown Hydrocarbon	980 J	Unknown Hydrocarbon	430 J	Unknown Hydrocarbon	180 J	Unknown Hydrocarbon	3700 J
	Unknown Hydrocarbon	470 J	Unknown Hydrocarbon	900 J	Unknown	4000 J	Unknown Hydrocarbon	540 J	Unknown Hydrocarbon	600 J	Unknown Hydrocarbon	9400 J
	Unknown Hydrocarbon	480 J	Unknown Hydrocarbon	2600 J	Unknown	1400 J	Unknown Hydrocarbon	1300 J	Unknown Hydrocarbon	370 J	Unknown Hydrocarbon	6700 J
	Unknown Hydrocarbon	710 J	Unknown Hydrocarbon	2000 J	Unknown	1300 J	Unknown Hydrocarbon	1200 J	Unknown Hydrocarbon	630 J	Unknown Hydrocarbon	5000 J
	Unknown Hydrocarbon	850 J	Unknown Hydrocarbon	1500 J	Unknown	6500 J	Unknown Hydrocarbon	1300 J	Unknown Hydrocarbon	550 J	Unknown Hydrocarbon	3500 J
	Unknown Hydrocarbon	760 J	Unknown Hydrocarbon	1000 J	Unknown	6600 J	Unknown Hydrocarbon	160 J	Unknown Hydrocarbon	530 J	Unknown Hydrocarbon	1700 J
	Unknown Hydrocarbon	2900 J	Unknown Hydrocarbon	540 J	Unknown	16000 J	Unknown Hydrocarbon	700 J	Unknown Hydrocarbon	420 J	Unknown	1800 J
	Unknown Hydrocarbon	2100 J	Unknown Hydrocarbon	170 J	Unknown	450 J	Unknown Hydrocarbon	460 J	Unknown Hydrocarbon	400 J	Unknown	29000 J
	Unknown Hydrocarbon	1700 J	Unknown	180 J	Unknown	9300 J	Unknown Hydrocarbon	620 J	Unknown Hydrocarbon	260 J	Unknown	3100 J
	Unknown Hydrocarbon	1600 J	Unknown	440 J	Unknown	640 J	Unknown	340 J	Unknown Hydrocarbon	440 J	Unknown	7700 J
	Unknown Hydrocarbon	410 J	Unknown	350 J	Unknown	1600 J	Unknown	160 J	Unknown Hydrocarbon	580 J	Unknown	1600 J
	Unknown	400 J	Unknown	6000 J	Unknown	710 J	Unknown	1700 J	Unknown Hydrocarbon	740 J	Unknown	1500 J
	Unknown	510 J	Unknown	680 J	Unknown	2100 J	Unknown	1400 J	Unknown Hydrocarbon	1700 J	Unknown	710 J
	Unknown	1500 J	Unknown	220 J	Unknown	9100 J	Unknown	4300 J	Unknown Hydrocarbon	1500 J	Unknown	830 J
	Unknown	1200 J	Unknown	1400 J	Unknown	1200 J	Unknown	4300 J	Unknown Hydrocarbon	1600 J	Unknown	3200 J
	Unknown	450 J	Unknown	310 J	Unknown	1800 J	Unknown	150 J	Unknown Hydrocarbon	1000 J	Unknown	1200 J
	Dimethyl Naphthalene	1200 J	Unknown	290 J	Unknown	8100 J			Unknown Hydrocarbon	260 J	Unknown Aromatic Hydrocarbon	630 J
	Trimethyl Naphthalene	470 J	Unknown	140 J	Unknown	3800 J			Unknown Hydrocarbon	340 J		
	Methyl Phenanthrene	470 J	Unknown	210 J	Unknown	510 J			Unknown	470 J		
	Methyl Anthracene	340 J	Unknown	570 J	Unknown	1700 J			Unknown	440 J		
			Unknown	1200 J	Unknown	1700 J			Unknown	2100 J		
			Unknown	390 J	Unknown	4700 J			Unknown	2000 J		
			Unknown	210 J	Unknown	540 J			Unknown	4900 J		
					Unknown	510 J			Unknown	470 J		
	Total SVOC TICs	22040	Total SVOC TICs	25310	Total SVOC TICs	91110	Total SVOC TICs	20080	Total SVOC TICs	25730	Total SVOC TICs	96670

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	TP-11 (continued)			
Sample I.D.:	SB-TP-11-0002	SB-TP-11-0002D	SB-TP-11-1011	SB-TP-11-1112
Laboratory Project No.:	96-5077	96-5077	96-5077	96-5077
Sample Interval:	0 - 2 feet	0 - 2 feet	10 - 11 feet	11 - 12 feet
Sample Date:	10/23/96	10/23/96	10/23/96	10/23/96
TCL Semi-Volatile Organic Compounds (µg/kg)				
1,3-Dichlorobenzene	1700 U	1700 U	380 U	350 U
1,4-Dichlorobenzene	1700 U	1700 U	380 U	350 U
1,2,4-Trichlorobenzene	1700 U	1700 U	380 U	350 U
Naphthalene	1700 U	1700 U	380 U	350 U
2-Methylnaphthalene	1700 U	1700 U	380 U	350 U
Dimethyl phthalate	1700 U	1700 U	380 U	350 U
Acenaphthylene	1700 U	1700 U	380 U	350 U
Acenaphthene	1700 U	1700 U	380 U	350 U
Dibenzofuran	1700 U	1700 U	380 U	350 U
Fluorene	1700 U	1700 U	380 U	350 U
Phenanthrene	1700 U	1700 U	380 U	350 U
Anthracene	1700 U	1700 U	380 U	350 U
Carbazole	1700 U	1700 U	380 U	350 U
Di-n-butyl phthalate	1700 U	1700 U	380 U	350 U
Fluoranthene	1800 D	1700 U	380 U	350 U
Pyrene	1500 J	1700 U	380 U	350 U
Butyl benzyl phthalate	1700 U	1700 U	380 U	350 U
Benzo(a)anthracene	1700 U	1700 U	380 U	350 U
Bis(2-ethylhexyl)phthalate	1700 U	1700 U	380 U	350 U
Chrysene	1700 U	1700 U	380 U	350 U
Di-n-octyl phthalate	1700 U	1700 U	380 U	350 U
Benzo(b)fluoranthene	1700 U	1700 U	380 U	350 U
Benzo(k)fluoranthene	1700 U	1700 U	380 U	350 U
Benzo(a)pyrene	1700 U	1700 U	380 U	350 U
Indeno(1,2,3-cd)pyrene	1700 U	1700 U	380 U	350 U
Dibenzo(a,h)anthracene	1700 U	1700 U	380 U	350 U
Benzo(ghi)perylene	1700 U	1700 U	380 U	350 U

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	TP-11 (continued)						
Sample I.D.:	SB-TP-11-0002		SB-TP-11-0002D	SB-TP-11-1011		SB-TP-11-1112	
Laboratory Project No.:	96-5077		96-5077	96-5077		96-5077	
Sample Interval:	0 - 2 feet		0 - 2 feet	10 - 11 feet		11 - 12 feet	
Sample Date:	10/23/96		10/23/96	10/23/96		10/23/96	
Semi-Volatile Organics							
Tentatively Identified Compounds (µg/kg)	Unknown Hydrocarbon	1100 J	NA	Unknown Hydrocarbon	190 J	Unknown Hydrocarbon	620 J
	Unknown Hydrocarbon	1700 J		Unknown Hydrocarbon	190 J	Unknown Hydrocarbon	360 J
	Unknown Hydrocarbon	5200 J		Unknown Hydrocarbon	220 J	Unknown Hydrocarbon	350 J
	Unknown Hydrocarbon	4900 J		Unknown Hydrocarbon	350 J	Unknown Hydrocarbon	660 J
	Unknown Hydrocarbon	4000 J		Unknown Hydrocarbon	410 J	Unknown Hydrocarbon	670 J
	Unknown Hydrocarbon	1500 J		Unknown Hydrocarbon	760 J	Unknown Hydrocarbon	670 J
	Unknown Hydrocarbon	2500 J		Unknown Hydrocarbon	770 J	Unknown Hydrocarbon	470 J
	Unknown Hydrocarbon	690 J		Unknown Hydrocarbon	630 J	Unknown Hydrocarbon	300 J
	Unknown Hydrocarbon	730 J		Unknown Hydrocarbon	560 J	Unknown Hydrocarbon	530 J
	Unknown Hydrocarbon	880 J		Unknown Hydrocarbon	270 J	Unknown Hydrocarbon	510 J
	Unknown	710 J		Unknown	920 J	Unknown Hydrocarbon	460 J
	Unknown	1400 J		Unknown	230 J	Unknown Hydrocarbon	440 J
	Unknown	1100 J		Unknown	610 J	Unknown Hydrocarbon	280 J
	Unknown	2700 J		Unknown	1700 J	Unknown Hydrocarbon	220 J
	Unknown Aromatic Hydrocarbon	1200 J		Unknown	1500 J	Unknown Hydrocarbon	360 J
	Unknown Aromatic Hydrocarbon	1500 J		Unknown	4700 J	Unknown Hydrocarbon	580 J
				Unknown	400 J	Unknown Hydrocarbon	830 J
				Unknown	250 J	Unknown Hydrocarbon	1800 J
						Unknown Hydrocarbon	1800 J
						Unknown Hydrocarbon	2100 J
						Unknown Hydrocarbon	1100 J
						Unknown Hydrocarbon	270 J
						Unknown Hydrocarbon	200 J
						Unknown Hydrocarbon	800 J
						Unknown Hydrocarbon	210 J
						Unknown Hydrocarbon	290 J
						Unknown	1800 J
						Unknown	1500 J
						Unknown	4300 J
						Unknown	3800 J
	Total SVOC TICs	31810		Total SVOC TICs	14660	Total SVOC TICs	28280

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-03			RFI-04		
Sample I.D.:	SS-RFI-003-03	SB-RFI-003-0002	SB-RFI-003-0406	SB-RFI-004-0002	SB-RFI-004-0204	SB-RFI-004-2022
Laboratory Project No.:	96-5053	96-5102	96-5102	96-5198	96-5198	96-5198
Sample Interval:	0 - 3 inches	0 - 2 feet	4 - 6 feet	0 - 2 feet	2 - 4 feet	20 - 22 feet
Sample Date:	10/22/96	10/25/96	10/25/96	10/29/96	10/29/96	10/29/96
TCL Semi-Volatile Organic Compounds (μg/kg)						
1,3-Dichlorobenzene	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
1,4-Dichlorobenzene	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
1,2,4-Trichlorobenzene	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Naphthalene	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
2-Methylnaphthalene	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Dimethyl phthalate	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Acenaphthylene	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Acenaphthene	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Dibenzofuran	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Fluorene	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Phenanthrene	1600 U	480 J	700 UJ	370 U	530 U	350 U
Anthracene	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Carbazole	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Di-n-butyl phthalate	1600 U	680 UJ	700 UJ	340 J	490 J	240 J
Fluoranthene	1600 U	670 J	630 J	370 U	530 U	350 U
Pyrene	1600 U	510 J	500 J	370 U	530 U	350 U
Butyl benzyl phthalate	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Benzo(a)anthracene	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Bis(2-ethylhexyl)phthalate	1600 U	680 UJ	700 UJ	420	530 U	350 U
Chrysene	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Di-n-octyl phthalate	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Benzo(b)fluoranthene	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Benzo(k)fluoranthene	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Benzo(a)pyrene	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Indeno(1,2,3-cd)pyrene	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Dibenzo(a,h)anthracene	1600 U	680 UJ	700 UJ	370 U	530 U	350 U
Benzo(ghi)perylene	1600 U	680 UJ	700 UJ	370 U	530 U	350 U

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-03						RFI-04					
Sample I.D.:	SS-RFI-003-03		SB-RFI-003-0002		SB-RFI-003-0406		SB-RFI-004-0002		SB-RFI-004-0204		SB-RFI-004-2022	
Laboratory Project No.:	96-5053		96-5102		96-5102		96-5198		96-5198		96-5198	
Sample Interval:	0 - 3 inches		0 - 2 feet		4 - 6 feet		0 - 2 feet		2 - 4 feet		20 - 22 feet	
Sample Date:	10/22/96		10/25/96		10/25/96		10/29/96		10/29/96		10/29/96	
Semi-Volatile Organics Tentatively Identified Compounds (µg/kg)	Unknown Hydrocarbon	760 J	Unknown Hydrocarbon	55 NJ	Unknown Hydrocarbon	59 NJ	Unknown Hydrocarbon	760 J	Unknown Hydrocarbon	320 J	Unknown Hydrocarbon	760 J
	Unknown Hydrocarbon	1100 J	Unknown Hydrocarbon	28 NJ	Unknown Hydrocarbon	48 NJ	Unknown Hydrocarbon	900 J	Unknown Hydrocarbon	280 J	Unknown Hydrocarbon	1200 J
	Unknown Hydrocarbon	2800 J	Unknown Hydrocarbon	58 NJ	Unknown Hydrocarbon	85 NJ	Unknown Hydrocarbon	1300 J	Unknown Hydrocarbon	270 J	Unknown Hydrocarbon	890 J
	Unknown Hydrocarbon	1900 J	Unknown Hydrocarbon	69 NJ	Unknown Hydrocarbon	82 NJ	Unknown Hydrocarbon	900 J	Unknown Hydrocarbon	280 J	Unknown Hydrocarbon	1700 J
	Unknown Hydrocarbon	2700 J	Unknown Hydrocarbon	120 NJ	Unknown Hydrocarbon	71 NJ	Unknown Hydrocarbon	540 J	Unknown Hydrocarbon	250 J	Unknown Hydrocarbon	1600 J
	Unknown Hydrocarbon	4500 J	Unknown Hydrocarbon	86 NJ	Unknown Hydrocarbon	110 NJ	Unknown Hydrocarbon	880 J	Unknown Hydrocarbon	220 J	Unknown Hydrocarbon	2200 J
	Unknown Hydrocarbon	4400 J	Unknown Hydrocarbon	130 NJ	Unknown Hydrocarbon	130 NJ	Unknown Hydrocarbon	1200 J	Unknown Hydrocarbon	230 J	Unknown Hydrocarbon	2500 J
	Unknown Hydrocarbon	4100 J	Unknown Hydrocarbon	140 NJ	Unknown Hydrocarbon	160 NJ	Unknown Hydrocarbon	520 J	Unknown Hydrocarbon	310 J	Unknown Hydrocarbon	960 J
	Unknown Hydrocarbon	13000 J	Unknown Hydrocarbon	150 NJ	Unknown Hydrocarbon	110 NJ	Unknown Hydrocarbon	830 J	Unknown Hydrocarbon	430 J	Unknown Hydrocarbon	1800 J
	Unknown Hydrocarbon	8600 J	Unknown Hydrocarbon	110 NJ	Unknown Hydrocarbon	170 NJ	Unknown Hydrocarbon	660 J	Unknown Hydrocarbon	510 J	Unknown Hydrocarbon	1500 J
	Unknown Hydrocarbon	6500 J	Unknown Hydrocarbon	59 NJ	Unknown Hydrocarbon	180 NJ	Unknown Hydrocarbon	590 J	Unknown Hydrocarbon	630 J	Unknown Hydrocarbon	1300 J
	Unknown Hydrocarbon	1700 J	Unknown Hydrocarbon	57 NJ	Unknown Hydrocarbon	180 NJ	Unknown Hydrocarbon	620 J	Unknown Hydrocarbon	640 J	Unknown Hydrocarbon	1000 J
	Unknown	1800 J	Unknown	29 NJ	Unknown Hydrocarbon	180 NJ	Unknown Hydrocarbon	530 J	Unknown Hydrocarbon	740 J	Unknown Hydrocarbon	1000 J
	Unknown	860 J	Unknown	66 NJ	Unknown Hydrocarbon	120 NJ	Unknown Hydrocarbon	6640 J	Unknown	2500 J	Unknown Hydrocarbon	950 J
	Unknown	21000 J	Unknown	33 NJ	Unknown Hydrocarbon	130 NJ	Unknown Hydrocarbon	530 J	Unknown	1200 J	Unknown Hydrocarbon	910 J
	Unknown	3600 J	Unknown	220 NJ	Unknown Hydrocarbon	66 NJ	Unknown	1500 J	Unknown Phthalate	220 J	Unknown Hydrocarbon	800 J
	Unknown	690 J	Unknown	220 NJ	Unknown	230 NJ	Unknown	580 J			Unknown	1100 J
	Unknown	9200 J	Unknown	45 NJ	Unknown	77 NJ	Unknown	800 J				
	Unknown	2000 J	Unknown	50 NJ	Unknown	140 NJ	Unknown	2400 J				
	Unknown	1700 J	Unknown	63 NJ	Unknown	230 NJ	Unknown	760 J				
	Unknown	750 J	Unknown Aromatic Hydrocarbon	79 NJ	Unknown	190 NJ						
	Unknown	7100 J	Unknown Aromatic Hydrocarbon	40 NJ	Unknown	50 NJ						
	Unknown	1400 J			Unknown	140 NJ						
					Unknown Aromatic Hydrocarbon	72 NJ						
					Unknown Aromatic Hydrocarbon	46 NJ						
	Total SVOC TICs	102160	Total SVOC TICs	1907	Total SVOC TICs	3056	Total SVOC TICs	23440	Total SVOC TICs	9030	Total SVOC TICs	22170

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-06				RFI-08	
Sample I.D.:	SS-RFI-006-03	SS-RFI-006-03D	SB-RFI-006-0204	SB-RFI-006-0406	SS-RFI-008-03	SS-RFI-008-03D
Laboratory Project No.:	96-5077	96-5077	96-5102	96-5102	96-5102	96-5102
Sample Interval:	0 - 3 inches	0 - 3 inches	2 - 4 feet	4 - 6 feet	0 - 3 inches	0 - 3 inches
Sample Date:	10/23/96	10/28/96	10/25/96	10/25/96	10/24/96	10/24/96
TCL Semi-Volatile Organic Compounds (µg/kg)						
1,3-Dichlorobenzene	360 U	360 U	1700 UJ	350 UJ	1700 UJ	1700 UJ
1,4-Dichlorobenzene	360 U	360 U	1700 UJ	350 UJ	1700 UJ	1700 UJ
1,2,4-Trichlorobenzene	360 U	360 U	1700 UJ	350 UJ	1700 UJ	1700 UJ
Naphthalene	360 U	360 U	1700 UJ	350 UJ	1700 UJ	1700 UJ
2-Methylnaphthalene	360 U	360 U	1700 UJ	350 UJ	1700 UJ	1700 UJ
Dimethyl phthalate	360 U	360 U	1700 UJ	350 UJ	1700 UJ	1700 UJ
Acenaphthylene	290 J	290 J	1700 UJ	350 UJ	1700 UJ	2000 J
Acenaphthene	360 U	360 U	1700 UJ	350 UJ	1700 UJ	1700 UJ
Dibenzofuran	360 U	360 U	1700 UJ	350 UJ	1700 UJ	1700 UJ
Fluorene	360 U	360 U	1700 UJ	350 UJ	1700 UJ	1700 UJ
Phenanthrene	2200	3000	1200 J	350 UJ	3800 J	8300 J
Anthracene	470	580	1700 UJ	350 UJ	1700 UJ	1800 J
Carbazole	310 J	370	1700 UJ	350 UJ	1700 UJ	1700 UJ
Di-n-butyl phthalate	360 U	360 U	1700 UJ	350 UJ	1700 UJ	1700 UJ
Fluoranthene	3300	4300	1400 J	350 UJ	7200 J	15000 J
Pyrene	2400	2900	1700 UJ	350 UJ	5800 J	12000 J
Butyl benzyl phthalate	360 U	440	1700 UJ	350 UJ	1700 UJ	1700 UJ
Benzo(a)anthracene	1200	1300	1700 UJ	350 UJ	2700 J	5900 J
Bis(2-ethylhexyl)phthalate	1100	540	1700 UJ	350 UJ	1700 UJ	1700 UJ
Chrysene	1500	1700	1700 UJ	350 UJ	3500 J	8100 J
Di-n-octyl phthalate	360 U	360 U	1700 UJ	350 UJ	1700 UJ	1700 UJ
Benzo(b)fluoranthene	1400	1400	1700 UJ	350 UJ	3200 J	7500 J
Benzo(k)fluoranthene	1200	1300	1700 UJ	350 UJ	3200 J	6800 J
Benzo(a)pyrene	1300	1300	1700 UJ	350 UJ	3100 J	7000 J
Indeno(1,2,3-cd)pyrene	840	770	1700 UJ	350 UJ	2400 J	5600 J
Dibenzo(a,h)anthracene	420	380	1700 UJ	350 UJ	1700 UJ	1600 J
Benzo(ghi)perylene	970	830	1700 UJ	350 UJ	2600 J	5900 J

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-06								RFI-08			
Sample I.D.:	SS-RFI-006-03		SS-RFI-006-03D		SB-RFI-006-0204		SB-RFI-006-0406		SS-RFI-008-03		SS-RFI-008-03D	
Laboratory Project No.:	96-5077		96-5077		96-5102		96-5102		96-5102		96-5102	
Sample Interval:	0 - 3 inches		0 - 3 inches		2 - 4 feet		4 - 6 feet		0 - 3 inches		0 - 3 inches	
Sample Date:	10/23/96		10/23/96		10/25/96		10/25/96		10/24/96		10/24/96	
Semi-Volatile Organics												
Tentatively Identified Compounds (µg/kg)	Unknown Hydrocarbon	620 J	Unknown Hydrocarbon	620 J	Unknown Hydrocarbon	67 NJ	Unknown Hydrocarbon	79 NJ	Unknown Hydrocarbon	180 J	Unknown Hydrocarbon	130 NJ
	Unknown Hydrocarbon	410 J	Unknown Hydrocarbon	460 J	Unknown Hydrocarbon	160 NJ	Unknown Hydrocarbon	55 NJ	Unknown Hydrocarbon	210 J	Unknown Hydrocarbon	140 NJ
	Unknown Hydrocarbon	800 J	Unknown Hydrocarbon	860 J	Unknown Hydrocarbon	220 NJ	Unknown Hydrocarbon	120 NJ	Unknown Hydrocarbon	200 J	Unknown Hydrocarbon	130 NJ
	Unknown Hydrocarbon	770 J	Unknown Hydrocarbon	670 J	Unknown Hydrocarbon	270 NJ	Unknown Hydrocarbon	150 NJ	Unknown Hydrocarbon	100 J	Unknown Hydrocarbon	330 NJ
	Unknown Hydrocarbon	260 J	Unknown Hydrocarbon	240 J	Unknown Hydrocarbon	180 NJ	Unknown Hydrocarbon	140 NJ	Unknown Hydrocarbon	180 J	Unknown Hydrocarbon	180 NJ
	Unknown Hydrocarbon	340 J	Unknown Hydrocarbon	240 J	Unknown Hydrocarbon	350 NJ	Unknown Hydrocarbon	95 NJ	Unknown Hydrocarbon	330 J	Unknown Hydrocarbon	80 NJ
	Unknown Hydrocarbon	280 J	Unknown Hydrocarbon	270 J	Unknown Hydrocarbon	380 NJ	Unknown Hydrocarbon	100 NJ	Unknown Hydrocarbon	88 J	Unknown Hydrocarbon	120 NJ
	Unknown Hydrocarbon	190 J	Unknown Hydrocarbon	440 J	Unknown Hydrocarbon	380 NJ	Unknown Hydrocarbon	100 NJ	Unknown	110 J	Unknown Hydrocarbon	580 NJ
	Unknown Hydrocarbon	180 J	Unknown Hydrocarbon	1200 J	Unknown Hydrocarbon	290 NJ	Unknown Hydrocarbon	93 NJ	Unknown	840 J	Unknown Hydrocarbon	110 NJ
	Unknown Hydrocarbon	270 J	Unknown Hydrocarbon	1600 J	Unknown Hydrocarbon	140 NJ	Unknown Hydrocarbon	78 NJ	Unknown	680 J	Unknown Hydrocarbon	600 NJ
	Unknown Hydrocarbon	800 J	Unknown Hydrocarbon	13000 J	Unknown Hydrocarbon	200 NJ	Unknown Hydrocarbon	130 NJ	Unknown	130 J	Unknown Hydrocarbon	68 NJ
	Unknown Hydrocarbon	1200 J	Unknown Hydrocarbon	14000 J	Unknown	640 NJ	Unknown Hydrocarbon	140 NJ	Unknown	71 J	Unknown Hydrocarbon	72 NJ
	Unknown Hydrocarbon	14000 J	Unknown Hydrocarbon	14000 J	Unknown	580 NJ	Unknown Hydrocarbon	140 NJ	Unknown	330 J	Unknown Hydrocarbon	76 NJ
	Unknown Hydrocarbon	15000 J	Unknown Hydrocarbon	11000 J	Unknown	120 NJ	Unknown Hydrocarbon	140 NJ	Unknown	96 J	Unknown Hydrocarbon	330 NJ
	Unknown Hydrocarbon	16000 J	Unknown Hydrocarbon	1800 J	Unknown	210 NJ	Unknown Hydrocarbon	54 NJ			Unknown Hydrocarbon	80 NJ
	Unknown Hydrocarbon	12000 J	Unknown Hydrocarbon	7200 J	Unknown	120 NJ	Unknown Hydrocarbon	140 NJ			Unknown Aromatic Hydrocarbon	91 NJ
	Unknown Hydrocarbon	7800 J	Unknown Hydrocarbon	1500 J	Unknown Aromatic Hydrocarbon	92 NJ	Unknown Hydrocarbon	140 NJ			Unknown Hydrocarbon	140 NJ
	Unknown Hydrocarbon	1500 J	Unknown Hydrocarbon	1000 J	Unknown Aromatic Hydrocarbon	200 NJ	Unknown Hydrocarbon	110 NJ			Unknown Hydrocarbon	130 NJ
	Unknown	200 J	Unknown	220 J			Unknown Hydrocarbon	90 NJ			Unknown Hydrocarbon	240 NJ
	Unknown	430 J	Unknown	250 J			Unknown Hydrocarbon	66 NJ				
	Unknown	240 J	Unknown	210 J			Unknown	83 NJ				
	Unknown	170 J	Unknown	240 J			Unknown	75 NJ				
	Unknown	190 J	Unknown	310 J			Unknown	150 NJ				
	Unknown	1500 J	Unknown	210 J			Unknown	130 NJ				
	Unknown	1400 J	Unknown	2200 J			Unknown	47 NJ				
	Unknown	3600 J	Unknown	1700 J								
	Unknown	1400 J	Unknown	6800 J								
	Unknown Aromatic Hydrocarbon	300 J	Unknown	2000 J								
	Unknown Aromatic Hydrocarbon	5000 J	Unknown Aromatic Hydrocarbon	6200 J								
	Methyl naphthalene	360 J	Methyl naphthalene	400 J								
	Total SVOC TICs	87210	**Total SVOC TICs**	90840	**Total SVOC TICs**	4599	**Total SVOC TICs**	2645	**Total SVOC TICs**	3545	**Total SVOC TICs**	3627

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-09			RFI-010		RFI-11
Sample I.D.:	SB-RFI-009-0002	SB-RFI-009-0406	SB-RFI-009-0810	SB-RFI-010-0204	SB-RFI-010-0810	SB-RFI-011-0002
Laboratory Project No.:	96-5102	96-5102	96-5102	96-5092	96-5092	96-5102
Sample Interval:	0 - 2 feet	4 - 6 feet	8 - 10 feet	2 - 4 feet	8 - 10 feet	0 - 2 feet
Sample Date:	10/24/96	10/24/96	10/24/96	10/24/96	10/23/96	10/24/96
TCL Semi-Volatile Organic Compounds (µg/kg)						
1,3-Dichlorobenzene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
1,4-Dichlorobenzene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
1,2,4-Trichlorobenzene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Naphthalene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
2-Methylnaphthalene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Dimethyl phthalate	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Acenaphthylene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Acenaphthene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Dibenzofuran	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Fluorene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Phenanthrene	360 UJ	340 UJ	310 UJ	370 U	340 U	650 J
Anthracene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Carbazole	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Di-n-butyl phthalate	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Fluoranthene	360 UJ	340 UJ	310 UJ	370 U	340 U	460 J
Pyrene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Butyl benzyl phthalate	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Benzo(a)anthracene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Bis(2-ethylhexyl)phthalate	360 UJ	340 J	310 UJ	380	920	640 UJ
Chrysene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Di-n-octyl phthalate	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Benzo(b)fluoranthene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Benzo(k)fluoranthene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Benzo(a)pyrene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Indeno(1,2,3-cd)pyrene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Dibenzo(a,h)anthracene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ
Benzo(ghi)perylene	360 UJ	340 UJ	310 UJ	370 U	340 U	640 UJ

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-09						RFI-10				RFI-11	
Sample I.D.:	SB-RFI-009-0002		SB-RFI-009-0406		SB-RFI-009-0810		SB-RFI-010-0204		SB-RFI-010-0810		SB-RFI-011-0002	
Laboratory Project No.:	96-5102		96-5102		96-5102		96-5092		96-5102		96-5102	
Sample Inverval:	0 - 2 feet		4 - 6 feet		8 - 10 feet		2 - 4 feet		8 - 10 feet		0 - 2 feet	
Sample Date:	10/24/96		10/24/96		10/24/96		10/24/96		10/23/96		10/24/96	
Semi-Volatile Organics												
Tentatively Identified Compounds (µg/kg)	Unknown Hydrocarbon	620 NJ	Unknown Hydrocarbon	220 NJ	Unknown Hydrocarbon	180 NJ	Unknown Hydrocarbon	490 NJ	Unknown Hydrocarbon	890 NJ	Unknown Hydrocarbon	28 NJ
	Unknown Hydrocarbon	450 NJ	Unknown Hydrocarbon	330 NJ	Unknown Hydrocarbon	170 NJ	Unknown Hydrocarbon	1200 NJ	Unknown Hydrocarbon	2000 NJ	Unknown Hydrocarbon	40 NJ
	Unknown Hydrocarbon	500 NJ	Unknown Hydrocarbon	490 NJ	Unknown Hydrocarbon	170 NJ	Unknown Hydrocarbon	110 NJ	Unknown Hydrocarbon	2300 NJ	Unknown Hydrocarbon	28 NJ
	Unknown Hydrocarbon	610 NJ	Unknown Hydrocarbon	430 NJ	Unknown Hydrocarbon	180 NJ	Unknown Hydrocarbon	850 NJ	Unknown Hydrocarbon	2000 NJ	Unknown Hydrocarbon	27 NJ
	Unknown Hydrocarbon	250 NJ	Unknown Hydrocarbon	150 NJ	Unknown Hydrocarbon	160 NJ	Unknown Hydrocarbon	930 NJ	Unknown Hydrocarbon	1300 NJ	Unknown Hydrocarbon	33 NJ
	Unknown Hydrocarbon	640 NJ	Unknown Hydrocarbon	450 NJ	Unknown Hydrocarbon	170 NJ	Unknown	3100 NJ	Unknown Hydrocarbon	1600 NJ	Unknown Hydrocarbon	30 NJ
	Unknown Hydrocarbon	590 NJ	Unknown Hydrocarbon	390 NJ	Unknown Hydrocarbon	350 NJ	Unknown	2200 NJ	Unknown Hydrocarbon	1600 NJ	Unknown Hydrocarbon	29 NJ
	Unknown Hydrocarbon	550 NJ	Unknown Hydrocarbon	640 NJ	Unknown Hydrocarbon	470 NJ	Unknown	2000 NJ	Unknown Hydrocarbon	1500 NJ	Unknown Hydrocarbon	110 NJ
	Unknown Hydrocarbon	480 NJ	Unknown Hydrocarbon	440 NJ	Unknown Hydrocarbon	440 NJ	Unknown	5900 NJ	Unknown Hydrocarbon	1600 NJ	Unknown Hydrocarbon	100 NJ
	Unknown Hydrocarbon	270 NJ	Unknown Hydrocarbon	370 NJ	Unknown Hydrocarbon	500 NJ	Unknown	540 NJ	Unknown Hydrocarbon	1300 NJ	Unknown Hydrocarbon	120 NJ
	Unknown	180 NJ	Unknown	140 NJ	Unknown Hydrocarbon	210 NJ	Unknown	660 NJ	Unknown Hydrocarbon	1100 NJ	Unknown Hydrocarbon	48 NJ
	Unknown	390 NJ	Unknown	290 NJ	Unknown Hydrocarbon	600 NJ			Unknown Hydrocarbon	1200 NJ	Unknown Hydrocarbon	160 NJ
	Unknown	490 NJ	Unknown	440 NJ	Unknown Hydrocarbon	480 NJ			Unknown	3200 NJ	Unknown Hydrocarbon	140 NJ
	Unknown	180 NJ	Unknown	2500 NJ	Unknown Hydrocarbon	540 NJ			Unknown	2700 NJ	Unknown Hydrocarbon	170 NJ
	Unknown	2500 NJ	Unknown	420 NJ	Unknown Hydrocarbon	500 NJ			Unknown	8600 NJ	Unknown Hydrocarbon	160 NJ
	Unknown	230 NJ	Unknown	1400 NJ	Unknown Hydrocarbon	340 NJ			Unknown	1200 NJ	Unknown Hydrocarbon	69 NJ
	Unknown	490 NJ	Unknown	290 NJ	Unknown Hydrocarbon	170 NJ				R	Unknown Hydrocarbon	44 NJ
	Unknown	2100 NJ	Unknown	170 NJ	Unknown	280 NJ					Unknown Hydrocarbon	74 NJ
	Unknown	470 NJ			Unknown	2200 NJ					Unknown	400 NJ
	Unknown	270 NJ			Unknown	470 NJ					Unknown	390 NJ
	Unknown	190 NJ			Unknown	2100 NJ					Unknown	92 NJ
	Unknown Aromatic Hydrocarbon	150 NJ			Unknown	210 NJ					Unknown	52 NJ
	Unknown Phthalate	160 NJ			Unknown	140 NJ					Unknown	49 NJ
											Unknown	120 NJ
	Total SVOC TICs	12760	**Total SVOC TICs**	9560	**Total SVOC TICs**	11030	**Total SVOC TICs**	17980	**Total SVOC TICs**	34090	**Total SVOC TICs**	2513

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-11 (continued)					
Sample I.D.:	SB-RFI-011-0002D	SB-RFI-011-0204	SB-RFI-011-0406	SB-RFI-011-0608	SB-RFI-011-0810	SB-RFI-011-1012
Laboratory Project No.:	96-5102	96-5102	96-5102	96-5102	96-5102	96-5102
Sample Interval:	0 - 2 feet	2 - 4 feet	4 - 6 feet	6 - 8 feet	8 - 10 feet	10 - 12 feet
Sample Date:	10/24/96	10/24/96	10/24/96	10/24/96	10/24/96	10/24/96
TCL Semi-Volatile Organic Compounds (µg/kg)						
1,3-Dichlorobenzene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
1,4-Dichlorobenzene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
1,2,4-Trichlorobenzene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Naphthalene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
2-Methylnaphthalene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Dimethyl phthalate	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Acenaphthylene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Acenaphthene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Dibenzofuran	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Fluorene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Phenanthrene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Anthracene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Carbazole	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Di-n-butyl phthalate	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Fluoranthene	660 UJ	260 J	340 UJ	330 UJ	340 UJ	340 UJ
Pyrene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Butyl benzyl phthalate	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Benzo(a)anthracene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Bis(2-ethylhexyl)phthalate	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Chrysene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Di-n-octyl phthalate	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Benzo(b)fluoranthene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Benzo(k)fluoranthene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Benzo(a)pyrene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Indeno(1,2,3-cd)pyrene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Dibenzo(a,h)anthracene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ
Benzo(ghi)perylene	660 UJ	330 UJ	340 UJ	330 UJ	340 UJ	340 UJ

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-11 (continued)											
Sample I.D.:	SB-RFI-011-0002D		SB-RFI-011-0204		SB-RFI-011-0406		SB-RFI-011-0608		SB-RFI-011-0810		SB-RFI-011-1012	
Laboratory Project No.:	96-5102		96-5102		96-5102		96-5102		96-5102		96-5102	
Sample Inverval:	0 - 2 feet		2 - 4 feet		4 - 6 feet		6 - 8 feet		8 - 10 feet		10 - 12 feet	
Sample Date:	10/24/96		10/24/96		10/24/96		10/24/96		10/24/96		10/24/96	
Semi-Volatile Organics												
Tentatively Identified Compounds (µg/kg)	Unknown Hydrocarbon	67 NJ	Unknown Hydrocarbon	13 NJ	Unknown Hydrocarbon	25 NJ	Unknown Hydrocarbon	19 NJ	Unknown Hydrocarbon	33 NJ	Unknown Hydrocarbon	33 NJ
	Unknown Hydrocarbon	100 NJ	Unknown Hydrocarbon	15 NJ	Unknown Hydrocarbon	35 NJ	Unknown Hydrocarbon	20 NJ	Unknown Hydrocarbon	35 NJ	Unknown Hydrocarbon	32 NJ
	Unknown Hydrocarbon	150 NJ	Unknown Hydrocarbon	14 NJ	Unknown Hydrocarbon	43 NJ	Unknown Hydrocarbon	19 NJ	Unknown Hydrocarbon	25 NJ	Unknown Hydrocarbon	33 NJ
	Unknown Hydrocarbon	58 NJ	Unknown Hydrocarbon	49 NJ	Unknown Hydrocarbon	59 NJ	Unknown Hydrocarbon	23 NJ	Unknown Hydrocarbon	33 NJ	Unknown Hydrocarbon	35 NJ
	Unknown Hydrocarbon	160 NJ	Unknown Hydrocarbon	48 NJ	Unknown Hydrocarbon	52 NJ	Unknown Hydrocarbon	21 NJ	Unknown Hydrocarbon	35 NJ	Unknown Hydrocarbon	37 NJ
	Unknown Hydrocarbon	150 NJ	Unknown Hydrocarbon	65 NJ	Unknown Hydrocarbon	78 NJ	Unknown Hydrocarbon	21 NJ	Unknown Hydrocarbon	33 NJ	Unknown Hydrocarbon	33 NJ
	Unknown Hydrocarbon	210 NJ	Unknown Hydrocarbon	26 NJ	Unknown Hydrocarbon	78 NJ	Unknown Hydrocarbon	42 NJ	Unknown Hydrocarbon	31 NJ	Unknown Hydrocarbon	33 NJ
	Unknown Hydrocarbon	190 NJ	Unknown Hydrocarbon	72 NJ	Unknown Hydrocarbon	69 NJ	Unknown Hydrocarbon	46 NJ	Unknown Hydrocarbon	44 NJ	Unknown Hydrocarbon	44 NJ
	Unknown Hydrocarbon	160 NJ	Unknown Hydrocarbon	74 NJ	Unknown Hydrocarbon	67 NJ	Unknown Hydrocarbon	63 NJ	Unknown Hydrocarbon	57 NJ	Unknown Hydrocarbon	55 NJ
	Unknown Hydrocarbon	150 NJ	Unknown Hydrocarbon	77 NJ	Unknown Hydrocarbon	43 NJ	Unknown Hydrocarbon	62 NJ	Unknown Hydrocarbon	58 NJ	Unknown Hydrocarbon	65 NJ
	Unknown Hydrocarbon	70 NJ	Unknown Hydrocarbon	79 NJ	Unknown Hydrocarbon	42 NJ	Unknown Hydrocarbon	43 NJ	Unknown Hydrocarbon	120 NJ	Unknown Hydrocarbon	70 NJ
	Unknown Hydrocarbon	80 NJ	Unknown Hydrocarbon	59 NJ	Unknown Hydrocarbon	25 NJ	Unknown Hydrocarbon	80 NJ	Unknown Hydrocarbon	89 NJ	Unknown Hydrocarbon	39 NJ
	Unknown Hydrocarbon	64 NJ	Unknown Hydrocarbon	65 NJ	Unknown	20 NJ	Unknown Hydrocarbon	72 NJ	Unknown Hydrocarbon	81 NJ	Unknown Hydrocarbon	88 NJ
	Unknown Hydrocarbon	170 NJ	Unknown Hydrocarbon	40 NJ	Unknown	21 NJ	Unknown Hydrocarbon	74 NJ	Unknown Hydrocarbon	81 NJ	Unknown Hydrocarbon	85 NJ
	Unknown Hydrocarbon	500 NJ	Unknown	30 NJ	Unknown	25 NJ	Unknown Hydrocarbon	63 NJ	Unknown Hydrocarbon	67 NJ	Unknown Hydrocarbon	93 NJ
	Unknown Hydrocarbon	88 NJ	Unknown	49 NJ	Unknown	130 NJ	Unknown Hydrocarbon	37 NJ	Unknown Hydrocarbon	38 NJ	Unknown Hydrocarbon	76 NJ
	Unknown Hydrocarbon	380 NJ	Unknown	15 NJ	Unknown	140 NJ	Unknown	28 NJ	Unknown Hydrocarbon	29 NJ	Unknown Hydrocarbon	53 NJ
	Unknown Hydrocarbon	85 NJ	Unknown	250 NJ	Unknown	66 NJ	Unknown	65 NJ	Unknown	45 NJ	Unknown Hydrocarbon	45 NJ
	Unknown Hydrocarbon	49 NJ	Unknown	200 NJ	Unknown	120 NJ	Unknown	130 NJ	Unknown	66 NJ	Unknown	61 NJ
	Unknown Hydrocarbon	130 NJ	Unknown	46 NJ	Unknown	27 NJ	Unknown	69 NJ	Unknown	33 NJ	Unknown	55 NJ
	Unknown Hydrocarbon	200 NJ	Unknown	23 NJ	Unknown	55 NJ	Unknown	92 NJ	Unknown	130 NJ	Unknown	130 NJ
	Unknown Aromatic		Unknown	59 NJ	Unknown	14 NJ	Unknown	20 NJ	Unknown	65 NJ	Unknown	64 NJ
	Hydrocarbon	51 NJ	Unknown	33 NJ			Unknown	30 NJ	Unknown	130 NJ	Unknown	120 NJ
	Unknown Hydrocarbon	52 NJ	Unknown Aromatic				Unknown	35 NJ	Unknown	27 NJ	Unknown	30 NJ
	Unknown Hydrocarbon	55 NJ	Hydrocarbon	25 J			Unknown	30 NJ	Unknown	51 NJ	Unknown	48 NJ
	Unknown Hydrocarbon	53 NJ										
	Total SVOC TICs	3422	**Total SVOC TICs**	1426	**Total SVOC TICs**	1234	**Total SVOC TICs**	1204	**Total SVOC TICs**	1436	**Total SVOC TICs**	1457

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-11 (continued)	RFI-14		RFI-15	
Sample I.D.:	SB-RFI-011-1214	SB-RFI-014-0204	SB-RFI-014-1214	SB-RFI-015-0608	SB-RFI-015-1516
Laboratory Project No.:	96-5102	96-5077	96-5077	96-5077	96-5077
Sample Interval:	12 - 14 feet	2 - 4 feet	12 - 14 feet	6 - 8 feet	15 - 16 feet
Sample Date:	10/24/96	10/22/96	10/22/96	10/23/96	10/23/96
TCL Semi-Volatile Organic Compounds (µg/kg)					
1,3-Dichlorobenzene	340 UJ	370 U	360 U	350 U	350 U
1,4-Dichlorobenzene	340 UJ	370 U	360 U	350 U	350 U
1,2,4-Trichlorobenzene	340 UJ	370 U	360 U	350 U	350 U
Naphthalene	340 UJ	370 U	360 U	350 U	350 U
2-Methylnaphthalene	340 UJ	370 U	360 U	350 U	350 U
Dimethyl phthalate	340 UJ	370 U	360 U	350 U	350 U
Acenaphthylene	340 UJ	370 U	360 U	350 U	350 U
Acenaphthene	340 UJ	370 U	360 U	350 U	350 U
Dibenzofuran	340 UJ	370 U	360 U	350 U	350 U
Fluorene	340 UJ	370 U	360 U	350 U	350 U
Phenanthrene	340 UJ	370 U	360 U	350 U	350 U
Anthracene	340 UJ	370 U	360 U	350 U	350 U
Carbazole	340 UJ	370 U	360 U	350 U	350 U
Di-n-butyl phthalate	340 UJ	370 U	360 U	350 U	350 U
Fluoranthene	340 UJ	370 U	360 U	350 U	350 U
Pyrene	340 UJ	370 U	360 U	350 U	350 U
Butyl benzyl phthalate	340 UJ	370 U	360 U	350 U	350 U
Benzo(a)anthracene	340 UJ	370 U	360 U	350 U	350 U
Bis(2-ethylhexyl)phthalate	340 UJ	810	850	280 J	350 U
Chrysene	340 UJ	370 U	360 U	350 U	350 U
Di-n-octyl phthalate	340 UJ	370 U	360 U	350 U	350 U
Benzo(b)fluoranthene	340 UJ	370 U	360 U	350 U	350 U
Benzo(k)fluoranthene	340 UJ	370 U	360 U	350 U	350 U
Benzo(a)pyrene	340 UJ	370 U	360 U	350 U	350 U
Indeno(1,2,3-cd)pyrene	340 UJ	370 U	360 U	350 U	350 U
Dibenzo(a,h)anthracene	340 UJ	370 U	360 U	350 U	350 U
Benzo(ghi)perylene	340 UJ	370 U	360 U	350 U	350 U

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-11 (continued)		RFI-14				RFI-15			
Sample I.D.:	SB-RFI-011-1214		SB-RFI-014-0204		SB-RFI-014-1214		SB-RFI-015-0608		SB-RFI-015-1516	
Laboratory Project No.:	96-5102		96-5077		96-5077		96-5077		96-5077	
Sample Inverval:	12 - 14 feet		2 - 4 feet		12 - 14 feet		6 - 8 feet		15 - 16 feet	
Sample Date:	10/24/96		10/22/96		10/22/96		10/23/96		10/23/96	
Semi-Volatile Organics Tentatively Identified Compounds (µg/kg)	Unknown Hydrocarbon	30 NJ	Unknown Hydrocarbon	250 J	Unknown Hydrocarbon	1100 J	Unknown Hydrocarbon	250 J	Unknown Hydrocarbon	170 J
	Unknown Hydrocarbon	55 NJ	Unknown Hydrocarbon	290 J	Unknown Hydrocarbon	1600 J	Unknown Hydrocarbon	290 J	Unknown Hydrocarbon	170 J
	Unknown Hydrocarbon	54 NJ	Unknown Hydrocarbon	290 J	Unknown Hydrocarbon	1900 J	Unknown Hydrocarbon	380 J	Unknown Hydrocarbon	150 J
	Unknown Hydrocarbon	33 NJ	Unknown Hydrocarbon	310 J	Unknown Hydrocarbon	2400 J	Unknown Hydrocarbon	310 J	Unknown Hydrocarbon	150 J
	Unknown Hydrocarbon	50 NJ	Unknown Hydrocarbon	370 J	Unknown Hydrocarbon	840 J	Unknown Hydrocarbon	260 J	Unknown Hydrocarbon	160 J
	Unknown Hydrocarbon	45 NJ	Unknown Hydrocarbon	330 J	Unknown Hydrocarbon	2300 J	Unknown Hydrocarbon	260 J	Unknown Hydrocarbon	150 J
	Unknown Hydrocarbon	41 NJ	Unknown Hydrocarbon	380 J	Unknown Hydrocarbon	1700 J	Unknown Hydrocarbon	270 J	Unknown Hydrocarbon	230 J
	Unknown Hydrocarbon	39 NJ	Unknown Hydrocarbon	1200 J	Unknown Hydrocarbon	2500 J	Unknown Hydrocarbon	280 J	Unknown Hydrocarbon	350 J
	Unknown Hydrocarbon	49 NJ	Unknown Hydrocarbon	1900 J	Unknown Hydrocarbon	2000 J	Unknown Hydrocarbon	180 J	Unknown Hydrocarbon	440 J
	Unknown Hydrocarbon	61 NJ	Unknown Hydrocarbon	8400 J	Unknown Hydrocarbon	2200 J	Unknown Hydrocarbon	180 J	Unknown Hydrocarbon	930 J
	Unknown Hydrocarbon	74 NJ	Unknown Hydrocarbon	8700 J	Unknown Hydrocarbon	660 J	Unknown Hydrocarbon	280 J	Unknown Hydrocarbon	840 J
	Unknown Hydrocarbon	75 NJ	Unknown Hydrocarbon	8500 J	Unknown Hydrocarbon	1500 J	Unknown Hydrocarbon	300 J	Unknown Hydrocarbon	850 J
	Unknown Hydrocarbon	87 NJ	Unknown Hydrocarbon	7100 J	Unknown Hydrocarbon	2200 J	Unknown Hydrocarbon	670 J	Unknown Hydrocarbon	220 J
	Unknown Hydrocarbon	85 NJ	Unknown Hydrocarbon	630 J	Unknown Hydrocarbon	10000 J	Unknown Hydrocarbon	940 J	Unknown Hydrocarbon	510 J
	Unknown Hydrocarbon	79 NJ	Unknown Hydrocarbon	4700 J	Unknown Hydrocarbon	9700 J	Unknown Hydrocarbon	3200 J	Unknown Hydrocarbon	260 J
	Unknown Hydrocarbon	63 NJ	Unknown Hydrocarbon	2000 J	Unknown Hydrocarbon	9600 J	Unknown Hydrocarbon	2600 J	Unknown Hydrocarbon	180 J
	Unknown Hydrocarbon	37 NJ	Unknown Hydrocarbon	1400 J	Unknown Hydrocarbon	7100 J	Unknown Hydrocarbon	3100 J	Unknown Hydrocarbon	150 J
	Unknown Hydrocarbon	35 NJ	Unknown Hydrocarbon	360 J	Unknown Hydrocarbon	3800 J	Unknown Hydrocarbon	1900 J	Unknown	270 J
	Unknown	38 NJ	Unknown Hydrocarbon	280 J	Unknown Hydrocarbon	880 J	Unknown Hydrocarbon	1200 J	Unknown	220 J
	Unknown	120 NJ	Unknown Hydrocarbon	550 J	Unknown Hydrocarbon	610 J	Unknown Hydrocarbon	580 J	Unknown	1000 J
	Unknown	61 NJ	Unknown Hydrocarbon	1100 J	Unknown Hydrocarbon	1700 J	Unknown Hydrocarbon	420 J	Unknown	840 J
	Unknown	98 NJ	Unknown Hydrocarbon	810 J	Unknown Hydrocarbon	740 J	Unknown Hydrocarbon	310 J	Unknown	2400 J
	Unknown	28 NJ	Unknown	240 J	Unknown Hydrocarbon	550 J	Unknown	260 J	Unknown	750 J
	Unknown	46 NJ	Unknown	850 J	Unknown	600 J	Unknown	360 J		
	Unknown	38 NJ	Unknown	300 J	Unknown	2300 J	Unknown	220 J		
			Unknown	1200 J	Unknown	1900 J	Unknown	1500 J		
			Unknown	1100 J	Unknown	7000 J	Unknown	1300 J		
			Unknown	3300 J	Unknown	3500 J	Unknown	3600 J		
			Unknown	4200 J			Unknown	1300 J		
			Unknown Aromatic Hydrocarbon	240 J			Unknown	330 J		
	Total SVOC TICs	1421	Total SVOC TICs	61280	Total SVOC TICs	82880	Total SVOC TICs	27030	Total SVOC TICs	11390

Table 4-6 (continued)

Surface and Subsurface Soil
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

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a/ TCL = Target Compound List; SVOC = Semi-Volatile Organic Compound; TIC = Tentatively Identified Compound.
Only those TCL SVOCs detected in one or more of the soil samples have been retained in this table. Unabridged analytical results are presented in Appendix N.
b/ µg/kg = micrograms per kilogram.
c/ Data Qualifiers:
U = constituent not present at the detection limit noted.
J = constituent present at an estimated concentration below the method detection limit.
UJ = constituent not present at the estimated limit noted.
NJ = presumptive evidence of the constituent at an estimated concentration.
D = concentration represents that generated for a diluted aliquot.
d/ Total SVOC TICs represent the sum of all detected TICs.
e/ D = duplicate sample.
f/ NA = not analyzed.

Table 4-7

Surface and Subsurface Soil
TCL PCB and Miscellaneous Parameter Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	**GS-01 (a)**		**GS-02**	**GS-03**	**GS-04**	**GS-05**	**RB-01**
Sample I.D.:	**SS-GS-01-03**	**SS-GS-01-03**	**SS-GS-02-03**	**SS-GS-03-03**	**SS-GS-04-03**	**SS-GS-05-03**	**SB-RB-01-0002**
Laboratory Project No.:	**96-5102**	**96-5209**	**96-5102**	**96-5077**	**96-5077**	**96-5077**	**96-5200**
Sample Interval:	**0 - 3 inches**	**0 - 3 inches**	**0 - 3 inches**	**0 - 3 inches**	**0 - 3 inches**	**0 - 3 inches**	**0 - 2 feet**
Sample Date:	**10/25//96**	**11/01/96**	**10/25/96**	**10/23/96**	**10/23/96**	**10/23/96**	**10/31/96**
TCL Polychlorinated Biphenyls (mg/kg) (b, c)							
Aroclor 1016	NA (d)	NA	NA	NA	NA	NA	NA
Aroclor 1221	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	NA	NA	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Total Petroleum Hydrocarbons (mg/kg)	14	140 J	110 UJ	R	20	32	10 U
pH (s.u.)	7.78	7.74	8.46	8.58	7.84	7.77	4.48
Total Phenols (mg/kg)	1 U (e)	0.12 J	1 U	1 U	1 U	1 U	1 U
Total Organic Carbon (mg/l)	NA	NA	NA	NA	NA	NA	NA

Table 4-7 (continued)

Surface and Subsurface Soil Data
TCL PCB and Miscellaneous Parameter
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RB-01 (continued)		RB-02		RB-04		
Sample I.D.:	SB-RB-01-0507	SB-RB-01-0709	SB-RB-02-0002	SB-RB-02-1618	SB-RB-04-0002	SB-RB-04-0406	SB-RB-04-0709
Laboratory Project No.:	96-5200	96-5200	96-5200	96-5200	96-5198	96-5198	96-5198
Sample Interval:	5 - 7 feet	7 - 9 feet	0 - 2 feet	16 - 18 feet	0 - 2 feet	4 - 6 feet	7 -9 feet
Sample Date:	10/31/96	10/31/96	10/31/96	10/31/96	10/30/96	10/30/96	10/30/96
TCL Polychlorinated Biphenyls (mg/kg)							
Aroclor 1016	NA	NA	1 U	1 U	NA	NA	1 U
Aroclor 1221	NA	NA	1 U	1 U	NA	NA	1 U
Aroclor 1232	NA	NA	1 U	1 U	NA	NA	1 U
Aroclor 1242	NA	NA	1 U	1 U	NA	NA	1 U
Aroclor 1248	NA	NA	1 U	1 U	NA	NA	1 U
Aroclor 1254	NA	NA	1 U	1 U	NA	NA	1 U
Aroclor 1260	NA	NA	1 U	1 U	NA	NA	1 U
Miscellaneous Parameters							
Total Petroleum Hydrocarbons (mg/kg)	10 U	12 J	10 U	23	NA	NA	NA
pH (s.u.)	7.37	10.93	7.31	NA	8.48	7.54	8.29
Total Phenols (mg/kg)	NA	NA	1 U	NA	NA	NA	1 U
Total Organic Carbon (mg/l)	NA	NA	2.7	2.3	2.9	2.5	3.2

Table 4-7 (continued)

Surface and Subsurface Soil Data
TCL PCB and Miscellaneous Parameter
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

 PCB

Sample Location:	RB-05			RB-06			RB-07
Sample I.D.:	SB-RB-05-0002	SB-RB-05-0204	SB-RB-05-0810	SB-RB-06-0002	SB-RB-06-0406	SB-RB-06-0608	SB-RB-07-0002
Laboratory Project No.:	96-5167	96-5167	96-5167	96-5198	96-5198	96-5198	96-5198
Sample Interval:	0 - 2 feet	2 - 4 feet	8 - 10 feet	0 - 2 feet	4 - 6 feet	6 - 8 feet	0 - 2 feet
Sample Date:	10/28/96	10/28/96	10/28/96	10/29/96	10/29/96	10/29/96	10/30/96
TCL Polychlorinated Biphenyls (mg/kg)							
Aroclor 1016	NA	1 U	1 U	1 U	1 U	1 U	3 U
Aroclor 1221	NA	1 U	1 U	1 U	1 U	1 U	3 U
Aroclor 1232	NA	1 U	1 U	1 U	1 U	1 U	3 U
Aroclor 1242	NA	1 U	1 U	1 U	1 U	1 U	21
Aroclor 1248	NA	1 U	1 U	1 U	1 U	1 U	3 U
Aroclor 1254	NA	1 U	1 U	1 U	1 U	1 U	3 U
Aroclor 1260	NA	1 U	1 U	1 U	1 U	1 U	3 U
Miscellaneous Parameters							
Total Petroleum Hydrocarbons (mg/kg)	NA	NA	NA	NA	NA	NA	NA
pH (s.u.)	4.03	4.04	9.93	NA	NA	NA	NA
Total Phenols (mg/kg)	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/l)	2.5	2.6	10	5.5	3	4.1	3.6

Table 4-7 (continued)

Surface and Subsurface Soil Data
TCL PCB and Miscellaneous Parameter
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RB-07 (continued)		TP-02				TP-03
Sample I.D.:	SB-RB-07-0608	SB-RB-07-0810	SS-TP-02-03	SB-TP-02-0002	SB-TP-02-0304	SB-TP-02-0910	SB-TP-03-0002
Laboratory Project No.:	96-5198	96-5198	96-5053	96-5053	96-5053	96-5053	96-5053
Sample Interval:	6 - 8 feet	8 - 10 feet	0 - 3 inches	0 - 2 feet	3 - 4 feet	9 - 10 feet	0 - 2 feet
Sample Date:	10/30/96	10/30/96	10/22/96	10/22/96	10/22/96	10/22/96	10/22/96
TCL Polychlorinated Biphenyls (mg/kg)							
Aroclor 1016	1 U	1 U	NA	NA	NA	NA	NA
Aroclor 1221	1 U	1 U	NA	NA	NA	NA	NA
Aroclor 1232	1 U	1 U	NA	NA	NA	NA	NA
Aroclor 1242	3.9	1 U	NA	NA	NA	NA	NA
Aroclor 1248	1 U	1 U	NA	NA	NA	NA	NA
Aroclor 1254	1 U	1 U	NA	NA	NA	NA	NA
Aroclor 1260	1 U	1 U	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Total Petroleum Hydrocarbons (mg/kg)	NA	NA	21 J	NA	NA	NA	NA
pH (s.u.)	NA	NA	8.52	8.14	8.23	8.18	8.06
Total Phenols (mg/kg)	NA	NA	1 U	1 U	NA	NA	NA
Total Organic Carbon (mg/l)	3.8	3.2	NA	NA	NA	NA	NA

Table 4-7 (continued)

Surface and Subsurface Soil Data
TCL PCB and Miscellaneous Parameter
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	TP-03 (continued)		TP-04		TP-05		
Sample I.D.:	SB-TP-03-0506	SB-TP-03-1112	SB-TP-04-0002	SB-TP-04-1112	SS-TP-05-03	SB-TP-05-0002	SB-TP-05-0203
Laboratory Project No.:	96-5053	96-5053	96-5077	96-5077	96-5077	96-5092	96-5092
Sample Interval:	5 - 6 feet	11 - 12	0 - 2 feet	11 - 12 feet	0 - 3 inches	0 - 2 feet	2 - 3 feet
Sample Date:	10/22/96	10/22/96	10/22/96	10/22/96	10/23/96	10/24/96	10/24/96
TCL Polychlorinated Biphenyls (mg/kg)							
Aroclor 1016	NA	NA	1 U	1 U	NA	NA	NA
Aroclor 1221	NA	NA	1 U	1 U	NA	NA	NA
Aroclor 1232	NA	NA	1 U	1 U	NA	NA	NA
Aroclor 1242	NA	NA	1 U	1 U	NA	NA	NA
Aroclor 1248	NA	NA	1 U	1 U	NA	NA	NA
Aroclor 1254	NA	NA	1 U	1 U	NA	NA	NA
Aroclor 1260	NA	NA	1 U	1 U	NA	NA	NA
Miscellaneous Parameters							
Total Petroleum Hydrocarbons (mg/kg)	NA	NA	NA	NA	NA	NA	NA
pH (s.u.)	7.93	8.23	8.46	8.16	NA	NA	NA
Total Phenols (mg/kg)	NA	NA	NA	NA	1 U	1 U	1 U
Total Organic Carbon (mg/l)	NA	NA	2.6	2.9	NA	NA	NA

Table 4-7 (continued)

Surface and Subsurface Soil Data
TCL PCB and Miscellaneous Parameter
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	TP-05 (continued)	TP-06				TP-07	
Sample I.D.:	SB-TP-05-0809	SB-TP-06-0002	SB-TP-06-0002D (f)	SB-TP-06-0304	SB-TP-06-0708	SS-TP-07-03	SB-TP-07-0002
Laboratory Project No.:	96-5092	96-5092	96-5092	96-5092	96-5092	96-5092	96-5092
Sample Interval:	8 - 9 feet	0 - 2 feet	0 - 2 feet	3 - 4 feet	7 - 8 feet	0 - 0.25	0 - 2 feet
Sample Date:	10/24/96	10/24/96	10/24/96	10/24/96	10/24/96	10/23/96	10/24/96
TCL Polychlorinated Biphenyls (mg/kg)							
Aroclor 1016	NA	NA	NA	NA	NA	1 U	1 U
Aroclor 1221	NA	NA	NA	NA	NA	1 U	1 U
Aroclor 1232	NA	NA	NA	NA	NA	1 U	1 U
Aroclor 1242	NA	NA	NA	NA	NA	1 U	1 U
Aroclor 1248	NA	NA	NA	NA	NA	1 U	1 U
Aroclor 1254	NA	NA	NA	NA	NA	1 U	1 U
Aroclor 1260	NA	NA	NA	NA	NA	1 U	1 U
Miscellaneous Parameters							
Total Petroleum Hydrocarbons (mg/kg)	NA	NA	NA	NA	NA	NA	NA
pH (s.u.)	NA	NA	NA	NA	NA	7.85	7.92
Total Phenols (mg/kg)	1 U	1 U	1 U	1 U	1 U	NA	NA
Total Organic Carbon (mg/l)	NA	NA	NA	NA	NA	3.1	2.5

Table 4-7 (continued)

Surface and Subsurface Soil Data
TCL PCB and Miscellaneous Parameter
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

TPH

Sample Location:	TP-07 (continued)		TP-08			TP-09	
Sample I.D.:	SB-TP-07-0304	SB-TP-07-0809	SB-TP-08-0002	SB-TP-08-0304	SB-TP-08-0708	SB-TP-09-0002	SB-TP-09-0203
Laboratory Project No.:	96-5092	96-5092	96-5077	96-5077	96-5077	96-5077	96-5077
Sample Interval:	3 - 4 feet	8 - 9 feet	0 - 2 feet	3 - 4 feet	7 - 8 feet	0 - 2 feet	2 - 3 feet
Sample Date:	10/24/96	10/24/96	10/23/96	10/23/96	10/23/96	10/23/96	10/23/96
TCL Polychlorinated Biphenyls (mg/kg)							
Aroclor 1016	1 U	1 U	1 U	1 U	1 U	NA	NA
Aroclor 1221	1 U	1 U	1 U	1 U	1 U	NA	NA
Aroclor 1232	1 U	1 U	1 U	1 U	1 U	NA	NA
Aroclor 1242	1 U	1 U	1 U	1 U	1 U	NA	NA
Aroclor 1248	1 U	1 U	1 U	1 U	1 U	NA	NA
Aroclor 1254	1 U	1 U	1 U	1 U	1 U	NA	NA
Aroclor 1260	1 U	1 U	1 U	1 U	1 U	NA	NA
Miscellaneous Parameters							
Total Petroleum Hydrocarbons (mg/kg)	29	180	NA	NA	NA	390	20
pH (s.u.)	7.92	8.19	7.91	8.06	8.22	NA	NA
Total Phenols (mg/kg)	NA	NA	NA	NA	NA	1 U	1 U
Total Organic Carbon (mg/l)	8.9	2.7	2.6	3.2	8.2	NA	NA

Table 4-7 (continued)

Surface and Subsurface Soil Data
TCL PCB and Miscellaneous Parameter
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	TP-09 (continued)	TP-10		TP-11				
Sample I.D.:	SB-TP-09-0708	SB-TP-10-0002	SB-TP-10-0809	SS-TP-11-03	SB-TP-11-0002	SB-TP-11-0002D	SB-TP-11-1011	SB-TP-11-1112
Laboratory Project No.:	96-5077	96-5077	96-5077	96-5053	96-5077	96-5077	96-5077	96-5077
Sample Interval:	7 - 8 feet	0 - 2 feet	8 - 9 feet	0 - 3 inches	0 - 2 feet	0 - 2 feet	10 - 11 feet	11 - 12 feet
Sample Date:	10/23/96	10/23/96	10/23/96	10/22/96	10/23/96	10/23/96	10/23/96	10/23/96
TCL Polychlorinated Biphenyls (mg/kg)								
Aroclor 1016	NA	NA	NA	1 U	1 U	1 U	1 U	1 U
Aroclor 1221	NA	NA	NA	1 U	1 U	1 U	1 U	1 U
Aroclor 1232	NA	NA	NA	1 U	1 U	1 U	1 U	1 U
Aroclor 1242	NA	NA	NA	1 U	1 U	1 U	1 U	1 U
Aroclor 1248	NA	NA	NA	1 U	1 U	1 U	1 U	1 U
Aroclor 1254	NA	NA	NA	1 U	1 U	1 U	1 U	1 U
Aroclor 1260	NA	NA	NA	1 U	1 U	1 U	1 U	1 U
Miscellaneous Parameters								
Total Petroleum Hydrocarbons (mg/kg)	25	NA	NA	NA	35 J	32 J	10	59
pH (s.u.)	NA	NA	NA	8.56	8.91	8.84	7.68	7.84
Total Phenols (mg/kg)	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U
Total Organic Carbon (mg/l)	NA	NA	NA	3.2	3.1	2.8	5.3	3.4

Table 4-7 (continued)

Surface and Subsurface Soil Data
TCL PCB and Miscellaneous Parameter
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-01			RFI-02			
Sample I.D.:	SS-RFI-001-03	SB-RFI-001-0406	SB-RFI-001-1012	SS-RFI-002-03	SB-RFI-002-0002	SB-RFI-002-0810	SB-RFI-002-1012
Laboratory Project No.:	96-5053	96-5053	96-5053	96-5053	96-5053	96-5053	96-5053
Sample Interval:	0 - 3 inches	4 - 6 feet	10 - 12 feet	0 - 3 inches	0 - 2 feet	8 - 10 feet	10 - 12 feet
Sample Date:	10/22/96	10/21/96	10/21/96	10/22/96	10/22/96	10/22/96	10/22/96
TCL Polychlorinated Biphenyls (mg/kg)							
Aroclor 1016	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	NA	NA	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Total Petroleum Hydrocarbons (mg/kg)	9.9 J	10 U	10 U	15	22	52	94
pH (s.u.)	7.09	7.68	8.11	7.62	8.24	8.03	7.99
Total Phenols (mg/kg)	NA	1 U	1 U	1 U	1 U	0.36 B	0.12 B
Total Organic Carbon (mg/l)	NA	NA	NA	3.8	3.4	NA	NA

Table 4-7 (continued)

Surface and Subsurface Soil Data
TCL PCB and Miscellaneous Parameter
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:		RFI-03			RFI-04		RFI-05
Sample I.D.:	SS-RFI-003-03	SB-RFI-003-0002	SB-RFI-003-0406	SB-RFI-004-0002	SB-RFI-004-0204	SB-RFI-004-2022	SS-RFI-005-03
Laboratory Project No.:	96-5053	96-5102	96-5102	96-5198	96-5198	96-5198	96-5102
Sample Interval:	0 - 3 inches	0 - 2 feet	4 - 6 feet	0 - 2 feet	2 - 4 feet	20 - 22 feet	0 - 3 inches
Sample Date:	10/22/96	10/25/96	10/25/96	10/29/96	10/29/96	10/29/96	10/25/96
TCL Polychlorinated Biphenyls (mg/kg)							
Aroclor 1016	1 U	1 UJ	1 UJ	1 U	1 U	1 U	NA
Aroclor 1221	1 U	1 UJ	1 UJ	1 U	1 U	1 U	NA
Aroclor 1232	1 U	R	R	1 U	1 U	1 U	NA
Aroclor 1242	1 U	1 UJ	1 UJ	1 U	1 U	1 U	NA
Aroclor 1248	1 U	1 UJ	1 UJ	1 U	1 U	1 U	NA
Aroclor 1254	1 U	1 UJ	1 UJ	1 U	1 U	1 U	NA
Aroclor 1260	1 U	1 UJ	1 UJ	1 U	1 U	1 U	NA
Miscellaneous Parameters							
Total Petroleum Hydrocarbons (mg/kg)	47 J	NA	NA	NA	NA	NA	110 UJ
pH (s.u.)	8.71	7.77	NA	7.65	6.85	7.96	NA
Total Phenols (mg/kg)	NA	NA	NA	NA	NA	NA	1 U
Total Organic Carbon (mg/l)	4.5	1.9 J	3 J	2.5	2.5	2.7	NA

Table 4-7 (continued)

Surface and Subsurface Soil Data
TCL PCB and Miscellaneous Parameter
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-05 (continued)			RFI-06			
Sample I.D.:	SB-RFI-005-0204	SB-RFI-005-0204D	SB-RFI-005-1214	SS-RFI-006-03	SS-RFI-006-03D	SB-RFI-006-0204	SB-RFI-006-0406
Laboratory Project No.:	96-5167	96-5167	96-5167	96-5077	96-5077	96-5102	96-5102
Sample Interval:	2 - 4 feet	2 - 4 feet	12 - 14 feet	0 - 3 inches	0 - 3 inches	2 - 4 feet	4 - 6 feet
Sample Date:	10/28/96	10/28/96	10/28/96	10/23/96	10/23/96	10/25/96	10/25/96
TCL Polychlorinated Biphenyls (mg/kg)							
Aroclor 1016	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	NA	NA	NA	NA	NA	NA	NA
Miscellaneous Parameters							
Total Petroleum Hydrocarbons (mg/kg)	R	NA	R	15 J	NA	NA	NA
pH (s u)	7 18	6 93	7 83	NA	NA	NA	NA
Total Phenols (mg/kg)	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Total Organic Carbon (mg/l)	3 8	4 3	2 9	NA	NA	NA	NA

Table 4-7 (continued)

Surface and Subsurface Soil Data
TCL PCB and Miscellaneous Parameter
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-07			RFI-08			RFI-09
Sample I.D.:	SS-RFI-007-03	SB-RFI-007-0204	SB-RFI-007-0608	SS-RFI-008-03	SS-RFI-008-03D	SB-RFI-008-0507	SS-RFI-009-03
Laboratory Project No.:	96-5102	96-5167	96-5167	96-5102	96-5102	96-5198	96-5077
Sample Interval:	0 - 3 inches	2 - 4 feet	6 - 8 feet	0 - 3 inches	0 - 3 inches	5 - 7 feet	0 - 3 inches
Sample Date:	10/25/97	10/28/96	10/28/96	10/24/96	10/24/96	10/29/96	10/23/96
TCL Polychlorinated Biphenyls (mg/kg)							
Aroclor 1016	NA	NA	NA	1 UJ	1 UJ	NA	1 U
Aroclor 1221	NA	NA	NA	1 UJ	1 UJ	NA	1 U
Aroclor 1232	NA	NA	NA	R	R	NA	1 U
Aroclor 1242	NA	NA	NA	1 UJ	1 UJ	NA	1 U
Aroclor 1248	NA	NA	NA	1 UJ	1 UJ	NA	1 U
Aroclor 1254	NA	NA	NA	1 UJ	1 UJ	NA	1 U
Aroclor 1260	NA	NA	NA	1 UJ	1 UJ	NA	1 U
Miscellaneous Parameters							
Total Petroleum Hydrocarbons (mg/kg)	92 J	NA	NA	100 UJ	130 J	35	12
pH (s u)	8 22	8.11	8 13	8 03	8.04	8 73	8 17
Total Phenols (mg/kg)	NA	NA	NA	1 U	1 U	1 U	1 U
Total Organic Carbon (mg/l)	NA	NA	NA	2 6 J	2.1	NA	2 6

Table 4-7 (continued)

Surface and Subsurface Soil Data
TCL PCB and Miscellaneous Parameter
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-09 (continued)						RFI-10
Sample I.D.:	SB-RFI-009-0002	SB-RFI-009-0002D	SB-RFI-009-0204	SB-RFI-009-0406	SB-RFI-009-0608	SB-RFI-009-0810	SS-RFI-010-03
Laboratory Project No.:	96-5102	96-5102	96-5102	96-5102	96-5102	96-5102	96-5077
Sample Interval:	0 - 2 feet	0 - 2 feet	2 - 4 feet	4 - 6 feet	6 - 8 feet	8 - 10 feet	0 - 3 inches
Sample Date:	10/24/96	10/24/96	10/24/96	10/24/96	10/24/96	10/24/96	10/23/96
TCL Polychlorinated Biphenyls (mg/kg)							
Aroclor 1016	1 UJ	NA	NA	1 UJ	NA	1 UJ	1 U
Aroclor 1221	1 UJ	NA	NA	1 UJ	NA	1 UJ	1 U
Aroclor 1232	R	NA	NA	R	NA	R	1 U
Aroclor 1242	1 UJ	NA	NA	1 UJ	NA	1 UJ	1 U
Aroclor 1248	1 UJ	NA	NA	1 UJ	NA	1 UJ	1 U
Aroclor 1254	1 UJ	NA	NA	1 UJ	NA	1 UJ	1 U
Aroclor 1260	1 UJ	NA	NA	1 UJ	NA	1 UJ	1 U
Miscellaneous Parameters							
Total Petroleum Hydrocarbons (mg/kg)	20 UJ	NA	13 UJ	<10 UJ	40 UJ	76 UJ	95 U
pH (s.u.)	7.97	7.92	7.36	7.36	8.39	8.24	NA
Total Phenols (mg/kg)	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Total Organic Carbon (mg/l)	1.8 J	2	NA	2.2 J	NA	1.9 J	2.5

Table 4-7 (continued)

Surface and Subsurface Soil Data
TCL PCB and Miscellaneous Parameter
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-10 (continued)			RFI-11			
Sample I.D.:	SB-RFI-010-0002	SB-RFI-010-0204	SB-RFI-010-0810	SS-RFI-011-03	SB-RFI-011-0002	SB-RFI-011-0002D	SB-RFI-011-0204
Laboratory Project No.:	96-5092	96-5092	96-5092	96-5077	96-5102	96-5102	96-5102
Sample Interval:	0 - 2 feet	2 - 4 feet	8 - 10 feet	0 - 3 inches	0 - 2 feet	0 - 2 feet	2 - 4 feet
Sample Date:	10/23/96	10/24/96	10/23/96	10/23/96	10/24/96	10/24/96	10/24/96
TCL Polychlorinated Biphenyls (mg/kg)							
Aroclor 1016	1 UJ	1 UJ	1 UJ	1 U	1 UJ	1 UJ	1 UJ
Aroclor 1221	1 UJ	1 UJ	1 UJ	1 U	1 UJ	1 UJ	1 UJ
Aroclor 1232	R	R	R	1 U	R	R	R
Aroclor 1242	1 UJ	1 UJ	1 UJ	1 U	1 UJ	1 UJ	1 UJ
Aroclor 1248	1 UJ	1 UJ	1 UJ	1 U	1 UJ	1 UJ	1 UJ
Aroclor 1254	1 UJ	1 UJ	1 UJ	1 U	1 UJ	1 UJ	1 UJ
Aroclor 1260	1 UJ	1 UJ	1 UJ	1 U	1 UJ	1 UJ	1 UJ
Miscellaneous Parameters							
Total Petroleum Hydrocarbons (mg/kg)	10 UJ	10 UJ	NA	19	34 UJ	10 UJ	10 UJ
pH (s.u.)	NA	NA	NA	8.00	8.13	8.11	8.13
Total Phenols (mg/kg)	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Total Organic Carbon (mg/l)	5.9 J	2.6 J	2.2 J	2.9	1.8 J	2	1.6 J

Table 4-7 (continued)

Surface and Subsurface Soil Data
TCL PCB and Miscellaneous Parameter
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-11 (continued)					RFI-12	
Sample I.D.:	SB-RFI-011-0406	SB-RFI-011-0608	SB-RFI-011-0810	SB-RFI-011-1012	SB-RFI-011-1214	SS-RFI-012-03	SS-RFI-012-03D
Laboratory Project No.:	96-5102	96-5102	96-5102	96-5102	96-5102	96-5053	96-5053
Sample Interval:	4 - 6 feet	6 - 8 feet	8 - 10 feet	10 - 12 feet	12 - 14 feet	0 - 3 inches	0 - 3 inches
Sample Date:	10/24/96	10/24/96	10/24/96	10/24/96	10/24/96	10/22/96	10/22/96
TCL Polychlorinated Biphenyls (mg/kg)							
Aroclor 1016	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	NA	NA
Aroclor 1221	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	NA	NA
Aroclor 1232	R	R	R	R	R	NA	NA
Aroclor 1242	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	NA	NA
Aroclor 1248	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	NA	NA
Aroclor 1254	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	NA	NA
Aroclor 1260	1 UJ	1 UJ	31 J	1 UJ	1 UJ	NA	NA
Miscellaneous Parameters							
Total Petroleum Hydrocarbons (mg/kg)	R	14 UJ	29 UJ	130 UJ	180 UJ	97 J	10
pH (s u)	7 89	8 35	8 3	8 21	7 95	NA	NA
Total Phenols (mg/kg)	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Total Organic Carbon (mg/l)	3 J	2 J	1 6 J	1 5 J	1 6 J	NA	NA

Table 4-7 (continued)

Surface and Subsurface Soil Data
TCL PCB and Miscellaneous Parameter
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-12 (continued)			RFI-13			RFI-14
Sample I.D.:	SB-RFI-012-0204	SB-RFI-012-0204D	SB-RFI-012-1416	SS-RFI-013-03	SB-RFI-013-0406	SB-RFI-013-1618	SS-RFI-014-03
Laboratory Project No.:	96-5077	96-5077	96-5077	96-5053	96-5092	96-5092	96-5053
Sample Interval:	2 - 4 feet	2 - 4 feet	14 - 16 feet	0 - 3 inches	4 - 6 feet	16 - 18 feet	0 - 3 inches
Sample Date:	10/23/96	10/23/96	10/23/96	10/22/96	10/24/96	10/24/96	10/22/96
TCL Polychlorinated Biphenyls (mg/kg)							
Aroclor 1016	NA	NA	NA	NA	NA	NA	1 U
Aroclor 1221	NA	NA	NA	NA	NA	NA	1 U
Aroclor 1232	NA	NA	NA	NA	NA	NA	1 U
Aroclor 1242	NA	NA	NA	NA	NA	NA	1 U
Aroclor 1248	NA	NA	NA	NA	NA	NA	1 U
Aroclor 1254	NA	NA	NA	NA	NA	NA	1 U
Aroclor 1260	NA	NA	NA	NA	NA	NA	1 U
Miscellaneous Parameters							
Total Petroleum Hydrocarbons (mg/kg)	27	13	77	80 J	<10 UJ	28 UJ	55 J
pH (s.u.)	7.84	7.82	8.05	NA	8.39	8.11	NA
Total Phenols (mg/kg)	1 U	1 U	1 U	1 U	NA	NA	0.12 B
Total Organic Carbon (mg/l)	NA	NA	NA	NA	NA	NA	4.6

Table 4-7 (continued)

Surface and Subsurface Soil Data
TCL PCB and Miscellaneous Parameter
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-14 (continued)		RFI-15			RFI-16	
Sample I.D.:	SB-RFI-014-0204	SB-RFI-014-1214	SS-RFI-015-03	SB-RFI-015-0608	SB-RFI-015-1516	SS-RFI-016-03	SB-RFI-016-0406
Laboratory Project No.:	96-5077	96-5077	96-5053	96-5077	96-5077	96-5077	96-5053
Sample Interval:	2 - 4 feet	12 - 14 feet	0 - 3 inches	6 - 8 feet	15 - 16 feet	0 - 3 inches	4 - 6 feet
Sample Date:	10/22/96	10/22/96	10/22/96	10/23/96	10/23/96	10/23/96	10/22/96
TCL Polychlorinated Biphenyls (mg/kg)							
Aroclor 1016	1 U	1 U	1 U	1 U	1 U	NA	NA
Aroclor 1221	1 U	1 U	1 U	1 U	1 U	NA	NA
Aroclor 1232	1 U	1 U	1 U	1 U	1 U	NA	NA
Aroclor 1242	1 U	1 U	1 U	1 U	1 U	NA	NA
Aroclor 1248	1 U	1 U	2.6	1 U	1 U	NA	NA
Aroclor 1254	1 U	1 U	1 U	1 U	1 U	NA	NA
Aroclor 1260	1 U	1 U	1 U	1 U	1 U	NA	NA
Miscellaneous Parameters							
Total Petroleum Hydrocarbons (mg/kg)	NA	NA	61	NA	NA	NA	31
pH (s.u.)	NA	NA	NA	NA	NA	NA	8.45
Total Phenols (mg/kg)	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Total Organic Carbon (mg/l)	2.5	2.4	3.9	2.4	2.4	NA	NA

Table 4-7 (continued)

Surface and Subsurface Soil Data
TCL PCB and Miscellaneous Parameter
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-16 (continued)	RFI-17	
Sample I.D.:	SB-RFI-016-1415	SB-RFI-017-0204	SB-RFI-017-0608
Laboratory Project No.:	96-5053	96-5167	96-5167
Sample Interval:	14 - 15 feet	2 - 4 feet	6 - 8 feet
Sample Date:	10/22/96	10/28/96	10/28/96
TCL Polychlorinated Biphenyls (mg/kg)			
Aroclor 1016	NA	NA	NA
Aroclor 1221	NA	NA	NA
Aroclor 1232	NA	NA	NA
Aroclor 1242	NA	NA	NA
Aroclor 1248	NA	NA	NA
Aroclor 1254	NA	NA	NA
Aroclor 1260	NA	NA	NA
Miscellaneous Parameters			
Total Petroleum Hydrocarbons (mg/kg)	110	NA	NA
pH (s.u.)	8.77	7.94	8.27
Total Phenols (mg/kg)	0.11 B	NA	NA
Total Organic Carbon (mg/l)	NA	NA	NA

a/ Two samples were inadvertently collected from this location for analysis of some samples.
b/ TCL = Target Compound List; PCB = polychlorinated biphenyl.
c/ mg/kg = milligrams per kilogram; mg/l milligrams per liter; s.u = standard units.
d/ NA = not analyzed.
e/ Data Qualifiers:
U = constituent not detected at the noted detection limit.
J = constituent detected at an estimated concentration less than the method detected limit.
UJ = constituent not detected at the estimated detection limit noted.
B = constituents also detected in an associated blank.
R = data rejected.
f/ D = duplicate sample.

Table 4-8

Subsurface Soil Sample Data (CAMUs A, B, and D)
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Bad Bad

CAMU:	CAMU A						
Sample Location:	LWB-01		LWB-02		LWB-03		LWB-04
Sample I.D.:	SB-LWB-01-0204	SB-LWB-01-0608	SB-LWB-02-0002	SB-LWB-02-0608	SB-LWB-03-0002	SB-LWB-03-0608	SB-LWB-04-0002
Laboratory Project No.:	96-5198	96-5198	96-5198	96-5198	96-5198	96-5198	96-5198
Sample Interval :	2 - 4 feet	6 - 8 feet	0 - 2 feet	6 - 8 feet	0 - 2 feet	6 - 8 feet	0 - 2 feet
Sample Date:	10/30/96	10/30/96	10/30/96	10/30/96	10/30/96	10/30/96	10/30/96
Metals (mg/kg) (a)							
Silver	0.81 U (b)	0.83 U	1.5	0.66 U	0.81 U	0.96	1.1
Arsenic	3.6	9.9	11	4.7	4.6	5.3	7.6
Barium	110	180	94	290	83	180	130
Cadmium	13	3.4	4.9	3.4	3.9	4.4	9.2
Chromium (Total)	170	180	77	300	22	510	24
Chromium (Hexavalent) (c)	11.5	61.6.	11.4	1900	2.49 U	3510	2.31 U
Copper	24	34	22	110	13	48	45
Mercury (c)	0.09 U	0.09 U	0.08 U	0.08 U	0.10 U	0.1 U	0.12
Lead	8.3	14	13	9	32	82	19
Selenium	0.26 U	0.27 U	0.26 U	0.21 U	0.26 U	0.23 U	0.26 U
Cyanide (c)							
Total (mg/kg)	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Free (mg/l)	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Table 4-8 (continued)

Subsurface Soil Sample Data (CAMUs A, B, and D)
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

CAMU:	CAMU A (continued)	CAMU B				CAMU D	
Sample Location:	LWB-04 (continued)	BRB-01			BRB-03	LEB-01	
Sample I.D.:	SB-LWB-04-0608	SB-BRB-01-0002	SB-BRB-01-0204	SB-BRB-01-1517	SB-BRB-03-0103	SB-LEB-01-0204	SB-LEB-01-0204D (d)
Laboratory Project No.:	96-5198	96-5200	96-5200	96-5200	96-5200	96-5198	96-5200
Sample Interval :	6 - 8 feet	0 - 2 feet	2 - 4 feet	15 - 17 feet	1 - 3 feet	2 - 4 feet	2 - 4 feet
Sample Date:	10/30/96	10/31/96	10/30/96	10/30/96	10/31/96	10/29/96	10/29/96
Metals (mg/kg) (a)							
Silver	0.92	1	0.97	1.1	1.4	0.78 U	0.75 U
Arsenic	9.6	21	6	8.7	3.9	11	9.5
Barium	260	21	75	42	61	97	90
Cadmium	4.3	45	3.7	4.4	3.8	4.9	4.4
Chromium (Total)	450	230	49	34	110	45	26
Chromium (Hexavalent) (c)	280	2 U	64.1	2.11 U	3.86	2.3 U	NA (e)
Copper	44	110	42	39	24	65	44
Mercury (c)	0.10 U	0.10 U	0.090 U	0.09 U	0.1 U	0.12	0.09 U
Lead	15	12	120	9.5	36	14	13
Selenium	0.27 U	0.24 U	0.25 U	0.27 U	0.23 U	0.25 U	0.24 U
Cyanide (c)							
Total (mg/kg)	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Free (mg/l)	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Table 4-8 (continued)

Subsurface Soil Sample Data (CAMUs A, B, and D)
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

CAMU:	CAMU D (continued)						
Sample Location:	**LEB-01 (continued)**	**LEB-02**		**LEB-03**			
Sample I.D.:	**SB-LEB-01-0810**	**SB-LEB-02-0608**	**SB-LEB-02-0810**	**SB-LEB-03-0002**	**SB-LEB-03-0709**	**SB-LEB-03-0709D**	**SB-LEB-03-1113**
Laboratory Project No.:	**96-5198**	**96-5198**	**96-5198**	**96-5210**	**96-5210**	**96-5210**	**96-5210**
Sample Interval :	**8 - 10 feet**	**6 - 8 feet**	**8 - 10 feet**	**0 - 2 feet**	**7 - 9 feet**	**7 - 9 feet**	**11 - 13 feet**
Sample Date:	**10/29/96**	**10/29/96**	**10/29/96**	**11/01/96**	**11/01/96**	**11/01/96**	**11/01/96**
Metals (mg/kg) (a)							
Silver	0.8	0.8 U	0.78 U	2.3	1.6	1.5	1
Arsenic	9.1	10	9.6	19	11	6.8	27
Barium	82	72	83	100	170	160	190
Cadmium	3.7	3.7	3.9	9.3	17	7.8	16
Chromium (Total)	14	13	16	2300	29	34	20
Chromium (Hexavalent) (c)	2.23 U	2.38 U	2.25 U	1.95 U	2.38 U	NA	2.06 U
Copper	31	70	40	94	52	52	37
Mercury (c)	0.09 U	0.09 U	0.08 U	0.07 U	0.21	0.1 U	0.1 U
Lead	11	12	11	230	28	13	42
Selenium	0.25 U	0.26 U	0.25 U	0.25 U	0.26 U	0.26 U	0.25 U
Cyanide (c)							
Total (mg/kg)	1 U	4.2	7.1	1 U	1 U	1 U	1 U
Free (mg/l)	0.005 U	0.005	0.007	0.005 U	0.005 U	0.005 U	0.005 U

Table 4-8 (continued)

Subsurface Soil Sample Data (CAMUs A, B, and D)
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

CAMU:	CAMU D					
Sample Location:	LEB-01			LEB-02		LEB-03
Sample I.D.:	SB-LEB-01-0204	SB-LEB-01-0204D	SB-LEB-01-0810	SB-LEB-02-0608	SB-LEB-02-0810	SB-LEB-03-0002
Laboratory Project No.:	96-5198	96-5200	96-5198	96-5198	96-5198	96-5210
Sample Interval :	2 - 4 feet	2 - 4 feet	8 - 10 feet	6 - 8 feet	8 - 10 feet	0 - 2 feet
Sample Date:	10/29/96	10/29/96	10/29/96	10/29/96	10/29/96	11/1/96
TCL Volatile Organic Compounds (µg/kg) (f)						
Vinyl chloride	12 U	12 U	11 U	12 U	11 U	11 U
Methylene chloride	14 B	12 U	11 B	13 B	34 B	11 U
Acetone	12 B	12 U	15 B	16 B	37 B	11 U
Carbon disulfide	12 U	12 U	11 U	12 U	11 U	11 U
1,1-Dichloroethene	12 U	12 U	11 U	12 U	11 U	11 U
trans-1,2-Dichloroethene	12 U	12 U	11 U	12 U	11 U	11 U
cis-1,2-Dichloroethene	12 U	12 U	11 U	39	11 U	28
Trichloroethene	87	570	11 U	110	11 U	97

Table 4-8 (continued)

Subsurface Soil Sample Data (CAMUs A, B, and D)
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

CAMU:	CAMU D										
Sample Location:	LEB-01						LEB-02				LEB-03
Sample I.D.:	SB-LEB-01-0204		SB-LEB-01-0204D	SB-LEB-01-0810		SB-LEB-02-0608		SB-LEB-02-0810		SB-LEB-03-0002	
Laboratory Project No.:	96-5198		96-5200	96-5198		96-5198		96-5198		96-5210	
Sample Interval :	2 - 4 feet		2 - 4 feet	8 - 10 feet		6 - 8 feet		8 - 10 feet		0 - 2 feet	
Sample Date:	10/29/96		10/29/96	10/29/96		10/29/96		10/29/96		11/1/96	
Volatile Organics											
Tentatively Identified Compounds (µg/kg)											
	Unknown Hydrocarbon	80 J		Unknown	50 J	Unknown	40 J	Unknown Hydrocarbon	30 J		
	Unknown	100 J		Unknown	30 J	Unknown	60 J	Unknown	90 J		
	Unknown	90 J		Unknown	100 J	Unknown	40 J	Unknown	10 J		
	Unknown	90 J		Unknown Aromatic Hydrocarbon	20 J	Unknown	200 J				
	Unknown	70 J		Unknown Aromatic Hydrocarbon	20 J	Unknown	50 J				
	Unknown	100 J		Unknown Aromatic Hydrocarbon	40 J	Unknown Aromatic Hydrocarbon	100 J				
	Unknown	60 J				Unknown Aromatic Hydrocarbon	200 J				
	Unknown Aromatic Hydrocarbon	80 J									
	Total VOC TICs (g)	670	Total VOC TICs 0	Total VOC TICs	260	Total VOC TICs	690	Total VOC TICs	130	Total VOC TICs	0

Table 4-8 (continued)

Subsurface Soil Sample Data (CAMUs A, B, and D)
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

CAMU:	CAMU D (continued)	
Sample Location:	LEB-03 (continued)	
Sample I.D.:	SB-LEB-03-0709	SB-LEB-03-1113
Laboratory Project No.:	96-5210	96-5210
Sample Interval :	7 - 9 feet	11 - 13 feet
Sample Date:	11/1/96	11/1/96
TCL Volatile Organic Compounds (µg/kg) (f)		
Vinyl chloride	24	220 E
Methylene chloride	30 B	11 U
Acetone	720 BD	130
Carbon disulfide	12 U	27
1,1-Dichloroethene	12 U	41
trans-1,2-Dichloroethene	12 U	230 E
cis-1,2-Dichloroethene	870 D	1500 D
Trichloroethene	160	17000 D

Table 4-8 (continued)

Subsurface Soil Sample Data (CAMUs A, B, and D)
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

CAMU:	CAMU D (continued)			
Sample Location:			LEB-03 (continued)	
Sample I.D.:	SB-LEB-03-0709		SB-LEB-03-1113	
Laboratory Project No.:	96-5210		96-5210	
Sample Interval :	7 - 9 feet		11 - 13 feet	
Sample Date:	11/1/96		11/1/96	
Volatile Organics				
Tentatively Identified Compounds (µg/				
	Unknown	8 J	Unknown Hydrocarbon	6000 J
	Unknown	8 J	Unknown Hydrocarbon	1000 J
			Unknown	30 J
			Unknown	30 J
			Unknown	20 J
			Unknown	60 J
			Unknown	30 J
			Unknown	30 J
			Unknown	30 J
	Total VOC TICs	16	**Total VOC TICs**	7230

Table 4-8 (continued)

Subsurface Soil Sample Data (CAMUs A, B, and D)
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

CAMU:	**CAMU A**						
Sample Location:	**LWB-01**		**LWB-02**		**LWB-03**		**LWB-04**
Sample I.D.:	**SB-LWB-01-0204**	**SB-LWB-01-0608**	**SB-LWB-02-0002**	**SB-LWB-02-0608**	**SB-LWB-03-0002**	**SB-LWB-03-0608**	**SB-LWB-04-0002**
Laboratory Project No.:	**96-5198**	**96-5198**	**96-5198**	**96-5198**	**96-5198**	**96-5198**	**96-5198**
Sample Interval :	**2 - 4 feet**	**6 - 8 feet**	**0 - 2 feet**	**6 - 8 feet**	**0 - 2 feet**	**6 - 8 feet**	**0 - 2 feet**
Sample Date:	**10/30/96**	**10/30/96**	**10/30/96**	**10/30/96**	**10/30/96**	**10/30/96**	**10/30/96**
Miscellaneous Parameters							
pH (s.u.)	7.92	11.06	3.52	10.89	8.56	10.73	8.11
Total Organic Carbon (mg/l)	NA	NA	NA	NA	NA	NA	NA

Table 4-8 (continued)

Subsurface Soil Sample Data (CAMUs A, B, and D)
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

CAMU:	CAMU A (continued)	CAMU B				CAMU D	
Sample Location:	LWB-04 (continued)		BRB-01		BRB-03	LEB-01	
Sample I.D.:	SB-LWB-04-0608	SB-BRB-01-0002	SB-BRB-01-0204	SB-BRB-01-1517	SB-BRB-03-0103	SB-LEB-01-0204	SB-LEB-01-0204D
Laboratory Project No.:	96-5198	96-5200	96-5200	96-5200	96-5200	96-5198	96-5200
Sample Interval :	6 - 8 feet	0 - 2 feet	2 - 4 feet	15 - 17 feet	1 - 3 feet	2 - 4 feet	2 - 4 feet
Sample Date:	10/30/96	10/31/96	10/30/96	10/30/96	10/31/96	10/29/96	10/29/96
Miscellaneous Parameters							
pH (s.u.)	10.04	4.48	8.55	8.28	10.32	7.4	8.15
Total Organic Carbon (mg/l)	NA	10 U	NA	NA	NA	3.2	2.6

Table 4-8 (continued)

Subsurface Soil Sample Data (CAMUs A, B, and D)
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

	CAMU D (continued)						
CAMU:	**LEB-01 (continued)**	**LEB-02 (continued)**		**LEB-03**			
Sample Location:	**SB-LEB-01-0810**	**SB-LEB-02-0608**	**SB-LEB-02-0810**	**SB-LEB-03-0002**	**SB-LEB-03-0709**	**SB-LEB-03-0709D**	**SB-LEB-03-1113**
Sample I.D.:	**96-5198**	**96-5198**	**96-5198**	**96-5210**	**96-5210**	**96-5210**	**96-5210**
aboratory Project No.:	**8 - 10 feet**	**6 - 8 feet**	**8 - 10 feet**	**0 - 2 feet**	**7 - 9 feet**	**7 - 9 feet**	**11 - 13 feet**
Sample Interval :	**10/29/96**	**10/29/96**	**10/29/96**	**11/1/96**	**11/1/96**	**11/1/96**	**11/1/96**
Sample Date:							
Miscellaneous Parameter	8.35	8.84	8.85	9.78	7.01	6.92	8.19
pH (s.u.)	2.4	4.3	2.9	2.9	4.8	7.7	2.5
Total Organic Carbon (mg/l)							

a/ mg/kg = milligrams per kilogram; ug/kg = micrograms per kilogram;
mg/l = milligrams per liter; s.u. = standard units.

b/ Data Qualifiers:
- U = constituent not detected at the noted detection limit.
- B = constituent also detected in an associated blank
- J = constituent detected at an estimated concentration less than the method detected limit.
- D = concentration represents that generated for a diluted aliquot.
- E = estimated concentration, result outside calibration range of instrument.

c/ Analysis for hexavalent chromium, mercury, and cyanide was performed on unsieved sample aliquots consistent with the Work Plan.

d/ D = duplicate sample.

e/ NA = not analyzed.

f/ TCL = Target Compound List; VOC = Volatile Organic Compound; TIC = Tentatively Identified Compound.
Only those TCL VOCs detected in one or more of the soil samples have been retained in this table.
Unabridged analytical results are presented in Appendix N.

g/ Total VOC TICs represent the sum of all detected TICs.

Table 4-9

Groundwater Sample
TAL Inorganics Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	B-01				LAE-04			
Sample I.D.:	GW-B-1-1196		GW-B-1-0397		GW-LAE-4-1196		GW-LAE-4-0397	
Laboratory Project No.:	96-5507		97-1208		96-5567		97-1228	
Sample Date:	11/18/96		03/24/97		11/20/96		03/27/97	
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
TAL Inorganics Plus Molybdenum (mg/l) (a,b)								
Silver	0.0083 U (c)	NA (d)	0.007 U	NA	0.0083 UJ	0.0083 U	0.007 UJ	0.007 UJ
Aluminum	0.058 U	NA	0.096 J	NA	8	0.39 J	3.5	0.096 U
Arsenic	0.0018 U	NA	0.0025 U	NA	0.0023	0.0018 U	0.0025 U	0.0025 U
Barium	0.24	NA	0.072 J	NA	0.087	0.035	0.091 J	0.045 J
Beryllium	0.0006 U	NA	0.0018 U	NA	0.0006 U	0.0006 U	0.0018 U	0.0018 U
Calcium	87	NA	90	NA	90	78 J	140	110
Cadmium	0.0022 U	NA	0.005 U	NA	0.0022 U	0.0022 U	0.005 U	0.005 U
Cobalt	0.0056 U	NA	0.017 U	NA	0.0056 U	0.0056 U	0.017 U	0.017 U
Chromium (Total)	0.0078 U	NA	0.0084 U	NA	0.0078 U	0.0078 U	0.0089 J	0.0084 U
Chromium (Hexavalent)	0.01 U	NA	0.02 (e)	NA	0.01 U	NA	0.01 U	NA
Copper	0.0047 U	NA	0.015	NA	0.0047 U	0.0047 U	0.052	0.014 J
Iron	0.26 J	NA	0.28 J	NA	7.1	0.65 J	5.5	0.56
Mercury	0.0002 U	NA	0.0002 U	NA	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Potassium	2.3	NA	2.4 J	NA	3.1	0.67	1.8 J	1.2 J
Magnesium	40	NA	41	NA	28	24 J	32	28
Manganese	0.031 J	NA	0.035	NA	0.34	0.11 J	1.2	0.97
Molybdenum	0.01 J	NA	0.043 U	NA	0.01 J	0.01 J	0.043 U	0.043 U
Sodium	24	NA	19	NA	47	41 J	45	44
Nickel	0.01 U	NA	0.028 U	NA	0.01 U	0.01 U	0.041	0.028 U
Lead	0.0029	NA	0.0048 J	NA	0.0072	0.0017 U	0.013 J	0.0026 U
Antimony	0.0018	NA	0.0027 J	NA	0.0016 U	0.0016 U	0.0026 U	0.0026 U
Selenium	0.0027 U	NA	0.0039 U	NA	0.0027 U	0.0027 U	0.0039 U	0.0039 U
Thallium	0.0023 U	NA	0.005 J	NA	0.0023 U	0.0023 U	0.0027 U	0.0027 U
Vanadium	0.0054 U	NA	0.026 U	NA	0.0054 U	0.0054 U	0.026 U	0.026 U
Zinc	0.019	NA	0.011 J	NA	0.027	0.0052	0.058	0.028
Cyanide (Total)	0.005 UJ	NA	0.005 U	NA	0.007 J	NA	0.005 U	NA
Cyanide (Free)	0.005 UJ	NA	0.005 U	NA	0.057 J	NA	0.005 U	NA

Table 4-9 (continued)

Groundwater Sample
TAL Inorganics Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	LAW-05				LAW-06			
Sample I.D.:	GW-LAW-5-1196		GW-LAW-5-0397		GW-LAW-6-1196		GW-LAW-6-0397	
Laboratory Project No.:	96-5586		97-1228		96-5586		97-1228	
Sample Date:	11/21/96		03/26/97		11/21/96		03/26/97	
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
TAL Inorganics Plus Molybdenum (mg/l)								
Silver	0.0083 U	NA	0.007 UJ	NA	0.0083 U	0.0083 U	0.018 J	NA
Aluminum	0.058 U	NA	0.096 U	NA	0.058 U	0.3	0.3	NA
Arsenic	0.0018 U	NA	0.0025 U	NA	0.13	0.13	0.22	NA
Barium	0.014 U	NA	0.017 J	NA	0.014 U	0.014 U	0.013 U	NA
Beryllium	0.0021	NA	0.0018 U	NA	0.0006 U	0.0006 U	0.0018 U	NA
Calcium	280	NA	230	NA	12	14	9.5	NA
Cadmium	0.0022 U	NA	0.005 U	NA	0.0022 U	0.0022 U	0.0065	NA
Cobalt	0.0056 U	NA	0.017 U	NA	0.0056 U	0.0056 U	0.025 J	NA
Chromium (Total)	4.8	NA	3.1	NA	43	41	43	NA
Chromium (Hexavalent)	5.24	NA	3.96	NA	36.1	NA	54.5	NA
Copper	0.0047 U	NA	0.028	NA	0.072	0.031	0.065	NA
Iron	0.18 J	NA	0.17	NA	0.15 J	1.5 J	0.094 J	NA
Mercury	0.0002 U	NA	0.0002 U	NA	0.0002 U	0.0002 U	0.0002 U	NA
Potassium	4.5	NA	4.4 J	NA	11	10	10	NA
Magnesium	91	NA	75	NA	77	75	92	NA
Manganese	0.13 J	NA	0.11	NA	0.0013 J	0.014 J	0.0029 U	NA
Molybdenum	0.32	NA	0.33	NA	6	5.7	6.2	NA
Sodium	410	NA	290	NA	2400	2400	2700	NA
Nickel	0.075	NA	0.085	NA	0.04 U	0.01 U	0.055	NA
Lead	0.0026	NA	0.0026 U	NA	0.0017 U	0.0017 U	0.0026 U	NA
Antimony	0.0093	NA	0.011 J	NA	0.086	0.086	0.15	NA
Selenium	0.0027 U	NA	0.0039 U	NA	0.027	0.024	0.018	NA
Thallium	0.0039	NA	0.0027 U	NA	0.007	0.0052	0.0079 J	NA
Vanadium	0.0054 U	NA	0.026 U	NA	0.2	0.14	0.29	NA
Zinc	0.0041	NA	0.0067 J	NA	0.019	0.014	0.0065 J	NA
Cyanide (Total)	0.014 J	NA	0.005 U	NA	0.14 J	NA	0.011	NA
Cyanide (Free)	0.005 UJ	NA	0.005 U	NA	0.16 J	NA	0.011	NA

Table 4-9 (continued)

Groundwater Sample
TAL Inorganics Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	MW-01				MW-03			
Sample I.D.:	GW-MW-1-1196		GW-MW-1-0397		GW-MW-3-1196		GW-MW-3-0397	
Laboratory Project No.:	96-5586		97-1208		96-5567		97-1208	
Sample Date:	11/20/96		03/25/97		11/20/96		03/26/97	
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
TAL Inorganics Plus Molybdenum (mg/l)								
Silver	0.0083 U	NA	0.007 U	NA	0.0083 UJ	0.0083 U	0.02	NA
Aluminum	0.28	NA	0.5 J	NA	3.4	0.058 U	0.62 J	NA
Arsenic	0.0018 U	NA	0.0025 U	NA	0.0018 U	0.0018 U	0.0025 U	NA
Barium	0.044	NA	0.06 J	NA	0.044	0.025	0.029 J	NA
Beryllium	0.0006 U	NA	0.0018 U	NA	0.005	0.004	0.0018 U	NA
Calcium	77	NA	67	NA	190	190 J	220	NA
Cadmium	0.0022 U	NA	0.005 U	NA	0.004	0.0022 U	0.0091	NA
Cobalt	0.0056 U	NA	0.017 U	NA	0.006	0.0056 U	0.018 J	NA
Chromium (Total)	0.0078 U	NA	0.022 J	NA	7	6.6	6 J	NA
Chromium (Hexavalent)	0.01 U	NA	0.01 U	NA	7.54	NA	8.05	NA
Copper	0.0047 U	NA	0.018	NA	0.025	0.0058	0.046	NA
Iron	1.5 J	NA	0.99 J	NA	5.3	0.015 J	1.9 J	NA
Mercury	0.0002 U	NA	0.0002 U	NA	0.0002 U	0.0002 U	0.0002 U	NA
Potassium	3.9	NA	20	NA	4.6	3.4	3.7 J	NA
Magnesium	35	NA	24	NA	54	55 J	61	NA
Manganese	0.26 J	NA	0.18	NA	0.25	0.078 J	0.21	NA
Molybdenum	0.6	NA	0.38	NA	0.41 J	0.39 J	0.3	NA
Sodium	180	NA	120	NA	460	480 J	420	NA
Nickel	0.01 U	NA	0.039 J	NA	0.027	0.01 U	0.039 J	NA
Lead	0.0021	NA	0.0085 J	NA	0.0017 U	0.0017 U	0.0026 U	NA
Antimony	0.0016 U	NA	0.0026 U	NA	0.0072	0.0063	0.012 J	NA
Selenium	0.0027 U	NA	0.0039 U	NA	0.0042	0.008	0.0039 U	NA
Thallium	0.0023 U	NA	0.0027 U	NA	0.0023 U	0.0023 U	0.0027 U	NA
Vanadium	0.0054 U	NA	0.026 U	NA	0.014	0.0054 U	0.028 J	NA
Zinc	0.024	NA	0.015 J	NA	0.015	0.0084	0.021	NA
Cyanide (Total)	0.009 J	NA	0.005 U	NA	0.008 J	NA	0.005 U	NA
Cyanide (Free)	0.005 UJ	NA	0.005 U	NA	0.005 UJ	NA	0.005 U	NA

Table 4-9 (continued)

Groundwater Sample
TAL Inorganics Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-01				RFI-02			
Sample I.D.:	GW-RFI-001-1196		GW-RFI-001-0397		GW-RFI-002-1196		GW-RFI-002-0397	
Laboratory Project No.:	96-5507		97-1208		96-5507		97-1208	
Sample Date:	11/18/96		03/24/97		11/18/96		03/24/97	
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
TAL Inorganics Plus Molybdenum (mg/l)								
Silver	0.0083 U	NA	0.007 U	0.007 U	0.0083 U	NA	0.007 U	0.01
Aluminum	0.98	NA	2.3 J	0.096 U	0.29	NA	0.32 J	0.12 J
Arsenic	0.0023	NA	0.0037 J	0.0031 J	0.0025	NA	0.0031	0.0025 U
Barium	0.1	NA	0.12 J	0.056 J	0.014 U	NA	0.016 J	0.013 U
Beryllium	0.0012	NA	0.0018 U	0.0018 U	0.0006 U	NA	0.0018 U	0.0018 U
Calcium	90	NA	100	87 J	130	NA	160	160 J
Cadmium	0.0048 J	NA	0.005 U	0.005 U	0.0022 U	NA	0.005 U	0.0054
Cobalt	0.0056 U	NA	0.017 U	0.017 U	0.0056 U	NA	0.017 U	0.017 U
Chromium (Total)	0.016 J	NA	0.011 J	0.0084 U	0.0078 U	NA	0.0084 U	0.0084 U
Chromium (Hexavalent)	0.01 U	NA	0.1 U	NA	0.01 U	NA	0.05 U	NA
Copper	0.011 U	NA	0.031	0.014 J	0.0047 U	NA	0.021	0.027 J
Iron	1.3 J	NA	7.3 J	0.068 J	1.8 J	NA	3.4 J	0.9
Mercury	0.0002 U	NA	0.0002 U	0.0002 U	0.0002 U	NA	0.0002 U	0.0002 U
Potassium	2.2	NA	1.8 J	1.3 J	5.4	NA	2.8 J	2.9 J
Magnesium	29	NA	32	28 J	57	NA	71	72 J
Manganese	0.11 J	NA	0.3	0.13 J	0.24 J	NA	0.3	0.25 J
Molybdenum	0.023 J	NA	0.043 U	0.043 U	0.01 J	NA	0.043 U	0.043 U
Sodium	28	NA	19	19 J	15	NA	13	14 J
Nickel	0.019 U	NA	0.028 U	0.028 U	0.01 U	NA	0.028 U	0.028 U
Lead	0.0052	NA	0.029 J	0.011	0.0025	NA	0.0078 J	0.0046
Antimony	0.0029	NA	0.0026 U	0.0034 J	0.0016 U	NA	0.0026 U	0.0026 U
Selenium	0.0027 U	NA	0.0039 U	0.0039 U	0.0027 U	NA	0.0039 U	0.0039 U
Thallium	0.0054	NA	0.0027 U	0.014 U	0.0023 U	NA	0.0027 U	0.0034 U
Vanadium	0.0054 U	NA	0.026 U	0.026 U	0.0054 U	NA	0.026 U	0.026 U
Zinc	0.033	NA	0.037	0.011 J	0.029	NA	0.016 J	0.021
Cyanide (Total)	0.005 UJ	NA	0.005 U	NA	0.005 UJ	NA	0.005 U	NA
Cyanide (Free)	0.005 UJ	NA	0.005 U	NA	0.005 UJ	NA	0.005 U	NA

Table 4-9 (continued)

Groundwater Sample
TAL Inorganics Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-03				RFI-04			
Sample I.D.:	GW-RFI-003-1196		GW-RFI-003-0397		GW-RFI-004-1196		GW-RFI-004-0397	
Laboratory Project No.:	96-5507		97-1208		96-5528		97-1208	
Sample Date:	11/18/96		03/24/97		11/19/96		03/25/97	
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
TAL Inorganics Plus Molybdenum (mg/l)								
Silver	0.0083 U	NA	0.007 U	NA	0.016	NA	0.007 U	0.007 J
Aluminum	0.94	NA	0.099 J	NA	0.28	NA	0.19 J	0.36
Arsenic	0.0019	NA	0.0025 U	NA	0.0018 U	NA	0.0025 U	0.0025 U
Barium	0.064	NA	0.07 J	NA	0.25	NA	0.13 J	0.14 J
Beryllium	0.0006 U	NA	0.0018 U	NA	0.0035	NA	0.0018 U	0.0018 U
Calcium	150	NA	150	NA	100	NA	94	99 J
Cadmium	0.0022 U	NA	0.005 U	NA	0.0093 U	NA	0.005 U	0.005 U
Cobalt	0.0056 U	NA	0.017 U	NA	0.018	NA	0.017 U	0.017 U
Chromium (Total)	0.0078 U	NA	0.0084 U	NA	0.02	NA	0.0084 U	0.01 J
Chromium (Hexavalent)	0.01 U	NA	0.05 (e)	NA	0.01 U	NA	0.01 U	NA
Copper	0.0047 U	NA	0.021	NA	0.027	NA	0.014	0.02 J
Iron	4 J	NA	2.7 J	NA	0.68	NA	0.31 J	1.2
Mercury	0.0002 U	NA	0.0002 U	NA	0.0002 U	NA	0.0002 U	0.0002 U
Potassium	3.3	NA	3 J	NA	2.5	NA	2.1 J	2.1 J
Magnesium	42	NA	42	NA	50	NA	48	50 J
Manganese	0.94 J	NA	0.95	NA	0.056	NA	0.029	0.039 J
Molybdenum	1.3	NA	1.2	NA	0.023	NA	0.043 U	0.043 U
Sodium	95	NA	81	NA	17	NA	15	15 J
Nickel	0.01 U	NA	0.028 U	NA	0.03	NA	0.028 U	0.028 U
Lead	0.0075	NA	0.0035 J	NA	0.0017	NA	0.0026 U	0.0026 U
Antimony	0.0016 U	NA	0.0026 U	NA	0.0016 U	NA	0.0026 U	0.0026 U
Selenium	0.0027 U	NA	0.0039 U	NA	0.0027 U	NA	0.0039 U	0.0039 U
Thallium	0.0023 U	NA	0.0027 U	NA	0.0023 U	NA	0.0027 U	0.0027 U
Vanadium	0.0054 U	NA	0.026 U	NA	0.029	NA	0.026 U	0.026 U
Zinc	0.036	NA	0.025	NA	0.017	NA	0.017 J	0.0093 J
Cyanide (Total)	0.005 UJ	NA	0.005 U	NA	0.005 UJ	NA	0.005 U	NA
Cyanide (Free)	0.005 UJ	NA	0.005 U	NA	0.005 UJ	NA	0.005 U	NA

Table 4-9 (continued)

Groundwater Sample
TAL Inorganics Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-05				RFI-06			
Sample I.D.:	GW-RFI-005-1196		GW-RFI-005-0397		GW-RFI-006-1196		GW-RFI-006-0397	
Laboratory Project No.:	96-5567		97-1228		96-5567		97-1228	
Sample Date:	11/20/96		03/27/97		11/19/96		03/26/97	
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
TAL Inorganics Plus Molybdenum (mg/l)								
Silver	0.0083 UJ	NA	0.007 UJ	NA	0.0083 UJ	NA	0.007 UJ	NA
Aluminum	0.44	NA	0.13 J	NA	1.5	NA	0.19 J	NA
Arsenic	0.0018 U	NA	0.0025 U	NA	0.0038	NA	0.0031 J	NA
Barium	0.058	NA	0.036 J	NA	0.075	NA	0.03 J	NA
Beryllium	0.0022	NA	0.0018 U	NA	0.0022	NA	0.0018 U	NA
Calcium	90	NA	87	NA	99	NA	100	NA
Cadmium	0.0033	NA	0.005 U	NA	0.0025	NA	0.005 U	NA
Cobalt	0.013	NA	0.017 U	NA	0.0056 U	NA	0.017 U	NA
Chromium (Total)	0.04	NA	0.0084 U	NA	0.03	NA	0.0084 U	NA
Chromium (Hexavalent)	0.01 U	NA	0.01 U	NA	0.01 U	NA	0.01 U	NA
Copper	0.01	NA	0.012 U	NA	0.013	NA	0.012 U	NA
Iron	0.74	NA	0.21	NA	2.4	NA	0.7	NA
Mercury	0.0002 U	NA	0.0002 U	NA	0.0002 U	NA	0.0002 U	NA
Potassium	2.1	NA	0.82 J	NA	12	NA	6.8	NA
Magnesium	21	NA	20	NA	33	NA	34	NA
Manganese	0.04	NA	0.0082 J	NA	0.15	NA	0.17	NA
Molybdenum	0.049 J	NA	0.043 U	NA	0.029 J	NA	0.043 U	NA
Sodium	27	NA	23	NA	90	NA	82	NA
Nickel	0.017	NA	0.028 U	NA	0.024	NA	0.028 U	NA
Lead	0.0017	NA	0.0036 J	NA	0.0021	NA	0.0026 U	NA
Antimony	0.0016 U	NA	0.0026 U	NA	0.0016 U	NA	0.0026 U	NA
Selenium	0.0094	NA	0.0085	NA	0.0044	NA	0.0039 U	NA
Thallium	0.0023 U	NA	0.0027 U	NA	0.0023 U	NA	0.007 J	NA
Vanadium	0.0068	NA	0.026 U	NA	0.0054 U	NA	0.026 U	NA
Zinc	0.059	NA	0.017 J	NA	0.023	NA	0.0051 U	NA
Cyanide (Total)	0.005 UJ	NA	0.005 U	NA	0.005 UJ	NA	0.005 U	NA
Cyanide (Free)	0.005 UJ	NA	0.005 U	NA	0.005 UJ	NA	0.005 U	NA

Table 4-9 (continued)

Groundwater Sample
TAL Inorganics Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-07				RFI-08			
Sample I.D.:	GW-RFI-007-1196		GW-RFI-007-0397		GW-RFI-008-1196		GW-RFI-008-0397	
Laboratory Project No.:	96-5567		97-1208		96-5567		97-1228	
Sample Date:	11/20/96		03/26/97		11/20/96		03/27/97	
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
TAL Inorganics Plus Molybdenum (mg/l)								
Silver	0.0083 U	NA	0.013	0.016	0.023 J	NA	0.007 UJ	NA
Aluminum	0.37	NA	0.5 J	0.14 J	0.18	NA	0.096 U	NA
Arsenic	0.0018 U	NA	0.0025 U	0.0025 U	0.0018 U	NA	0.0025 U	NA
Barium	0.046	NA	0.13 J	0.15 J	0.11	NA	0.042 J	NA
Beryllium	0.01	NA	0.0018 U	0.0018 U	0.0032	NA	0.0018 U	NA
Calcium	420	NA	200	240 J	99	NA	96	NA
Cadmium	0.0025	NA	0.0084	0.0087	0.0092	NA	0.009	NA
Cobalt	0.017	NA	0.027 J	0.017 U	0.02	NA	0.017 U	NA
Chromium (Total)	0.033	NA	0.069 J	0.024	0.034	NA	0.0084 U	NA
Chromium (Hexavalent)	0.01 U	NA	0.01 U	NA	0.01 U	NA	0.01 U	NA
Copper	0.037	NA	0.037	0.041 J	0.028	NA	0.012 J	NA
Iron	0.7	NA	0.77 J	0.062 J	0.28	NA	0.2	NA
Mercury	0.0002 U	NA	0.0002 U	0.0002 U	0.0002 U	NA	0.0002 U	NA
Potassium	28	NA	17	17	7.6	NA	4.1 J	NA
Magnesium	130	NA	60	70 J	26	NA	25	NA
Manganese	2.3	NA	0.81	1 J	0.1	NA	0.066	NA
Molybdenum	1.2 J	NA	0.71	0.79	0.093 J	NA	0.043 U	NA
Sodium	310	NA	140	170 J	49	NA	45	NA
Nickel	0.089	NA	0.072	0.051	0.036	NA	0.028 U	NA
Lead	0.0017 U	NA	0.0031 J	0.0026 U	0.0031	NA	0.02 J	NA
Antimony	0.0016 U	NA	0.0026 U	0.0042 J	0.0016 U	NA	0.0026 U	NA
Selenium	0.0032	NA	0.0039 U	0.0039 U	0.0049	NA	0.0039 U	NA
Thallium	0.0023 U	NA	0.0027 U	0.0027 U	0.0023 U	NA	0.0027 U	NA
Vanadium	0.011	NA	0.026 U	0.026 U	0.028	NA	0.026 U	NA
Zinc	0.025	NA	0.024	0.025	0.026	NA	0.02	NA
Cyanide (Total)	0.005 UJ	NA	0.005 U	NA	0.005 J	NA	0.005 U	NA
Cyanide (Free)	0.005 UJ	NA	0.005 U	NA	0.005 UJ	NA	0.005 U	NA

Table 4-9 (continued)

Groundwater Sample
TAL Inorganics Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-09				RFI-10			
Sample I.D.:	GW-RFI-009-1196		GW-RFI-009-0397		GW-RFI-010-1196		GW-RFI-010-0397	
Laboratory Project No.:	96-5528		97-1208		96-5567		97-1208	
Sample Date:	11/19/96		03/26/97		11/19/96		03/25/97	
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
TAL Inorganics Plus Molybdenum (mg/l)								
Silver	0.041	0.0083 U	0.01	NA	0.025 J	NA	0.007 U	NA
Aluminum	0.28	0.058 U	0.39 J	NA	0.25	NA	0.25 J	NA
Arsenic	0.0018 U	0.0018 U	0.027	NA	0.004	NA	0.0025 U	NA
Barium	0.047	0.038	0.06 J	NA	0.12	NA	0.076 J	NA
Beryllium	0.006	0.0034	0.0018 U	NA	0.005	NA	0.0018 U	NA
Calcium	140	140	130	NA	160	NA	170	NA
Cadmium	0.018	0.0028 U	0.0058	NA	0.012	NA	0.005 U	NA
Cobalt	0.036	0.0066	0.017 J	NA	0.026	NA	0.017 U	NA
Chromium (Total)	0.041	0.0078 U	0.0084 U	NA	0.035	NA	0.0084 U	NA
Chromium (Hexavalent)	0.01 U	NA	0.01 U	NA	0.01 U	NA	0.01 U	0.01 U
Copper	0.049	0.017	0.027	NA	0.036	NA	0.027	NA
Iron	0.078	0.053	0.57 J	NA	0.92	NA	0.51 J	NA
Mercury	0.0002 U	0.0002 U	0.0002 U	NA	0.0002 U	NA	0.0002 U	NA
Potassium	1.8	1.3	1.2 J	NA	19	NA	17	NA
Magnesium	36	38	36	NA	53	NA	64	NA
Manganese	0.81	0.85	0.84	NA	0.17	NA	0.085	NA
Molybdenum	0.48	0.42	0.41	NA	0.061 J	NA	0.043 U	NA
Sodium	42	46	44	NA	110	NA	100	NA
Nickel	0.067	0.022	0.031 J	NA	0.041	NA	0.028 U	NA
Lead	0.0049 U	0.0036 U	0.0082 J	NA	0.0017 U	NA	0.0041 J	NA
Antimony	0.0016 U	0.0016 U	0.0056 J	NA	0.0026	NA	0.0026 U	NA
Selenium	0.0031 U	0.0027 U	0.025	NA	0.0066	NA	0.0039 U	NA
Thallium	0.0023 U	0.0023 U	0.028	NA	0.0023 U	NA	0.0027 U	NA
Vanadium	0.055	0.0099	0.026 U	NA	0.033	NA	0.026 U	NA
Zinc	0.022	0.057	0.02	NA	0.044	NA	0.022	NA
Cyanide (Total)	0.14 J	NA	0.005 U	NA	0.005 UJ	NA	0.005 U	NA
Cyanide (Free)	0.005 UJ	NA	0.005 U	NA	0.005 UJ	NA	0.005 U	NA

Table 4-9 (continued)

Groundwater Sample
TAL Inorganics Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-10 (continued)	RFI-11				RFI-12			
Sample I.D.:	GW-RFI-010-0397D (f)	GW-RFI-011-1196		GW-RFI-011-0397		GW-RFI-012-1196		GW-RFI-012-0397	
Laboratory Project No.:	97-1208	96-5528		97-1208		96-5586		97-1228	
Sample Date:	03/25/97	11/18/96		03/25/97		11/21/96		03/27/97	
	Total	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
TAL Inorganics Plus Molybdenum (mg/l)									
Silver	NA	0.026	0.023 J	0.007 U	NA	0.0083 U	NA	0.007 UJ	NA
Aluminum	NA	0.45	0.21	0.27 J	NA	0.058 U	NA	0.34	NA
Arsenic	NA	0.0018 U	0.0018 U	0.0025 U	NA	0.0018 U	NA	0.0025 U	NA
Barium	NA	0.43	0.32	0.28	NA	0.057	NA	0.037 J	NA
Beryllium	NA	0.021	0.005	0.0018 U	NA	0.0006 U	NA	0.0018 U	NA
Calcium	NA	730	130	110	NA	83	NA	62	NA
Cadmium	NA	0.016	0.011 U	0.005 U	NA	0.0022 U	NA	0.005 U	NA
Cobalt	NA	0.1	0.029	0.033 J	NA	0.0056 U	NA	0.017 U	NA
Chromium (Total)	NA	0.042	0.028 J	0.016 J	NA	0.0078 U	NA	0.045	NA
Chromium (Hexavalent)	0.01 U	0.01 U	NA	0.01 U	NA	0.01 U	NA	0.01 U	NA
Copper	NA	0.089	0.04	0.021	NA	0.0047 U	NA	0.012 J	NA
Iron	NA	0.85	0.11	1.2	NA	0.27 J	NA	0.86	NA
Mercury	NA	0.0002 U	0.0002 U	0.0002 U	NA	0.0002 U	NA	0.0002 U	NA
Potassium	NA	16	9.6	3.8 J	NA	15	NA	5.5	NA
Magnesium	NA	48	34	30	NA	38	NA	25	NA
Manganese	NA	5.4	0.81	0.95	NA	0.18 J	NA	0.13	NA
Molybdenum	NA	0.046	0.059	0.043 U	NA	0.095	NA	0.067	NA
Sodium	NA	52	56	47	NA	29	NA	16	NA
Nickel	NA	0.21	0.051	0.087	NA	0.01 U	NA	0.06	NA
Lead	NA	0.0027 U	0.0058 U	0.011	NA	0.0017 U	NA	0.0026 U	NA
Antimony	NA	0.0016	0.0016 U	0.0026 U	NA	0.0023	NA	0.0026 U	NA
Selenium	NA	0.0027 U	0.0027 U	0.0039 U	NA	0.0027 U	NA	0.0042 J	NA
Thallium	NA	0.0023 U	0.0023 U	0.0027 U	NA	0.0023 U	NA	0.0027 U	NA
Vanadium	NA	0.056	0.036	0.026 U	NA	0.0054 U	NA	0.026 U	NA
Zinc	NA	0.042	0.091	0.017 J	NA	0.32	NA	0.031	NA
Cyanide (Total)	NA	0.009 J	NA	0.005 U	NA	0.005 UJ	NA	0.005 U	NA
Cyanide (Free)	NA	0.005 UJ	NA	0.005 U	NA	0.006 J	NA	0.005 U	NA

Table 4-9 (continued)

Groundwater Sample
TAL Inorganics Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-13						RFI-14	
Sample I.D.:	GW-RFI-013-1196		GW-RFI-013-1196D		GW-RFI-013-0397		GW-RFI-014-1196	
Laboratory Project No.:	96-5567		97-5567		96-1228		96-5567	
Sample Date:	11/20/96		11/20/96		03/26/97		11/20/96	
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
TAL Inorganics Plus Molybdenum (mg/l)								
Silver	0.025 J	NA	0.022	NA	0.007 UJ	NA	0.037 J	0.0084
Aluminum	1.3	NA	1.6	NA	0.19 J	NA	76	1.7 J
Arsenic	0.0027	NA	0.0019	NA	0.0025 U	NA	0.062	0.0022
Barium	0.12	NA	0.1	NA	0.07 J	NA	0.95	0.12
Beryllium	0.0033	NA	0.0032	NA	0.0018 U	NA	0.012	0.0019
Calcium	97	NA	98	NA	120	NA	230	58 J
Cadmium	0.012	NA	0.012	NA	0.005 U	NA	0.042	0.0062
Cobalt	0.026	NA	0.025	NA	0.017 U	NA	0.22	0.017
Chromium (Total)	0.035	NA	0.031	NA	0.0093 J	NA	0.43	0.022
Chromium (Hexavalent)	0.01 U	NA	0.01 U	NA	0.01 U	NA	0.01 U	NA
Copper	0.029	NA	0.028	NA	0.021 J	NA	0.22	0.022
Iron	1.8	NA	2	NA	0.55	NA	170	2 J
Mercury	0.0002 U	NA	0.0002 U	NA	0.0002 U	NA	0.0002 U	0.0002 U
Potassium	6.8	NA	6.9	NA	4.9 J	NA	32	44
Magnesium	43	NA	43	NA	44	NA	75	25 J
Manganese	0.2	NA	0.21	NA	0.11	NA	3.4	0.12 J
Molybdenum	0.036 J	NA	0.049	NA	0.043 U	NA	0.19 J	0.11 J
Sodium	95	NA	96	NA	100	NA	31	29 J
Nickel	0.039	NA	0.044	NA	0.028 U	NA	0.39	0.1
Lead	0.0017 U	NA	0.0023	NA	0.0039 J	NA	0.042	0.0017 U
Antimony	0.0016 U	NA	0.0029	NA	0.005 J	NA	0.0085	0.0032
Selenium	0.0027 U	NA	0.0027 U	NA	0.0039 U	NA	0.0064	0.0051
Thallium	0.0023 U	NA	0.0023 U	NA	0.0027 U	NA	0.0023 U	0.0023 U
Vanadium	0.033	NA	0.031	NA	0.026 U	NA	0.16	0.015
Zinc	0.021	NA	0.03	NA	0.014 J	NA	0.47	0.02
Cyanide (Total)	0.005 J	NA	0.009 J	NA	0.005 U	NA	0.027 J	NA
Cyanide (Free)	0.005 UJ	NA	0.005 J	NA	0.005 U	NA	0.005 UJ	NA

Table 4-9 (continued)

Groundwater Sample
TAL Inorganics Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-14 (continued)		RFI-15					
Sample I.D.:	GW-RFI-014-0397		GW-RFI-015-1196		GW-RFI-015-1196D		GW-RFI-015-0397	
Laboratory Project No.:	97-1208		96-5567		97-5567		96-1208	
Sample Date:	03/25/97		11/20/96		11/20/96		03/26/97	
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
TAL Inorganics Plus Molybdenum (mg/l)								
Silver	0.007 U	0.007 U	0.024 J	0.023	0.029	0.018	0.007 U	NA
Aluminum	0.83 J	0.096 U	43	0.28 J	41	0.15	0.23 J	NA
Arsenic	0.0025 U	0.0025 U	0.032	0.0018	0.03	0.0022	0.0025 U	NA
Barium	0.084 J	0.067 J	0.63	0.069	0.61	0.035	0.044 J	NA
Beryllium	0.0018 U	0.0018 U	0.0089	0.0043	0.0088	0.0022	0.0018 U	NA
Calcium	100	87 J	210 J	130 J	200	57	130	NA
Cadmium	0.005 U	0.005 U	0.027	0.011	0.028	0.0092	0.005 U	NA
Cobalt	0.017 U	0.017 U	0.095	0.025	0.095	0.02	0.017 U	NA
Chromium (Total)	0.026 J	0.0084 U	0.17	0.031	0.17	0.021	0.0084 U	NA
Chromium (Hexavalent)	0.01 U	NA	0.01 U	NA	0.01 U	NA	0.01 U	NA
Copper	0.021	0.017 J	0.15	0.033	0.14	0.026	0.018	NA
Iron	3.6 J	0.069 J	88	0.26 J	84	0.2	0.6 J	NA
Mercury	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	NA
Potassium	7.7	8.1	13	5.5	13	2.7	3.7 J	NA
Magnesium	36	35 J	80	50 J	74	22	49	NA
Manganese	0.41	0.13 J	1.2	0.13 J	1.3	0.066	0.18	NA
Molybdenum	0.044	0.056	0.092 J	0.076 J	0.097	0.042	0.043 U	NA
Sodium	26	27 J	25	24 J	23	11	19	NA
Nickel	0.05	0.028 U	0.18	0.044	0.19	0.028	0.028 U	NA
Lead	0.0048 J	0.0039	0.032	0.0017 U	0.032	0.0017 U	0.0029 J	NA
Antimony	0.0026 U	0.0026 U	0.0044	0.0017 U	0.0019	0.0017 U	0.0026 U	NA
Selenium	0.0039 U	0.0039 U	0.0027 U	0.0059	0.0038	0.0038	0.0039 U	NA
Thallium	0.0027 U	0.0053 J	0.0023 U	0.0023 U	0.0023 U	0.003	0.0027 U	NA
Vanadium	0.026 U	0.026 U	0.1	0.03	0.11	0.023	0.026 U	NA
Zinc	0.022	0.04	0.24	0.01	0.22	0.014	0.013 J	NA
Cyanide (Total)	0.005 U	NA	0.005 UJ	NA	0.005 J	NA	0.005 U	NA
Cyanide (Free)	0.005 U	NA	0.005 UJ	NA	0.005 UJ	NA	0.005 U	NA

Table 4-9 (continued)

Groundwater Sample
TAL Inorganics Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-16				RFI-17			
Sample I.D.:	GW-RFI-016-1196		GW-RFI-016-0397		GW-RFI-017-1196		GW-RFI-017-0397	
Laboratory Project No.:	96-5567		97-1208		96-5567		97-1208	
Sample Date:	11/18/96		03/25/97		11/20/96		03/26/97	
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
TAL Inorganics Plus Molybdenum (mg/l)								
Silver	0.0083 U	NA	0.007 U	NA	0.01 U	0.01 U	0.011	NA
Aluminum	0.058 U	NA	0.36 J	NA	0.38	0.1 U	0.37 J	NA
Arsenic	0.0018 U	NA	0.0025 U	NA	0.001 U	0.001 U	0.0025 U	NA
Barium	0.034	NA	0.06 J	NA	0.081	0.074	0.059 J	NA
Beryllium	0.0006 U	NA	0.0018 U	NA	0.003	0.003	0.0018 U	NA
Calcium	110	NA	130	NA	130	150	270	NA
Cadmium	0.0022 U	NA	0.005 U	NA	0.005 U	0.005 U	0.0066	NA
Cobalt	0.0056 U	NA	0.017 U	NA	0.01 U	0.01 U	0.017 U	NA
Chromium (Total)	0.0078 U	NA	0.0084 U	NA	0.01 U	0.01 U	0.089 J	NA
Chromium (Hexavalent)	0.01 U	NA	0.01 U	NA	0.01 U	NA	0.01 U	NA
Copper	0.0047 U	NA	0.017	NA	0.028	0.016	0.042	NA
Iron	1	NA	1.8 J	NA	1.1	0.066	1.1 J	NA
Mercury	0.0002 U	NA	0.0002 U	NA	0.0002 U	0.0002 U	0.0002 U	NA
Potassium	2.4	NA	2.5 J	NA	20	24	12	NA
Magnesium	36	NA	41	NA	40	47	91	NA
Manganese	0.21	NA	0.39	NA	0.22	0.22	1	NA
Molybdenum	0.71	NA	0.59	NA	0.41	0.36	0.27	NA
Sodium	75	NA	76	NA	86	90	110	NA
Nickel	0.01 U	NA	0.028 U	NA	0.04 U	0.04 U	0.04	NA
Lead	0.0033	NA	0.0031 J	NA	0.001 U	0.001 U	0.0028 J	NA
Antimony	0.0016 U	NA	0.0026 U	NA	0.006 U	0.006 U	0.0026 U	NA
Selenium	0.0027 U	NA	0.0039 U	NA	0.001 U	0.001 U	0.0039 U	NA
Thallium	0.0023 U	NA	0.0027 U	NA	0.004 U	0.004 U	0.0027 U	NA
Vanadium	0.0054 U	NA	0.026 U	NA	0.05 U	0.05 U	0.026 U	NA
Zinc	0.0048	NA	0.019 J	NA	0.011	0.008	0.058	NA
Cyanide (Total)	0.005 J	NA	0.0066	NA	0.029 J	NA	0.005 U	NA
Cyanide (Free)	0.005 UJ	NA	0.005 U	NA	0.005 UJ	NA	0.005 U	NA

Table 4-9 (continued)

Groundwater Sample
TAL Inorganics Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	WP-04				WP-05			
Sample I.D.:	GW-WP-4-1196		GW-WP-4-0397		GW-WP-5-1196		GW-WP-5-0397	
Laboratory Project No.:	96-5586		97-1208		96-5586		97-1208	
Sample Date:	11/21/96		03/25/97		11/21/96		03/25/97	
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
TAL Inorganics Plus Molybdenum (mg/l)								
Silver	0.0083 U	NA	0.007 U	NA	0.0083 U	NA	0.007 U	0.007 U
Aluminum	0.14	NA	0.096 U	NA	0.42	NA	0.32 J	0.096 U
Arsenic	0.0018 U	NA	0.0025 U	NA	0.0022	NA	0.0025 U	0.0031 J
Barium	0.03	NA	0.02 J	NA	0.063	NA	0.062 J	0.053 J
Beryllium	0.003	NA	0.0018 U	NA	0.0014	NA	0.0018 U	0.0018 U
Calcium	140	NA	130	NA	91	NA	84	99 J
Cadmium	0.0064 J	NA	0.005 U	NA	0.0034 J	NA	0.005 U	0.007
Cobalt	0.013	NA	0.017 U	NA	0.011	NA	0.017 U	0.017 U
Chromium (Total)	0.028 J	NA	0.0084 U	NA	0.0078 U	NA	0.0084 U	0.0084 U
Chromium (Hexavalent)	0.01 U	NA	0.01 U	NA	0.01 U	NA	0.01 U	NA
Copper	0.024 U	NA	0.015	NA	0.012 U	NA	0.012 U	0.018 J
Iron	0.44 J	NA	0.27 J	NA	3.1 J	NA	2.1 J	1.3
Mercury	0.0002 U	NA	0.0002 U	NA	0.0002 U	NA	0.0002 U	0.0002 U
Potassium	3.1	NA	2.4 J	NA	1.8	NA	1.6 J	1.4 J
Magnesium	44	NA	42	NA	24	NA	21	25 J
Manganese	0.071 J	NA	0.068	NA	0.32 J	NA	0.45	0.35 J
Molybdenum	0.48	NA	0.4	NA	0.031 J	NA	0.043 U	0.043 U
Sodium	76	NA	64	NA	20	NA	28	26 J
Nickel	0.019 U	NA	0.028 U	NA	0.01 U	NA	0.028 U	0.028 U
Lead	0.0036	NA	0.0026 U	NA	0.0023	NA	0.0046 J	0.0048
Antimony	0.002	NA	0.0026 U	NA	0.0019	NA	0.0042 J	0.0026 U
Selenium	0.0027 U	NA	0.0039 U	NA	0.0027 U	NA	0.0039 U	0.0039 U
Thallium	0.0023 U	NA	0.0027 U	NA	0.0023 U	NA	0.0027 U	0.0027 U
Vanadium	0.013 U	NA	0.026 U	NA	0.0054 U	NA	0.026 U	0.026 U
Zinc	0.044	NA	0.028	NA	0.0088	NA	0.011 J	0.03
Cyanide (Total)	0.014 J	NA	0.005 U	NA	0.005 J	NA	0.005 U	NA
Cyanide (Free)	0.013 J	NA	0.005 U	NA	0.005 UJ	NA	0.005 U	NA

Table 4-9 (continued)

Groundwater Sample
TAL Inorganics Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	WT-01A				WT-01B			
Sample I.D.:	GW-WT-1A-1196		GW-WT-1A-0397		GW-WT-1B-1196		GW-WT-1B-0397	
Laboratory Project No.:	96-5528		97-1208		96-5528		97-1208	
Sample Date:	11/19/96		03/26/97		11/19/96		03/26/97	
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
TAL Inorganics Plus Molybdenum (mg/l)								
Silver	0.009	0.022 J	0.01	NA	0.0083 U	0.011 J	0.007 U	0.007 U
Aluminum	0.41	0.19	0.18 J	NA	0.35	0.19	0.35 J	0.096 U
Arsenic	0.0067	0.0018 U	0.0025 U	NA	0.0018 U	0.0018 U	0.0025 U	0.0025 U
Barium	0.12	0.11	0.073 J	NA	0.082	0.083	0.062 J	0.046 J
Beryllium	0.004	0.0048	0.0018 U	NA	0.0033	0.0044	0.0018 U	0.0018 U
Calcium	130	130	110	NA	150	150	150	170 J
Cadmium	0.0079 U	0.011 U	0.0054	NA	0.0022 U	0.0062 U	0.005 U	0.005 U
Cobalt	0.035	0.032	0.017 U	NA	0.015	0.021	0.017 U	0.017 U
Chromium (Total)	0.023	0.026 J	0.01 J	NA	0.0078 U	0.022 J	0.016 J	0.0084 U
Chromium (Hexavalent)	0.01 U	NA	0.01 U	NA	0.01 U	NA	0.01 U	NA
Copper	0.03	0.037	0.021	NA	0.013	0.034	0.026	0.026 J
Iron	2.8	0.08	0.93 J	NA	0.72	0.6	0.87 J	0.16
Mercury	0.0002 U	0.0002 U	0.0002 U	NA	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Potassium	1.6	1.8	1.3 J	NA	2.7	3	2.4 J	2.6 J
Magnesium	43	42	35	NA	42	42	41	47 J
Manganese	2.2	2.2	1.8	NA	0.37	0.38	0.26	0.32 J
Molybdenum	0.34	0.32	0.27	NA	0.039	0.058	0.1	0.092
Sodium	100	110	83	NA	78	79	60	64 J
Nickel	0.058	0.066	0.038 J	NA	0.01	0.03	0.028 J	0.028 U
Lead	0.0023 U	0.0035 U	0.0039 J	NA	0.0023 U	0.0035 U	0.0033 J	0.0027 J
Antimony	0.0016 U	0.0016 U	0.0044 J	NA	0.0016 U	0.0016 U	0.0026 U	0.0026 U
Selenium	0.0027 U	0.0027 U	0.0039 U	NA	0.0027 U	0.0027 U	0.0039 U	0.0039 U
Thallium	0.0023 U	0.0023 U	0.0027 U	NA	0.0023 U	0.0023 U	0.0027 U	0.0027 U
Vanadium	0.024	0.036	0.026 U	NA	0.0054 U	0.024	0.026 U	0.026 U
Zinc	0.06	0.11	0.031	NA	0.046	0.064	0.012 J	0.012 J
Cyanide (Total)	0.005 UJ	NA	0.005 U	NA	0.005 UJ	NA	0.005 U	NA
Cyanide (Free)	0.005 UJ	NA	0.005 U	NA	0.005 UJ	NA	0.005 U	NA

Table 4-9 (continued)

Groundwater Sample
TAL Inorganics Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

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Sample Location:	WT-01B (continued)	WT-02				WT-03		
Sample I.D.:	GW-WT-1B-0397D	GW-WT-2-1196		GW-WT-2-0397		GW-WT-03-1196		GW-WT-03-0397
Laboratory Project No.:		96-5653		97-1228		96-5528		97-1208
Sample Date:	03/26/97	11/25/96		03/27/97		11/19/96		03/26/97
	Total	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total
TAL Inorganics Plus Molybdenum (mg/l)								
Silver	NA	0.032 J	0.026	0.007 UJ	NA	0.018	0.023 J	0.012
Aluminum	NA	0.82	0.8 J	0.48 J	NA	0.52	0.21	0.42 J
Arsenic	NA	0.0018 U	0.0018 U	0.0025 U	NA	0.0018 U	0.0018 U	0.0025 U
Barium	NA	0.17	0.18	0.2	NA	0.024	0.028	0.021 J
Beryllium	NA	0.007	0.0071	0.0018 U	NA	0.0047	0.0054	0.0018 U
Calcium	NA	220 J	230 J	300	NA	140	150	170
Cadmium	NA	0.014	0.012	0.005 U	NA	0.011 U	0.012 U	0.0059
Cobalt	NA	0.028	0.025	0.017 U	NA	0.034	0.035	0.019 J
Chromium (Total)	NA	0.036	0.03	0.027	NA	0.025	0.032 J	0.013 J
Chromium (Hexavalent)	0.01 U	0.01 U	NA	0.01 U	NA	0.01 U	NA	0.01 U
Copper	NA	0.052	0.05	0.034	NA	0.034	0.043	0.031
Iron	NA	0.081	0.19 J	0.25	NA	2.4	1	1.7 J
Mercury	NA	0.0002 U	0.0002 U	0.0002 U	NA	0.0002 U	0.0002 U	0.0002 U
Potassium	NA	15	15	15	NA	8.8	9.1	7.7
Magnesium	NA	0.32	0.32 J	0.29 U	NA	45	46	55
Manganese	NA	0.015	0.02 J	0.005 J	NA	0.53	0.55	0.69
Molybdenum	NA	0.28 J	0.29 J	0.22	NA	2.1	2.4	1.7
Sodium	NA	29	30 J	36	NA	130	130	120
Nickel	NA	0.12	0.13	0.068	NA	0.047	0.049	0.05
Lead	NA	0.094	0.094 J	0.0037 J	NA	0.0028 U	0.0039 U	0.0026 U
Antimony	NA	0.0017 U	0.0022	0.0026 U	NA	0.0016 U	0.0016 U	0.0026 U
Selenium	NA	0.0066 J	0.0039 J	0.0039 U	NA	0.0032 U	0.0029 U	0.0039 U
Thallium	NA	0.0023 U	0.0023 U	0.0027 U	NA	0.0023 U	0.0023 U	0.0027 U
Vanadium	NA	0.038	0.035	0.026 U	NA	0.032	0.037	0.026 U
Zinc	NA	0.018	0.014	0.013 J	NA	0.15	0.18	0.017 J
Cyanide (Total)	NA	0.005 U	NA	0.005 U	NA	0.005 UJ	NA	0.005 U
Cyanide (Free)	NA	0.005 U	NA	0.005 U	NA	0.005 UJ	NA	0.005 U

Table 4-9 (continued)

Groundwater Sample
TAL Inorganics Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	WT-03 (continued)	WT-04					
Sample I.D.:	GW-WT-03-0397	GW-WT-04-1196		GW-WT-04-1196D		GW-WT-04-0397	
Laboratory Project No.:	97-1208	96-5528		97-5528		96-1208	
Sample Date:	03/26/97	11/19/96		11/19/96		03/26/97	
	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
TAL Inorganics Plus Molybdenum (mg/l)							
Silver	NA	0.0083 U	0.01 J	0.025	0.0083 U	0.007 U	NA
Aluminum	NA	0.11	0.096	0.19	0.11	0.096 U	NA
Arsenic	NA	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0025 U	NA
Barium	NA	0.045	0.049	0.052	0.044	0.046 J	NA
Beryllium	NA	0.0029	0.0032	0.0042	0.0029	0.0018 U	NA
Calcium	NA	99	100	100	97	130	NA
Cadmium	NA	0.0048 U	0.0065 U	0.012	0.0053	0.005 U	NA
Cobalt	NA	0.021	0.024	0.032	0.021	0.017 U	NA
Chromium (Total)	NA	0.017	0.013 J	0.03	0.016	0.0084 U	NA
Chromium (Hexavalent)	NA	0.01 U	NA	0.01 U	NA	0.01 U	NA
Copper	NA	0.017	0.029	0.04	0.019	0.02	NA
Iron	NA	0.8	0.7	0.7	0.78	0.59 J	NA
Mercury	NA	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	NA
Potassium	NA	6.6	6.9	6.8	6.5	6.4	NA
Magnesium	NA	32	33	31	31	41	NA
Manganese	NA	0.57	0.58	0.58	0.55	0.52	NA
Molybdenum	NA	0.14	0.12	0.13	0.13	0.13	NA
Sodium	NA	170	170	170	170	180	NA
Nickel	NA	0.02	0.026	0.046	0.023	0.028 U	NA
Lead	NA	0.0017 U	0.004 U	0.0033	0.0026	0.0026 J	NA
Antimony	NA	0.0023	0.002	0.0016 U	0.0016 U	0.0026 U	NA
Selenium	NA	0.0027 U	0.0027 U	0.0029	0.0027 U	0.0039 U	NA
Thallium	NA	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0027 U	NA
Vanadium	NA	0.016	0.021	0.036	0.017	0.026 U	NA
Zinc	NA	0.11	0.13	0.12	0.11	0.022	NA
Cyanide (Total)	NA	0.005 UJ	NA	0.005 UJ	NA	0.005 U	NA
Cyanide (Free)	NA	0.005 UJ	NA	0.005 UJ	NA	0.005 U	NA

Table 4-9 (Continued)

Groundwater Sample
TAL Inorganics Plus Molybdenum Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

a/ TAL = Target Analyte List.
This list also includes hexavalent chromium and free cyanide.
b/ mg/l = milligrams per liter.
c/ Data Qualifiers:
U = constituent not detected at the noted detection limit.
J = constituent detected at an estimated concentration less than the method detected limit.
UJ = constituent not detected at the estimated detection limit noted.
R = data rejected.
d/ NA = not analyzed.
e/ A second sample was subsequently collected from this well during Round 2 and analyzed for Hexivalent Chromium.
Hexavalent Chromium was not detected in this second sample.
f/ D = duplicate sample.

Table 4-10 (continued)

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	B-01		LAE-04		LAW-05		LAW-06	
Sample I.D.:	GW-B-1-1196	GW-B-1-0397	GW-LAE-4-1196	GW-LAE-4-0397	GW-LAW-5-1196	GW-LAW-5-0397	GW-LAW-6-1196	GW-LAW-6-0397
Laboratory Project No.:	96-5507	97-1208	96-5567	97-1228	96-5586	97-1228	96-5586	97-1228
Sample Date:	11/18/96	03/24/97	11/20/96	03/27/97	11/21/96	03/26/97	11/21/96	03/26/97
Volatile Organics								
Tentatively Identified Compounds (µg/l)		NA	Unknown R	Unknown 1000 NJ Unknown 20 NJ		NA		NA
	Total VOC TICs (e) 0		Total VOC TICs 0	Total VOC TICs 1020	Total VOC TICs 0		Total VOC TICs 0	

Table 4-10

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	B-01		LAE-04		LAW-05		LAW-06	
Sample I.D.:	GW-B-1-1196	GW-B-1-0397	GW-LAE-4-1196	GW-LAE-4-0397	GW-LAW-5-1196	GW-LAW-5-0397	GW-LAW-6-1196	GW-LAW-6-0397
Laboratory Project No.:	96-5507	97-1208	96-5567	97-1228	96-5586	97-1228	96-5586	97-1228
Sample Date:	11/18/96	03/24/97	11/20/96	03/27/97	11/21/96	03/26/97	11/21/96	03/26/97
TCL Volatile Organic Compounds (µg/l) (a,b)								
Vinyl chloride	10 U (c)	NA (d)	97 J	100	10 U	NA	10 U	NA
Acetone	10 U	NA	10 U	10 U	10 U	NA	10 U	NA
Carbon disulfide	10 U	NA	10 U	10 U	10 U	NA	10 U	NA
1,1-Dichloroethene	10 U	NA	13 J	11	10 U	NA	10 U	NA
trans-1,2-Dichloroethene	10 U	NA	27 J	21	10 U	NA	10 U	NA
cis-1,2-Dichloroethene	10 U	NA	790 J	860 D	10 U	NA	10 U	NA
Chloroform	10 UJ	NA	10 U	10 U	10 U	NA	10 U	NA
cis-1,3-Dichloropropene	10 U	NA	10 U	10 U	10 U	NA	10 U	NA
Trichloroethene	10 U	NA	6900 J	7300 D	10 U	NA	10 U	NA

Table 4-10 (continued)

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	MW-01		MW-03		RFI-01		RFI-02	
Sample I.D.:	GW-MW-1-1196	GW-MW-1-0397	GW-MW-3-1196	GW-MW-3-0397	GW-RFI-001-1196	GW-RFI-001-0397	GW-RFI-002-1196	GW-RFI-002-0397
Laboratory Project No.:	96-5586	97-1208	96-5567	97-1208	96-5507	97-1208	96-5077	97-1208
Sample Date:	11/20/96	03/25/97	11/20/96	03/26/97	11/18/96	03/24/97	11/18/96	03/24/97
TCL Volatile Organic Compounds (µg/l)								
Vinyl chloride	10 U	NA	10 U	NA	10 U	NA	10 U	NA
Acetone	10 U	NA	10 U	NA	10 U	NA	10 U	NA
Carbon disulfide	10 U	NA	10 U	NA	10 U	NA	5 J	NA
1,1-Dichloroethene	10 U	NA	10 U	NA	10 U	NA	10 U	NA
trans-1,2-Dichloroethene	10 U	NA	10 U	NA	10 U	NA	10 U	NA
cis-1,2-Dichloroethene	10 U	NA	10 U	NA	10 U	NA	10 U	NA
Chloroform	10 U	NA	6 J	NA	10 U	NA	10 U	NA
cis-1,3-Dichloropropene	10 U	NA	10 UJ	NA	10 U	NA	10 U	NA
Trichloroethene	10 U	NA	10 UJ	NA	10 U	NA	10 U	NA

Table 4-10 (continued)

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	MW-01		MW-03		RFI-01		RFI-02	
Sample I.D.:	GW-MW-1-1196	GW-MW-1-0397	GW-MW-3-1196	GW-MW-3-0397	GW-RFI-001-1196	GW-RFI-001-0397	GW-RFI-002-1196	GW-RFI-002-0397
Laboratory Project No.:	96-5586	97-1208	96-5567	97-1208	96-5507	97-1208	96-5077	97-1208
Sample Date:	11/20/96	03/25/97	11/20/96	03/25/97	11/18/96	03/24/97	11/18/96	03/24/97
Volatile Organics								
Tentatively Identified Compounds (µg/l)		NA	Unknown 7 NJ	NA		NA		NA
			Unknown 8 NJ	NA				
	Total VOC TICs 0		Total VOC TICs 15		Total VOC TICs 0		Total VOC TICs 0	

Table 4-10 (continued)

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-03		RFI-04		RFI-05		RFI-06	
Sample I.D.:	GW-RFI-003-1196	GW-RFI-003-0397	GW-RFI-004-1196	GW-RFI-004-0397	GW-RFI-005-1196	GW-RFI-005-0397	GW-RFI-006-1196	GW-RFI-006-0397
Laboratory Project No.:	96-5507	97-1028	96-5528	97-1208	96-5567	97-1228	96-5567	97-1228
Sample Date:	11/18/96	03/24/97	11/19/96	03/25/97	11/20/96	03/27/97	11/19/96	03/26/97
TCL Volatile Organic Compounds (µg/l)								
Vinyl chloride	10 U	NA	10 U	NA	10 U	10 U	10 U	NA
Acetone	10 U	NA	10 U	NA	10 U	10 U	10 U	NA
Carbon disulfide	10 U	NA	10 U	NA	10 U	10 U	10 U	NA
1,1-Dichloroethene	10 U	NA	10 U	NA	10 U	10 U	10 U	NA
trans-1,2-Dichloroethene	10 U	NA	10 U	NA	10 U	10 U	10 U	NA
cis-1,2-Dichloroethene	10 U	NA	10 U	NA	10 U	10 U	10 U	NA
Chloroform	10 U	NA	10 U	NA	10 U	10 U	10 U	NA
cis-1,3-Dichloropropene	10 U	NA	10 U	NA	10 U	10 U	10 U	NA
Trichloroethene	10 U	NA	10 U	NA	10 U	10 U	10 U	NA

Table 4-10 (continued)

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-03		RFI-04		RFI-05		RFI-06	
Sample I.D.:	GW-RFI-003-1196	GW-RFI-003-0397	GW-RFI-004-1196	GW-RFI-004-0397	GW-RFI-005-1196	GW-RFI-005-0397	GW-RFI-006-1196	GW-RFI-006-0397
Laboratory Project No.:	96-5077	97-1208	96-5528	97-1208	96-5567	97-1228	96-5567	97-1228
Sample Date:	11/18/96	03/24/97	11/19/96	03/25/97	11/20/96	03/27/97	11/19/96	03/26/97
Volatile Organics								
Tentatively Identified Compounds (µg/l)		NA		NA				NA
	Total VOC TICs 0		Total VOC TICs 0		Total VOC TICs 0	Total VOC TICs 0	Total VOC TICs 0	

Table 4-10 (continued)

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-07		RFI-08		RFI-09		RFI-10	
Sample I.D.:	GW-RFI-007-1196	GW-RFI-007-0397	GW-RFI-008-1196	GW-RFI-008-0397	GW-RFI-009-1196	GW-RFI-009-0397	GW-RFI-010-1196	GW-RFI-010-0397
Laboratory Project No.:	96-5567	97-1208	96-5567	97-1228	96-5528	97-1208	96-5567	97-1208
Sample Date:	11/20/96	03/26/97	11/20/96	03/27/97	11/19/96	03/26/97	11/19/96	03/25/97
TCL Volatile Organic Compounds (µg/l)								
Vinyl chloride	10 U	NA	10 U	NA	10 U	10 U	10 U	NA
Acetone	10 U	NA	10 U	NA	10 U	10 U	10 U	NA
Carbon disulfide	10 U	NA	10 U	NA	10 U	10 U	10 U	NA
1,1-Dichloroethene	10 U	NA	10 U	NA	10 U	10 U	10 U	NA
trans-1,2-Dichloroethene	10 U	NA	10 U	NA	10 U	10 U	10 U	NA
cis-1,2-Dichloroethene	10 U	NA	10 U	NA	10 U	10 U	10 U	NA
Chloroform	10 U	NA	10 U	NA	10 U	10 U	10 U	NA
cis-1,3-Dichloropropene	10 U	NA	10 UJ	NA	10 U	10 U	10 U	NA
Trichloroethene	10 U	NA	10 UJ	NA	10 U	10 U	10 U	NA

Table 4-10 (continued)

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-07		RFI-08		RFI-09		RFI-10	
Sample I.D.:	GW-RFI-007-1196	GW-RFI-007-0397	GW-RFI-008-1196	GW-RFI-008-0397	GW-RFI-009-1196	GW-RFI-009-0397	GW-RFI-010-1196	GW-RFI-010-0397
Laboratory Project No.:	96-5567	97-1208	96-5567	97-1228	96-5528	97-1208	96-5567	97-1208
Sample Date:	11/20/96	03/26/97	11/20/96	03/27/97	11/19/96	03/26/97	11/19/96	03/25/97
Volatile Organics								
Tentatively Identified Compounds (μg/l)		NA	Unknown 7 NJ	NA				NA
	Total VOC TICs 0		Total VOC TICs 7		Total VOC TICs 0	Total VOC TICs 0	Total VOC TICs 0	

Table 4-10 (continued)

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-11		RFI-12		RFI-13		
Sample I.D.:	GW-RFI-011-1196	GW-RFI-011-0397	GW-RFI-012-1196	GW-RFI-012-0397	GW-RFI-013-1196	GW-RFI-013-1196D(f)	GW-RFI-013-0397
Laboratory Project No.:	96-5528	97-1208	96-5586	97-1228	96-5567	96-5567	97-1228
Sample Date:	11/18/96	03/25/97	11/21/96	03/28/97	11/20/96	11/20/96	03/26/97
TCL Volatile Organic Compounds (µg/l)							
Vinyl chloride	10 U	NA	10 U	NA	10 U	NA	NA
Acetone	10 U	NA	19 U	NA	10 U	NA	NA
Carbon disulfide	10 U	NA	10 U	NA	10 U	NA	NA
1,1-Dichloroethene	10 U	NA	10 U	NA	10 U	NA	NA
trans-1,2-Dichloroethene	10 U	NA	10 U	NA	10 U	NA	NA
cis-1,2-Dichloroethene	10 U	NA	10 U	NA	10 U	NA	NA
Chloroform	10 U	NA	10 U	NA	10 U	NA	NA
cis-1,3-Dichloropropene	10 U	NA	10 U	NA	10 U	NA	NA
Trichloroethene	10 U	NA	10 U	NA	10 U	NA	NA

Table 4-10 (continued)

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-11		RFI-12		RFI-13		
Sample I.D.:	GW-RFI-011-1196	GW-RFI-011-0397	GW-RFI-012-1196	GW-RFI-012-0397	GW-RFI-013-1196	GW-RFI-013-1196D	GW-RFI-013-0397
Laboratory Project No.:	96-5528	97-1208	96-5586	97-1228	96-5667	96-5667	97-1228
Sample Date:	11/18/96	03/25/97	11/21/96	3/28/97	11/20/96	11/20/96	03/26/97
Volatile Organics							
Tentatively Identified Compounds (µg/l)		NA		NA		NA	NA
	Total VOC TIC's 0		Total VOC TIC's 0		Total VOC TIC's 0		

Table 4-10 (continued)

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-14		RFI-15			RFI-16	
Sample I.D.:	GW-RFI-014-1196	GW-RFI-014-0397	GW-RFI-015-1196	GW-RFI-015-1196D	GW-RFI-015-0397	GW-RFI-016-1196	GW-RFI-016-0397
Laboratory Project No.:	96-5567	97-1208	96-5567	96-5567	97-1208	96-5507	97-1208
Sample Date:	11/20/96	03/25/97	11/20/96	11/20/96	03/25/97	11/18/96	03/25/97
TCL Volatile Organic Compounds (μg/l)							
Vinyl chloride	10 U	NA	10 U	10 U	10 U	10 U	10 U
Acetone	10 U	NA	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	10 U	NA	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	NA	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	10 U	NA	10 U	10 U	2 J	10 U	10 U
cis-1,2-Dichloroethene	10 U	NA	10 U	10 U	110	130 J	10 U
Chloroform	10 U	NA	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	NA	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	NA	10 U	10 U	490 D	480 D	10 U

Table 4-10 (continued)

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-14		RFI-15			RFI-16	
Sample I.D.:	GW-RFI-014-1196	GW-RFI-014-0397	GW-RFI-015-1196	GW-RFI-015-1196D	GW-RFI-015-0397	GW-RFI-016-1196	GW-RFI-016-0397
Laboratory Project No.:	96-5667	97-1208	96-5667	96-5667	97-1208	96-5507	97-1208
Sample Date:	11/20/96	03/25/97	11/20/96	11/20/96	03/25/97	11/18/96	03/25/97
Volatile Organics							
Tentatively Identified Compounds (µg/l)		NA					NA
	Total VOC TICs 0		Total VOC TICs 0	Total VOC TICs 0	Total VOC TICs 0	Total VOC TICs 0	

Table 4-10 (continued)

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-17		WP-01	WP-02	WP-03	WP-04	
Sample I.D.:	GW-RFI-017-1196	GW-RFI-017-0397	GW-WP-1-0397	GW-WP-2-0397	GW-WP-3-0397	GW-WP-4-1196	GW-WP-4-0397
Laboratory Project No.:	96-5567	97-1208	97-1208	97-1208	97-1208	96-5586	97-1208
Sample Date:	11/20/96	03/26/97	03/25/97	03/25/97	03/25/97	11/21/96	03/25/97
TCL Volatile Organic Compounds (µg/l)							
Vinyl chloride	10 U	NA	10 U	10 U	10 U	10 U	10 U
Acetone	10 U	NA	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	10 U	NA	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	NA	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	10 U	NA	10 U	10 U	10 U	2 J	2 J
cis-1,2-Dichloroethene	10 U	NA	10 U	10 U	10 U	130	140
Chloroform	10 U	NA	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	NA	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	NA	10 U	10 U	10 U	190	210 D

Table 4-10 (continued)

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-17		WP-01	WP-02	WP-03	WP-04	
Sample I.D.:	GW-RFI-017-1196	GW-RFI-017-0397	GW-WP-1-0397	GW-WP-2-0397	GW-WP-3-0397	GW-WP-4-1196	GW-WP-4-0397
Laboratory Project No.:	96-5667	97-1208	97-1208	97-1208	97-1208	96-5886	97-1208
Sample Date:	11/20/96	03/26/97	03/25/97	03/25/97	03/25/97	11/21/96	03/25/97
Volatile Organics							
Tentatively Identified Compounds (µg/l)		NA		NA	NA		
	Total VOC TICs 0		Total VOC TICs 0			Total VOC TICs 0	Total VOC TICs 0

Table 4-10 (continued)

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	WP-05		WT-01A		WT-01B		
Sample I.D.:	GW-WP-5-1196	GW-WP-5-0397	GW-WT-1A-1196	GW-WT-1A-0397	GW-WT-1B-1196	GW-WT-1B-0397	GW-WT-1B-0397D
Laboratory Project No.:	96-5586	97-1208	96-5528	97-1208	96-5528	97-1208	97-1208
Sample Date:	11/21/96	03/25/97	11/19/96	03/26/97	11/19/96	03/26/97	03/26/97
TCL Volatile Organic Compounds (µg/l)							
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Table 4-10 (continued)

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	WP-05		WT-01A		WT-01B		
Sample I.D.:	GW-WP-5-1196	GW-WP-5-0397	GW-WT-1A-1196	GW-WT-1A-0397	GW-WT-1B-1196	GW-WT-1B-0397	GW-WT-1B-0397D
Laboratory Project No.:	96-5586	97-1208	96-5528	97-1208	96-5528	97-1208	97-1208
Sample Date:	11/21/96	03/25/97	11/19/96	03/26/97	11/19/96	03/26/97	03/26/97
Volatile Organics							
Tentatively Identified Compounds (µg/l)							NA
	Total VOC TICs 0	Total VOC TICs 0	Total VOC TICs 0	Total VOC TICs 0	Total VOC TICs 0	Total VOC TICs 0	

Table 4-10 (continued)

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	WT-02		WT-03		WT-04	
Sample I.D.:	GW-WT-2-1196	GW-WT-02-0397	GW-WT-03-1196	GW-WT-03-0397	GW-WT-04-1196	GW-WT-04-0397
Laboratory Project No.:	96-5653	97-1228	96-5528	97-1208	96-5528	97-1208
Sample Date:	11/25/96	03/27/97	11/19/96	03/26/97	11/19/96	03/26/97
TCL Volatile Organic Compounds (µg/l)						
Vinyl chloride	18 J	21	10 U	10 U	10 U	10 U
Acetone	250 J	66 U	10 U	10 U	10 U	10 U
Carbon disulfide	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	10 U	3 J	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	51 J	64	10 U	1 J	10 U	2 J
Chloroform	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	8 J	9 J	10 U	10 U	10 U	10 U

Table 4-10 (continued)

Groundwater Sample
TCL VOC and VOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	**WT-02**		**WT-03**		**WT-04**		
Sample I.D.:	**GW-WT-2-1196**	**GW-WT-02-0397**	**GW-WT-03-1196**	**GW-WT-03-0397**	**GW-WT-04-1196**	**GW-WT-04-1196D**	**GW-WT-04-0397**
Laboratory Project No.:	**96-5653**	**97-1228**	**96-5228**	**97-1208**	**96-5528**	**96-5528**	**97-1208**
Sample Date:	**11/25/96**	**03/27/97**	**11/19/96**	**03/26/97**	**11/19/96**	**11/19/96**	**03/26/97**
Volatile Organics							
Tentatively Identified Compounds (µg/l)							
	Unknown 100 NJ	Unknown 100 NJ					
	Total VOC TICs 100	Total VOC TICs 100	Total VOC TICs 0	Total VOC TICs 0	Total VOC TICs 0	Total VOC TICs 0	Total VOC TICs 0

a/ TCL = Target Compound List; VOC = volatile organic compound; TIC = tentatively identified compound.
Only those TCL VOCs detected in one or more of the groundwater samples have been retained in this table. Unabridged analytical results are presented in Appendix N.
b/ ug/l = micrograms per liter.
c/ Data Qualifiers:
U = constituent not detected at the noted detection limit.
J = constituent detected at an estimated concentration less than the method detected limit.
UJ = constituent not detected at the estimated detection limit noted.
NJ = presumptive evidence of detection at an estimated concentration.
B = constituent detected in associated blank.
d/ NA = not analyzed.
e/ Total VOC TICs represent the sum of all detected TICs.
f/ D = duplicate sample.

Table 4-11

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	B-01		LAE-04		LAW-05		LAW-06
Sample I.D.:	GW-B-1-1196	GW-B-1-0397	GW-LAE-4-1196	GW-LAE-4-0397	GW-LAW-5-1196	GW-LAW-5-0397	GW-LAW-6-1196
Laboratory Project No.:	96-5507	97-1208	96-5567	97-1228	96-5586	97-1228	96-5586
Sample Date:	11/18/96	03/24/97	11/20/96	03/27/97	11/21/96	03/26/97	11/21/96
TCL Semi-Volatile Organic Compounds (µg/l)							
Phenol	11 U (c)	NA (d)	11 U	11 U	11 UJ	NA	11 R
Naphthalene	11 U	NA	11 U	14	11 UJ	NA	11 U
Di-n-butyl phthalate	11 U	NA	11 U	11 U	11 UJ	NA	11 U
Bis(2-ethylhexyl)phthalate	11 U	NA	11 U	11 U	11 UJ	NA	11 U

Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	B-01				LAE-04				LAW-05				LAW-06	
Sample I.D.:	GW-B-1-1196		GW-B-1-0397		GW-LAE-4-1196		GW-LAE-4-0397		GW-LAW-5-1196		GW-LAW-5-0397		GW-LAW-6-1196	
Laboratory Project No.:	96-5507		97-1208		96-5567		97-1228		96-5586		97-1228		96-5586	
Sample Date:	11/18/96		03/24/97		11/20/96		03/27/97		11/21/96		03/26/97		11/21/96	
Semi-Volatile Organics TICs (µg/l)														
	Unknown Hydrocarbon	7 NJ		NA	Unknown Hydrocarbon	15 NJ			Unknown Hydrocarbon	7 NJ		NA	Unknown Hydrocarbon	9 NJ
	Unknown Hydrocarbon	10 NJ			Unknown Hydrocarbon	19 NJ			Unknown Hydrocarbon	14 NJ			Unknown Hydrocarbon	15 NJ
	Unknown Hydrocarbon	12 NJ			Unknown Hydrocarbon	7 NJ			Unknown Hydrocarbon	10 NJ			Unknown Hydrocarbon	21 NJ
	Unknown Hydrocarbon	19 NJ			Unknown Hydrocarbon	16 NJ			Unknown Hydrocarbon	18 NJ			Unknown Hydrocarbon	20 NJ
	Unknown Hydrocarbon	15 NJ			Unknown Hydrocarbon	20 NJ			Unknown Hydrocarbon	24 NJ			Unknown Hydrocarbon	20 NJ
	Unknown Hydrocarbon	18 NJ			Unknown Hydrocarbon	36 NJ			Unknown Hydrocarbon	6 NJ			Unknown Hydrocarbon	19 NJ
	Unknown Hydrocarbon	14 NJ			Unknown Hydrocarbon	24 NJ			Unknown Hydrocarbon	20 NJ			Unknown Hydrocarbon	22 NJ
	Unknown Hydrocarbon	15 NJ			Unknown Hydrocarbon	21 NJ			Unknown Hydrocarbon	20 NJ			Unknown Hydrocarbon	17 NJ
	Unknown Hydrocarbon	12 NJ			Unknown Hydrocarbon	19 NJ			Unknown Hydrocarbon	24 NJ			Unknown Hydrocarbon	12 NJ
	Unknown Hydrocarbon	11 NJ			Unknown Hydrocarbon	15 NJ			Unknown Hydrocarbon	19 NJ			Unknown	12 NJ
	Unknown Hydrocarbon	5 NJ			Unknown	13 NJ			Unknown Hydrocarbon	16 NJ			Unknown	11 NJ
	Unknown	5 NJ			Unknown	17 NJ			Unknown Hydrocarbon	16 NJ			Unknown	20 NJ
	Unknown	33 NJ			Unknown	5 NJ			Unknown Hydrocarbon	8 NJ			Unknown	42 NJ
	Unknown	74 NJ			Unknown	17 NJ			Unknown	12 NJ			Unknown	41 NJ
	Unknown	11 NJ			Unknown	10 NJ			Unknown	25 NJ			Unknown	120 NJ
	Unknown	50 NJ			Unknown	13 NJ			Unknown	12 NJ			Unknown	8 NJ
	Unknown	11 NJ			Unknown	18 NJ			Unknown	8 NJ			Unknown	16 NJ
	Unknown	9 NJ			Unknown	5 NJ			Unknown	7 NJ			Unknown	13 NJ
	Unknown	38 NJ			Unknown	74 NJ			Unknown	17 NJ			Unknown	10 NJ
	Unknown	8 NJ			Unknown	10 NJ			Unknown	68 NJ			Unknown	12 NJ
	Unknown	7 NJ			Unknown	16 NJ			Unknown	12 NJ			Unknown	9 NJ
					Unknown	95 NJ			Unknown	11 NJ			Unknown	74 NJ
					Unknown	10 NJ			Unknown	70 NJ			Unknown	18 NJ
					Unknown	7 NJ			Unknown	16 NJ			Unknown	14 NJ
					Unknown	8 NJ			Unknown	13 NJ			Unknown	75 NJ
	Total SVOC TICs(e)	384			Total SVOC TICs	510	Total SVOC TICs	0	Total SVOC TICs	473			Total SVOC TICs	640

Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	LAW-06 (continued)	MW-01		MW-03		RFI-01	
Sample I.D.:	GW-LAW-6-0397	GW-MW-1-1196	GW-MW-1-0397	GW-MW-3-1196	GW-MW-3-0397	GW-RFI-001-1196	GW-RFI-001-0397
Laboratory Project No.:	97-1228	96-5586	97-1208	96-5567	97-1208	96-5507	97-1208
Sample Date:	03/26/97	11/20/96	03/25/97	11/20/96	03/26/97	11/18/96	03/24/97
TCL Semi-Volatile Organic Compounds (µg/l)							
Phenol	11 R	11 UJ	10 U	11 R	NA	11 U	10 U
Naphthalene	11 U	11 U	10 U	11 U	NA	11 U	10 U
Di-n-butyl phthalate	11 U	11 U	10 U	11 U	NA	11 U	10 U
Bis(2-ethylhexyl)phthalate	11 U	11 U	10 U	11 U	NA	27	10 U

Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	LAW-06 (continued)		MW-01				MW-03				RFI-01			
Sample I.D.:	GW-LAW-6-0397		GW-MW-1-1196		GW-MW-1-0397		GW-MW-3-1196		GW-MW-3-0397		GW-RFI-001-1196		GW-RFI-001-0397	
Laboratory Project No.:	97-1228		96-5586		97-1208		96-5567		97-1208		96-5507		97-1208	
Sample Date:	03/26/97		11/20/96		03/25/97		11/20/96		03/25/97		11/18/96		03/24/97	
Semi-Volatile Organics TICs (µg/l)														
	Unknown	20 NJ	Unknown Hydrocarbon	26 NJ	Unknown	5 NJ	Unknown Hydrocarbon	6 NJ	NA		Unknown Hydrocarbon	7 NJ	Unknown	6 NJ
	Unknown	11 NJ	Unknown Hydrocarbon	24 NJ	Unknown	10 NJ	Unknown Hydrocarbon	7 NJ			Unknown Hydrocarbon	10 NJ	Unknown	8 NJ
	Unknown	4 NJ	Unknown Hydrocarbon	36 NJ			Unknown Hydrocarbon	9 NJ			Unknown Hydrocarbon	14 NJ		
	Unknown	9 NJ	Unknown Hydrocarbon	45 NJ			Unknown Hydrocarbon	13 NJ			Unknown Hydrocarbon	21 NJ		
	Unknown	42 NJ	Unknown Hydrocarbon	34 NJ			Unknown Hydrocarbon	20 NJ			Unknown Hydrocarbon	17 NJ		
	Unknown	38 NJ	Unknown Hydrocarbon	27 NJ			Unknown Hydrocarbon	13 NJ			Unknown Hydrocarbon	17 NJ		
	Unknown	34 NJ	Unknown Hydrocarbon	18 NJ			Unknown Hydrocarbon	15 NJ			Unknown Hydrocarbon	13 NJ		
	Unknown	15 NJ	Unknown	18 NJ			Unknown Hydrocarbon	14 NJ			Unknown Hydrocarbon	12 NJ		
	Unknown	5 NJ	Unknown	33 NJ			Unknown Hydrocarbon	9 NJ			Unknown	17 NJ		
	Unknown	5 NJ	Unknown	95 NJ			Unknown	6 NJ			Unknown	88 NJ		
	Unknown	43 NJ	Unknown	32 NJ			Unknown	9 NJ			Unknown	8 NJ		
	Unknown	37 NJ	Unknown	91 NJ			Unknown	12 NJ			Unknown	62 NJ		
	Unknown	43 NJ	Unknown	25 NJ			Unknown	7 NJ			Unknown	30 NJ		
	Unknown	28 NJ	Unknown	26 NJ			Unknown	6 NJ						
	Unknown	4 NJ					Unknown	18 NJ						
	Unknown	41 NJ					Unknown	9 NJ						
	Unknown	29 NJ					Unknown	10 NJ						
	Unknown	6 NJ					Unknown	5 NJ						
							Unknown	5 NJ						
							Unknown	6 NJ						
							Unknown	8 NJ						
							Unknown	39 NJ						
							Unknown	10 NJ						
							Unknown	10 NJ						
							Unknown	60 NJ						
	Total SVOC TICs	414	Total SVOC TICs	530	Total SVOC TICs	15	Total SVOC TICs	326			Total SVOC TICs	316	Total SVOC TICs	14

Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-02		RFI-03		RFI-04		RFI-05
Sample I.D.:	GW-RFI-002-1196	GW-RFI-002-0397	GW-RFI-003-1196	GW-RFI-003-0397	GW-RFI-004-1196	GW-RFI-004-0397	GW-RFI-005-1196
Laboratory Project No.:	96-5507	97-1208	96-5507	97-1208	96-5528	97-1208	96-5567
Sample Date:	11/18/96	03/24/97	11/18/96	03/24/97	11/19/96	03/25/97	11/20/96
TCL Semi-Volatile Organic Compounds (µg/l)							
Phenol	10 R	NA	10 U	11 U	11 U	NA	11 U
Naphthalene	10 R	NA	10 U	11 U	11 U	NA	11 U
Di-n-butyl phthalate	10 R	NA	10 U	11 U	11 U	NA	11 U
Bis(2-ethylhexyl)phthalate	10 R	NA	10 U	11 U	14.	NA	11 U

Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-02			RFI-03				RFI-04			RFI-05	
Sample I.D.:	GW-RFI-002-1196		GW-RFI-002-0397	GW-RFI-003-1196		GW-RFI-003-0397		GW-RFI-004-1196		GW-RFI-004-0397	GW-RFI-005-1196	
Laboratory Project No.:	96-5507		97-1208	96-5507		97-1208		96-5528		97-1208	96-5567	
Sample Date:	11/18/96		03/24/97	11/18/96		03/24/97		11/19/96		03/25/97	11/20/96	
Semi-Volatile Organics												
TICs (µg/l)												
	Unknown Hydrocarbon	9 NJ	NA	Unknown Hydrocarbon	12 NJ	Unknown	8 NJ	Unknown	26 NJ	NA	Unknown Hydrocarbon	6 NJ
	Unknown Hydrocarbon	14 NJ		Unknown Hydrocarbon	13 NJ	Unknown	4 NJ	Unknown	8 NJ		Unknown Hydrocarbon	5 NJ
	Unknown Hydrocarbon	35 NJ		Unknown Hydrocarbon	29 NJ	Unknown	12 NJ	Unknown Phthalate	13 NJ		Unknown Hydrocarbon	5 NJ
	Unknown Hydrocarbon	23 NJ		Unknown Hydrocarbon	21 NJ						Unknown Hydrocarbon	8 NJ
	Unknown Hydrocarbon	22 NJ		Unknown Hydrocarbon	19 NJ						Unknown Hydrocarbon	17 NJ
	Unknown Hydrocarbon	18 NJ		Unknown Hydrocarbon	20 NJ						Unknown Hydrocarbon	12 NJ
	Unknown Hydrocarbon	13 NJ		Unknown Hydrocarbon	15 NJ						Unknown Hydrocarbon	13 NJ
	Unknown	5 NJ		Unknown Hydrocarbon	9 NJ						Unknown Hydrocarbon	11 NJ
	Unknown	110 NJ		Unknown Hydrocarbon	8 NJ						Unknown Hydrocarbon	10 NJ
	Unknown	17 NJ		Unknown	12 NJ						Unknown	4 NJ
	Unknown	90 NJ		Unknown	5 NJ						Unknown	46 NJ
	Unknown	7 NJ		Unknown	4 NJ						Unknown	9 NJ
	Unknown	5 NJ		Unknown	16 NJ						Unknown	52 NJ
				Unknown	100 NJ							
				Unknown	15 NJ							
				Unknown	81 NJ							
				Unknown	6 NJ							
				Unknown	13 NJ							
				Unknown	29 NJ							
				Unknown	22 NJ							
				Unknown	79 NJ							
				Unknown	6 NJ							
	Total SVOC TICs	368		Total SVOC TICs	534	Total SVOC TICs	24	Total SVOC TICs	47		Total SVOC TICs	198

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Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-05 (continued)	RFI-06		RFI-07		RFI-08	
Sample I.D.:	GW-RFI-005-0397	GW-RFI-006-1196	GW-RFI-006-0397	GW-RFI-007-1196	GW-RFI-007-1196	GW-RFI-008-1196	GW-RFI-008-0397
Laboratory Project No.:	97-1228	96-5567	97-1228	96-5567	96-1208	96-5567	97-1228
Sample Date:	03/27/97	11/19/96	03/26/97	11/20/96	03/27/97	11/20/96	03/27/97
TCL Semi-Volatile Organic Compounds (μg/l)							
Phenol	NA	- (f)	11 U	11 U	11 U	10 U	10 U
Naphthalene	NA	11 U	11 U	11 U	11 U	10 U	10 U
Di-n-butyl phthalate	NA	11 U	11 U	11 U	11 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	NA	11 U	22	11 U	11 U	10 U	13

Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-05 (continued)	RFI-06				RFI-07				RFI-08			
Sample I.D.:	GW-RFI-005-0397	GW-RFI-006-1196		GW-RFI-006-0397		GW-RFI-007-1196		GW-RFI-007-0397		GW-RFI-008-1196		GW-RFI-008-0397	
Laboratory Project No.:	97-1228	96-5567		97-1228		96-5567		97-1208		96-5567		97-1228	
Sample Date:	03/27/97	11/19/96		03/26/97		11/20/96		03/26/97		11/20/96		03/27/97	
Semi-Volatile Organics TIC (µg/l)													
	NA	Unknown Hydrocarbon	8 NJ			Unknown Hydrocarbon	8 NJ	Unknown	6 NJ	Unknown Hydrocarbon	9 NJ		
		Unknown Hydrocarbon	10 NJ			Unknown Hydrocarbon	19 NJ	Unknown	9 NJ	Unknown Hydrocarbon	17 NJ		
		Unknown Hydrocarbon	18 NJ			Unknown Hydrocarbon	6 NJ	Unknown	5 NJ	Unknown Hydrocarbon	10 NJ		
		Unknown Hydrocarbon	11 NJ			Unknown Hydrocarbon	5 NJ	Unknown	9 NJ	Unknown Hydrocarbon	11 NJ		
		Unknown Hydrocarbon	13 NJ			Unknown Hydrocarbon	12 NJ	Unknown	43 NJ	Unknown Hydrocarbon	10 NJ		
		Unknown Hydrocarbon	11 NJ			Unknown Hydrocarbon	8 NJ	Unknown	9 NJ	Unknown Hydrocarbon	10 NJ		
		Unknown	4 NJ			Unknown Hydrocarbon	9 NJ			Unknown Hydrocarbon	22 NJ		
		Unknown	5 NJ			Unknown Hydrocarbon	17 NJ			Unknown Hydrocarbon	15 NJ		
		Unknown	6 NJ			Unknown Hydrocarbon	17 NJ			Unknown Hydrocarbon	19 NJ		
		Unknown	7 NJ			Unknown Hydrocarbon	12 NJ			Unknown Hydrocarbon	21 NJ		
		Unknown	45 NJ			Unknown Hydrocarbon	13 NJ			Unknown Hydrocarbon	17 NJ		
		Unknown	43 NJ			Unknown	6 NJ			Unknown Hydrocarbon	13 NJ		
		Unknown	9 NJ			Unknown	20 NJ			Unknown Hydrocarbon	12 NJ		
		Unknown	5 NJ			Unknown	19 NJ			Unknown Hydrocarbon	6 NJ		
						Unknown	11 NJ			Unknown	10 NJ		
						Unknown	8 NJ			Unknown	7 NJ		
						Unknown	19 NJ			Unknown	10 NJ		
						Unknown	16 NJ			Unknown	6 NJ		
						Unknown	10 NJ			Unknown	8 NJ		
						Unknown	16 NJ			Unknown	53 NJ		
						Unknown	39 NJ			Unknown	10 NJ		
						Unknown	10 NJ			Unknown	52 NJ		
						Unknown	6 NJ			Unknown	11 NJ		
						Unknown	242 NJ						
						Unknown	6 NJ						
		Total SVOC TICs	195	Total SVOC TICs	0	Total SVOC TICs	554	Total SVOC TICs	81	Total SVOC TICs	359	Total SVOC TICs	0

Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-09		RFI-10			RFI-11	
Sample I.D.:	GW-RFI-009-1196	GW-RFI-009-0397	GW-RFI-010-1196	GW-RFI-010-0397	GW-RFI-010-0397D(g)	GW-RFI-011-1196	GW-RFI-011-0397
Laboratory Project No.:	96-5528	97-1208	96-5567	97-1208	97-1208	96-5528	97-1208
Sample Date:	11/19/96	03/26/97	11/19/96	03/25/97	03/25/97	11/18/96	03/25/97
TCL Semi-Volatile Organic Compounds (µg/l)							
Phenol	13 U	10 U	10 R	NA	NA	10 U	NA
Naphthalene	13 U	10 U	10 U	NA	NA	10 U	NA
Di-n-butyl phthalate	13 U	10 U	10 U	NA	NA	10 U	NA
Bis(2-ethylhexyl)phthalate	56	10 U	10 U	NA	NA	10 U	NA

Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-09				RFI-10				RFI-11		
Sample I.D.:	GW-RFI-009-1196		GW-RFI-009-0397		GW-RFI-010-1196		GW-RFI-010-0397	GW-RFI-010-0397D	GW-RFI-011-1196		GW-RFI-011-0397
Laboratory Project No.:	96-5528		97-1208		96-5567		97-1208	97-1208	96-5528		97-1208
Sample Date:	11/19/96		03/26/97		11/19/96		03/25/97	03/25/97	11/18/96		03/25/97
Semi-Volatile Organics TICs (µg/l)											
			Unknown	6 NJ	Unknown Hydrocarbon	4 NJ	NA	NA			NA
			Unknown	6 NJ	Unknown Hydrocarbon	8 NJ					
					Unknown Hydrocarbon	19 NJ					
					Unknown Hydrocarbon	12 NJ					
					Unknown Hydrocarbon	13 NJ					
					Unknown Hydrocarbon	6 NJ					
					Unknown Hydrocarbon	11 NJ					
					Unknown Hydrocarbon	11 NJ					
					Unknown	6 NJ					
					Unknown	5 NJ					
					Unknown	12 NJ					
					Unknown	15 NJ					
					Unknown	5 NJ					
					Unknown	19 NJ					
					Unknown	6 NJ					
					Unknown	5 NJ					
					Unknown	6 NJ					
					Unknown	4 NJ					
					Unknown	8 NJ					
					Unknown	36 NJ					
					Unknown	8 NJ					
					Unknown	9 NJ					
					Unknown	54 NJ					
					Unknown	6 NJ					
	Total SVOC TICs	0	Total SVOC TICs	12	Total SVOC TICs	288			Total SVOC TICs	0	

Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-12		RFI-13			RFI-14	
Sample I.D.:	GW-RFI-012-1196	GW-RFI-012-0397	GW-RFI-013-1196	GW-RFI-013-1196D	GW-RFI-013-0397	GW-RFI-014-1196	GW-RFI-014-0397
Laboratory Project No.:	96-5586	97-1228	96-5567	96-5567	97-1228	96-5567	97-1208
Sample Date:	11/21/96	03/27/97	11/20/96	11/20/96	03/26/97	11/20/96	03/25/97
TCL Semi-Volatile Organic Compounds (μg/l)(b)							
Phenol	11 U	11 U	10 U	NA	NA	11 U	NA
Naphthalene	11 U	11 U	10 U	NA	NA	11 U	NA
Di-n-butyl phthalate	11 U	11 U	10 U	NA	NA	11 U	NA
Bis(2-ethylhexyl)phthalate	11 U	11 U	10 U	NA	NA	11 U	NA

Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-12			RFI-13				RFI-14		
Sample I.D.:	GW-RFI-012-1196		GW-RFI-012-0397	GW-RFI-013-1196		GW-RFI-013-1196D	GW-RFI-013-0397	GW-RFI-014-1196		GW-RFI-014-0397
Laboratory Project No.:	96-5586		97-1228	96-5567		96-5567	97-1228	96-5567		97-1208
Sample Date:	11/21/96		03/28/97	11/20/96		11/20/96	03/26/97	11/20/96		03/25/97
Semi-Volatile Organics										
TICs (µg/l)										
	Unknown Hydrocarbon	20 NJ		Unknown Hydrocarbon	5 NJ	NA	NA	Unknown Hydrocarbon	22 NJ	NA
	Unknown Hydrocarbon	28 NJ		Unknown Hydrocarbon	10 NJ			Unknown Hydrocarbon	8 NJ	
	Unknown Hydrocarbon	37 NJ		Unknown Hydrocarbon	14 NJ			Unknown Hydrocarbon	21 NJ	
	Unknown Hydrocarbon	43 NJ		Unknown Hydrocarbon	20 NJ			Unknown Hydrocarbon	9 NJ	
	Unknown Hydrocarbon	35 NJ		Unknown Hydrocarbon	15 NJ			Unknown Hydrocarbon	10 NJ	
	Unknown Hydrocarbon	29 NJ		Unknown Hydrocarbon	16 NJ			Unknown Hydrocarbon	19 NJ	
	Unknown Hydrocarbon	20 NJ		Unknown Hydrocarbon	19 NJ			Unknown Hydrocarbon	14 NJ	
	Unknown Hydrocarbon	20 NJ		Unknown Hydrocarbon	16 NJ			Unknown Hydrocarbon	14 NJ	
	Unknown	35 NJ		Unknown Hydrocarbon	13 NJ			Unknown Hydrocarbon	13 NJ	
	Unknown	100 NJ		Unknown	9 NJ			Unknown Hydrocarbon	13 NJ	
	Unknown	31 NJ		Unknown	7 NJ			Unknown Hydrocarbon	7 NJ	
	Unknown	81 NJ		Unknown	10 NJ			Unknown	30 NJ	
	Unknown	20 NJ		Unknown	8 NJ			Unknown	29 NJ	
	Unknown	25 NJ		Unknown	6 NJ			Unknown	24 NJ	
	Unknown	32 NJ		Unknown	10 NJ			Unknown	22 NJ	
				Unknown	20 NJ			Unknown	8 NJ	
				Unknown	6 NJ			Unknown	12 NJ	
				Unknown	16 NJ			Unknown	17 NJ	
				Unknown	72 NJ			Unknown	12 NJ	
				Unknown	39 NJ			Unknown	26 NJ	
				Unknown	10 NJ			Unknown	50 NJ	
				Unknown	10 NJ			Unknown	9 NJ	
				Unknown	48 NJ			Unknown	8 NJ	
				Unknown	9 NJ			Unknown	54 NJ	
				Unknown	6 NJ					
	Total SVOC TICs	556	Total SVOC TICs 0	Total SVOC TICs	414			Total SVOC TICs	451	Total SVOC TICs 0

Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-15			RFI-16		RFI-17	
Sample I.D.:	GW-RFI-015-1196	GW-RFI-015-1196D	GW-RFI-015-0397	GW-RFI-016-1196	GW-RFI-016-0397	GW-RFI-017-1196	GW-RFI-017-0397
Laboratory Project No.:	96-5567	96-5567	97-1208	96-5507	97-1208	96-5567	97-1208
Sample Date:	11/20/96	11/20/96	03/25/97	11/18/96	03/25/97	11/20/96	03/26/97
TCL Semi-Volatile Organic Compounds (µg/l)(b)							
Phenol	10 U	NA	NA	10 U	NA	11 U	NA
Naphthalene	10 U	NA	NA	10 U	NA	11 U	NA
Di-n-butyl phthalate	7 J	NA	NA	10 U	NA	11 U	NA
Bis(2-ethylhexyl)phthalate	10 U	NA	NA	10 U	NA	11 U	NA

Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-15				RFI-16			RFI-17		
Sample I.D.:	GW-RFI-015-1196		GW-RFI-015-1196D	GW-RFI-015-0397	GW-RFI-016-1196		GW-RFI-016-0397	GW-RFI-017-1196		GW-RFI-017-0397
Laboratory Project No.:	96-5567		96-5567	97-1208	96-5507		97-1208	96-5567		97-1208
Sample Date:	11/20/96		11/20/96	03/25/97	11/18/96		03/25/97	11/20/96		03/26/97
Semi-Volatile Organics TICs (µg/l)										
	Unknown Hydrocarbon	7 NJ	NA	NA	Unknown Hydrocarbon	6 NJ	NA	Unknown Hydrocarbon	9 NJ	NA
	Unknown Hydrocarbon	19 NJ			Unknown Hydrocarbon	8 NJ		Unknown Hydrocarbon	28 NJ	
	Unknown Hydrocarbon	5 NJ			Unknown Hydrocarbon	9 NJ		Unknown Hydrocarbon	14 NJ	
	Unknown Hydrocarbon	8 NJ			Unknown Hydrocarbon	16 NJ		Unknown Hydrocarbon	11 NJ	
	Unknown Hydrocarbon	10 NJ			Unknown Hydrocarbon	13 NJ		Unknown Hydrocarbon	11 NJ	
	Unknown Hydrocarbon	11 NJ			Unknown Hydrocarbon	15 NJ		Unknown Hydrocarbon	11 NJ	
	Unknown Hydrocarbon	12 NJ			Unknown Hydrocarbon	11 NJ		Unknown Hydrocarbon	9 NJ	
	Unknown Hydrocarbon	11 NJ			Unknown Hydrocarbon	12 NJ		Unknown Hydrocarbon	12 NJ	
	Unknown Hydrocarbon	14 NJ			Unknown	17 NJ		Unknown Hydrocarbon	12 NJ	
	Unknown Hydrocarbon	13 NJ			Unknown	60 NJ		Unknown Hydrocarbon	9 NJ	
	Unknown Hydrocarbon	11 NJ			Unknown	9 NJ		Unknown Hydrocarbon	10 NJ	
	Unknown	13 NJ			Unknown	42 NJ		Unknown	24 NJ	
	Unknown	25 NJ			Unknown	8 NJ		Unknown	21 NJ	
	Unknown	21 NJ			Unknown	33 NJ		Unknown	23 NJ	
	Unknown	16 NJ			Unknown	6 NJ		Unknown	24 NJ	
	Unknown	11 NJ			Unknown	6 NJ		Unknown	17 NJ	
	Unknown	15 NJ						Unknown	25 NJ	
	Unknown	40 NJ						Unknown	31 NJ	
	Unknown	5 NJ						Unknown	29 NJ	
	Unknown	6 NJ						Unknown	31 NJ	
	Unknown	63 NJ						Unknown	30 NJ	
	Unknown	32 NJ						Unknown	21 NJ	
	Unknown	6 NJ						Unknown	19 NJ	
	Unknown	6 NJ						Unknown	10 NJ	
	Unknown	7 NJ								
	Total SVOC TICs	387			Total SVOC TICs	271		Total SVOC TICs	441	

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Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	WP-01	WP-02	WP-03	WP-04		WP-05	
Sample I.D.:	GW-WP-1-0397	GW-WP-2-0397	GW-WP-3-0397	GW-WP-4-1196	GW-WP-4-0397	GW-WP-5-1196	GW-WP-5-0397
Laboratory Project No.:	97-1208	97-1208	97-1208	96-5586	97-1208	96-5586	97-1208
Sample Date:	03/25/97	03/25/97	03/25/97	11/21/96	03/25/97	11/21/96	03/25/97
TCL Semi-Volatile Organic Compounds (μg/l)(b)							
Phenol	NA	NA	NA	11 UJ	10 U	11 UJ	NA
Naphthalene	NA	NA	NA	11 UJ	10 U	11 UJ	NA
Di-n-butyl phthalate	NA	NA	NA	11 R	10 U	11 UJ	NA
Bis(2-ethylhexyl)phthalate	NA	NA	NA	11 R	10 U	11 UJ	NA

Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	**WP-01**	**WP-02**	**WP-03**	**WP-04**				**WP-05**		
Sample I.D.:	GW-WP-1-0397	GW-WP-2-0397	GW-WP-3-0397	GW-WP-4-1196		GW-WP-4-0397		GW-WP-5-1196		GW-WP-5-0397
Laboratory Project No.:	97-1208	97-1208	97-1208	96-5586		97-1208		96-5586		97-1208
Sample Date:	03/25/97	03/25/97	03/25/97	11/21/96		03/25/97		11/21/96		03/25/97
Semi-Volatile Organics										
TICs (µg/l)	NA	NA	NA	Unknown Hydrocarbon	13 NJ	Unknown Hydrocarbon	4 NJ	Unknown Hydrocarbon	17 NJ	NA
				Unknown Hydrocarbon	11 NJ	Unknown Hydrocarbon	9 NJ	Unknown Hydrocarbon	26 NJ	
				Unknown Hydrocarbon	10 NJ			Unknown Hydrocarbon	35 NJ	
				Unknown Hydrocarbon	21 NJ			Unknown Hydrocarbon	43 NJ	
				Unknown Hydrocarbon	31 NJ			Unknown Hydrocarbon	33 NJ	
				Unknown Hydrocarbon	11 NJ			Unknown Hydrocarbon	24 NJ	
				Unknown Hydrocarbon	31 NJ			Unknown Hydrocarbon	17 NJ	
				Unknown Hydrocarbon	30 NJ			Unknown Hydrocarbon	16 NJ	
				Unknown Hydrocarbon	9 NJ			Unknown	21 NJ	
				Unknown Hydrocarbon	37 NJ			Unknown	24 NJ	
				Unknown Hydrocarbon	33 NJ			Unknown	88 NJ	
				Unknown Hydrocarbon	28 NJ			Unknown	32 NJ	
				Unknown Hydrocarbon	24 NJ			Unknown	89 NJ	
				Unknown	20 NJ			Unknown	28 NJ	
				Unknown	21 NJ			Unknown	28 NJ	
				Unknown	16 NJ					
				Unknown	14 NJ					
				Unknown	9 NJ					
				Unknown	15 NJ					
				Unknown	94 NJ					
				Unknown	18 NJ					
				Unknown	17 NJ					
				Unknown	90 NJ					
				Unknown	23 NJ					
				Unknown	18 NJ					
				Total SVOC TICs	644	**Total SVOC TICs**	13	**Total SVOC TICs**	521	

Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	WT-01A		WT-01B			WT-02	
Sample I.D.:	GW-WT-1A-1196	GW-WT-1A-0397	GW-WT-1B-1196	GW-WT-1B-0397	GW-WT-1B-0397D	GW-WT-2-1196	GW-WT-02-0397
Laboratory Project No.:	96-5528	97-1208	96-5528	97-1208	97-1208	96-5653	97-1228
Sample Date:	11/19/96	03/26/97	11/19/96	03/26/97	03/26/97	11/25/96	03/27/97
TCL Semi-Volatile Organic Compounds (µg/l)(b)							
Phenol	10 U	10 U	10 U	11 U	10 U	17 J	34
Naphthalene	10 U	10 U	10 U	11 U	10 U	10 R	11 U
Di-n-butyl phthalate	10 U	10 U	10 U	11 U	10 U	10 R	11 U
Bis(2-ethylhexyl)phthalate	10 U	10 U	10 U	7.5 J	10 U	10 R	11 U

Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	WT-01A				WT-01B						WT-02			
Sample I.D.:	GW-WT-1A-1196		GW-WT-1A-0397		GW-WT-1B-1196		GW-WT-1B-0397		GW-WT-1B-0397D		GW-WT-2-1196		GW-WT-02-0397	
Laboratory Project No.:	96-5528		97-1208		96-5528		97-1208		97-1208		96-5653		97-1228	
Sample Date:	11/19/96		03/26/97		11/19/96		03/26/97		03/26/97		11/25/96		03/27/97	
Semi-Volatile Organics TICs (µg/l)														
			Unknown	6 NJ	Unknown	14 NJ	Unknown Hydrocarbon	6 NJ	Unknown	6 NJ	Unknown Hydrocarbon	20 NJ	Unknown	15 NJ
			Unknown	5 NJ	Unknown	11 NJ	Unknown Hydrocarbon	5 NJ	Unknown	9 NJ	Unknown Hydrocarbon	23 NJ	Unknown	66 NJ
					Unknown	5 NJ	Unknown	6 NJ	Unknown	4 NJ	Unknown Hydrocarbon	12 NJ	Unknown	38 NJ
							Unknown	7 NJ	Unknown	10 NJ	Unknown Hydrocarbon	15 NJ	Unknown	5 NJ
							Unknown	5 NJ			Unknown Hydrocarbon	10 NJ	Unknown	18 NJ
							Unknown	29 NJ			Unknown Hydrocarbon	12 NJ	Unknown	9 NJ
											Unknown Hydrocarbon	21 NJ	Unknown	31 NJ
											Unknown Hydrocarbon	10 NJ	Unknown	11 NJ
											Unknown	10 NJ	Unknown	7 NJ
											Unknown	39 NJ		
											Unknown	46 NJ		
											Unknown	36 NJ		
											Unknown	37 NJ		
											Unknown	25 NJ		
											Unknown	34 NJ		
											Unknown	48 NJ		
											Unknown	59 NJ		
											Unknown	17 NJ		
											Unknown	28 NJ		
											Unknown	44 NJ		
											Unknown	36 NJ		
											Unknown	32 NJ		
											Unknown	24 NJ		
											Unknown	14 NJ		
	Total SVOC TICs	0	Total SVOC TICs	11	Total SVOC TICs	30	Total SVOC TICs	58	Total SVOC TICs	29	Total SVOC TICs	560	Total SVOC TICs	200

Table 4-11 (continued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	WT-03		WT-04		
Sample I.D.:	GW-WT-03-1196	GW-WT-03-0397	GW-WT-04-1196	GW-WT-04-1196D	GW-WT-04-0397
Laboratory Project No.:	96-5528	97-1208	96-5528	96-5528	97-1208
Sample Date:	11/19/96	03/26/97	11/19/96	11/19/96	03/26/97
TCL Semi-Volatile Organic Compounds (µg/l)(b)					
Phenol	11 U	11 U	10 U	10 U	10 U
Naphthalene	11 U	11 U	10 U	10 U	10 U
Di-n-butyl phthalate	11 U	11 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	11 U	11 U	10 U	10 U	10 U

Table 4-1Y . .inued)

Groundwater Sample
TCL SVOC and SVOC TIC Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	WT-03				WT-04					
Sample I.D.:	GW-WT-03-1196		GW-WT-03-0397		GW-WT-04-1196		GW-WT-04-1196D		GW-WT-04-0397	
Laboratory Project No.:	96-5228		97-1208		96-5528		96-5528		97-1208	
Sample Date:	11/19/96		03/26/97		11/19/96		11/19/96		03/26/97	
Semi-Volatile Organics										
TICs (µg/l)										
	Unknown	5 NJ	Unknown	7 NJ	Unknown	12 NJ	Unknown	9 NJ	Unknown	8 NJ
	Unknown	4 NJ	Unknown	11 NJ	Unknown	6 NJ	Unknown	16 NJ	Unknown	9 NJ
	Unknown	7 NJ	Unknown	7 NJ	Unknown	6 NJ	Unknown	120 NJ		
	Unknown	100 NJ					Unknown	49 NJ		
	Unknown	44 NJ					Unknown	9 NJ		
	Unknown	12 NJ					Unknown	9 NJ		
	Unknown	5 NJ					Unknown	8 NJ		
	Unknown	11 NJ					Unknown	5 NJ		
	Unknown	7 NJ					Unknown Phthalate	4 NJ		
	Unknown	24 NJ								
	Unknown	5 NJ								
	Unknown	9 NJ								
	Unknown	5 NJ								
	Total SVOC TICs	238	**Total SVOC TICs**	25	**Total SVOC TICs**	24	**Total SVOC TICs**	229	**Total SVOC TICs**	17

a/ TCL = target compound list; SVOC = semi-volatile organic compounds; TIC = tentatively identified compounds.
Only those TCL SVOCs detected in one or more of the groundwater samples have been retained in this table.
Unabridged analytical results are presented in Appendix M.
b/ µg/l = micrograms per liter.
c/ Data Qualifiers:
U = constituent not detected at the noted detection limit.
J = constituent detected at an estimated concentration less than the method detected limit.
UJ = constituent not detected at the estimated detection limit noted.
NJ = presumptive evidence of detection at an estimated concentration.
d/ NA = not analyzed.
e/ Total SVOC TICs represent the sum of all detected TICs.
f/ The analytical laboratory inadvertently neglected to complete the analysis for TCL SVOCs.
g/ D = duplicate sample.

Table 4-12

Groundwater Sample
TCL PCB and Miscellaneous Parameter Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	B-01		LAE-04		LAW-05		LAW-06	
Sample I.D.:	GW-B-1-1196	GW-B-1-0397	GW-LAE-4-1196	GW-LAE-4-0397	GW-LAW-5-1196	GW-LAW-5-0397	GW-LAW-6-1196	GW-LAW-6-0397
Laboratory Project No.:	96-5507	97-1208	96-5567	97-1228	96-5586	97-1228	96-5586	97-1228
Sample Date:	11/18/96	03/27/97	11/20/96	03/27/97	11/21/96	03/26/97	11/21/96	03/26/97
TCL Polychlorinated Biphenyls (μg/l)								
Aroclor 1016	1 U (c)	NA (d)	1 U	NA	1 U	NA	1 UJ	NA
Aroclor 1221	1 U	NA	1 U	NA	1 U	NA	1 UJ	NA
Aroclor 1232	R	NA	R	NA	R	NA	R	NA
Aroclor 1242	1 U	NA	1 U	NA	1 U	NA	1 UJ	NA
Aroclor 1248	1 U	NA	1 U	NA	1 U	NA	1 UJ	NA
Aroclor 1254	1 U	NA	1 U	NA	1 U	NA	1 UJ	NA
Aroclor 1260	1 U	NA	1 U	NA	1 U	NA	1 UJ	NA
Miscellaneous Parameters								
pH (s.u.)	7.26	7.20	7.14	7.05	6.98	6.90	8.98	9.19
Alkalinity (Total) (mg/l)	110	328	176	444	233	479	3360	3510
Total Phenols (μg/l)	5 B	NA	5 B	NA	5 U	NA	5 U	NA
Chloride (mg/l)	6.1	3.8	18 J	19	300	280	140	200
Fluoride (mg/l)	0.26	0.18	0.31	0.24	0.19	0.18	6.3	3.8
Nitrate (mg/l)	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	14 J	10 J	30 J	24 J
Sulfate (mg/l)	120	130	110	150	2300	880	1100	2900
Ammonia (as N) (mg/l)	0.73	0.62	0.79	0.78	1.2	1.1	2.5	1.4
Specific Conductance (umhos/cm) (at 25°C)	808	NA	892	830	3160	2820	9700	9190
Total Organic Carbon (mg/l)	NA	760	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand (mg/l)	NA	NA	NA	NA	NA	NA	NA	NA
Total Suspended. Solids (mg/l) (at 105°C)	NA	NA	NA	NA	NA	NA	NA	NA
Temperature (°C) (field)	14.0	8.7	13.6	10.3	14.8	9.3	13.5	7.7
Turbidity (NTU) (field)	10.0	<10 (e)	10	>1000	10	10	10	10

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Table 4-12 (continued)

Groundwater Sample
TCL PCB and Miscellaneous Parameter Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	MW-01		MW-03		RFI-01		RFI-02	
Sample I.D.:	GW-MW-1-1196	GW-MW-1-0397	GW-MW-3-1196	GW-MW-3-0397	GW-RFI-001-1196	GW-RFI-001-0397	GW-RFI-002-1196	GW-RFI-002-0397
Laboratory Project No.:	96-5586	97-1208	96-5567	97-1208	96-5507	97-1208	96-5507	97-1208
Sample Date:	11/20/96	03/25/97	11/20/96	03/26/97	11/18/96	03/24/97	11/18/96	03/24/97
TCL Polychlorinated Biphenyls (µg/l)								
Aroclor 1016	1 U	NA	1 U	NA	1 U	NA	1 U	NA
Aroclor 1221	1 U	NA	1 U	NA	1 U	NA	1 U	NA
Aroclor 1232	R	NA	R	NA	R	NA	R	NA
Aroclor 1242	1 U	NA	1 U	NA	1 U	NA	1 U	NA
Aroclor 1248	1 U	NA	1 U	NA	1 U	NA	1 U	NA
Aroclor 1254	1 U	NA	1 U	NA	1 U	NA	1 U	NA
Aroclor 1260	1 U	NA	1 U	NA	1 U	NA	1 U	NA
Miscellaneous Parameters								
pH (s.u.)	7.51	7.94	7.27	7.17	7.32	7.27	7.05	7.03
Alkalinity (Total) (mg/l)	216	549	192	396	76	343	170	404
Total Phenols (µg/l)	5 B	NA	5 U	NA	5 B	NA	5 B	NA
Chloride (mg/l)	57	42	250 J	430	25	20	8.8	3.3
Fluoride (mg/l)	0.1 U	0.56	0.63	0.49	0.31	0.22	0.26	0.18
Nitrate (mg/l)	0.11 J	0.39 J	83 J	49 J	0.51	0.22 J	0.1 U	0.1 UJ
Sulfate (mg/l)	350	280	660	720	71	57	230	430
Ammonia (as N) (mg/l)	0.63	0.34	0.1 U	0.1 U	0.1 U	0.1 U	0.36	0.1 U
Specific Conductance (umhos/cm) (at 25°C)	1340	1000	3250	3200	720	675	1060	1200
Total Organic Carbon (mg/l)	NA	NA	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand (mg/l)	NA	NA	NA	NA	NA	NA	NA	NA
Total Suspended. Solids (mg/l) (at 105°C)	NA	NA	NA	NA	NA	NA	NA	NA
Temperature (°C) (field)	9.9	8.7	14.7	9.3	17.2	7.5	13.6	6.6
Turbidity (NTU) (field)	39	<10	64	17	10	999	305	122

Table 4-12 (continued)

Groundwater Sample
TCL PCB and Miscellaneous Parameter Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-03		RFI-04		RFI-05		RFI-06	
Sample I.D.:	GW-RFI-003-1196	GW-RFI-003-0397	GW-RFI-004-1196	GW-RFI-004-0397	GW-RFI-005-1196	GW-RFI-005-0397	GW-RFI-006-1196	GW-RFI-006-0397
Laboratory Project No.:	96-5507	97-1208	96-5528	97-1208	96-5567	97-1228	96-5567	97-1228
Sample Date:	11/18/96	03/24/97	11/19/96	03/25/97	11/20/96	03/27/97	11/19/96	03/26/97
TCL Polychlorinated Biphenyls (µg/l)								
Aroclor 1016	1 U	NA	1 U	NA	1 U	NA	1 U	NA
Aroclor 1221	1 U	NA	1 U	NA	1 U	NA	1 U	NA
Aroclor 1232	R	NA	R	NA	R	NA	R	NA
Aroclor 1242	1 U	NA	1 U	NA	1 U	NA	1 U	NA
Aroclor 1248	1 U	NA	1 U	NA	1 U	NA	1 U	NA
Aroclor 1254	1 U	NA	1 U	NA	1 U	NA	1 U	NA
Aroclor 1260	1 U	NA	1 U	NA	1 U	NA	1 U	NA
Miscellaneous Parameters								
pH (s.u.)	7.44	7.40	7.31	7.33	7.43	7.22	7.44	7.24
Alkalinity (Total) (mg/l)	200	376	202	382	160	259	192	340
Total Phenols (µg/l)	5 B	NA	5 B	NA	5 B	NA	5 B	NA
Chloride (mg/l)	120	93	18	16	14 J	12	42 J	50
Fluoride (mg/l)	1.9	1.1	0.18	0.18	0.31	0.21	0.34	0.27
Nitrate (mg/l)	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	2.5 J	2.4 J	0.1 UJ	0.1 UJ
Sulfate (mg/l)	230	230	110	110	120	110	310	270
Ammonia (as N) (mg/l)	0.34	0.24	0.31	0.21	0.1 U	0.1 U	1.9	1.3
Specific Conductance (umhos/cm) (at 25°C)	1410	1360	841	767	716	621	1180	1100
Total Organic Carbon (mg/l)	NA	NA	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand (mg/l)	NA	NA	NA	NA	NA	NA	NA	NA
Total Suspended. Solids (mg/l) (at 105°C)	NA	NA	NA	NA	NA	NA	NA	NA
Temperature (°C) (field)	16.5	NA	12.8	10.2	11.6	9.9	13.3	6.5
Turbidity (NTU) (field)	21	NA	10	488	8	<10	20	6

Table 4-12 (continued)

Groundwater Sample
TCL PCB and Miscellaneous Parameter Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-07		RFI-08		RFI-09		RFI-10
Sample I.D.:	GW-RFI-007-1196	GW-RFI-007-1196	GW-RFI-008-1196	GW-RFI-008-0397	GW-RFI-009-1196	GW-RFI-009-0397	GW-RFI-010-1196
Laboratory Project No.:	96-5567	97-1208	96-5567	97-1228	96-5528	97-1208	96-5567
Sample Date:	11/20/96	03/26/97	11/20/96	03/27/97	11/19/96	03/26/97	11/19/96
TCL Polychlorinated Biphenyls (µg/l)							
Aroclor 1016	1 U	NA	1 U	NA	1 U	NA	1 U
Aroclor 1221	1 U	NA	1 U	NA	1 U	NA	1 U
Aroclor 1232	R	NA	R	NA	R	NA	R
Aroclor 1242	1 U	NA	1 U	NA	1 U	NA	1 U
Aroclor 1248	1 U	NA	1 U	NA	1 U	NA	1 U
Aroclor 1254	1 U	NA	1 U	NA	1 U	NA	1 U
Aroclor 1260	1 U	NA	1 U	NA	1 U	NA	1 U
Miscellaneous Parameters							
pH (s.u.)	7.03	7.06	7.32	7.21	7.01	6.88	7.27
Alkalinity (Total) (mg/l)	196	348	160	326	49.6	467	126
Total Phenols (µg/l)	5 B	NA	5 B	NA	5 B	5 UJ	5 B
Chloride (mg/l)	220 J	150	47 J	42	14	13	250 J
Fluoride (mg/l)	0.56	0.72	0.32	0.23	0.24	0.23	0.29
Nitrate (mg/l)	61 J	12 J	1.3 J	0.53 J	0.1 UJ	0.1 UJ	1.2 J
Sulfate (mg/l)	1500	660	120	89	120	110	1500
Ammonia (as N) (mg/l)	1.8	0.21	0.1	0.1 U	0.1 U	0.1 U	0.1 U
Specific Conductance (umhos/cm) (at 25°C)	4130	2060	919	812	991	908	1760
Total Organic Carbon (mg/l)	NA	NA	NA	NA	3.1	NA	NA
Chemical Oxygen Demand (mg/l)	NA	NA	NA	NA	5 U	NA	NA
Total Suspended. Solids (mg/l) (at 105°C)	NA	NA	NA	NA	1 U	NA	NA
Temperature (°C) (field)	16.5	9.6	10.3	8.0	13.9	6.7	9.8
Turbidity (NTU) (field)	10	47	22	>10	10	22	23

Table 4-12 (continued)

Groundwater Sample
TCL PCB and Miscellaneous Parameter Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-10 (continued)		RFI-11		RFI-12		RFI-13	
Sample I.D.:	GW-RFI-010-0397	GW-RFI-010-0397D (f)	GW-RFI-011-1196	GW-RFI-011-0397	GW-RFI-012-1196	GW-RFI-012-0397	GW-RFI-013-1196	GW-RFI-013-1196D
Laboratory Project No.:	97-1208	97-1208	96-5528	97-1208	96-5586	97-1228	96-5567	96-5567
Sample Date:	03/25/97	03/25/97	11/18/96	03/25/97	11/21/96	03/27/97	11/20/96	11/20/96
TCL Polychlorinated Biphenyls (µg/l)								
Aroclor 1016	NA	NA	1 U	NA	1 U	NA	1 U	NA
Aroclor 1221	NA	NA	1 U	NA	1 U	NA	1 U	NA
Aroclor 1232	NA	NA	R	NA	R	NA	R	NA
Aroclor 1242	NA	NA	1 U	NA	1 U	NA	1 U	NA
Aroclor 1248	NA	NA	1 U	NA	1 U	NA	1 U	NA
Aroclor 1254	NA	NA	1 U	NA	1 U	NA	1 U	NA
Aroclor 1260	NA	NA	1 U	NA	1 U	NA	1 U	NA
Miscellaneous Parameters								
pH (s.u.)	7.23	7.32	7.28	7.52	8.03	7.62	7.17	6.99
Alkalinity (Total) (mg/l)	309	320	200	399	180	225	217	238
Total Phenols (µg/l)	NA	NA	5 B	NA	5 B	NA	5 B	NA
Chloride (mg/l)	290	320	39	24	12	11	67 J	65 J
Fluoride (mg/l)	0.24	0.25	0.46	0.34	0.49	0.49	0.29	0.31
Nitrate (mg/l)	0.34 J	0.27 J	0.1 UJ	0.1 UJ	0.67 J	4.9 J	1.2 J	1.3 J
Sulfate (mg/l)	150	140	99	61	160	93	170	180
Ammonia (as N) (mg/l)	0.1 U	0.12	0.25	0.1 U	0.15	0.1 U	0.35	0.4
Specific Conductance (umhos/cm) (at 25°C)	1660	774	960	352	764	601	1160	1170
Total Organic Carbon (mg/l)	NA	NA	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand (mg/l)	NA	NA	NA	NA	NA	NA	NA	NA
Total Suspended. Solids (mg/l) (at 105°C)	NA	NA	NA	NA	NA	NA	NA	NA
Temperature (°C) (field)	8.5	NA	11.3	10.0	11.5	11.2	11	NA
Turbidity (NTU) (field)	<10	NA	156	10	33	<10	35	NA

Table 4-12 (continued)

Groundwater Sample
TCL PCB and Miscellaneous Parameter Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-13 (continued)	RFI-14		RFI-15			RFI-16	
Sample I.D.:	GW-RFI-013-0397	GW-RFI-014-1196	GW-RFI-014-0397	GW-RFI-015-1196	GW-RFI-015-1196D	GW-RFI-015-0397	GW-RFI-016-1196	GW-RFI-016-0397
Laboratory Project No.:	97-1228	96-5567	97-1208	96-5567	96-5567	97-1208	96-5507	97-1208
Sample Date:	03/26/97	11/20/96	03/25/97	11/20/96	11/20/96	03/25/97	11/18/96	03/25/97
TCL Polychlorinated Biphenyls (µg/l)								
Aroclor 1016	NA	R	NA	1 U	1 U	NA	1 U	NA
Aroclor 1221	NA	R	NA	1 U	1 U	NA	1 U	NA
Aroclor 1232	NA	R	NA	R	R	NA	R	NA
Aroclor 1242	NA	R	NA	1 U	1 U	NA	1 U	NA
Aroclor 1248	NA	R	NA	1 U	1 U	NA	1 U	NA
Aroclor 1254	NA	R	NA	1 U	1 U	NA	1 U	NA
Aroclor 1260	NA	R	NA	1 U	1 U	NA	1 U	NA
Miscellaneous Parameters								
pH (s.u.)	7.22	7.78	7.48	7.27	7.3	7.50	7.16	7.13
Alkalinity (Total) (mg/l)	409	162	312	169	128	411	220	444
Total Phenols (µg/l)	NA	5 B	NA	5 B	5 B	NA	5 B	NA
Chloride (mg/l)	86	39 J	39	100 J	110 J	43	35	72
Fluoride (mg/l)	0.25	0.59	0.38	0.29	0.31	0.3	0.25	0.25
Nitrate (mg/l)	6.4 J	0.11 J	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.11 J
Sulfate (mg/l)	150	80	59	240	260	140	130	110
Ammonia (as N) (mg/l)	0.22	0.84	0.1 U	0.47	0.39	0.1 U	0.1 U	0.23
Specific Conductance (umhos/cm) (at 25°C)	1180	689	489	1180	1140	721	1050	1070
Total Organic Carbon (mg/l)	NA	NA	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand (mg/l)	NA	NA	NA	NA	NA	NA	NA	NA
Total Suspended. Solids (mg/l) (at 105°C)	NA	NA	NA	NA	NA	NA	NA	NA
Temperature (°C) (field)	8.8	11.2	7.1	18.6	NA	8.6	12.2	6.7
Turbidity (NTU)(field)	21	>1000	544	952	NA	395	42	<10

Table 4-12 (continued)

Groundwater Sample
TCL PCB and Miscellaneous Parameter Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	RFI-17		WP-01	WP-02	WP-03	WP-04	
Sample I.D.:	GW-RFI-017-1196	GW-RFI-017-0397	GW-WP-1-0397	GW-WP-2-0397	GW-WP-3-0397	GW-WP-4-1196	GW-WP-4-0397
Laboratory Project No.:	96-5567	97-1208	97-1208	97-1208	97-1208	96-5586	97-1208
Sample Date:	11/20/96	03/26/97	03/25/97	03/25/97	03/25/97	11/21/96	03/25/97
TCL Polychlorinated Biphenyls (µg/l)							
Aroclor 1016	1 U	NA	NA	NA	NA	1 U	NA
Aroclor 1221	1 U	NA	NA	NA	NA	1 U	NA
Aroclor 1232	R	NA	NA	NA	NA	R	NA
Aroclor 1242	1 U	NA	NA	NA	NA	1 U	NA
Aroclor 1248	1 U	NA	NA	NA	NA	1 U	NA
Aroclor 1254	1 U	NA	NA	NA	NA	1 U	NA
Aroclor 1260	1 U	NA	NA	NA	NA	1 U	NA
Miscellaneous Parameters							
pH (s.u.)	7.26	7.16	NA	NA	NA	7.3	7.13
Alkalinity (Total) (mg/l)	111	289	NA	NA	NA	237	422
Total Phenols (µg/l)	5 B	NA	NA	NA	NA	5 B	NA
Chloride (mg/l)	410 J	480	NA	NA	NA	84	92
Fluoride (mg/l)	0.57	0.76	NA	NA	NA	0.31	0.22
Nitrate (mg/l)	2.4 J	2 J	NA	NA	NA	0.1 UJ	0.1 UJ
Sulfate (mg/l)	360	330	NA	NA	NA	150	150
Ammonia (as N) (mg/l)	2	0.64	NA	NA	NA	2.2	0.1 U
Specific Conductance (umhos/cm) (at 25°C)	2440	2300	NA	NA	NA	1220	1210
Total Organic Carbon (mg/l)	NA	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand (mg/l)	NA	NA	NA	NA	NA	NA	NA
Total Suspended. Solids (mg/l) (at 105°C)	NA	NA	NA	NA	NA	NA	NA
Temperature (°C) (field)	13.6	9.1	6.7	8.3	9.1	12.3	8.3
Turbidity (NTU)(field)	10	<10	<10	<10	<10	12	7

Table 4-12 (continued)

Groundwater Sample
TCL PCB and Miscellaneous Parameter Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	WP-05		WT-01A		WT-01B		
Sample I.D.:	GW-WP-5-1196	GW-WP-5-0397	GW-WT-1A-1196	GW-WT-1A-0397	GW-WT-1B-1196	GW-WT-1B-0397	GW-WT-1B-0397D
Laboratory Project No.:	96-5586	97-1208	96-5528	97-1208	96-5528	97-1208	97-1208
Sample Date:	11/21/96	03/25/97	11/19/96	03/26/97	11/19/96	03/26/97	03/26/97
TCL Polychlorinated Biphenyls (µg/l)							
Aroclor 1016	1 U	NA	1 U	NA	1 U	NA	NA
Aroclor 1221	1 U	NA	1 U	NA	1 U	NA	NA
Aroclor 1232	R	NA	R	NA	R	NA	NA
Aroclor 1242	1 U	NA	1 U	NA	1 U	NA	NA
Aroclor 1248	1 U	NA	1 U	NA	1 U	NA	NA
Aroclor 1254	1 U	NA	1 U	NA	1 U	NA	NA
Aroclor 1260	1 U	NA	1 U	NA	1 U	NA	NA
Miscellaneous Parameters							
pH (s.u.)	7.16	7.15	7.05	7.16	7.1	7.29	7.23
Alkalinity (Total) (mg/l)	145	249	256	351	123	299	263
Total Phenols (µg/l)	5 U	NA	5 B	5 UJ	5 B	5 UJ	5 UJ
Chloride (mg/l)	21	46	120	110	280	180	170
Fluoride (mg/l)	0.36	0.34	0.74	0.59	0.23	0.23	0.22
Nitrate (mg/l)	0.1 UJ	0.11 J	0.38 J	0.2 J	0.1 UJ	0.1 UJ	0.1 UJ
Sulfate (mg/l)	61	67	170	96	170	200	210
Ammonia (as N) (mg/l)	1.4	1	0.1 U	0.1 U	0.59	0.28	0.26
Specific Conductance (umhos/cm) (at 25°C)	673	634	1400	1080	1560	1280	1260
Total Organic Carbon (mg/l)	NA	NA	9.5	NA	2.3	NA	NA
Chemical Oxygen Demand (mg/l)	NA	NA	23	NA	5 U	NA	NA
Total Suspended. Solids (mg/l) (at 105°C)	NA	NA	113	NA	300	NA	NA
Temperature (°C) (field)	16.1	8.1	12.1	6.5	10.5	7.0	NA
Turbidity (NTU)(field)	10	137	29	<10	79	364	NA

Table 4-1. .(inued)

Groundwater Sample
TCL PCB and Miscellaneous Parameter Data
Phase I RFI
Al Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	WT-02		WT-03		WT-04		
Sample I.D.:	GW-WT-2-1196	GW-WT-02-0397	GW-WT-03-1196	GW-WT-03-0397	GW-WT-04-1196	GW-WT-04-1196D	GW-WT-04-0397
Laboratory Project No.:	96-5653	97-1228	96-5528	97-1208	96-5528	96-5528	97-1208
Sample Date:	11/25/96	03/27/97	11/19/96	03/26/97	11/19/96	11/19/96	03/26/97
TCL Polychlorinated Biphenyls (µg/l)	1 U	NA	1 U	NA	1 U	1 U	NA
Aroclor 1016	1 U	NA	1 U	NA	1 U	1 U	NA
Aroclor 1221	R	NA	R	NA	R	R	NA
Aroclor 1232	1 U	NA	1 U	NA	1 U	1 U	NA
Aroclor 1242	1 U	NA	1 U	NA	1 U	1 U	NA
Aroclor 1248	1 U	NA	1 U	NA	1 U	1 U	NA
Aroclor 1254	1 U	NA	1 U	NA	1 U	1 U	NA
Aroclor 1260							
Miscellaneous Parameters							
pH (s.u.)	12.41	12.32	6.82	7.25	7.1	7.11	7.08
Alkalinity (Total) (mg/l)	1020	919	145	413	250	249	404
Total Phenols (µg/l)	54	29	5 B	5 UJ	5 B	5 B	5 U
Chloride (mg/l)	12	10	26	23	61	62	45
Fluoride (mg/l)	0.33	0.2	1.8	1.1	0.71	0.74	0.43
Nitrate (mg/l)	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.14 J
Sulfate (mg/l)	8.8	8.3	500	620	300	300	470
Ammonia (as N) (mg/l)	2.9	3.6	1.5	1.6	1.7	1.7	1.1
Specific Conductance (umhos/cm) (at 25°C)	4560	3340	1440	1700	1430	1460	1490
Total Organic Carbon (mg/l)	15	NA	3.7	NA	3.8	3.9	NA
Chemical Oxygen Demand (mg/l)	46	NA	5.4	NA	5 U	8.9	NA
Total Suspended. Solids (mg/l) (at 105°C)	129	NA	45	NA	11	11	NA
Temperature (°C) (field)	13.2	6.2	12.3	8.9	11.3	NA	10.2
Turbidity (NTU) (field)	45	10	113	>10	13	NA	<10

a/ TCL = Target Compound List.; PCB = polychlorinated biphenyl.
b/ µg/l = micrograms per liter; mg/l = milligrams per liter; s.u. = standard unit;
umhos/cm = microhoms per centimeter; °C = degrees celsius; NTU = nephelometric units.
as N = ammonia concentration reported as nitrogen.
c/ Data Qualifiers:
U = constituent not detected at the noted detection limit.
J or B = constituent detected at an estimated concentration less than the method detected limit.
UJ = constituent not detected at the estimated detection limit noted.
R = data rejected.
d/ NA = not analyzed.
e/ < or > = turbidity less than or greater than the equipment scale noted.
f/ D = duplicate sample.

Table 4-13

Surface Water Sample Data
Phase I RFI
ALTech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	**S-01**	**S-02**	**S-03**	
Sample I.D.:	**SW-S01-1024**	**SW-S02-1024**	**SW-S03-1024**	**SW-S03-1024D (a)**
Laboratory Project No.:	**96-5092**	**96-5092**	**96-5092**	**96-5092**
Sample Date:	**10/24/96**	**10/24/96**	**10/24/96**	**10/24/96**
TAL Inorganics plus Molybdenum (mg/l) (b)				
Silver	0.0083 UJ (c)	0.0083 UJ	0.0083 UJ	0.0083 U
Aluminum	0.058 U	0.069	0.058 U	0.058 U
Arsenic	0.0018 UJ	0.0018 UJ	0.0018 UJ	0.0018 U
Barium	0.073 J	0.086 J	0.087 J	0.089
Beryllium	0.0011	0.0015	0.0015	0.0016
Calcium	64	79	80	81
Cadmium	0.0022 U	0.0022 U	0.0022 U	0.0022 U
Cobalt	0.0056 UJ	0.0056 UJ	0.0056 UJ	0.0056 U
Chromium (Total)	0.0078 U	0.0089	0.0078 UJ	0.0086
Chromium (Hexavalent)	0.01 U	0.01 U	0.01 U	0.01 U
Copper	0.0047 UJ	0.0098 J	0.0047 UJ	0.0057
Iron	0.44 J	0.48 J	0.52 J	0.43
Mercury	0.00046 J	0.0002 J	0.0002 U	0.00029
Potassium	4.3	4.1	4.2	4.1
Magnesium	11	14	14	14
Manganese	0.048 J	0.042 J	0.041 J	0.042
Molybdenum	0.021	0.054	0.039	0.046
Sodium	46	55	57	57
Nickel	0.01 U	0.01 U	0.01 U	0.01 U
Lead	0.0017 U	0.0017 U	0.0018	0.0017 U
Antimony	0.0016 U	0.002	0.0017	0.0016 U
Selenium	0.0027 UJ	0.0027 UJ	0.0027 UJ	0.0027 U
Thallium	0.0023 UJ	0.0023 UJ	0.0023 UJ	0.0023 U
Vanadium	0.0054 UJ	0.0054 UJ	0.0054 UJ	0.0054 U
Zinc	0.056	0.015	0.014	0.014
Cyanide (Total)	0.005 UJ	0.005 UJ	0.009 UJ	0.005 U

Table 4-13 (continued)

Surface Water Sample Data
Phase I RFI
ALTech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	S-01		S-02		S-03			
Sample I.D.:	SW-S01-1024	SW-S01-0327	SW-S02-1024	SW-S02-0327	SW-S03-1024	SW-S03-0327	SW-S03-1024D	SW-S03-0327
Laboratory Project No.:	96-5092	97-1228	96-5092	97-1228	96-5092	97-1228	96-5092	97-1228
Sample Date:	10/24/96	3/27/97	10/24/96	3/27/97	10/24/96	3/27/97	10/24/96	3/27/97
TCL Volatile Organic Compounds	NA (d)	NA	NA	NA	NA	NA	NA	NA
TCL Semi-Volatile Organic Compounds (ug/l)								
Phenol	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Bis(2-chloroethyl)ether	NA	11 U	NA	11 U	NA	11 U	NA	10 U
2-Chlorophenol	NA	11 U	NA	11 U	NA	11 U	NA	10 U
1,3-Dichlorobenzene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
1,4-Dichlorobenzene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
1,2-Dichlorobenzene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
o-Cresol	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Bis(2-chloro-1-methylethyl) ether	NA	11 U	NA	11 U	NA	11 U	NA	10 U
p-Cresol	NA	11 U	NA	11 U	NA	11 U	NA	10 U
N-Nitrosodi-n-propylamine	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Hexachloroethane	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Nitrobenzene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Isophorone	NA	11 U	NA	11 U	NA	11 U	NA	10 U
2-Nitrophenol	NA	11 U	NA	11 U	NA	11 U	NA	10 U
2,4-Dimethylphenol	NA	11 U	NA	27 U	NA	11 U	NA	10 U
Bis(2-chloroethoxy)methane	NA	11 U	NA	11 U	NA	11 U	NA	10 U
2,4-Dichlorophenol	NA	11 U	NA	11 U	NA	11 U	NA	10 U
1,2,4-Trichlorobenzene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Naphthalene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
4-Chloroaniline	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Hexachlorobutadiene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
4-Chloro-3-methylphenol	NA	11 U	NA	11 U	NA	11 U	NA	10 U
2-Methylnaphthalene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Hexachlorocyclopentadiene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
2,4,6-Trichlorophenol	NA	11 U	NA	11 U	NA	11 U	NA	10 U
2,4,5-Trichlorophenol	NA	27 U	NA	27 U	NA	27 U	NA	26 U
2-Chloronaphthalene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
2-Nitroaniline	NA	27 U	NA	27 U	NA	27 U	NA	26 U
Dimethyl phthalate	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Acenaphthylene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
2,6-Dinitrotoluene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
3-Nitroaniline	NA	27 U	NA	27 U	NA	27 U	NA	26 U
Acenaphthene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
2,4-Dinitrophenol	NA	27 U	NA	27 U	NA	27 U	NA	26 U
4-Nitrophenol	NA	27 U	NA	27 U	NA	27 U	NA	26 U
Dibenzofuran	NA	11 U	NA	11 U	NA	11 U	NA	10 U
2,4-Dinitrotoluene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Diethyl phthalate	NA	11 U	NA	11 U	NA	11 U	NA	10 U
4-Chlorophenyl phenyl ether	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Fluorene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
4-Nitroaniline	NA	27 U	NA	27 U	NA	27 U	NA	26 U
2-Methyl-4,6-dinitrophenol	NA	27 U	NA	27 U	NA	27 U	NA	26 U
N-Nitrosodiphenylamine	NA	11 U	NA	11 U	NA	11 U	NA	10 U
4-Bromophenyl phenyl ether	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Hexachlorobenzene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Pentachlorophenol	NA	27 U	NA	27 U	NA	27 U	NA	26 U
Phenanthrene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Anthracene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Carbazole	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Di-n-butyl phthalate	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Fluoranthene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Pyrene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Butyl benzyl phthalate	NA	11 U	NA	11 U	NA	11 U	NA	10 U
3,3-Dichlorobenzidine	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Benzo(a)anthracene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Bis(2-ethylhexyl)phthalate	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Chrysene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Di-n-octyl phthalate	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Benzo(b)fluoranthene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Benzo(k)fluoranthene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Benzo(a)pyrene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Indeno(1,2,3-cd)pyrene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Dibenzo(a,h)anthracene	NA	11 U	NA	11 U	NA	11 U	NA	10 U
Benzo(ghi)perylene	NA	11 U	NA	11 U	NA	11 U	NA	10 U

Table 4-13 (continued)

Surface Water Sample Data
Phase I RFI
ALTech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	S-01	S-02	S-03	
Sample I.D.:	SW-S01-1024	SW-S02-1024	SW-S03-1024	SW-S03-1024D
Laboratory Project No.:	96-5092	96-5092	96-5092	96-5092
Sample Date:	10/24/96	10/24/96	10/24/96	10/24/96
TCL Polychlorinated Biphenyls (µg/l)				
Aroclor 1016	1 U	1 U	1 U	1 U
Aroclor 1221	1 U	1 U	1 U	1 U
Aroclor 1232	R	R	R	R
Aroclor 1242	1 U	1 U	1 U	1 U
Aroclor 1248	1 U	1 U	1 U	1 U
Aroclor 1254	1 U	1 U	1 U	1 U
Aroclor 1260	1 U	1 U	1 U	1 U
Miscellaneous Parameters				
Total Petroleum Hydrocarbons (µg/l)	1000 U	1000 UJ	1000 U	1000 UJ
pH (s.u.)	8.14	8.19	8.19	8.2
Alkalinity (Total) (mg/l)	175	200	231	230
Phenols (µg/l)	5 U	5 U	5 U	5 U
Chloride (mg/l)	83	92	97	98
Fluoride (mg/l)	0.23	0.34	0.29	0.3
Sulfate (mg/l)	51 J	110 J	49 J	60
Specific Conductance (µmhos/cm)(at 25°C)	636	734	735	738

a/ D = duplicate sample
b/ TAL = Target Analyte List. This list also includes hexavalent chromium.
TCL = Target Compound List
mg/l = milligrams per liter; ug/l = micrograms per liter; s.u. = standard units; µmhos/cm = microhoms per centimeter; 25°C = 25 degrees Celsius.
c/ Data Qualifiers:
U = constituent not detected at the noted detection limit.
J = constituent detected at an estimated concentration less than the method detected limit.
UJ = constituent not detected at the estimated detection limit noted.
R = data rejected.
d/ NA = not analyzed.

Table 4-14

Sediment Sample Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	**S-01**	**S-02**	**S-03**	
Sample I.D.:	**SD-S-01-06**	**SD-S-02-06**	**SD-S-03-06**	**SD-S-03-06D (a)**
Laboratory Project No.:	**96-5092**	**96-5092**	**96-5092**	**96-5092**
Sample Interval :	**0-0.5 foot**	**0-0.5 foot**	**0-0.5 foot**	**0-0.5 foot**
Sample Date:	**10/24/96**	**10/24/96**	**10/24/96**	**10/24/96**
TAL Inorganics plus Molybdenum (mg/kg) (b)				
Silver	R (c)	R	R	0.81 U
Aluminum	4400 J	5300	5200	3900
Arsenic	7.7 J	3.2 J	5.1 J	5.1
Barium	65 J	69 J	68 J	49
Beryllium	0.36 J	1 J	0.34 J	0.51
Calcium	5100 J	28000 J	2300 J	8300
Cadmium	2.5 J	3 J	2 J	2.2
Cobalt	6.6 J	9.1 J	5.1 J	12
Chromium (Total)	25 J	430 J	47 J	560
Chromium (Hexavalent)	3.64	2.19 U	2.12 U	2.36 U
Copper	20 J	25 J	16 J	25
Iron	15000 J	16000	11000	14000
Mercury	0.1 U	0.1	0.1 U	0.1 U
Potassium	470 J	1100	470	410
Magnesium	2400 J	7200 J	1500 J	2300
Manganese	710 J	480 J	200 J	400
Molybdenum	7.4 J	20 J	18 J	51
Sodium	100 J	190	100	110
Nickel	24 J	240 J	39 J	420
Lead	40 J	8.4 J	190 J	23
Antimony	1.1	0.92	1.2	0.91
Selenium	0.25 U	0.24 U	0.26 U	0.26 U
Thallium	0.22 U	0.22 U	0.22 U	0.23 U
Vanadium	11 J	20 J	12 J	18
Zinc	110 J	39 J	57 J	62
Cyanide (Total)	1 U	1 U	1 U	1 U
Cyanide (Free) (mg/l)	0.005 U	0.005 U	0.005 U	0.005 U

Table 4-14 (continued)

Sediment Sample Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	S-01	S-02	S-03	
Sample I.D.:	SD-S-01-06	SD-S-02-06	SD-S-03-06	SD-S-03-06D
Laboratory Project No.:	96-5092	96-5092	96-5092	96-5092
Sample Interval:	0-0.5 foot	0-0.5 foot	0-0.5 foot	0-0.5 foot
Sample Date:	10/24/96	10/24/96	10/24/96	10/24/96
TCL Volatile Organic Compounds (µg/kg)	NA	NA	NA	NA
TCL Semi-Volatile Organic Compounds (µg/kg)				
Acenaphthylene	340 J	360 U	3300 U	1600 U
Fluorene	370 J	360 U	3300 U	1600 U
Phenanthrene	2600	360 U	3300 U	3000 U
Anthracene	480	360 U	3300 U	1600 U
Fluoranthene	2900	360 U	4600 U	3800 U
Pyrene	2700 J	360 U	3600 U	3700 U
Benzo(a)anthracene	1300	360 U	3300 U	1600 U
Chrysene	1400	360 U	2500 J	1800 U
Benzo(b)fluoranthene	1000	360 U	3300 U	1500 J
Benzo(k)fluoranthene	1100	360 U	3300 U	1500 J
Benzo(a)pyrene	1100	360 U	3300 U	1500 J
Indeno(1,2,3-cd)pyrene	410	360 U	3300 U	1600 U
Benzo(ghi)perylene	370 J	360 U	3300 U	1600 U

Table 4-14 (continued)

Sediment Sample Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	S-01	S-02	S-03	
Sample I.D.:	SD-S-01-06	SD-S-02-06	SD-S-03-06	SD-S-03-06D
Laboratory Project No.:	96-5092	96-5092	96-5092	96-5092
Sample Interval:	0-0.5 foot	0-0.5 foot	0-0.5 foot	0-0.5 foot
Sample Date:	10/24/96	10/24/96	10/24/96	10/24/96
TCL Polychlorinated Biphenyls (mg/kg)				
Aroclor 1016	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1221	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1232	R	R	R	R
Aroclor 1242	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1248	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1254	1 UJ	1 UJ	1 UJ	1 UJ
Aroclor 1260	1 UJ	1 UJ	1 UJ	1 UJ
Miscellaneous Parameters				
Total Petroleum Hydrocarbons (mg/kg)	120 UJ	130 J	120 UJ	120 UJ
Total Phenolics (mg/kg)	1 U	1 U	1 U	1 U
Chloride (mg/l)	39	1.8	2.3	2.5
Fluoride (mg/l)	1.0 U	1.0 U	1.0 U	1.0 U
Nitrate (mg/l)	0.13	0.1 U	0.1 U	0.1 U
Sulfate (mg/l)	6.2 J	1 U	42 J	27
Total Organic Carbon (mg/l)	3.4 J	2.9 J	2.9 J	2.3

a/ D = duplicate sample
b/ TAL = Target Analyte List. This list also includes hexavalent chromium and free cyanide.
TCL = Target Compound List
TIC = Tentatively Identified Compound
mg/l = milligrams per liter; mg/kg = milligrams per kilogram; ug/kg = micrograms per kilogram; NA = not analyzed.
c/ Data Qualifiers:
U = constituent not detected at the noted detection limit.
J = constituent detected at an estimated concentration less than the method detected limit.
UJ = constituent not detected at the estimated detection limit noted.
R = data rejected.
d/ Total SVOC TICs represent the sum of all detected TICs.

5.0 SWMU 17 - Closed Surface Impoundment

A surface impoundment was used from 1976 to 1988 to hold spent pickle liquor (listed waste K062) and rinsate waters (SWMU 17). The lined impoundment covered an approximate 15,000 square-foot area immediately east of the facility's WWTP and had a capacity of approximately 750,000 gallons.

The materials stored in the impoundment included:

- lime
- dilute sodium hydroxide (Kolene salt)
- dilute sodium hydride
- oxylic, sulfuric, nitric, hydrochloric, and hydrofluoric acids
- spent pickle liquor
- barium chloride bath wastes
- rinse waters

The wastes contained high concentrations of chromium and nickel and, presumably, molybdenum.

Use of the impoundment was suspended in 1988 and it was closed in accordance with RCRA regulations in the spring of 1989. Figure 5-1 depicts the site conditions in this area at the time of closure, including the process and storm sewer lines and the extent of soils and bedrock excavated from the area during closure. Certification of clean closure was submitted to NYSDEC in October 1989.

Post-closure care included a provision for quarterly monitoring of groundwater from wells installed in the immediate vicinity of the former impoundment (WT-series compliance wells) for a period of three years. In May 1992, AL Tech submitted a request for NYSDEC to grant final approval for clean closure, following completion of three years of post-closure monitoring. The monitoring data indicated, to AL Tech, that clean closure had been accomplished.

In response to this request, NYSDEC expressed a concern regarding the presence of molybdenum and fluoride at elevated concentrations on several occasions (NYSDEC 1993). Both AL Tech and NYSDEC believed that these elevated concentrations were attributable to the existence of an industrial waste fill area located west of this area (subsequently identified as

SWMU 13C, Crucible Disposal Area; Figure 1-2). Despite this fact, however, approval of clean closure was not granted. The NYSDEC indicated that approval could be given following completion of the RFI, which, it was assumed, would provide sufficient information to support the belief that the industrial waste fill area, and not the closed surface impoundment, was the source of the elevated molybdenum and fluoride concentrations in the post-closure monitoring wells.

During implementation of the Phase I RFI, the following actions were taken to evaluate soil and groundwater conditions in this portion of the site:

- statistical analysis of fluoride and molybdenum concentrations (for the period of 1989 to 1996) for the compliance wells
- collection of groundwater samples (Rounds 1 and 2) from the newly installed site wells and select existing wells (including the WT-series wells)
- comparison of groundwater data for this area (WT-series wells and Wells RFI-09 and RFI-11) with groundwater data for the remainder of the site
- collection of soil samples from the SWMU 13C area on a continuous basis for analysis of molybdenum (and other parameters) from:
  - RFI-09 (from ground surface to 10 ft-bgs)
  - RFI-11 (from ground surface to 14 ft-bgs)
- comparison of soils data for this area with soils data for the remainder of the site

The findings generated via implementation of these activities are discussed below.

5.1 Groundwater Investigation and Evaluation

The results of groundwater analyses for samples collected from the site wells during implementation of the Phase I RFI are presented in Table 4-9 through 4-12. A summary table of groundwater analytical data for samples collected from the background and compliance wells for this unit (WT-1A, WT-1B, WT-3, and WT-4) from 1989 through 1992 and 1995 through 1996 is presented as Table 5-1.

5.1.1 Compliance Well Groundwater Quality

Statistical analyses were performed on the groundwater data for molybdenum and fluoride generated for the background and the compliance monitoring wells (Table 5-1). The data from compliance monitoring wells, WT-3 and WT-4, were compared to the data from the background wells, WT-1A and WT-1B, to determine whether there is statistically significant evidence of molybdenum and fluoride impact. The statistical analyses were conducted in accordance with the U.S. EPA's guidance documents regarding statistical analysis of groundwater monitoring data at RCRA facilities (U.S. EPA 1989 and 1992).

Molybdenum concentrations detected in compliance wells were compared to molybdenum concentrations detected in background wells. Because the proportion of non-detectable concentrations in the data set was approximately 21 percent, a one-way non-parametric analysis of variance (ANOVA) was used for evaluating the molybdenum data (U.S. EPA 1989). In accordance with the U.S. EPA's guidance, non-detectable concentrations were represented as tied values (U.S. EPA 1992). The ANOVA results indicate that there is statistically significant evidence that molybdenum concentrations in WT-3 exceed the molybdenum concentrations detected in background wells (Appendix Q, Table Q-1). However, there is no statistical evidence that molybdenum concentrations in WT-4 exceed the molybdenum concentrations detected in background wells (Appendix Q, Table Q-1).

Fluoride concentrations detected in compliance wells were compared to fluoride concentrations detected in background wells. Because the proportion of non-detectable concentrations in the data set was less than 15 percent, a one-way parametric ANOVA was used for evaluating the fluoride data. Using the Shapiro-Francia test, the data were determined not to be normally distributed (U.S. EPA 1992). The data were transformed using natural logs and rechecked using the Shapiro-Francia test. The natural log of the data exhibited a normal distribution and was then analyzed using a one-way parametric ANOVA. The ANOVA results indicate that there is statistically significant evidence that the fluoride concentrations in both compliance wells, WT-3 and WT-4, exceed the fluoride concentrations in the background wells, WT-1A and WT-1B (Appendix Q, Table Q-1).

5.1.2 Site Groundwater Quality

Molybdenum and fluoride were detected in a majority of the groundwater samples collected at the site during implementation of the Phase I RFI. The range of detected concentrations, and those wells from which samples with relatively higher concentrations of molybdenum and fluoride were detected are as follows:

- molybdenum
  - molybdenum was detected in all of the Round 1 groundwater samples and in over one-half of the Round 2 groundwater samples
  - typical range of concentrations was 0.01 to 0.1 mg/l
  - exceptions:

Well I.D.	Range of Concentrations
LAW-5	0.32 to 0.33 mg/l
LAW-6	5.7 to 6.2 mg/l
MW-1	0.38 to 0.6 mg/l
MW-3	0.3 to 0.39 mg/l
RFI-03	1.2 to 1.3 mg/l
RFI-07	0.79 to 1.2 mg/l
RFI-09	0.41 to 0.42 mg/l
RFI-14	0.056 to 0.11 mg/l
RFI-16	0.59 to 0.71 mg/l
RFI-17	0.27 to 0.36 mg/l
WP-4	0.4 to 0.48 mg/l
WT-1A	0.27 to 0.32 mg/l
WT-2	0.22 to 0.29 mg/l
WT-3	1.7 to 2.4 mg/l
WT-4	0.12 to 0.13 mg/l

- fluoride
  - fluoride was detected in all of the groundwater samples collected at the site, excluding the sample collected from MW-1 during Round 1
  - typical range of concentrations of 0.18 to 0.34 mg/l
  - exceptions:

Well I.D.	Range of Concentrations
LAW-6	3.8 to 6.3 mg/l
MW-1	not detected at 0.1 mg/l to 0.56 mg/l
MW-3	0.49 to 0.63 mg/l
RFI-03	1.1 to 1.9 mg/l
RFI-07	0.56 to 0.72 mg/l
RFI-11	0.34 to 0.46 mg/l

Well I.D.	Range of Concentrations
RFI-12	0.49 mg/l
RFI-14	0.38 to 0.59 mg/l
RFI-17	0.57 to 0.76 mg/l
WT-1A	0.59 to 0.74 mg/l
WT-3	1.1 to 1.8 mg/l
WT-4	0.49 to 0.74 mg/l

Approximately one-half of the wells identified above are located proximate to current or historical pickling operations.

5.2 Soils Investigation and Evaluation

Soil samples representing the industrial waste landfill area were collected continuously from the ground surface to depths of 10 and 14 ft-bgs at RFI-09 and RFI-11 during implementation of the Phase I RFI. Each of these samples was submitted for analysis of TAL Inorganics (plus molybdenum, hexavalent chromium, and free cyanide), TCL SVOCs, TCL PCBs, and select miscellaneous parameters. Analysis for fluoride in the soil samples was not performed.

The results of these analyses, which were presented in Section 4.3, indicate similar concentrations of constituents at these locations relative to the rest of the site, including notable decreases in the molybdenum concentrations with increased sample depth. At RFI-09 (and for many other site locations) molybdenum is present in the surface soils (0 to 3 in-bgs and 0 to 2 ft-bgs) at concentrations above the soil action level promulgated in NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) 3028 (NYSDEC 1992a) of 390 mg/kg. For RFI-09 and RFI-11, the molybdenum concentrations decreased notably with increased sample depth and to below the soil action level. Similar conditions were observed throughout the site.

The soil samples collected from these locations (except the 0 to 3 in-bgs samples) were also submitted for analysis of TCL SVOCs. Phenanthrene and fluoranthene, both PAHs, were the only TCL SVOCs detected in these samples. Both constituents were detected in the 0 to 2 ft-bgs sample collected from RFI-11 at concentrations of 650 and 460 μg/kg; fluoranthene was also detected in the 2 to 4 ft-bgs sample collected from RFI-11 at a concentration of 260 μg/kg. Both of these constituents were sporadically detected at similar concentrations in samples collected across the site. TCL SVOCs were not detected in any of the RFI-09 samples.

SVOC TICs were detected in each of the samples collected from these locations (except the 0 to 3 in-bgs samples which were not analyzed for SVOCs). The range of reported concentrations for samples collected from RFI-09 was 9,560 to 12,760 μg/kg; the range of reported concentrations for the samples collected from RFI-11 was 1,204 to 3,422 μg/kg. Similar concentrations were reported for many of the site soil samples.

Similar to most of the site soil samples, the analytical data for samples collected from RFI-09 and RFI-11 indicated:

- TCL PCBs were not detected in any samples
- TPH was not detected or was present at concentrations near the method detection limits
- pHs ranged from 7.36 to 8.39 s.u.
- total phenols was not detected in any samples
- TOC was detected in all samples at concentrations ranging from 1.5 to 3 mg/l

The surficial soil samples (0 to 3 in-bgs) collected from both locations and the 4 to 6 ft-bgs sample collected from RFI-11 were selected for TCLP extraction and analysis of the extract. Molybdenum was not detected in the extract generated for any of these three samples. Of the TC metals, only barium and total chromium were detected, both at concentrations below the TC limits.

5.3 Conclusions

The analytical data for soil samples collected from the industrial waste landfill area do not indicate conditions that would pose a potential source of molybdenum to groundwater or conditions that otherwise differ from those observed across much of the site. Consequently, the potential effect from the landfilled materials in this area on groundwater quality, specifically molybdenum, is not supported by these data. In addition, the removal of approximately 5,000 cubic yards of material from the area of the former impoundment and backfilling of the excavation with clean fill effectively eliminated the potential effect from this unit on groundwater quality.

Based solely on the determination of significantly higher concentrations of molybdenum and fluoride in WT-3 and molybdenum in WT-4 than the background wells (WT-1A and WT-1B), it could be concluded that the former surface impoundment continues to impact groundwater quality and clean closure was not performed. However, this conclusion is not consistent with the thorough removal action performed almost 10 years ago (and the relative higher solubilities of molybdenum and fluoride). Furthermore, if the former impoundment continued to impact groundwater quality, the impact would be expected to consistently reflect higher concentrations other process-related constituents in groundwater samples from WT-3 and WT-4. Consequently, an evaluation of these constituents (i.e., total chromium, nickel, sulfate, nitrate, and chloride) was also performed.

- Total chromium was detected at similar concentrations in the background wells (WT-1A) and compliance wells (WT-3 and WT-4) for SWMU 17.

- Nickel was detected at slightly higher concentrations in the groundwater samples collected from WT-3.

- Chloride concentrations reported for samples collected from WT-1A and WT-1B were approximately 10-fold higher than those reported for samples collected from WT-3 and WT-4.

- Sulfate concentrations reported for samples collected from WT-3 and WT-4 were approximately 3-fold higher than those reported for samples collected from WT-1A and WT-1B.

- Nitrate, which was detected infrequently in site groundwater samples, was detected at generally similar concentrations in samples collected from WT-1A and WT-4, although the results for WT-4 were slightly lower than those for WT-1A.

Each of these constituents is associated with the historical and current process wastewater system at the facility, including operation of the impoundment. Based on the following factors, AL Tech believes that the historical and existing process sewer lines are the most probable source of impact observed not only for the compliance wells, but also the background wells:

- Chloride concentrations were significantly higher in samples collected from WT-1A and WT-1B, which are located in the proximity of the old grit chamber (WT-1A) and the "octopus" (an area of numerous process lines) (WT-1B) which received barium chloride discharges from the LAP West Pickle Facility from 1974 to 1989, as well as muriatic acid (HCl) from the metallurgical laboratory etch room (MetLab Etch Room). The laboratory started operations in 1960 and continues today.

- Sulfate concentrations were notably higher in samples collected from WT-3 and WT-4. These wells are located in the proximity of the spent sulfuric pit and spent acid pit, which receives and holds spent sulfuric acids.

- WT-4 is located close to the WWTP Outfall 5A sewer line, which historically has carried high nitrate effluent.

In addition, higher concentrations of barium reported for groundwater samples collected from WT-1A[1] are also believed to have resulted from historical discharge of waste from the barium chloride bath, located in the LAP West Pickle Facility, to the "octopus" and then to the old grit chamber for settling of solids before the wastewater was discharged to the former surface impoundment (Figure 5-1).

AL Tech is currently evaluating the most appropriate means of upgrading the existing pickling process sewer system. The upgrade is anticipated to remove further significant sources of spent pickle liquors to site groundwater.

[1] WT-1B which is located closest to the octopus is screened approximately 10 feet deeper than the other WT-series wells. Therefore, less impact from operation of the octopus, or other site operations, would be anticipated.

Table 5-1

SWMU 17, Post Closure Groundwater Monitoring Data (a)
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	WT-1A											
Sample Date:	1989				1990				1991			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Barium	0.200	BQL(b)	BQL	0.048	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Hexavalent Chromium	<0.010	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Molybdenum	1.230	4.3	2.50	0.84	3.59	4.17	1.78	2.09	2.02	2.94	2.86	2.67
Nitrate	<0.100	BQL	1.6	0.03	0.02	0.084	4.40	0.02	0.02	0.01	0.02	BQL
Chloride	4.200	69.2	159	140	26	33.0	100	76.0	46	89	100	76
Phenols	0.193	BQL	0.006	BQL	0.005	0.005	0.007	0.003	0.003	ND(c)	0.017	0.002
Fluoride	0.400	1.3	0.95	0.61	0.20	0.60	0.49	0.44	0.36	0.61	0.64	0.72
Chromium	0.009	BQL	BQL	0.031	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Copper	<0.020	BQL	BQL	0.041	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead	<0.005	BQL	BQL	0.014	0.025	0.023	BQL	0.005	BQL	BQL	BQL	0.009
Turbidity (NTU)	20.000	220	190	52	100	69	21	220	140	50	140	160
Iron	2.160	27.8	1.35	22.9	12.4	23.2	1.46	8.04	4.97	5.11	3.84	23.0
Sulfate	306.800	300	128	150	340	240	140	200	300	150	100	130
TOC	22.400	32.1	32.4	59.1	42.0	106	15.5	17.2	42.4	18.2	16.8	17.2
	21.900											
	22.000											
	21.300											
TOX (ug/l)	0.012	21.6	47.8	38.7	23	21	47	47	33	26	33	43
	0.010											
	0.008											
	0.009											
Specific Conductance (umhos/cm)	1484.000	1600	1290	923	976	920	1350	1100	11000	1701	1400	1500

Sample Location:	WT-1A				
Sample Date:	1992		1994	1995	1996
	1st	2nd			
Barium	BQL	0.10	2.6	0.12	0.12
Hexavalent Chromium	BQL	ND	ND	ND	0.01 U (e)
Molybdenum	2.25	3.25	0.66	0.83	0.34
Nitrate	0.08	0.06	ND	ND	0.38
Chloride	54	51	83	96	120
Phenols	ND	ND	ND	ND	0.005
Fluoride	0.54	0.95	0.65	0.83	0.74
Chromium	BQL	ND	0.47	0.02	0.023
Copper	BQL	0.01	ND	ND	0.03
Lead	BQL	ND	ND	ND	0.0023
Turbidity (NTU)	470	64	NA(d)	NA	29
Iron	0.37	57.9	3.6	4.3	2.8
Sulfate	160	100	130	82	170
TOC	26.5	16.6	15	20	9.5
TOX (ug/l)	22	28	ND	39	NA
Specific Conductance (umhos/cm)	1400	1300			1400

Table 5-1 (continued)

SWMU 17, Post Closure Groundwater Monitoring Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	WT-3										
Sample Date:	1989			1990				1991			
	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Barium	BQL	BQL	0.024	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Hexavalent Chromium	BQL	0.01	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Molybedenum	12.7	10	8	6.06	6.08	3.38	5.19	3.21	4.9	11.2	12.4
Nitrate	0.11	0.02	0.23	0.09	0.199	1.60	0.18	0.09	0.16	0.13	0.16
Chloride	43.4	39.6	33	40	37.0	31.0	30	30	28	40	40
Phenols	0.051	BQL	BQL	0.008	0.003	0.006	0.004	ND	ND	0.068	0.002
Fluoride	2.4	3.8	2.17	1.36	2.25	3.28	0.25	1.39	2.04	3.36	2.64
Chromium	BQL	BQL	0.02	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Copper	BQL	BQL	0.037	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead	BQL	BQL	BQL	0.024	0.010	BQL	BQL	BQL	BQL	BQL	BQL
Turbidity (NTU)	800	36	35	29	16	8.0	42	14	20	24	14
Iron	8.7	BQL	5.2	1.39	1.86	0.55	2.24	0.61	0.34	0.63	1.01
Sulfate	225	223	190	270	290	340	280	480	300	180	210
TOC	6.4	7.5	10.6	32.7	23.8	4.01	5.17	13.3	3.99	3.75	3.40
TOX (ug/l)	BQL	BQL	BQL	83	28	ND	ND	7.3	12	ND	5.7
Specific Conductance (umhos/cm)	1030	950	593	876	800	925	825	12000	1364	940	1140

	WT-3				
	1992		1994	1995	1996
	1st	2nd			
Barium	BQL	0.02	1.3	0.03	0.024
Hexavalent Chromium	BQL	ND	ND	ND	0.01 U
Molybedenum	10.4	16.2	3.0	3.7	2.1
Nitrate	0.70	0.16	0.08	0.20	0.017
Chloride	38	28	29	30	26
Phenols	0.002	0.004	ND	ND	0.005
Fluoride	1.94	2.21	1.9	1.9	1.8
Chromium	BQL	ND	ND	ND	0.025
Copper	BQL	ND	ND	ND	0.034
Lead	BQL	ND	ND	ND	0.0028
Turbidity (NTU)	18	14	NA	NA	113
Iron	0.77	0.37	0.36	1.0	2.4
Sulfate	300	270	390	310	500
TOC	3.68	ND	3.2	4.8	3.7
TOX (ug/l)	ND	ND	ND	11	NA
Specific Conductance (umhos/cm)	1200	1200	NA	NA	1440

Table 5-1 (continued)

SWMU 17, Post Closure Groundwater Monitoring Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	WT-1B											
Sample Date:	1989				1990				1991			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Barium	0.2	BQL	BQL	0.059	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Hexavalent Chromium	<0.010	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Molybdenum	1.04	BQL	BQL	0.076	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Nitrate	0.25	0.08	0.04	0.36	0.85	0.170	4.60	1.00	0.16	0.32	0.08	1.7
Chloride	146.2	383	449	420	390	485	340	88.5	420	420	400	280
Phenols	0.068	0.006	BQL	BQL	0.002	0.003	0.007	0.003	0.002	ND	0.003	ND
Fluoride	0.3	0.9	0.38	0.60	0.14	0.60	0.28	0.24	0.23	0.25	0.36	0.47
Chromium	0.013	BQL	BQL	0.015	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Copper	<0.020	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead	<0.005	BQL	BQL	0.015	0.047	0.027	BQL	0.005	BQL	BQL	BQL	0.007
Turbidity (NTU)	24	280	140	36	200	28	88	220	160	30	240	70
Iron	3.5	40.1	0.32	18.8	16.3	24.6	BQL	6.88	14.4	8.2	4.53	21.2
Sulfate	143.4	100	55	130	180	92	110	280	170	76	82	200
TOC	6.6 6.6 6.2 6.2	19.7	34.5	33.8	50.8	58.7	4.50	4.10	29.3	1.26	2.87	2.32
TOX (ug/l)	<0.010 <0.010 <0.010 <0.010	BQL	15.5	86.4	16	ND	13	9.2	12	34	8.3	ND
Specific Conductance (umhos/cm)	1094	1960	1920	1350	1300	1400	1750	1000	13000	2304	2000	1820

Sample Location:	WT-1B				
Sample Date:	1992		1994	1995	1996
	1st	2nd			
Barium	0.32	0.12	1.2	0.19	0.082
Hexavalent Chromium	BQL	ND	ND	ND	0.01 U
Molybdenum	BQL	0.43	0.11	0.15	0.039
Nitrate	1.36	0.60	0.50	0.29	0.1 U
Chloride	420	380	260	170	280
Phenols	ND	0.004	ND	ND	0.005
Fluoride	0.28	0.35	0.34	0.53	0.23
Chromium	0.05	ND	ND	0.02	0.0078 U
Copper	0.06	0.01	ND	0.01	0.013
Lead	0.014	ND	ND	ND	0.0023
Turbidity (NTU)	96	380	NA	NA	79
Iron	51.4	78.9	8.9	13.0	0.72
Sulfate	190	190	150	130	170
TOC	40.7	ND	3.3	4.8	2.3
TOX (ug/l)	ND	6.8	0.10	24.0	NA
Specific Conductance (umhos/cm)	2000	1900			1560

Table 5-1 (continued)

SWMU 17, Post Closure Groundwater Monitoring Data
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Sample Location:	WT-4											
Sample Date:	1989				1990				1991			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Barium	0.3	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Hexavalent Chromium	<0.010	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Molybdenum	1.44	2.5	3.24	0.53	1.72	1.23	1.56	BQL	BQL	1.09	2.89	1.59
Nitrate	0.11	0.04	0.03	0.05	0.01	0.246	4.10	0.05	0.06	0.07	0.03	0.06
Chloride	96.1	75.3	39.6	69	59	61.5	56.0	65.0	56	58	80	78
Phenols	0.04	0.013	BQL	BQL	0.033	BQL	0.006	0.002	ND	0.005	ND	ND
Fluoride	0.50	1.9	3.3	0.77	0.44	0.89	1.71	1.50	0.73	0.97	1.50	1.22
Chromium	0.002	BQL	BQL	0.012	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Copper	<0.02	BQL	BQL	0.017	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead	<0.005	BQL	BQL	BQL	0.028	0.011	BQL	BQL	BQL	BQL	BQL	BQL
Turbidity (NTU)	4.6	10	24	5.6	5.6	10	3.6	14	2.0	4.8	5.8	1.6
Iron	0.10	1.1	BQL	0.20	0.30	0.63	0.39	0.31	0.32	0.40	0.82	0.45
Sulfate	704.6	380	235	340	310	340	200	230	280	260	240	230
TOC	4.4 4.7 4.2 4.3	29.3	29.4	33.9	79.8	12.5	3.87	5.35	15.6	4.21	6.24	5.00
TOX (ug/l)	<0.010 <0.010 <0.010 <0.010	BQL	13.5	23.0	15	20	14	11	12	11	11	14
Specific Conductance (umhos/cm)	1998	1600	860	908	1020	1380	925	1150	11500	1568	1500	1570

Sample Location:	WT-4					RFI-09
Sample Date:	1992		1994	1995	1996	1996
	1st	2nd				
Barium	BQL	0.04	2.0	0.07	0.045	0.047
Hexavalent Chromium	BQL	ND	ND	ND	0.01 U	0.01 U
Molybdenum	BQL	1.20	0.20	0.18	0.14	0.48
Nitrate	0.03	0.09	ND	0.05	0.1 U	0.1 U
Chloride	65	63	75	70	61	14
Phenols	ND	0.002	ND	ND	0.005	0.005
Fluoride	0.96	1.05	0.62	0.81	0.71	0.24
Chromium	BQL	ND	ND	0.02	0.017	0.041
Copper	BQL	ND	ND	ND	0.017	0.049
Lead	BQL	ND	ND	ND	0.0017 U	0.0049
Turbidity (NTU)	2.2	6.4	NA	NA	13	10
Iron	BQL	0.84	ND	0.87	0.8	0.078
Sulfate	310	380	260	260	300	120
TOC	6.28	2.88	3.60	4.8	3.8	3.1
TOX (ug/l)	8.6	16	0.05	19.0	NA	NA
Specific Conductance (umhos/cm)	1600	1700			1430	991

a/ All concentrations in mg/l, except as otherwise noted.
b/ BQL = below quantifiable limit
c/ ND = constituent not detected
d/ NA = not analyzed
e/ U = constituent not detected at noted detection limit

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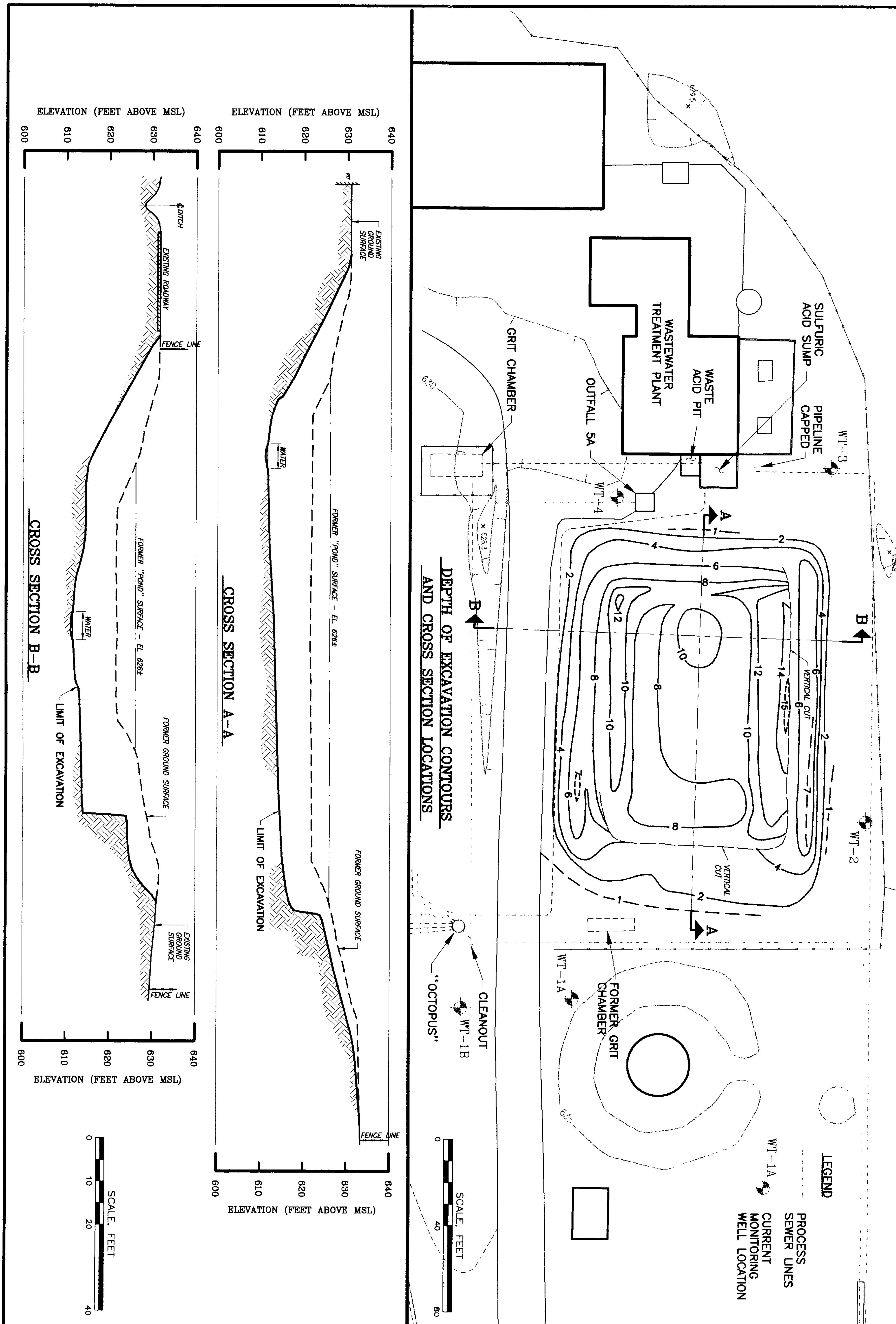


ESC ENVIRONMENTAL STRATEGIES CORPORATION Four Penn Center West, Suite 315 Pittsburgh, Pennsylvania 15276 (412) 787-5100	Figure 5-1 SWMU 17 - CLOSED SURFACE IMPOUNDMENT	AL TECH SPECIALTY STEEL CORPORATION DUNKIRK, NEW YORK PHASE I RFI	Drawn By: RAZ 091798 Checked: 10/13/98 Approved: DWG Number: 483803-B13

6.0 Evaluation of Analytical Data and Potentially Applicable Criteria

Analytical data for environmental media samples generated during the Phase I RFI have been compared with potentially applicable regulatory criteria as specified in the Phase I RFI Work Plan. The results of the comparisons are used to aid in identification of the most appropriate subsequent action (i.e., no action, Phase II, ICM, or CMS) for each SWMU, AOC, and CAMU.

6.1 Soils Evaluation

Soil sample analytical data were evaluated with the following potentially applicable criteria:

- NYSDEC, November 30, 1992, "Contained-In Criteria for Environmental Media," TAGM 3028 (revised 1997) (NYSDEC 1992a)
- U.S. EPA, May 1996, "Soil Screening Guidance: Technical Background Document," EPA/540/R-95/138
- 40 Code of Federal Regulations, Part 264, Subpart S, Vol. 55, No. 145, July 27, 1990
- NYSDEC, August 1992, "Petroleum-Contaminated Soil Guidance Policy," Spill Technology and Remediation Series (STARS) Memo #1 (NYSDEC 1992b).

The potentially applicable criteria for each of the TAL Inorganics (plus molybdenum, hexavalent chromium, and free cyanide), TCL VOC, TCL SVOCs, TCL PCBs, and miscellaneous parameters are presented in Table 6-1. Table 6-2 identifies the samples in which constituents were detected at concentrations above potentially applicable criteria, hereinafter referred to as "elevated concentrations." Soil sample data, relative to the potentially applicable criteria, are discussed in the following sections on an area-by-area basis, where appropriate.

The results of comparison of the 95 UCLs calculated for background soils and the NYSDEC cleanup objectives for inactive hazardous waste sites (TAGM 4046)

(NYSDEC 1994a), which are largely dependent on site background concentrations, are not presented in Table 6-2 for these reasons:

- the nature of operations at the facility has resulted in the majority of soil samples collected from the site having detected concentrations of inorganics that exceed background
- this is an active facility and cleanup to background is not feasible
- site-specific cleanup limits will be established during the RFI process, as necessary
- TAGM 4046 is applicable to inactive hazardous waste sites [1]

6.1.1 Background Soils

Arsenic was detected in each of the surficial background soil samples (0 to 3 in-bgs) at elevated concentrations. Beryllium was detected at elevated concentration in samples collected from BS-01, BS-03, and BS-07. Consequently, and because these metals were fairly consistently detected at elevated concentration in site soils, they are believed to be representative of regional conditions and are, therefore, not discussed further below.

Total chromium was detected at elevated concentrations in three of the seven background soil samples: BS-02, BS-03, and BS-06.

Four PAHs (TCL SVOCs) were detected at elevated concentrations in the sample collected from the BS-01 location:

- benzo(a)anthracene
- benzo(b)fluoranthene
- benzo(k)fluoranthene
- benzo(a)pyrene

Although several other PAHs were detected in the sample collected from BS-01, none were present at elevated concentrations. No other organic compounds were detected in the background soil samples.

[1] AL Tech presumes that the registry listing for the Dunkirk facility will be deleted or amended as appropriate and that the facility will not be subject to the inactive site program requirements.

6.1.2 Transformer Soils

Cadmium, antimony, or both, were detected at elevated concentrations in each of the surficial soil samples (0 to 3 in-bgs) collected from the transformer areas.

Total chromium and nickel were detected at elevated concentrations in each of the samples collected for analysis of metals:

- Transformer T1 at Locations T1-01, T1-03, T1-05, and T1-07
- Transformer T2 at Locations T2-01 and T2-03
- Transformer T3 at Locations T3-01 and T3-03

Molybdenum was only detected at elevated concentrations in samples collected at T2-03, T3-01, and T3-03.

The TC limits were not exceeded in the extract from either of the two transformer area soil samples submitted for TCLP extraction (ALT-SS-T1-03 and ALT SS-T3-03).

PCBs were only detected at elevated concentrations (i.e., above 1 mg/kg) in the three samples collected from Transformer T3:

Sample Location	Detected Aroclor	Reported Concentration (mg/kg)
T3-01	1248	87
T3-02	1242	3.9
	1260	6.4
T3-03	1254	1.1

6.1.3 SWMU Soils

During implementation of the Phase I RFI, soil samples were collected specifically to address potential impact from 13 site SWMUs. The results of comparison between analytical data generated for samples collected from these locations and potentially applicable criteria are discussed in the following sections.

6.1.3.1 SWMU 5/Former Grinding Room Pickling Process

Cadmium was detected at an elevated concentration in the surface soil sample (0 to 2 ft-bgs) collected from RB-01. Total chromium was also detected at an elevated concentration in the surface soil sample collected from this location. Total chromium was not detected at an elevated concentration in samples collected at this location from greater depths (to 9 ft-bgs).

6.1.3.2 SWMU 9/Former TCA Container Storage Area

No metals or organic constituents (which are of particular interest in this SWMU) were detected at elevated concentrations in soil samples collected from RB-02.

6.1.3.3 SWMU 11/Shark Pit Residual Material Loading Area

Total chromium, molybdenum, and nickel were detected at elevated concentrations in the surface soil samples (0 to 3 in-bgs and 0 to 2 ft-bgs) collected from RFI-10. Only total chromium was detected at an elevated concentration in a subsurface sample collected at this location (8 to 10 ft-bgs).

6.1.3.4 SWMU 13/Crucible Disposal Areas and SWMU 14/Waste Disposal Areas

There are five areas defined within these two general SWMUs. A minimum of one test pit or boring was completed in each area:

SWMU	Test Pit/ Boring
13A	TP-08
13B and 14B	TP-04 and RFI-04
13C	RFI-11
14A	TP-07
14C	TP-11

Cadmium, barium, manganese, and antimony were detected at elevated concentrations infrequently in soil samples collected from these locations.

Total chromium and nickel were detected at elevated concentrations in each of the surface soil samples (0 to 3 in-bgs and 0 to 2 ft-bgs) collected from these locations. Total chromium was also detected at elevated concentrations in samples collected from greater depths at four of these locations:

Location	Sample Interval
TP-08	7 to 8 ft-bgs
RFI-11	2 to 4 ft-bgs
	6 to 8 ft-bgs
TP-07	3 to 4 ft-bgs
TP-11	11 to 12 ft-bgs

Samples were not collected at TP-08 or TP-11 from depths greater than 8 and 12 ft-bgs; therefore, the vertical extent of elevated total chromium concentrations is not known. Analytical data for samples collected at Locations RFI-11 and TP-07 indicated that total chromium was not detected at elevated concentrations in samples collected at depths greater than 8 ft-bgs.

The TC limits were not exceeded in extract from any of the five soil samples selected for TCLP extraction from these locations (ALT-SB-TP07-0304, ALT-SB-TP11-0002D, ALT-SB-RFI04-0002, ALT-SS-RFI11-03, and ALT-SB-RFI11-0406).

Several PAHs (TCL SVOCs) were detected in surface soil samples collected from these locations at elevated concentrations:

Location	Sample Interval	Constituent
SWMUs 13B and 14B/		
TP-04	0 to 2 ft-bgs	benzo(a)anthracene
RFI-04	0 to 2 ft-bgs	benzo(a)anthrancene
		benzo(a)pyrene
		dibenzo(a,h)anthrancene
SWMU 14A/		
TP-07	0 to 3 in-bgs	benzo(a)anthrancene
		benzo(b)fluoranthene
		benzo(k)fluoranthene
		benzo(a)pyrene

These constituents were not detected at elevated concentration in any of the subsurface soil samples collected from these locations.

PCB Aroclor 1260 was detected at an elevated concentration of 31 mg/kg in the sample collected from 8 to 10 ft-bgs at RFI-11. No other Aroclors were detected in soil samples collected from this location.

6.1.3.5 SWMU 15/Former Waste Acid Surface Impoundments

Cadmium was detected at an elevated concentration in the sample collected from 10 to 12 ft-bgs at RFI-02.

Total chromium was detected at elevated concentrations in the surface soil samples (0 to 3 in-bgs and 0 to 2 ft-bgs) collected from this location. Nickel was detected at an elevated concentration in the 0 to 3 in-bgs sample. These constituents were not detected at elevated concentrations in samples collected from greater depths at this location (to 12 ft-bgs).

6.1.3.6 SWMU 16/Willowbrook Pond

Total chromium was detected at elevated concentrations in each of the soil samples collected from RFI-14 (0 to 3 in-bgs and 2 to 4 and 12 to 14 ft-bgs). Total chromium was only detected at an elevated concentration in the surficial soil sample (0 to 3 in-bgs) collected from RFI-15. Nickel was detected at elevated concentrations in the surficial soil samples collected from both RFI-14 and RFI-15 and the sample collected from 2 to 4 ft-bgs at RFI-14.

PCB Aroclor 1248 was detected at an elevated concentration of 2.6 mg/kg in the surficial soil sample (0 to 3 in-bgs) collected from RFI-15. No other Aroclors were detected in soil samples collected from this location.

6.1.3.7 SWMU 17/Closed Surface Impoundment and SWMU 22/Wastewater Treatment Plant Areas

Total chromium was detected at elevated concentrations in several soil samples collected from RFI-09 including: 0 to 3 in-bgs and 0 to 2 and 8 to 10 ft-bgs. Molybdenum was detected at an elevated concentration in the surficial soil sample (0 to 3 in-bgs) collected from this location. Nickel was detected at elevated concentrations in the surface soil samples (0 to 3 in-bgs and 0 to 2 ft-bgs). Neither molybdenum nor nickel was detected at elevated concentrations in samples collected at this location from greater depths (to 10 ft-bgs).

The TC limits were not exceeded in the extract from the one sample selected for TCLP extraction from this location (ALT-SS-RFI09-03).

6.1.3.8 SWMU 18/Grinding Dust Transfer Pile

Cadmium and vanadium were detected at elevated concentrations in the surficial soil samples (0 to 3 in-bgs) collected from TP-02, in the inactive grinding dust transfer pile area. Antimony was detected at an elevated concentration in the sample collected from 9 to 10 ft-bgs at this location.

Total chromium and nickel were detected at elevated concentrations in the surface soil samples (0 to 3 in-bgs and 0 to 2 ft-bgs) and the sample collected from 9 to 10 ft-bgs at TP-02. Molybdenum was detected at elevated concentrations in the samples collected from 0 to 2 and 9 to 10 ft-bgs at location. None of these constituents were detected at elevated concentrations in the intermediate sample collected from 3 to 4 ft-bgs.

The TC limits were not exceeded in the extract from two samples that were selected for TCLP extraction from this location (ALT-SS-TP02-03 and ALT-SB-TP02-0910).

Benzo(a)anthrancene was detected at an elevated concentration in the sample collected from 9 to 19 ft-bgs at TP-02.

6.1.3.9 SWMU 19/Former Waste Pile

Cadmium and lead were detected at elevated concentrations in the surface soil sample (0 to 2 ft-bgs) collected from TP-06.

Total chromium, molybdenum, and nickel were detected at elevated concentrations in the 0 to 2 ft-bgs sample collected from this location. Total chromium and nickel were also detected at elevated concentrations in the sample collected from 7 to 8 ft-bgs. However, neither of these constituents was detected at elevated concentrations in the intermediate sample collected from 3 to 4 ft-bgs.

Benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, and benzo(a)pyrene were each detected at an elevated concentration in the sample collected from 0 to 2 ft-bgs at TP-06.

6.1.3.10 SWMU 20/Waste Asbestos Accumulation Area

Asbestos was not present in the two surficial soil samples (0 to 3 in-bgs) collected from this SWMU at GS-01 and GS-02.

Cadmium was detected in the sample collected from GS-02.

Total chromium and nickel were detected at elevated concentrations in the surficial soil samples collected from GS-01 and GS-02. (These data are also discussed as part of the evaluation of general site conditions in Section 6.1.4.)

6.1.3.11 SWMU 21/Grinding Swarf Storage Area

Total chromium, molybdenum, and nickel were detected at elevated concentrations in the sample collected from 0 to 2 ft-bgs at TP-03. Total chromium and nickel were also detected at elevated concentrations in the sample collected from 5 to 6 ft-bgs at this location. Only total chromium was detected at an elevated concentration in the sample collected from 11 to 12 ft-bgs.

The TC limits were not exceeded in the extract for the one sample selected for TCLP extraction from this location (ALT-SB-TP03-0002).

6.1.3.12 SWMU 23/API Oil/Water Separator

Total chromium and nickel were detected at elevated concentrations in each of the samples collected from RFI-03 including: 0 to 3 in-bgs and 0 to 2 and 4 to 6 ft-bgs.

Phenanthrene was detected at an elevated concentration in the sample collected from 0 to 2 ft-bgs at RFI-03.

6.1.4 AOC Soils

During implementation of the Phase I RFI, soil samples were collected to address potential impact from five site AOCs. The results of comparison between analytical data generated for samples collected from these locations and potentially applicable criteria are discussed in the following sections.

6.1.4.1 AOC 3/Cooling Towers

Cadmium, manganese, and vanadium were detected at elevated concentrations in the surficial soil sample (0 to 3 in-bgs) collected from RB-07 in AOC 3A (Rust Furnace Cooling Tower).

Total chromium was detected at an elevated concentration in the shallower samples collected from RB-07: 0 to 3 in-bgs and 0 to 2 and 6 to 8 ft-bgs. Molybdenum was only detected at an elevated concentration in the surficial soil sample (0 to 3 in-bgs) collected from this location. Nickel was only detected in the soil samples collected from 0 to 3 in-bgs and 0 to 2 ft-bgs. None of these metals was detected at an elevated concentration in the sample collected from 8 to 10 ft-bgs at RB-07.

1,4-Dichlorobenzene (TCL SVOC) was detected at an elevated concentration in the sample collected from 6 to 8 ft-bgs at RB-07. Four PAHs (TCL SVOCs) were detected at elevated concentrations in both of the samples collected from 0 to 2 and 6 to 8 ft-bgs at this location:

- benzo(a)anthracene
- benzo(b)fluoranthene
- benzo(k)fluoranthene
- benzo(a)pyrene

Indeno(1,2,3,-cd)pyrene and dibenzo(a,h)anthrancene were also detected at elevated concentrations in the 0 to 2 ft-bgs sample. However, none of these constituents were detected in the sample collected from 8 to 10 ft-bgs at RB-07.

PCBs were detected at elevated concentrations in two samples collected at RB-07:

Sample Interval	Detected Aroclor	Reported Concentration (mg/kg)
0 to 2 ft-bgs	1242	21
6 to 8 ft-bgs	1242	3.9

Total chromium was detected at an elevated concentration in the surficial soil sample (0 to 3 in-bgs) collected from RB-06 in AOC 3B (HAP Cooling Tower). No other constituents were detected at elevated concentrations in the soil samples collected at this location.

6.1.4.2 AOC 6/Former Above Ground Fuel Oil Tank

Four PAHs (TCL SVOCs) were detected at elevated concentrations in the surface soil sample (0 to 2 ft-bgs) collected at TP-09, including:

- benzo(a)anthracene
- benzo(b)fluoranthene
- benzo(k)fluoranthene
- benzo(a)pyrene

No PAHs were detected in the samples collected from greater depths (to 8 ft-bgs) at this location.

6.1.4.3 AOC 7/Scrap Steel Storage Areas

Three test pits were completed in the scrap steel storage areas:

AOC	Test Pit
AOC 7A	TP-01
AOC 7B	TP-05
AOC 7C	TP-10

Total chromium was detected at elevated concentration the soil samples collected from the surface (0 to 2 ft-bgs) and from 8 to 9 ft-bgs at TP-01. Nickel was also detected at an elevated concentration in the surface soil sample collected from this location. Neither metal was detected at an elevated concentration in the intermediate sample collected from 3 to 4 ft-bgs.

Lead was detected at an elevated concentration in the surface soil sample (0 to 2 ft-bgs) collected from TP-05. Total chromium and nickel were detected at elevated concentrations in each of the soil samples collected from this location: 0 to 3 in-bgs and 0 to 2, 2 to 3, and 8 to 9 ft-bgs.

Cadmium was detected at an elevated concentration in the surface soil sample (0 to 2 ft-bgs) collected from TP-10. Total chromium and nickel were also detected at elevated concentrations in the surface soil sample and the sample collected from 8 to 9 ft-bgs at this location. Molybdenum was only detected at an elevated concentration in the surface soil sample.

The TC limits were not exceeded in the extract for the three samples selected for TCLP extraction from this location (ALT-SB-TP05-0002, ALT-SB-TP05-0809, and ALT-SB-TP10-0809).

Five PAHs (TCL SVOCs) were detected at elevated concentrations in one or more of the samples collected at TP-05 (AOC 7 B) from 0 to 3 in-bgs and 0 to 2 and 2 to 3 ft-bgs. However, these constituents were not detected at elevated concentrations in the sample collected from 8 to 9 ft-bgs at this location.

- benzo(a)anthracene
- benzo(b)fluoranthene
- benzo(k)fluoranthene
- benzo(a)pyrene
- dibenzo(a,h)anthracene

6.1.4.4 AOC 8/Former Coal Storage Area

Total chromium and nickel were detected at elevated concentration in both of the surface soil samples (0 to 3 in-bgs and 0 to 2 ft-bgs) collected from RB-03.

Four PAHs (TCL SVOCs) were detected at elevated concentrations in the surface soil sample (0 to 2 ft-bgs) collected at RB-03.

- benzo(a)anthracene
- benzo(b)fluoranthene
- benzo(k)fluoranthene
- benzo(a)pyrene

The 0 to 2 ft-bgs sample was the deepest sample collected at this location.

6.1.4.5 AOC 11/Former Coal Gasification Plant

Total chromium and nickel were detected at elevated concentrations in samples collected from 0 to 3 in-bgs and 2 to 4 ft-bgs at RFI-06.

Five PAHs (TCL SVOCs) were detected at elevated concentrations in the sample collected from 0 to 3 in-bgs at RFI-06.

- benzo(a)anthracene
- benzo(b)fluoranthene
- benzo(k)fluoranthene
- benzo(a)pyrene
- dibenzo(a,h)anthrancene

Phenanthrene was the only PAH detected at an elevated concentration in the sample collected from 0 to 2 ft-bgs at RFI-06.

None of these metals or PAHS were detected at elevated concentrations in the sample collected from 4 to 6 ft-bgs at RFI-06.

6.1.5 CAMU Soils

During implementation of the Phase I RFI, soil samples were collected from interior or exterior borings, or both, completed proximate to the four CAMUs. The results of comparison between analytical data generated for samples collected from these locations and potentially applicable criteria are discussed in the following sections.

6.1.5.1 CAMU A/Former LAP West Pickling Facility

Two borings were completed exterior to the Former LAP West Pickle Facility: RB-04 and RB-05. Four borings were completed within the former pickle facility: LWB-01 through LWB-04.

Exterior Borings

Lead was detected at an elevated concentration in the surface soil samples (0 to 3 in-bgs and 0 to 2 ft-bgs) collected from RB-04. Antimony was also detected at an elevated concentration in the 0 to 2 ft-bgs sample collected from this location.

Total chromium was detected at elevated concentrations in each of the samples collected at RB-04, except in the deepest sample collected at this location, from 7 to 9 ft-bgs. Nickel was also detected at elevated concentrations in each of the samples collected from this location, except for the sample collected from 4 to 6 ft-bgs.

The TC limit for lead was exceeded in the extract for the soil sample selected for TCLP extraction from RB-04 (ALT-SB-RB04-0002).

Total chromium was detected at elevated concentrations in each of the samples collected at RB-05 (0 to 10 ft-bgs). Hexavalent chromium was also detected at an elevated concentration in the sample collected from 2 to 4 ft-bgs at this location. Nickel was only detected at an elevated concentration in the surficial soil sample (0 to 3 in-bgs).

Interior Borings

Cadmium was detected at elevated concentrations in one soil sample each collected from LWB-01 (2 to 4 ft-bgs) and LWB-04 (0 to 2 ft-bgs).

Total chromium was detected at elevated concentrations in each of the interior borings, except the samples collected from 0 to 2 ft-bgs at LWB-03 and LWB-04. Hexavalent chromium was detected at elevated concentrations in the samples collected from 6 to 8 ft-bgs at LWB-02 and LWB-03.

The TC limit for total chromium was exceeded in the extract for the sample selected for TCLP extraction from LWB-03 (ALT-SB-LWB03-0608).

6.1.5.2 CAMU B/Former BRP Pickling Facility

One boring was completed exterior to the Former BRP Pickle Facility: RFI-13. Two borings were completed within the former pickle facility: BRB-01 and BRB-03.

Exterior Boring

Total chromium was detected at an elevated concentration in the surficial soil sample (0 to 3 in-bgs) collected from RFI-13. Total chromium was not detected at elevated concentrations in the deeper samples collected at this location (to 18 ft-bgs).

Interior Borings

Cadmium was detected at an elevated concentration in the surface soil sample (0 to 2 ft-bgs) collected from BRB-01.

Total chromium was detected at elevated concentrations in the three shallow samples collected from BRB-01 (0 to 2 and 2 to 4 ft-bgs) and BRB-03 (1 to 3 ft-bgs). Total chromium was not detected at elevated concentrations in the deeper samples collected at BRB-01 (15 to 17 ft-bgs).

6.1.5.3 CAMU C/BFS Pickling Facility

Total chromium and nickel were detected at elevated concentrations in samples collected from 0 to 3 in-bgs and 2 to 4 ft-bgs at RFI-07, but were not detected at an elevated concentration in the sample collected from 6 to 8 ft-bgs.

No constituents were detected at elevated concentrations in the samples collected at RFI-17 (to 8 ft-bgs).

6.1.5.4 CAMU D/Former LAP East Pickling Facility

One boring was completed exterior to the Former LAP East Pickle Facility: RFI-05. Three borings were completed within the former pickle facility: LEB-01, LEB-02, and LEB-03.

Exterior Boring

Total chromium and nickel were detected at elevated concentrations in the surficial soil sample (0 to 3 in-bgs) collected from RFI-05.

Carbon disulfide (TCL VOC) was detected at an elevated concentration in the sample collected from 12 to 14 ft-bgs at RFI-05.

Interior Borings

Cadmium was detected at an elevated concentration in the sample collected from 11 to 13 ft-bgs at LEB-03.

Total chromium was detected at elevated concentrations in soil samples collected from LEB-01 (2 to 4 ft-bgs) and LEB-03 (0 to 2 ft-bgs).

TCL VOCs were detected at elevated concentrations in five of seven soil samples collected from LEB-02 and LEB-03:

Location	Sample Depth	Constituent
LEB-01	2 to 4 ft-bgs	trichloroethene
LEB-02	6 to 8 ft-bgs	trichloroethene
LEB-03	0 to 2 ft-bgs	trichloroethene
	7 to 9 ft-bgs	trichloroethene
		cis-1,2-dichloroethene
	11 to 13 ft-bgs	trichloroethene
		cis-1,2-dichloroethene

6.1.6 General Site Soils

Soil samples were collected from the following locations to evaluate general site conditions: GS-01 through GS-05, RFI-01, RFI-08, RFI-12, and RFI-16. (Data for GS-01 and GS-02 were also addressed under SWMU 20, Waste Asbestos Accumulation Area, in Section 6.1.3.10.)

Cadmium was detected at elevated concentrations in the surficial soil samples (0 to 3 in-bgs) collected from GS-02, GS-03, and RFI-08. Antimony was detected at elevated concentrations in the surficial soil samples collected from GS-03 and RFI-08. Lead was detected at an elevated concentration in the surficial soil sample collected from RFI-08.

Total chromium, molybdenum, and nickel detected at elevated concentrations in the surficial soil samples collected from each of the general site locations.

Location	Constituent
GS-01	total chromium nickel
GS-02	total chromium nickel
GS-03	total chromium molybdenum nickel
GS-04	total chromium nickel
GS-05	total chromium nickel
RFI-05	total chromium
RFI-08	total chromium molybdenum nickel
RFI-12	total chromium
RFI-16	total chromium nickel

No exceedances of these metals occurred for subsurface soil samples collected from these locations (i.e., RFI-01, RFI-08, RFI-12, and RFI-16).

The TC limit for lead was exceeded in the extract for the sample selected for TCLP extraction from RFI-08 (ALT-SS-RFI08-03). The TC limits were not exceeded in the extract for the sample selected for TCLP extraction from GS-03 (ALT-SS-GS03-03).

Five PAHs (TCL SVOCs) were detected at elevated concentrations in the surficial soil sample (0 to 3 in-bgs) collected at RFI-08.

- benzo(a)anthracene
- benzo(b)fluoranthene
- benzo(k)fluoranthene
- benzo(a)pyrene
- indeno(1,2,3-cd)pyrene

These constituents were not detected at elevated concentrations in the other sample collected from 5 to 7 ft-bgs at this location.

6.2 Groundwater Evaluation

Groundwater analytical data were evaluated with the following potentially applicable criteria:

- NYSDEC, November 30, 1992, "Contained-In Criteria for Environmental Media," TAGM 3028 (revised 1997) (NYSDEC 1992a)

- New York Codes, Rules, and Regulations, Title 6, Chapter X, Parts 700-705 (New York State Water Quality Standards for Class GA Waters)

- U.S. Environmental Protection Agency, Final Maximum Contaminant Levels (MCLs) for drinking water

- 40 Code of Federal Regulations, Part 264, Subpart S, Vol. 55, No. 145, July 27, 1990

The potentially applicable criteria for each of the TAL Inorganics (plus molybdenum, hexavalent chromium, and free cyanide), TCL VOCs and SVOCs, and miscellaneous parameters are presented in Table 6-3. Constituents that were detected at concentrations in exceedance of one or more of the potentially applicable criteria (e.g., elevated concentrations) are presented in Table 6-4.

Wells associated with the following units have been separated out from the remaining site wells, as impact in these wells may be due to the unit operations:

- SWMU 16, Willowbrook Pond
- SWMU 17/Closed Surface Impoundment and SWMU 22/Wastewater Treatment Plant Areas
- CAMU A, Former LAP West Pickling House
- CAMU B, Former BRP Pickling Facility

- CAMU C, BFS Pickling Facility
- CAMU D, Former LAP East Pickling House

For metals, total concentrations were evaluated with the potentially applicable criteria, except for instances in which dissolved data were required due to high sample turbidity. The sample aliquot (total or dissolved) is identified in the Table 6-4. The area-by-area discussions presented below are focused on four key metals (hexavalent chromium, total chromium, molybdenum, and nickel) that are believed to be key indicator parameters of impact from site operations. Metals that were detected at elevated concentrations in Wells B-1 and RFI-01 (which may be representative of background conditions), included aluminum, beryllium, iron, manganese, sodium, thallium, and antimony. Most of these metals were also frequently detected at elevated concentrations in groundwater samples collected from other site monitoring wells. Therefore, exceedances of criteria for these metals are not discussed further below.

TCL PCBs were not detected in any of the site groundwater samples. Therefore, potentially applicable criteria for these compounds are not presented in Table 6-3.

Figure 6-1 identifies those locations from which groundwater samples were collected and the analytical data indicated exceedances of potentially applicable criteria (e.g., elevated concentrations) for key metals (i.e., total chromium, hexavalent chromium, molybdenum, and nickel) TCL VOCs, TCL SVOCs, and miscellaneous parameters.

6.2.1 SWMU 16 - Willowbrook Pond

Groundwater quality in this area was monitored during the Phase I RFI by Wells WP-1 through WP-4, RFI-14, and RFI-15.

Molybdenum was the only metal indicator parameter detected at an elevated concentration in groundwater samples collected from this area. Molybdenum was detected at an elevated concentration in the groundwater samples collected from WP-4 during Round 1 and Round 2.

cis-1,2-Dichloroethene and trichloroethene (TCL VOCs) were detected at elevated concentrations in groundwater samples collected from WP-4 during Round 1 and Round 2 and the groundwater sample collected from RFI-15 during Round 2.

Ammonia was detected at an elevated concentration in the sample collected from WP-4 during Round 1.

6.2.2 SWMU 17/Closed Surface Impoundment and SWMU 22/Wastewater Treatment Plant Areas

Groundwater quality in the SWMU 17 area was monitored during the Phase I RFI by Wells WT-1A, WT-1B, WT-2, WT-3, WT-4, and RFI-09. Groundwater quality in the area of SWMU 22 was monitored by RFI-09.

Molybdenum was detected at an elevated concentration in several of the groundwater samples collected from this area during both sampling rounds.

Well	Sample Round(s)
WT-1A	1 and 2
WT-1B	-
WT-2	1 and 2
WT-3	1 and 2
WT-4	-
RFI-09	1 and 2

Nickel was detected at an elevated concentration in the groundwater sample collected from WT-2 during Round 1.

Vinyl chloride, cis-1,2-dichloroethene, and trichloroethene (TCL VOCs) were detected at elevated concentrations in the groundwater samples collected from WT-2 during both sampling rounds.

Several of the miscellaneous parameters were detected at elevated concentrations in groundwater samples collected from this area:

Well	Sample Round	Constituent
WT-1B	1	chloride
WT-2	1	pH, total phenols, ammonia
	2	pH, total phenols, ammonia
WT-3	1	fluoride, sulfate
	2	sulfate

Sample Well	Round	Constituent
WT-4	1	sulfate
	2	sulfate

6.2.3 CAMU A - Former LAP West Pickling Facility

Groundwater quality in this area was monitored during the Phase I RFI by Wells LAW-5 and LAW-6.

Hexavalent chromium, total chromium, and molybdenum were detected at elevated concentrations in the groundwater samples collected from LAW-5 and LAW-6 during both sampling rounds.

Chloride, nitrate, fluoride, and sulfate were frequently detected at elevated concentrations in the groundwater samples collected from these wells.

Well	Round	Constituent
LAW-5	1	chloride, nitrate, sulfate
	2	chloride, sulfate
LAW-6	1	nitrate, fluoride, sulfate
	2	nitrate, fluoride, sulfate

The pHs of the samples were elevated (and basic in nature) in the samples collected from LAW-6 during both rounds.

6.2.4 CAMU B - Former BRP Pickling Facility

Groundwater quality in this area was monitored during the Phase I RFI by Wells MW-1 and RFI-13.

Both molybdenum and sulfate were detected at elevated concentrations in the groundwater samples collected during Rounds 1 and 2 from MW-1. Neither of these constituents was detected at elevated concentrations in the samples collected from RFI-13.

6.2.5 CAMU C - BFS Pickling Facility

Groundwater quality in this area was monitored during the Phase I RFI by Wells MW-3, RFI-07, and RFI-17.

Hexavalent chromium and total chromium were detected at elevated concentrations in groundwater samples collected from MW-3 during Rounds 1 and 2. Total chromium was detected at an elevated concentration in the groundwater sample collected from RFI-17 during Round 2.

Molybdenum was detected at elevated concentrations in each of the groundwater samples collected from MW-3, RFI-07, and RFI-17 during both sampling rounds.

Chloride, nitrate, and sulfate were frequently detected at elevated concentrations in the groundwater samples collected from these wells.

Well	Round	Constituent
MW-3	1	nitrate, sulfate
	2	chloride, nitrate, sulfate
RFI-07	1	nitrate, sulfate
	2	nitrate, sulfate
RFI-17	1	chloride, sulfate
	2	chloride, sulfate

6.2.6 CAMU D - Former LAP East Pickling Facility

Groundwater quality in this area was monitored during the Phase I RFI by Wells LAE-4 and RFI-05.

Key metal and miscellaneous parameters were not detected at elevated concentrations in groundwater samples collected from wells in this area (LAE-4 and RFI-05) during either sampling round.

Vinyl chloride, 1,1-dichloroethene, trans-1,2-dichloroethene, cis-1,2-dichloroethene, and trichloroethene (TCL VOCs) were detected at elevated concentrations in the groundwater samples collected from LAE-4 during Rounds 1 and 2.

Naphthalene (TCL SVOC) was detected at an elevated concentration in the groundwater sample collected from LAE-4 during Round 2. This was the only detection of a TCL SVOC at an elevated concentration in groundwater samples collected during the Phase I RFI at the site.

6.2.7 Site Groundwater

Site and perimeter groundwater quality were monitored during the Phase I RFI by Wells B-1 and RFI-01 (potentially representing background groundwater quality), RFI-02, RFI-03, RFI-04, RFI-06, RFI-08, RFI-10, RFI-11, RFI-12, and RFI-16.

Molybdenum was the only key metal detected at an elevated concentration in a groundwater samples collected from the general site and perimeter monitoring wells. This constituent was detected at elevated concentrations in the samples collected from RFI-03 and RFI-16 during Round 1 and Round 2.

cis-1,2-Dichloroethene and trichloroethene (TCL VOCs) were detected at elevated concentrations in the groundwater sample collected from RFI-16 during Round 1.

Fluoride, sulfate, and chloride were detected at elevated concentrations in these groundwater samples:

Well	Sample Round	Constituent
RFI-03	1	fluoride
RFI-06	1	sulfate
	2	sulfate
RFI-10	1	sulfate
	2	chloride

6.3 Surface Water and Sediment Evaluations

Surface water and sediment analytical data were evaluated with the following potentially applicable criteria:

- surface water
  - New York Codes, Rules, and Regulations, Title 6, Chapter X, Parts 700-705 (New York State Water Quality Standard for Class D Surface Water)
- sediment
  - NYSDEC, July 1994b, "Technical Guidance for Screening Contaminated Sediments"

6.3.1 Surface Water

The potentially applicable surface water criteria are presented, for detected parameters only, in Table 6-5. Because hardness was not determined for these samples, many of the water quality standards could not be calculated for evaluation (see Table 6-5).

Iron was the only parameter detected at an elevated concentration in the three surface water samples collected during implementation of the Phase I RFI. The Class D Water Quality Standard for iron is 0.3 mg/l; iron was detected in each of the surface water samples (and duplicate) at concentrations of 0.43 to 0.52 mg/l.

6.3.2 Sediment

The potentially applicable sediment criteria are presented, for detected parameters only, in Table 6-6. The screening guidance document provides two levels of impact for metals which are to be used as screening tools, not cleanup or action criteria/levels. The Lowest Effect Level indicates a level of sediment impact that can be tolerated by the majority of benthic organisms, but still causes toxicity to a few species. The Severe Effect Level indicates the concentration at which pronounced disturbance of the sediment dwelling community can be expected.

The levels of protection addressed for organic constituents include:

- Human Health Bioaccumulation
- Benthic Aquatic Life:
  - Acute Toxicity
  - Chronic Toxicity
- Wildlife Bioaccumulation

The following metals were detected at concentrations above the Low or Severe Effect Levels in one or more of the sediment samples:

- arsenic
- cadmium
- total chromium
- copper
- manganese
- nickel
- lead

Arsenic was detected in the sample collected from S-01, at a concentration of 7.7 mg/kg, which is slightly above the Low Effect Level of 6 mg/kg, but well below the Severe Effect Level of 33 mg/kg.

Cadmium was detected at similar concentrations in each of the three sediment (and duplicate) samples. All of the reported concentrations, which ranged from 2 to 3 mg/kg, were above the Lowest Effect Level of 0.6 mg/kg, but well below the Severe Effect Level of 9 mg/kg.

Total chromium was detected in sample collected from S-03 at a concentration of 47 mg/kg. The Lowest Effect Levels is 26 mg/kg. The total chromium concentrations reported for the sample collected from S-02 (430 mg/kg) and the duplicate from S-03 (560 mg/kg) were both above the Severe Effect Levels of 110 mg/kg.

Copper was detected in the samples collected from S-01 and S-02 (and the duplicate collected from S-03) at concentrations of 20 to 25 mg/kg. The Lowest Effect Level for copper is 16 mg/kg. All of the reported concentrations in these samples were well below the Severe Effect Level of 110 mg/kg.

Manganese was detected in the samples collected from S-01 and S-02 at concentrations of 710 and 480 mg/kg. The Lowest Effect Level for manganese is 460 mg/kg. These concentrations, however, are well below the Severe Effect Level of 1,100 mg/kg.

Nickel was detected in the samples collected from S-01 and S-03 at concentrations of 24 and 39 mg/kg. The Lowest Effect Level for nickel is 16 mg/kg. Nickel was also detected in the sample collected from S-02 (and the duplicate collected from S-03) at concentrations of 240 and 420 mg/kg, which are above the Severe Effect Level for nickel of 50 mg/kg.

Lead was detected in the sample collected from S-01 at a concentration of 40 mg/kg. The Lowest Effect Level is 31 mg/kg. Lead was also detected in the sample collected from S-03 at a concentration of 190 mg/kg, which is above the Severe Effect Level for lead is 110 mg/kg.

Screening criteria for TCL SVOCs which were exceeded in the sediment samples are based on human health bioaccumulation and benthic aquatic life chronic toxicity (Table 6-6). Several PAHs (TCL SVOCs) were detected in the samples collected from S-01 and S-03 at concentrations above the potentially applicable criteria.

Location	Constituent	Concentration	Criteria
S-01	chrysene	1,400 μg/kg	1,300 μg/kg
S-03	chrysene	2,500 μg/kg	1,300 μg/kg
	benzo(b)fluoranthene (a)	1,500 μg/kg	1,300 μg/kg
	benzo(k)fluoranthene (a)	1,500 μg/kg	1,300 μg/kg
	benzo(a)pyrene (a)	1,500 μg/kg	1,300 μg/kg

a/ These constituents were only detected at concentrations above the screening level criteria in the duplicate collected from S-03. However, it should be noted that the detection limits for the S-03 sample were elevated above the screening criteria (Table 4-14).

Table 6-1

Potentially Applicable Soil Criteria
Phase I RFI
Al Tech Specialty Steel Corporation
Dunkirk, New York Facility

Parameters	Background Soil Concentrations (a) Eastern United States	Background Soil Concentrations (a) Site 95 UCL	NYSDEC TAGM 3028 Soil Action Level (b)	U.S. EPA Technical Background Document for Soil Screening Levels Guidance (c) Ingestion (d)	U.S. EPA Technical Background Document for Soil Screening Levels Guidance (c) Inhalation (e)	U.S. EPA Technical Background Document for Soil Screening Levels Guidance (c) 20 DAF (f)	Proposed 40 CFR Part 264 Subpart S (g)	Human Health Guidance Values NYSDEC STARS Memo No. 1 (h)	TCLP (mg/l) (i)
TAL Inorganics (k) (mg/kg) (l)									
Silver	- (l)	0.7	390	390 (m)	-	34 (m,n)	200	-	5
Aluminum	33000	8956.34	-	-	-	-	-	-	
Arsenic	3 - 12 (o)	7.28	0.4	0.4 (p)	750 (p)	29 (n)	80	-	5
Barium	15 - 600	52.37	5500	5500 (m)	690000 (m)	1600 (n)	4000	-	100
Beryllium	0 - 1.75	0.21	0.15	0.1 (p)	1300 (p)	63 (n)	0.2	-	-
Calcium	130 - 35,000 (n)	784.07	-	-	-	-	-	-	-
Cadmium	0.1 - 1	2.46	78	78 (m,q)	1800 (p)	8 (n)	40	-	1
Cobalt	2.5 - 60 (o)	11.99	-	-	-	-	-	-	
Chromium (Total)	1.5 - 40 (o)	52.70	-	390 (m)	270 (p)	38 (n)	-	-	5
Chromium (Hexavalent)	-	-	390	390 (m)	270 (p)	38 (n)	400	-	-
Copper	1.0 - 50	23.08	-	-	-	-	-	-	
Iron	2000 - 550000	13164.79	-	-	-	-	-	-	-
Mercury	0.001 - 0.2	-	23	-	-	-	20	-	0.2
Potassium	8500 - 43000 (o)	736.20	-	-	-	-	-	-	-
Magnesium	100 - 5000	1418.27	-	-	-	-	-	-	-
Manganese	50 - 5000	217.83	11000	-	-	-	-	-	-
Molybdenum	-	22.16	390	-	-	-	-	-	-
Sodium	6000 - 8000	-	-	-	-	-	-	-	-
Nickel	0.5 - 25	39.08	1600	1600 (m)	13000 (p)	130 (n)	2000	-	-
Lead	- (r)	30.93	400	400 (s)	- (s)	- (s)	-	-	5
Antimony	-	0.89	31	31 (m)	-	5	30	-	-
Selenium	0.1 - 3.9	-	390	390 (m)	-	5 (n)	-	-	1
Thallium	-	-	7.8	-	-	0.7 (n)	-	-	-
Vanadium	1 - 300	14.67	550	550 (m)	-	6000 (m)	-	-	-
Zinc	9.0 - 50	68.55	23000	23000 (m)	-	12000 (m,n)		-	-
Cyanide (Total)	-	-	1600	-	-	-	2000	-	-
Cyanide (Free)	-	-	-	1600 (m)	-	40	-	-	-

Table 6-1 (continued)

Potentially Applicable Soil Criteria
Phase I RFI
Al Tech Specialty Steel Corporation
Dunkirk, New York Facility

Parameters	NYSDEC TAGM 3028 Soil Action Level	U.S. EPA Technical Background Document for Soil Screening Levels Guidance			Proposed 40 CFR Part 264 Subpart S	Human Health Guidance Values NYSDEC STARS Memo No. 1
		Ingestion	Inhalation	20 DAF		
Volatile Organic Compounds (ug/kg)						
Carbon Disulfide	7800000	7800000 (m)	720000 (t)	32000 (l)	8000000	-
cis-1,2-Dichloroethene	780000	780000 (m)	1200000 (t)	400	-	-
2-Butanone	47000000	-	-	-	4000000	-
Trichloroethene	58000	58000 (p)	5000 (o)	60	60000	-
Benzene	22000	22000 (p)	800 (o)	30	-	24000
2-Hexanone	-	-	-	-	-	-
Tetrachloroethene	12000	12000 (p)	11000 (o)	60	10000	-
Toluene	16000000	16000000 (m)	650000 (t)	12000	20000000	20000000
Chlorobenzene	1600000	1600000 (m)	130000 (l)	1000	2000000	-
Ethylbenzene	7800000	7800000 (m)	400000 (t)	13000	8000000	8000000
Styrene	21000	16000000 (m)	1500000 (t)	4000	20000000	-
Xylene (Total)	160000000	-	-	-	200000000	200000000
Semi-Volatile Organic Compounds (ug/kg)						
1,3-Dichlorobenzene	-	-	-	-	-	-
1,4-Dichlorobenzene	27000	27000 (p)	- (t)	2000	-	-
1,2,4-Trichlorobenzene	780000	780000 (m)	3200000 (u)	5000	2000000	-
Naphthalene	310000	3100000 (m)	-	84000 (l)	-	300000
2-Methylnaphthalene	-	-	-	-	-	-
Dimethyl phthalate	78000000	-	-	-	-	-
Acenaphthene	4700000	4700000 (m)	-	570000 (m)	-	5000000
Acenaphthylene	-	-	-	-	-	-
Dibenzofuran	-	-	-	-	-	-
Fluorene	3100000	3100000 (m)	-	560000 (m)	-	3000000
Phenanthrene	-	-	-	-	-	-
Anthracene	23000000	23000000 (m)	-	12000000 (m)	-	20000000
Carbazole	32000	32000 (p)	-	600 (p)	-	-
Fluoranthene	3100000	3100000 (m)	-	4300000 (m)	-	3000000
Pyrene	2300000	2300000 (m)	-	4200000 (m)	-	2000000
Butyl benzyl phthalate	16000000	16000000 (m)	930000 (u)	930000 (u)	20,000,000	-
3,3-Dichlorobenzidine	1000	1000 (p)	-	7 (p,v)	2000	-
Benzo(a)anthracene	900	900 (p)	-	2000 (p)	-	220
Chrysene	88000	88000 (p)	-	160000 (p)	-	-
Benzo(b)fluoranthene	900	900 (p)	-	5000 (p)	-	220
Benzo(k)fluoranthene	9000	9000 (p)	-	49000 (p)	-	220
Benzo(a)pyrene	90	90 (p,v)	-	8000	-	61
Indeno(1,2,3-cd)pyrene	900	900 (p)	-	14000 (p)	-	-
Dibenzo(a,h)anthracene	90	90 (p,v)	-	2000 (p)	-	14
Benzo(g,h,i)perylene	-	-	-	-	-	-

Table 6-1 (continued)

Potentially Applicable Soil Criteria
Phase I RFI
Al Tech Specialty Steel Corporation
Dunkirk, New York Facility

Parameters	NYSDEC TAGM 3028 Soil Action Level	U.S. EPA Technical Background Document for Soil Screening Levels Guidance			Proposed 40 CFR Part 264 Subpart S	Human Health Guidance Values NYSDEC STARS Memo No. 1
		Ingestion	Inhalation	20 DAF		
Polychlorinated Biphenyls (mg/kg)	1	1 (w)	-	-	0.09	-
Miscellaneous Parameters						
pH (s.u.)	-	-	-	-		
Total Petroleum Hydrocarbons (mg/kg)	-	-	-	-	-	-
Total Phenols (mg/kg)	-	47000 (m)	-	100 (m)	50000	-
Total Organic Carbon (mg/l)	-	-	-	-	-	-

a/ New York State Department of Environmental Conservation, January 24, 1994, "Determination of Soil Cleanup Objectives and Cleanup Levels," Technical and Administrative Guidance Memorandum (TAGM) 4046 (HWR-94-4046, revised).
Refer to Appendix O for calculation of the 95 percent upper confidence limit (95 UCL) background concentrations of the site.
b/ New York State Department of Environmental Conservation, November 30, 1992, "Contained-In Criteria for Environmental Media," Technical and Administrative Guidance Memorandum (TAGM) 3028 (revised 1997).
c/ U.S. Environmental Protection Agency, May 1996, "Soil Screening Guidance: Technical Background Document," EPA/540/R-95/128.
d/ Soil screening level (SSL) based on direct ingestion of soil.
e/ Soil screening level based on inhalation of volatiles or fugitive dust (in the case of metals and inorganics).
f/ Soil screening level based on the migration to groundwater pathway developed using a default DAF (dilution-attenuation factor) of 20 to account for natural processes that reduce contaminant concentrations in the subsurface.
g/ "Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities; Proposed Rule," 55 FR 30798; July 27, 1990.
h/ New York State Department of Environmental Conservation, August 1992, "Petroleum-Contaminated Soil Guidance Policy," Spill Technology and Remediation Series (STARS) Memo #1.
i/ TCLP = Toxicity Leaching Procedure.
j/ TAL = Target Analyte List; this list also includes hexavalent chromium, molybdenum, and free cyanide.
k/ mg/kg = milligrams per kilogram; ug/kg = micrograms per kilogram; s.u. = standard unit; mg/l = milligrams per liter.
l/ " - " indicates cleanup objective not established or background soils concentrations not available.
m/ Calculated values correspond to a noncancer hazard quotient of 1.
n/ SSL based on pH of 6.8.
o/ New York State background level.
p/ Calculated values correspond to a cancer risk of level of 1 in 1,000,000.
q/ SSL is based on dietary RfD.
r/ Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4 - 61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200 - 500 ppm.
s/ A screening level of 400 mg/kg has been set for lead based on *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities* (U.S. EPA, 1994).
t/ Chemical-specific properties are such that this pathway is not of concern at any soil contaminant concentration.
u/ Soil saturation concentration (C_{sat}).
v/ Level is at or below Contract Laboratory Program required quantitation limit for Regular Analytical Services (RAS).
w/ A preliminary remediation goal of 1 mg/kg has been set for PCBs based on Guidance on Remedial Actions for Superfund Actions for Superfund Sites with PCB Contamination (U.S. EPA, 1990) and on EPA efforts to manage PCB contamination.

Table 6-2

Soil Samples in Exceedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Area Description	Sample Location	Sample I.D.	Constituents Exceeding Criteria	Potentially Applicable Criteria (a)						
					Soil Screening Guidance					
				TAGM 3028	Ingestion	Inhalation	20 DAF	40 CFR Subpart S	STARS	TC Limits
Background										
	BS-01	SS-BS-01-03	Arsenic	X	X	- (b)	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Benzo(a)anthracene	-	X	-	-	-	X	NA
			Benzo(b)fluoranthene	-	-	-	-	-	X	NA
			Benzo(k)fluoranthene	-	-	-	-	-	X	NA
			Benzo(a)pyrene	X	X	-	-	-	X	NA
	BS-02	SS-BS-02-03	Arsenic	X	X	-	-	-	-	NA
			Total Chromium	-	-	-	X	-	-	NA
	BS-03	SS-BS-03-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	-	-	NA
			Total Chromium	-	-	-	X	-	-	NA
	BS-04	SS-BS-04-03	Arsenic	X	-	X	-	-	-	NA
	BS-05	SS-BS-05-03	Arsenic	X	-	X	-	-	-	NA
	BS-06	SS-BS-06-03	Arsenic	X	-	X	-	-	-	NA
			Total Chromium	-	-	-	X	-	-	NA
	BS-07	SS-BS-07-03	Arsenic	X	-	X	-	-	-	NA
			Beryllium	X	-	X	-	-	-	NA
AOC 1/Transformers										
	T1-01	SS-T1-01-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Cadmium	-	-	-	X	-	-	NA
			Total Chromium	-	-	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
			Lead	X	X	X	X	-	-	NA
	T1-02	SS-T1-02-03	-		-	-	-	-	-	NA
	T1-03	SS-T1-03-03	Arsenic	X	X	-	-	-	-	-
			Beryllium	X	X	-	-	X	-	-
			Cadmium	-	-	-	X	-	-	-
			Total Chromium	-	X	X	X	-	-	-
			Nickel	-	-	-	X	-	-	-
			Lead	X	X	X	X	-	-	-
			Antimony	-	-	-	X	-	-	NA
	T1-04	SS-T1-04-03	-	-	-	-	-	-	-	NA
	T1-05	SS-T1-05-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Cadmium	-	-	-	X	-	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
	T1-06	SS-T1-06-03	-	-	-	-	-	-	-	NA
	T1-07	SS-T1-07-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Cadmium	-	-	-	X	-	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
			Lead	X	X	X	X	-	-	NA
	T2-01	SS-T2-01-03	Arsenic	X	X	-	X	-	X	NA
			Beryllium	X	X	-	-	X	-	NA
			Cadmium	-	-	-	X	-	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
	T2-02	SS-T2-02-03	-	-	-	-	-	-	-	NA
	T2-03	SS-T2-03-03	Arsenic	X	X	-	X	X	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Cadmium	-	-	-	X	-	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Molybdenum	X	-	-	-	-	-	NA
			Nickel	-	-	-	X	-	-	NA
			Antimony	-	-	-	X	-	-	NA
	T3-01	SS-T3-01-03	Arsenic	X	X	-	-	-	-	-
			Beryllium	X	X	-	-	X	-	-
			Cadmium	-	-	-	X	-	-	-
			Total Chromium	-	X	X	X	-	-	-
			Molybdenum	X	-	-	-	-	-	-
			Nickel	X	X	-	X	X	-	-
			Antimony	-	-	-	X	-	-	NA
			PCBs	X	X	-	-	X	-	NA
	T3-02	SS-T3-02-03	PCBs	X	X	-	-	X	-	NA

Table 6-2 (continued)

Soil Samples in Exceedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Area Description	Sample Location	Sample I.D.	Constituents Exceeding Criteria	Potentially Applicable Criteria: TAGM 3028	Soil Screening Guidance: Ingestion	Soil Screening Guidance: Inhalation	Soil Screening Guidance: 20 DAF	40 CFR Subpart S	STARS	TC Limits
AOC 1/Transformers (continued)										
	T3-03	SS-T3-03-03	Arsenic	X	X	-	-	-	-	-
			Beryllium	X	X	-	-	-	-	-
			Cadmium	-	-	-	X	-	-	-
			Total Chromium	-	X	X	X	-	-	-
			Molybdenum	X	-	-	-	-	-	-
			Nickel	X	X	-	X	X	-	-
			Antimony	-	-	-	X	-	-	NA
			PCBs	X	X	-	-	X	-	NA
SWMU 5/Former Grinding Room Pickling Process										
	RB-01	SB-RB-01-0002	Arsenic	X	X	-	-	-	-	NA
			Cadmium	-	-	-	X	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
		SB-RB-01-0507	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-RB-01-0709	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
SWMU 9/Former TCA Container Storage Area										
	RB-02	SB-RB-02-0002	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-RB-02-1618	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
SWMU 11/Shark Pit Residual Material Loading Area										
	RFI-10	SS-RFI-10-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Molybdenum	X	-	-	-	-	-	NA
			Nickel	X	X	-	X	X	-	NA
		SB-RFI-10-0002	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Molybdenum	X	-	-	-	-	-	NA
			Nickel	-	-	-	X	-	-	NA
		SB-RFI-10-0204	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-RFI-10-0810	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
SWMU 13/Crucible Disposal Areas and SWMU1 4/Waste Disposal Areas										
	SWMU 13 A/TP-08	SB-TP-08-0002	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Cadmium	-	-	-	X	-	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	X	-	-	X	-	-	NA
		SB-TP-08-0304	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-TP-08-0708	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
	SWMUs 13B and 14B/ TP-04 and RFI-04	SB-TP-04-0002	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
			Benzo(a)anthracene	-	-	-	-	-	X	NA
		SB-TP-04-1112	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SS-RFI-04-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
			Antimony	-	-	-	X	-	-	NA

Table 6-2 (continued)

Soil Samples in Exceedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Area Description	Sample Location	Sample I.D.	Constituents Exceeding Criteria	Potentially Applicable Criteria: TAGM 3028	Soil Screening Guidance: Ingestion	Soil Screening Guidance: Inhalation	Soil Screening Guidance: 20 DAF	40 CFR Subpart S	STARS	TC Limits
SWMU 13/Crucible Disposal Areas and SWMU1 4/Waste Disposal Areas (continued)										
	RFI-04 (continued)	SB-RFI04-0002	Arsenic	X	X	-	-	-	-	-
			Beryllium	X	X	-	-	X	-	-
			Total Chromium	-	X	X	X	-	-	-
			Nickel	-	-	-	X	-	-	-
			Benzo(a)anthracene	-	-	-	-	-	X	NA
			Benzo(a)pyrene	X	X	-	-	-	X	NA
			Dibenzo(ah)anthracene	X	X	-	-	-	X	NA
		SB-RFI04-0204	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Manganese	X		-	-	-	-	NA
		SB-RFI04-2022	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
	SWMU 13C/RFI-11	SS-RFI-11-03	Arsenic	X	X	-	-	-	-	-
			Barium	X	X	-	X	X	-	-
			Beryllium	X	X	-	-	X	-	-
			Cadmium	-	-	-	X	-	-	-
			Total Chromium	-	X	X	X	-	-	-
			Mercury	X	-	-	-	X	-	-
			Nickel	X	X	-	X	X	-	-
		SB-RFI-11-0002	Arsenic	X	X	-	X	X	-	NA
			Barium	-	-	-	X	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Cadmium	-	-	-	X	-	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	X	X	-	X	X	-	NA
			Antimony	-	-	-	X	-	-	NA
		SB-RFI-11-0204	Arsenic	X	X	-	-	-	-	NA
			Barium	-	-	-	X	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
		SB-RFI-11-0406	Arsenic	X	X	-	-	-	-	-
			Barium	-	-	-	X	-	-	-
			Beryllium	X	X	-	-	X	-	-
		SB-RFI-11-0608	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
		SB-RFI-11-0810	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Antimony	-	-	-	X	-	-	NA
			PCBs	X	X	-	-	X	-	NA
		SB-RFI-11-1012	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-RFI-11-1214	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
	SWMU 14A/TP-07	SS-TP-07-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
			Benzo(a)anthracene	-	-	-	-	-	X	NA
			Benzo(b)fluoranthene	-	-	-	-	-	X	NA
			Benzo(k)fluoranthene	-	-	-	-	-	X	NA
			Benzo(a)pyrene	X	X	-	-	-	X	NA
		SB-TP-07-0002	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
		SB-TP-07-0304	Arsenic	X	X	-	-	-	-	-
			Beryllium	X	X	-	-	X	-	-
			Cadmium	-	-	-	X	-	-	-
			Total Chromium	-	X	X	X	-	-	-
			Nickel	-	-	-	X	-	-	-
		SB-TP-07-0809	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA

Table 6-2 (continued)

Soil Samples in Exceedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Area Description	Sample Location	Sample I.D.	Constituents Exceeding Criteria	Potentially Applicable Criteria: TAGM 3028	Soil Screening Guidance: Ingestion	Soil Screening Guidance: Inhalation	Soil Screening Guidance: 20 DAF	40 CFR Subpart S	STARS	TC Limits
SWMU 13/Crucible Disposal Areas and SWMU1 4/Waste Disposal Areas										
(continued)	SWMU 14C/TP-11	SS-TP-11-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
		SB-TP-11-0002 (c)	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
		SB-TP-11-1011	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-TP-11-1112	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
SWMU 15/Former Waste Acid Surface Impoundments										
	RFI-02	SS-RFI-02-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
		SB-RFI02-0002	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
		SB-RFI02-0810	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-RFI02-1012	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Cadmium	-	-	-	X	-	-	NA
SWMU 16/Willowbrook Pond										
	RFI-14	SS-RFI-14-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
		SB-RFI-14-0204	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
		SB-RFI-14-1214	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
	RFI-15	SS-RFI-15-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
			PCBs	X	X	-	-	-	-	NA
		SB-RFI-15-0608	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-RFI-15-1516	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
SWMU 17/Closed Surface Impoundment/ SWMU 22/Wastewater Treatment Plant										
	RFI-09	SS-RFI-09-03	Arsenic	X	X	-	-	-	-	-
			Beryllium	X	X	-	-	X	-	-
			Cadmium	-	-	-	X	-	-	-
			Total Chromium	-	X	X	X	-	-	-
			Molybdenum	X	-	-	-	-	-	-
			Nickel	X	X	X	X	X	-	-
		SB-RFI-09-0002	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Cadmium	-	-	-	X	-	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	X	X	-	X	X	-	NA
			Antimony	-	-	-	X	-	-	NA
		SB-RFI-09-0204	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-RFI-09-0406	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA

Table 6-2 (continued)

Soil Samples in Exceedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

				Potentially Applicable Criteria						
					Soil Screening Guidance					
Area Description	Sample Location	Sample I.D.	Constituents Exceeding Criteria	TAGM 3028	Ingestion	Inhalation	20 DAF	40 CFR Subpart S	STARS	TC Limits
SWMU 17/Closed Surface Impoundment/ SWMU 22/Wastewater Treatment Plant (continueD)										
	RFI-09	SB-RFI-09-0608	Arsenic	X	X	-	-	-	-	NA
	(continued)		Beryllium	X	X	-	-	X	-	NA
		SB-RFI-09-0810	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
SWMU 18/Grinding Dust Transfer Pile										
	TP-02	SS-TP-02-03	Arsenic	X	X	-	-	-	-	-
			Beryllium	X	X	-	-	X	-	-
			Cadmium	-	-	-	X	X	-	-
			Total Chromium	-	X	X	X	-	-	-
			Molybdenum	X	-	-	-	-	-	-
			Nickel	X	X	X	X	X	-	-
			Vanadium	X	X	-	-	-	-	-
		SB-TP-02-0002	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
			Molybdenum	X	-	-	-	-	-	NA
			Nickel	-	-	-	X	-	-	NA
		SB-TP-02-0304	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-TP-02-0910	Arsenic	X	X	-	-	-	-	-
			Beryllium	X	X	-	-	X	-	-
			Total Chromium	-	X	X	X	-	-	-
			Nickel	-	-	-	X	-	-	-
			Antimony	-	-	-	-	-	-	NA
			Benzo(a)anthracene	-	-	-	-	-	X	NA
SWMU 19/Former Waste Pile										
	TP-06	SB-TP-06-0002	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Cadmium	-	-	-	X	-	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Molybdenum	X		-	-	-	-	NA
			Nickel	X	X	-	X	-	-	NA
			Lead	-	X	-	X	-	-	NA
			Benzo(a)anthracene	-	-	-	-	-	X	NA
			Benzo(b)fluoranthene	-	-	-	-	-	X	NA
			Benzo(k)fluoranthene	-	-	-	-	-	X	NA
			Benzo(a)pyrene	X	X	-	-	-	X	NA
		SB-TP06-0304	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-TP06-0708	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
SWMU 20/Waste Asbestos Accumulation Area										
	GS-01	SS-GS-01-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
	GS-02	SS-GS-02-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Cadmium	-	-	-	X	-	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
SWMU 21/Grinding Swarf Storage Area										
	TP-03	SB-TP-03-0002	Arsenic	X	X	-	-	-	-	-
			Beryllium	X	X	-	-	X	-	-
			Total Chromium	-	X	X	X	-	-	-
			Molybdenum	X	-	-	-	-	-	-
			Nickel	X	X	-	X	-	-	-

Table 6-2 (continued)

Soil Samples in Exceedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Area Description	Sample Location	Sample I.D.	Constituents Exceeding Criteria	Potentially Applicable Criteria: TAGM 3028	Soil Screening Guidance: Ingestion	Soil Screening Guidance: Inhalation	Soil Screening Guidance: 20 DAF	40 CFR Subpart S	STARS	TC Limits
SWMU 21/Grinding Swarf Storage Area (continued)										
	TP-03	SB-TP-03-0506	Arsenic	X	X	-	-	-	-	NA
	(continued)		Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
		SB-TP-03-1112	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X			X	-	NA
			Total Chromium	-	-	X	X	-	-	NA
SWMU 23/API Oil/Water Separator										
	RFI-03	SB-RFI-03-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
		SB-RFI-03-0002	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
			Phenanthrene	X	-	-	-	-	-	NA
		SB-RFI-03-0406	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
AOC 3/Cooling Towers										
	AOC 3A/RB-07	SS-RB-07-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Cadmium	-	-	-	X	-	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Manganese	X	-	-	-	-	-	NA
			Molybdenum	X	-	-	-	-	-	NA
			Nickel	X	X	-	X	-	-	NA
			Vanadium	X	X	-	-	-	-	NA
		SB-RB-07-0002	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	X	-	-	X	-	-	NA
			Benzo(a)anthracene	X	X	-	-	-	X	NA
			Benzo(b)fluoranthene	X	X	-	-	-	X	NA
			Benzo(k)fluoranthene	-	-	-	-	-	X	NA
			Benzo(a)pyrene	X	X	-	-	-	X	NA
			Indeno(123-cd)pyrene	X	X	-	-	-	X	NA
			Dibenzo(a,h)anthrancene	X	X	-	-	-	X	NA
			PCBs	X	X	-	-	X	-	NA
		SB-RB-07-0608	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
			1,4-Dichlorobenzene	-	-	-	X	-	-	NA
			Benzo(a)anthracene	X	X	-	-	-	X	NA
			Benzo(b)fluoranthene	-	-	-	-	-	X	NA
			Benzo(k)fluoranthene	-	-	-	-	-	X	NA
			Benzo(a)pyrene	X	X	-	-	-	X	NA
			PCBs	X	X	-	-	X	-	NA
		SB-RB-07-0810	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
						-	-	-	-	NA
	AOC 3B/RB-06	SS-RB-06-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
		SB-RB-06-0002	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-RB-06-0406	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-RB06-0608	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
AOC 6/Former Above Ground Fuel Oil Tank										
	TP-09	SB-TP-09-0002	Benzo(a)anthracene	X	X	-	-	-	X	NA
			Benzo(b)fluoranthene	X	X	-	-	-	X	NA
			Benzo(k)fluoranthene	-	-	-	-	-	X	NA
			Benzo(a)pyrene	X	X	-	-	-	X	NA

Table 6-2 (continued)

Soil Samples in Exceedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

					Potentially Applicable Criteria					
					Soil Screening Guidance					
Area Description	Sample Location	Sample I.D.	Constituents Exceeding Criteria	TAGM 3028	Ingestion	Inhalation	20 DAF	40 CFR Subpart S	STARS	TC Limits
AOC 7/Scrap Steel Storage Areas										
	AOC 7A/TP-01	SB-TP-01-0002	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
		SB-TP-01-0304	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-TP-01-0809	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
	AOC 7B/TP-05	SS-TP-05-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
			Benzo(a)anthracene	X	X	-	-	-	X	NA
			Benzo(b)fluoranthene	-	-	-	-	-	X	NA
			Benzo(k)fluoranthene	-	-	-	-	-	X	NA
			Benzo(a)pyrene	X	X	-	-	-	X	NA
			Dibenzo(a,h)anthracene	X	X	-	-	-	X	NA
		SB-TP-05-0002	Arsenic	X	X	-	-	-	-	-
			Beryllium	X	X	-	-	X	-	-
			Total Chromium	-	X	X	X	-	-	-
			Nickel	-	-	-	X	-	-	-
			Lead	X	X	-	-	-	-	-
			Benzo(a)anthracene	-	-	-	-	-	X	NA
			Benzo(b)fluoranthene	-	-	-	-	-	X	NA
			Benzo(k)fluoranthene	-	-	-	-	-	X	NA
			Benzo(a)pyrene	X	X	-	-	-	X	NA
		SB-TP-05-0203	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
			Benzo(a)anthracene	-	-	-	-	-	X	NA
			Benzo(b)fluoranthene	-	-	-	-	-	X	NA
			Benzo(a)pyrene	X	X	-	-	-	X	NA
		SB-TP-05-0809	Arsenic	X	X	-	-	-	-	-
			Beryllium	X	X	-	-	X	-	-
			Total Chromium	-	X	X	X	-	-	-
			Nickel	-	-	-	X	-	-	-
	AOC 7C/TP-10	SB-TP-10-0002	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Cadmium	-	-	-	X	-	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Molybdenum	X	-	-	-	-	-	NA
			Nickel	X	X	X	X	X	-	NA
		SB-TP-10-0809	Arsenic	X	X	-	-	-	-	-
			Beryllium	X	X	-	-	X	-	-
			Total Chromium	-	X	X	X	-	-	-
			Nickel	X	X		X	-	-	-
AOC 8/Former Coal Storage Area										
	RB-03	SS-RB-03-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
		SB-RB-03-0002	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
			Benzo(a)anthracene	-	-	-	-	-	X	NA
			Benzo(b)fluoranthene	X	X	-	-	-	X	NA
			Benzo(k)fluoranthene	-	-	-	-	-	X	NA
			Benzo(a)pyrene	X	X	-	-	-	X	NA

Table 6-2 (continued)

Soil Samples in Exceedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Area Description	Sample Location	Sample I.D.	Constituents Exceeding Criteria	Potentially Applicable Criteria						
					Soil Screening Guidance					
				TAGM 3028	Ingestion	Inhalation	20 DAF	40 CFR Subpart S	STARS	TC Limits
AOC 11/Former Coal Gasification Plant								-		
	RFI-06	SS-RFI-06-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
			Benzo(a)anthracene	X	X	-	-	-	X	NA
			Benzo(b)fluoranthene	X	X	-	-	-	X	NA
			Benzo(k)fluoranthene	-	-	-	-	-	X	NA
			Benzo(a)pyrene	X	X	-	-	-	X	NA
			Dibenzo(a,h)anthracene	X	X	-	-	-	X	NA
		SB-RFI-06-0204	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
			Phenanthrene	X	-	-	-	-	-	NA
		SB-RFI-06-0406	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
CAMU A/Former LAP West Pickle Facility										
	RB-04	SS-RB-04-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
			Lead	X	X	-	-	-	-	NA
			Antimony	-	-	-	X	-	-	NA
		SB-RB-04-0002	Arsenic	X	X	-	-	-	-	-
			Beryllium	X	X	-	-	X	-	-
			Total Chromium	-	X	X	X	-	-	-
			Nickel	X	X	-	X	-	-	-
			Lead	X	X	-	-	-	-	X
			Antimony	-	-	-	X	-	-	NA
		SB-RB-04-0406	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	X	X	-	-	NA
		SB-RB-04-0709	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Nickel	-	-	-	X	-	-	NA
	RB-05	SS-RB-05-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
		SB-RB-05-0002	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	X	X	-	-	NA
		SB-RB-05-0204	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Hexavalent Chromium	-	-	-	X	-	-	NA
		SB-RB-05-0810	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
	LWB-01	SB-LWB-01-0204	Arsenic	X	X	-	-	-	-	NA
			Cadmium	-	-	-	X	-	-	NA
			Total Chromium	-	-	-	X	-	-	NA
		SB-LWB-01-0608	Arsenic	X	X	-	-	-	-	NA
			Total Chromium	-	-	-	X	-	-	NA
	LWB-02	SB-LWB-02-0002	Arsenic	X	X	-	-	-	-	NA
			Total Chromium	-	-	-	X	-	-	NA
		SB-LWB-02-0608	Arsenic	X	X	-	-	-	-	NA
			Total Chromium	-	-	X	X	-	-	NA
			Hexavalent Chromium	X	-	-	-	-	-	NA
	LWB-03	SB-LWB-03-0002	Arsenic	X	X	-	-	-	-	NA
		SB-LWB-03-0608	Arsenic	X	X	-	-	-	-	-
			Total Chromium	-	X	X	X	-	-	X
			Hexavalent Chromium	X	X	X	X	X	-	NA
	LWB-04	SB-LWB-04-0002	Arsenic	X	X	-	-	-	-	NA
			Cadmium	-	-	-	X	-	-	NA
		SB-LWB-04-0608	Arsenic	X	X	-	-	-	-	NA
			Total Chromium	-	X	X	X	-	-	NA

Table 6-2 (continued)

Soil Samples in Exceedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

				Potentially Applicable Criteria						
					Soil Screening Guidance					
Area Description	Sample Location	Sample I.D.	Constituents Exceeding Criteria	TAGM 3028	Ingestion	Inhalation	20 DAF	40 CFR Subpart S	STARS	TC Limits
CAMU B/Former BRB Pickle Facility										
	RFI-13	SS-RFI-13-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
		SB-RFI-13-0406	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-RFI-13-1618	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
	BRB-01	SB-BRB-01-0002	Arsenic	X	X	-	-	-	-	NA
			Cadmium	-	-	-	X	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
		SB-BRB-01-0204	Arsenic	X	X	-	-	-	-	NA
			Total Chromium	-	-	-	X	-	-	NA
		SB-BRB-01-1517	Arsenic	X	X	-	-	-	-	NA
	BRB-03	SB-BRB-03-0103	Arsenic	X	X	-	-	-	-	NA
			Total Chromium	-	-	-	X	-	-	NA
CAMU C/BFS Pickle Facility										
	RFI-07	SS-RFI-07-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
		SB-RFI-07-0204	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
		SB-RFI-07-0608	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
	RFI-17	SB-RFI-17-0204	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-RFI-17-0608	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
CAMU D/Former LAP East Pickle Facility										
	RFI-05	SS-RFI-05-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
		SB-RFI-05-0204	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-RFI-05-1214	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Carbon Disulfide	X	-	-	-	-	-	NA
	LEB-01	SB-LEB-01-0204	Arsenic	X	X	-	-	-	-	NA
			Total Chromium	-	-	-	X	-	-	NA
			Trichloroethene	-	-	-	X	-	-	NA
		SB-LEB-01-0810	Arsenic	X	X	-	-	-	-	NA
	LEB-02	SB-LEB-02-0608	Arsenic	X	X	-	-	-	-	NA
			Trichloroethene	-	-	-	X	-	-	NA
		SB-LEB-02-0810	Arsenic	X	X	-	-	-	-	NA
	LEB-03	SB-LEB-03-0002	Arsenic	X	X	-	-	-	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Trichloroethene	-	-	-	X	-	-	NA
		SB-LEB-03-0709	Arsenic	X	X	-	-	-	-	NA
			cis-1,2-Dichloroethene	-	-	-	X	-	-	NA
			Trichloroethene	-	-	-	X	-	-	NA
		SB-LEB-03-1113	Arsenic	X	X	-	-	-	-	NA
			Cadmium	-	-	-	X	-	-	NA
			cis-1,2-Dichloroethene	-	-	-	X	-	-	NA
			Trichloroethene	-	-	-	X	-	-	NA
General Site										
	GS-01	SS-GS-01-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
	GS-02	SS-GS-02-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Cadmium	-	-	-	X	-	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA

Table 6-2 (continued)

Soil Samples in Exceedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Area Description	Sample Location	Sample I.D.	Constituents Exceeding Criteria	Potentially Applicable Criteria: TAGM 3028	Soil Screening Guidance: Ingestion	Soil Screening Guidance: Inhalation	Soil Screening Guidance: 20 DAF	40 CFR Subpart S	STARS	TC Limits
General Site (continued)										
	GS-03	SS-GS-03-03	Beryllium	X	X	-	-	X	-	-
			Cadmium	-	-	-	X	-	-	-
			Total Chromium	-	X	X	X	-	-	-
			Molybdenum	X	-	-	-	-	-	-
			Nickel	-	X	-	X	-	-	-
			Antimony	-	-	-	X	-	-	NA
	GS-04	SS-GS-04-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
	GS-05	SS-GS-05-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	X	X	-	-	NA
			Nickel	-	-	-	X	-	-	NA
	RFI-01	SS-RFI-01-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
		SB-RFI-01-0406	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-RFI-01-1012	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
	RFI-08	SS-RFI-08-03	Beryllium	X	X	-	-	X	-	-
			Cadmium	-	-	-	X	-	-	-
			Total Chromium	-	X	X	X	-	-	-
			Molybdenum	X	-	-	-	-	-	-
			Nickel	X	X	X	X	X	-	-
			Lead	X	X	-	-	-	-	X
			Antimony	X	X	-	X	X	-	NA
			Benzo(a)anthracene	X	X	-	X	-	X	NA
			Benzo(b)fluoranthene	X	X	-	-	-	X	NA
			Benzo(k)fluoranthene	-	-	-	-	-	X	NA
			Benzo(a)pyrene	X	X	-	-	-	X	NA
			Indeno(123-cd)pyrene	X	X	-	-	-	-	NA
		SB-RFI-08-0507	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
	RFI-12	SS-RFI-12-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	-	-	X	-	-	NA
		SB-RFI-12-0204	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-RFI-12-1416	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
	RFI-16	SS-RFI-16-03	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
			Total Chromium	-	X	X	X	-	-	NA
			Nickel	X	X	-	X	X	-	NA
		SB-RFI-16-0406	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA
		SB-RFI-16-1415	Arsenic	X	X	-	-	-	-	NA
			Beryllium	X	X	-	-	X	-	NA

a/ TAGM 3028 source: New York State Department of Environmental Conservation, November 30, 1992 "Contained-In Criteria for Environmental Media," Technical and Administrative Guidance Memorandum (TAGM) 3028 (revised 1997).
Soil Screening Guidance source: U.S. Environmental Protection Agency, May 1996, "Soil Screening Guidance:" Technical Background Document," EPA/54/R-95/128.
Subpart S source: "Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities; Proposed Rule." 55 FR 30798, July 27, 1990.
STARS source: New York State Department of Environmental Conservation, August 1992, "Petroleum-Contaminated Soil Guidance Policy," Spill Technology and Remediation Series (STARS) Memo #1.
TC Limits source: Title 40 CFR 261.24 Table I, Maximum Concentration of Contaminants for the Toxicity Characteristic.

b/ "-" indicates soil sample not in exceedance of potentially applicable criteria.
NA = not analyzed/not applicable.

c/ The duplicate for this sample was selected for TCLP extraction and analysis of the extract. There were no exceedances of the TC limits.

Table 6-3

Potentially Applicable Groundwater Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Parameters	NYSDEC TAGM 3028 Groundwater Action Levels (a)	New York State Water Quality Standards for Class GA Waters (b)	U.S. EPA Maximum Contaminant Level (c)	40 CFR 264 Subpart S (d)
TAL Inorganics (mg/l) (e, f)				
Silver	0.05	0.05	0.1 (g)	0.05
Aluminum	- (i)	-	0.05 - 0.2 (g)	-
Arsenic	0.025	0.025	0.05 (j)	0.05 (h)
Barium	1	1	2	1 (h)
Beryllium	0.004	0.003	0.004	0.000008
Calcium	-	-	-	-
Cadmium	0.005	0.005	0.005	0.01 (h)
Cobalt	-	-	-	-
Chromium (Total)	0.05	0.05	0.1	-
Chromium (Hexavalent)	0.05	0.05	-	0.05 (h)
Copper	<0.20 (k)	0.2	1.0 (g)	-
Iron	0.3 (m)	0.3 (m)	0.3 (g)	-
Mercury	0.002	0.0007	0.002	0.002 (h)
Potassium	-	-	-	-
Magnesium	35	-	-	-
Manganese	0.3 (m)	0.3 (m)	0.05 (g)	-
Molybdenum	0.18	-	-	-
Sodium	<20	20	-	-
Nickel	0.1	0.1	1000	0.7
Lead	0.015	0.025	- (l)	0.05 (h)
Antimony	0.003	0.003	0.006	0.01
Selenium	0.01	0.01	0.05	-
Thallium	0.002	-	0.002	-
Vanadium	0.25	-	-	-
Zinc	<0.3	-	5 (g)	-
Cyanide (Total)	<0.1	0.02	0.2	0.7
Cyanide (Free)	-	-	-	-
Volatile Organic Compounds (µg/l)				
2-Butanone (MEK)	50	50	-	200
Carbon Disulfide	5	-	-	4000
Chloroform	7	7	100	6
cis-1,2-Dichloroethene	5	5	70	-
1,1-Dichloroethene	5	5	7	7 (h)
trans-1,2-Dichloroethene	5	5	100	-
Trichloroethene	5	5	5	5 (h)
Vinyl Chloride	2	2	2	-
Semi-Volatile Organic Compounds (µg/l)				
Naphthalene	10	-	-	-
Miscellaneous Parameters				
pH (s.u.)	-	6.5 < 8.5	6.5 < 8.5 (g)	-
Alkalinity	-	-	-	-
Total Phenols (ug/l)	1	1	-	20,000
Chloride (mg/l)	250	250	250 (g)	-
Fluoride (mg/l)	<1.5	2	2 (g)	-
Nitrate (mg/l)	10	10	10	-
Sulfate (mg/l)	250	250	250 (g)	-
Ammonia (mg/l)	<2	2 (as N)	-	-
Total Organic Carbon	-	-	-	-

a/ New York State Department of Environmental Conservation. November 30, 1992. "Contained-In Criteria for Environmental Media." Technical Administrative Guidance Memorandum (TAGM) 3028 (revised 1997).
b/ New York State. June 1998. "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" Division of Water Technical and Operational Guidance Series (NYS Water Quality Standards for Class GA Waters).
c/ U.S. EPA Final Maximum Contaminant Levels (MCLs) for drinking water; the values are current.
d/ "Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities; Proposed Rule" 55 FR 30798; July 27, 1990.
e/ TAL = Target Analyte List; this list also includes hexavalent chromium, molybdenum, and free cyanide.
f/ mg/l = milligrams per liter.
µg/l = micrograms per liter.
s.u. = standard units.
g/ This is a National Secondary Drinking Water Standard (unenforceable federal guidelines).
h/ Action level based directly on final MCL.
i/ " - " indicates a groundwater standard has not been established.
j/ Interim MCL standard for drinking water.
k/ "<" indicates the concentrations is to be below the level noted.
m/ The sum total of iron and manganese concentrations shall not be greater than 0.5 mg/l.

Table 6-4

Groundwater Samples in Exeedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Area Description	Sample Location	Sample Event	Constituents Exceeding Criteria	Total (T) or Dissolved (D) Metals Aliquot	Potentially Applicable Criteria (a) TAGM 3028	Class GA	MCL	40 CFR Subpart S
SWMU 16/ Willowbrook Pond								
	WP-1	03/97	- (b)	-	-	-	-	-
	WP-2	03/97	-	-	-	-	-	-
	WP-3	03/97	-	-	-	-	-	-
	WP-4	11/96	Aluminum	T	-	-	X	-
			Beryllium	T	-	-	-	X
			Cadmium	T	X	X	X	-
			Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	-	-	X	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	-
			cis-1,2-Dichloroethene	-	X	X	X	-
			Trichloroethene	-	X	X	X	X
			Ammonia	-	X	X	-	-
		03/97	Magnesium	T	X	-	-	-
			Manganese	T	-	-	X	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	-
			cis-1,2-Dichloroethene	-	X	X	X	-
			Trichloroethene	-	X	X	X	X
	WP-5	11/96	Aluminum	T	-	-	X	-
			Beryllium	T	-	-	-	X
			Iron	T	X	X	X	-
			Manganese	T	X	X	X	-
		03/97	Cadmium	D	X	X	X	-
			Iron	D	X	X	X	-
			Manganese	D	X	X	X	-
			Sodium	D	X	X	-	-
	RFI-14	11/96	Aluminum	D	-	-	X	-
			Beryllium	D	-	-	-	X
			Cadmium	D	X	X	X	-
			Iron	D	X	X	X	-
			Manganese	D	-	-	X	-
			Sodium	D	X	X	-	-
			Antimony	D	X	X	-	-
		03/97	Manganese	D	-	-	X	-
			Sodium	D	X	X	-	-
			Thallium	D	X	-	X	-
	RFI-15	11/96	Aluminum	D	-	-	X	-
			Beryllium	D	X	X	X	X
			Cadmium	D	X	X	X	X
			Magnesium	D	X	-	-	-
			Manganese	D	-	-	X	-
			Sodium	D	X	X	-	-
		03/97	Aluminum	T	-	-	X	-
			Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	-	-	X	-
			cis-1,2-Dichloroethene	-	X	-	X	-
			Trichloroethene	-	X	-	X	X

Table 6-4 (continued)

Groundwater Samples in Exeedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Area Description	Sample Location	Sample Event	Constituents Exceeding Criteria	Total (T) or Dissolved (D) Metals Aliquot	Potentially Applicable Criteria (a) TAGM 3028	Class GA	MCL	40 CFR Subpart S
SWMU 17/Closed Surface Impoundment								
	WT-1A	11/96	Aluminum	D	-	-	X	-
			Beryllium	D	X	X	X	X
			Magnesium	D	X	-	-	-
			Manganese	D	X	X	X	-
			Molybdenum	D	X	-	-	-
			Sodium	D	X	X	-	-
		03/97	Aluminum	T	-	-	X	-
			Cadmium	T	X	X	X	-
			Iron	T	X	X	X	-
			Manganese	T	X	X	X	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	-
			Antimony	T	X	-	-	-
	WT-1B	11/96	Aluminum	D	-	-	X	-
			Beryllium	D	X	X	X	X
			Iron	D	X	X	X	-
			Magnesium	D	X	-	-	-
			Manganese	D	X	X	X	-
			Sodium	D	X	X	-	-
			Chloride	-	X	X	X	-
		03/97	Magnesium	D	X	-	-	-
			Manganese	D	X	X	X	-
			Sodium	D	X	X	-	-
	WT-2	11/96	Aluminum	D	-	-	X	-
			Beryllium	D	X	X	X	X
			Cadmium	D	X	X	X	X
			Molybdenum	D	X	-	-	-
			Sodium	D	X	X	-	-
			Nickel	D	X	X	-	-
			Lead	D	X	X	-	X
			Vinyl chloride	-	X	X	X	-
			cis-1,2-Dichloroethene	-	X	X	-	-
			Trichloroethene	-	X	X	X	X
			pH	-	X	X	X	-
			Total phenols	-	X	X	-	-
			Ammonia	-	X	X	-	-
		03/97	Aluminum	T	-	-	X	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	-
			Vinyl chloride	-	X	X	X	-
			cis-1,2-Dichloroethene	-	X	X	-	-
			Trichloroethene	-	X	X	X	X
			pH	-	X	X	X	-
			Total phenols	-	X	X	-	-
			Ammonia	-	X	X	-	-

Table 6-4 (continued)

Groundwater Samples in Exeedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

				Total (T) or	Potentially Applicable Criteria (a)			
Area Description	Sample Location	Sample Event	Constituents Exceeding Criteria	Dissolved (D) Metals Aliquot	TAGM 3028	Class GA	MCL	40 CFR Subpart S
SWMU 17/Closed Surface Impoundment (continued)								
	WT-3	11/96	Aluminum	D	-	-	X	-
			Beryllium	D	X	X	X	X
			Iron	D	X	X	X	-
			Magnesium	D	X	-	-	-
			Manganese	D	X	X	X	-
			Molybdenum	D	X	-	-	-
			Sodium	D	X	X	-	-
			Fluoride	-	X	X	-	-
			Sulfate	-	X	X	X	-
		03/97	Aluminum	T	-	-	X	-
			Cadmium	T	X	X	X	-
			Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	X	X	X	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	-
			Sulfate	-	X	X	X	-
	WT-4	11/96	Aluminum	D	-	-	X	-
			Beryllium	D	-	X	-	X
			Iron	D	X	X	X	-
			Manganese	D	X	X	X	-
			Sodium	D	X	X	-	-
			Sulfate	-	X	X	X	-
		03/97	Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	X	X	X	-
			Sodium	T	X	X	-	-
			Sulfate	-	X	X	X	-
	RFI-09	11/96	Beryllium	D	-	X	-	X
			Magnesium	D	X	-	-	-
			Manganese	D	X	X	X	-
			Molybdenum	D	X	-	-	-
			Sodium	D	X	X	-	-
			Total Cyanide	T	X	-	-	-
		03/97	Aluminum	T	-	-	X	-
			Arsenic	T	X	X	-	-
			Cadmium	T	X	X	X	-
			Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	X	X	X	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	-
			Antimony	T	X	X	-	-
			Selenium	T	X	X	-	-
			Thallium	T	X	-	X	-

Table 6-4 (continued)

Groundwater Samples in Exeedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Area Description	Sample Location	Sample Event	Constituents Exceeding Criteria	Total (T) or Dissolved (D) Metals Aliquot	Potentially Applicable Criteria (a) TAGM 3028	Class GA	MCL	40 CFR Subpart S
CAMU A/Former LAP West Pickle Facility								
	LAW-5	11/96	Beryllium	T	-	-	-	X
			Total chromium	T	X	X	X	-
			Hexavalent chromium	T	X	X	-	X
			Magnesium	T	X	-	X	-
			Manganese	T	-	-	X	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	-
			Antimony	T	X	X	X	-
			Thallium	T	X	-	X	-
			Chloride	-	X	X	X	-
			Nitrate	-	X	X	X	-
			Sulfate	-	X	X	X	-
		03/97	Total chromium	T	X	X	X	-
			Hexavalent chromium	T	X	X	-	X
			Magnesium	T	X	-	-	-
			Manganese	T	-	-	X	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	-
			Antimony	T	X	X	X	X
			Chloride	-	X	X	X	-
			Sulfate	-	X	X	X	-
	LAW-6	11/96	Aluminum	D	-	-	X	-
			Arsenic	D	X	X	X	X
			Total chromium	D	X	X	X	-
			Hexavalent chromium	T	X	X	-	X
			Iron	D	X	X	X	-
			Magnesium	D	X	-	-	-
			Molybdenum	D	X	-	-	-
			Sodium	D	X	X	-	-
			Antimony	D	X	X	X	X
			Selenium	D	X	X	-	-
			Thallium	D	X	-	X	-
			Total Cyanide	T	X	-	-	-
			Free Cyanide	T	-	X	-	-
			pH	-	-	X	X	-
			Fluoride	-	X	X	X	-
			Nitrate	-	X	X	X	-
			Sulfate	-	X	X	X	-
			Ammonia	-	X	X	-	-
		03/97	Aluminum	T	-	-	X	-
			Arsenic	T	X	X	X	X
			Cadmium	T	X	X	X	-
			Total chromium	T	X	X	X	-
			Hexavalent chromium	T	X	X	-	X
			Magnesium	T	X	-	-	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	-

Table 6-4 (continued)

Groundwater Samples in Exeedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Area Description	Sample Location	Sample Event	Constituents Exceeding Criteria	Total (T) or Dissolved (D) Metals Aliquot	Potentially Applicable Criteria (a): TAGM 3028	Class GA	MCL	40 CFR Subpart S
CAMU A/Former LAP West Pickle Facility (continued)								
	LAW-6		Antimony	T	X	X	X	X
			Selenium	T	X	X	-	-
			Thallium	T	X	-	X	-
			Vanadium	T	X	-	-	-
			pH	-	-	X	X	-
			Fluoride	-	X	X	X	-
			Nitrate	-	X	X	X	-
			Sulfate	-	X	X	X	-
				-	-	-	-	-
CAMU B/Former BRP Pickle Facility				-	-	-	-	-
	MW-1	11/96	Aluminum	T	-	-	X	-
			Iron	T	X	X	X	-
			Manganese	T	-	-	X	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	-
			Sulfate	-	X	X	X	-
		03/97	Aluminum	T	-	-	X	-
			Iron	T	X	X	X	-
			Manganese	T	-	-	X	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	-
			Sulfate	-	X	X	X	-
	RFI-13	11/96	Aluminum	T	-	-	X	-
			Beryllium	T	-	X	-	X
			Cadmium	T	X	X	X	X
			Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	-	-	X	-
			Sodium	T	X	X	-	-
		03/97	Aluminum	T	-	-	X	-
			Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	-	-	X	-
			Sodium	T	X	X	-	-
CAMU C/BFS Pickle Facility								
	MW-3	11/96	Beryllium	D	-	X	-	X
			Total chromium	D	X	X	X	-
			Hexavalent chromium	T	X	X	-	X
			Magnesium	D	X	-	-	-
			Manganese	D	-	-	X	-
			Molybdenum	D	X	-	-	-
			Sodium	D	X	X	-	-
			Antimony	D	X	X	X	-
			Nitrate	-	X	X	X	-
			Sulfate	-	X	X	X	-

Groundwater Samples in Exeedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Area Description	Sample Location	Sample Event	Constituents Exceeding Criteria	Total (T) or Dissolved (D) Metals Aliquot	Potentially Applicable Criteria (a) TAGM 3028	Class GA	MCL	40 CFR Subpart S
CAMU C/BFS Pickle Facility (continued)								
	MW-3	03/97	Aluminum	T	-	-	X	-
			Cadmium	T	X	X	X	-
			Total chromium	T	X	X	X	-
			Hexavalent chromium	T	X	X	-	X
			Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	-	-	X	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	
			Antimony	T	X	X	X	X
			Chloride	-	X	X	X	-
			Nitrate	-	X	X	X	-
			Sulfate	-	X	X	X	-
	RFI-07	11/96	Aluminum	T	-	-	X	-
			Beryllium	T	X	X	X	X
			Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	X	X	X	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	-
			Nitrate	-	X	X	X	-
			Sulfate	-	X	X	X	-
		03/97	Aluminum	D	-	-	X	-
			Cadmium	D	X	X	X	-
			Iron	D	X	X	-	-
			Magnesium	D	X	-	-	-
			Manganese	D	X	X	X	-
			Molybdenum	D	X	-	-	-
			Sodium	D	X	X	-	-
			Antimony	D	X	X	-	-
			Nitrate	-	X	X	X	-
			Sulfate	-	X	X	X	-
	RFI-17	11/96	Beryllium	D	-	-	-	X
			Magnesium	D	X	-	-	-
			Manganese	D	-	-	X	-
			Molybdenum	D	X	-	-	-
			Sodium	D	X	X	-	-
			Chloride	-	X	X	X	-
			Sulfate	-	X	X	X	-
		03/97	Aluminum	T	-	-	X	-
			Cadmium	T	X	X	X	-
			Total chromium	T	X	X	-	-
			Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	X	X	X	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	-
			Chloride	-	X	X	X	-
			Sulfate	-	X	X	X	-

Table 6-4 (continued)

Groundwater Samples in Exeedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Area Description	Sample Location	Sample Event	Constituents Exceeding Criteria	Total (T) or Dissolved (D) Metals Aliquot	Potentially Applicable Criteria (a)			
					TAGM 3028	Class GA	MCL	40 CFR Subpart S
CAMU D/ Former LAP East Pickle Facility								
	LAE-4	11/96	Aluminum	D	-	-	X	-
			Iron	D	X	X	X	-
			Manganese	D	-	-	X	-
			Sodium	D	X	X	-	-
			Vinyl chloride	-	X	X	X	-
			1,1-Dichloroethene	-	X	X	X	X
			trans-1,2-Dichloroethene	-	X	X	-	-
			cis-1,2-Dichloroethene	-	X	X	X	-
			Trichloroethene	-	X	X	X	X
		03/97	Iron	D	X	X	X	-
			Manganese	D	X	X	X	-
			Sodium	D	X	X	-	-
			Vinyl chloride	-	X	X	X	-
			1,1-Dichloroethene	-	X	X	X	X
			trans-1,2-Dichloroethene	-	X	X	-	-
			cis-1,2-Dichloroethene	-	X	X	X	-
			Trichloroethene	-	X	X	X	X
			Naphthalene	-	X	-	-	-
	RFI-05	11/96	Aluminum	T	-	-	X	-
			Beryllium	T	-	-	-	X
			Iron	T	X	X	X	-
			Sodium	T	X	X	-	-
		03/97	Aluminum	T		-	X	-
			Sodium	T	X	X	-	-
Site Wells								
	B-1	11/96	Magnesium	T	X	-	-	-
			Sodium	T	X	X	-	-
		03/97	Magnesium	T	X	-	-	-
			Thallium	T	X	-	X	-
	RFI-01	11/96	Aluminum	T	-	-	X	-
			Beryllium	T	-	-	-	X
			Iron	T	X	X	X	-
			Manganese	T	-	-	X	-
			Sodium	T	X	X	-	-
			Thallium	T	X	-	X	-
		03/97	Manganese	D	-	-	X	-
			Antimony	D	X	-	-	-
	RFI-02	11/96	Aluminum	T	-	-	X	-
			Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	-	-	X	-
			Carbon Disulfide	-	X	-	-	-
		03/97	Aluminum	D	-	-	X	-
			Cadmium	D	X	X	X	-
			Iron	D	X	X	X	-
			Magnesium	D	X	-	-	-
			Manganese	D	-	-	X	-
			Sulfate	-	X	X	X	-

Table 6-4 (continued)

Groundwater Samples in Exeedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Area Description	Sample Location	Sample Event	Constituents Exceeding Criteria	Total (T) or Dissolved (D) Metals Aliquot	Potentially Applicable Criteria (a) TAGM 3028	Class GA	MCL	40 CFR Subpart S
Site (continued)								
	RFI-03	11/96	Aluminum	T	-	-	X	-
			Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	X	X	X	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	-
			Fluoride	-	X	X	-	-
		03/97	Aluminum	T	-	-	X	-
			Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	X	X	X	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	-
	RFI-04	11/96	Aluminum	T	-	-	X	-
			Beryllium	T	-	X	-	X
			Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	-	-	X	-
		03/97	Aluminum	D	-	-	X	-
			Iron	D	X	X	X	-
			Magnesium	D	X	-	-	-
	RFI-06	11/96	Aluminum	T	-	-	X	-
			Beryllium	T	-	-	-	X
			Iron	T	X	X	X	-
			Manganese	T	-	-	X	-
			Sodium	T	X	X	-	-
			Sulfate	-	X	X	X	-
		03/97	Aluminum	T	-	-	X	-
			Iron	T	X	X	X	-
			Manganese	T	-	-	X	-
			Sodium	T	X	X	-	-
			Thallium	T	X	-	X	-
			Sulfate	-	X	X	X	-
	RFI-08	11/96	Aluminum	T	-	-	X	-
			Beryllium	T	-	X	-	X
			Cadmium	T	X	X	X	-
			Manganese	T	-	-	X	-
			Sodium	T	X	X	-	-
		03/97	Cadmium	T	X	X	X	-
			Manganese	T	-	-	X	-
			Sodium	T	X	X	-	-
			Lead	T	X	-	-	-
	RFI-10	11/96	Aluminum	T	-	-	X	-
			Beryllium	T	X	X	X	X
			Cadmium	T	X	X	X	X
			Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	-	-	X	-
			Sodium	T	X	X	-	-
			Sulfate	-	X	X	X	-

Table 6-4 (continued)

Groundwater Samples in Exeedance of Potentially Applicable Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Area Description	Sample Location	Sample Event	Constituents Exceeding Criteria	Total (T) or Dissolved (D) Metals Aliquot	Potentially Applicable Criteria (a) TAGM 3028	Class GA	MCL	40 CFR Subpart S
Site (continued)								
	RFI-10	03/97	Aluminum	T	-	-	X	-
			Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	-	-	X	-
			Sodium	T	X	X	-	-
			Chloride	-	X	X	X	-
	RFI-11	11/96	Aluminum	D	-	-	X	-
			Beryllium	D	X	X	X	X
			Manganese	D	X	X	X	-
			Sodium	D	X	X	-	-
		03/97	Aluminum	T	-	-	X	-
			Iron	T	X	X	X	-
			Manganese	T	X	X	X	-
			Sodium	T	X	X	-	-
	RFI-12	11/96	Magnesium	T	X	-	X	-
			Manganese	T	-	-	X	-
			Sodium	T	X	X	-	-
			Zinc	T	X	-	-	-
		03/97	Aluminum	T	-	-	X	-
			Iron	T	X	X	X	-
			Manganese	T	-	-	X	-
	RFI-16	11/96	Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	-	-	X	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	-
			cis-1,2-Dichloroethene	-	X	X	X	-
			Trichloroethene	-	X	X	X	X
		03/97	Aluminum	T	-	-	X	-
			Iron	T	X	X	X	-
			Magnesium	T	X	-	-	-
			Manganese	T	X	X	X	-
			Molybdenum	T	X	-	-	-
			Sodium	T	X	X	-	-

a/ TAGM 3028 source: New York State Department of Environmental Conservation, November 30, 1992, "Contained-In Criteria for Environmental Media." Technical Administrative Guidance Memorandum (TAGM) 3028 (revised 1997).
Class GA source: New York State, June 2998, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations: Division of Water Technical and Operational Guidance Series (NYS Water Quality Standard for Class GA Waters).
MCL source: U.S. EPA Final Maximum Contaminant Levels (MCLs) for drinking water; the values are current.
Subpart S source: "Corrective Action for Solid Wate Management Units at Hazardous Waste Management Facilities; Proposed Rule." 55 FR 30798, July 27, 1990.

b/ "-" indicates groundwater sample not in exceedance of potentially applicable criteria.

Table 6-5

Potentially Applicable Surface Water Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Parameters	New York State Water Quality Standards For Class D Surface Water (a)
Metals (b) (mg/l) (c)	
Aluminum	- (d)
Barium	-
Beryllium	-
Calcium	-
Chromium (Total)	(e)
Copper	(f)
Iron	0.3
Mercury	-
Potassium	-
Magnesium	-
Manganese	-
Molybdenum	-
Lead	(g)
Antimony	-
Zinc	(h)
Miscellaneous Parameters (mg/l)	
pH (s.u.)	-
Alkalinity	-
Chloride	-
Fluoride	(i)
Sulfate	-

a/ New York State. June 1998. "Ambient Water Quality Standards and Guidances Values and Groundwater Limitations: Division of Water Technical and Operational Guidance Series (NYS Water Quality Standards for Class D Waters).
b/ This list contains only detected Target Analyte List Inorganics (and molybdenum).
c/ mg/l = milligrams per liter; s.u. = standard unit.
d/ " - " indicates water quality standard has not been established.
e/ The water quality standard for total chromium is exp(0.819[ln(ppm hardness)] + 3.7256).
f/ The water quality standard for copper is exp(0.9422[ln(ppm hardness)] - 1.7).
g/ The water quality standard for lead is exp(1.273[ln(ppm hardness)] - 1.052).
h/ The water quality standard for zinc is exp(0.85[ln(ppm hardness)] + 0.884).
i/ The water quality standard for fluoride is (0.1)exp(0.907[ln(ppm hardness)] + 7.394).

Table 6-6

Potentially Applicable Sediment Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

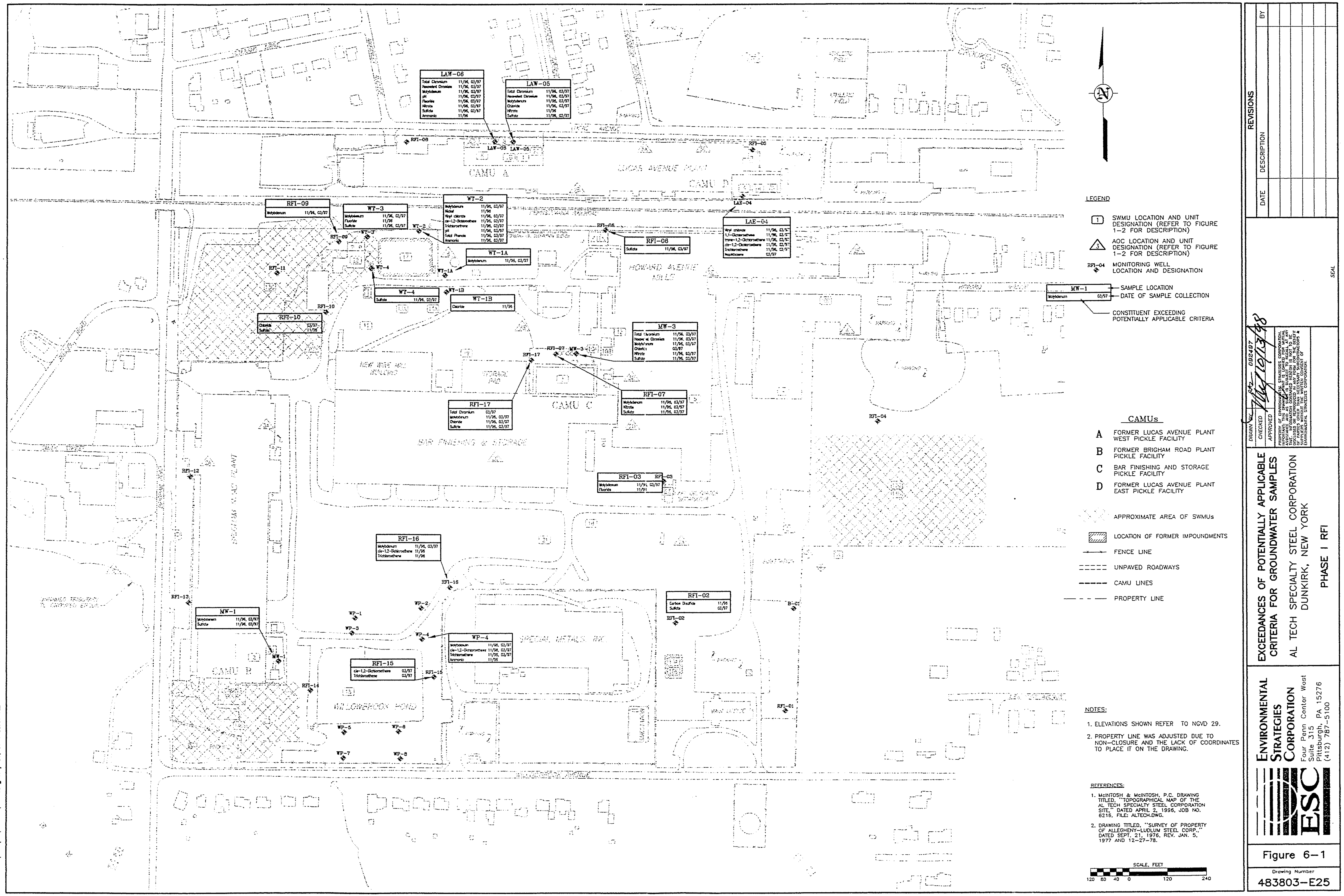
Parameters	Sediment Criteria for Fresh Water (a) Effect Level Low	Severe
TAL Inorganics plus Molybdenum (mg/kg) (b,c)		
Silver	1	2.2
Aluminum	- (d)	-
Arsenic	6	33
Barium	-	-
Beryllium	-	-
Calcium	-	-
Cadmium	0.6	9
Cobalt	-	-
Chromium (Total)	26	110
Chromium (Hexavalent)	-	-
Copper	16	110
Iron	2% (e)	4%
Mercury	0.15	1.3
Potassium	-	-
Magnesium	-	-
Manganese	460	1100
Molybdenum	-	-
Sodium	-	-
Nickel	16	50
Lead	31	110
Antimony	2	25
Vanadium	-	-
Zinc	120	270

Table 6-6 (continued)

Potentially Applicable Sediment Criteria
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

	Sediment Criteria for Fresh Water			
Parameters	**Human Health Bioaccumulation**	**Benthic Aquatic Life Acute Toxicity**	**Benthic Aquatic Life Chronic Toxicity**	**Wildlife Bioaccumulation**
TCL Semi-Volatile Organic Compounds (µg/kg)				
Phenanthrene	-	-	120,000	-
Anthracene	-	-	-	-
Fluoranthene	-	-	1,020,000	-
Pyrene	-	-	-	-
Benzo(a)anthracene	1,300	-	-	-
Chrysene	1,300	-	-	-
Benzo(b)fluoranthene	1,300	-	-	-
Benzo(k)fluoranthene	1,300	-	-	-
Benzo(a)pyrene	1,300	-	-	-
Indeno(1,2,3-cd)pyrene	1,300	-	-	-
Benzo(g,h,i)perylene	-	-	-	-
Miscellaneous Parameters				
Total Petroleum Hydrocarbons	-	-	-	-
Chloride	-	-	-	-
Nitrate	-	-	-	-
Sulfate	-	-	-	-
Total Organic Carbon	-	-	-	-

a/ New York State Department of Environmental Conservation, July 1994, "Technical Guidance for Screening Contaminated Sediments."
b/ Only detected Target Analyte List Inorganics (and hexavalent chromium and molybdenum) are included.
c/ mg/kg = milligrams per kilogram; µg/kg = micrograms per kilogram.
d/ " - " indicates that a standard has not been developed.
e/ "%" = percent.


LAW-06
LAW-05
LAE-04
RFI-09
WT-3
WT-2
WT-1A
WT-4
WT-13
RFI-08
RFI-10
MW-3
RFI-17
RFI-07
RFI-03
RFI-16
RFI-02
MW-1
WP-4
RFI-15
CAMU A
CAMU B
CAMU C
CAMU D
LUCAS AVENUE PLANT
HOWARD AVENUE MILLS
BAR FINISHING & STORAGE
SPECIAL METALS, INC.
LEGEND
SWMU LOCATION AND UNIT DESIGNATION (REFER TO FIGURE 1-2 FOR DESCRIPTION)
AOC LOCATION AND UNIT DESIGNATION (REFER TO FIGURE 1-2 FOR DESCRIPTION)
RFI-04 MONITORING WELL LOCATION AND DESIGNATION
MW-1
Molybdenum 03/97
SAMPLE LOCATION
DATE OF SAMPLE COLLECTION
CONSTITUENT EXCEEDING POTENTIALLY APPLICABLE CRITERIA
CAMUs
A FORMER LUCAS AVENUE PLANT WEST PICKLE FACILITY
B FORMER BRIGHAM ROAD PLANT PICKLE FACILITY
C BAR FINISHING AND STORAGE PICKLE FACILITY
D FORMER LUCAS AVENUE PLANT EAST PICKLE FACILITY
APPROXIMATE AREA OF SWMUs
LOCATION OF FORMER IMPOUNDMENTS
FENCE LINE
UNPAVED ROADWAYS
CAMU LINES
PROPERTY LINE
NOTES:
1. ELEVATIONS SHOWN REFER TO NGVD 29.
2. PROPERTY LINE WAS ADJUSTED DUE TO NON-CLOSURE AND THE LACK OF COORDINATES TO PLACE IT ON THE DRAWING.
REFERENCES:
1. McINTOSH & McINTOSH, P.C. DRAWING TITLED, "TOPOGRAPHICAL MAP OF THE AL TECH SPECIALTY STEEL CORPORATION SITE," DATED APRIL 2, 1996, JOB NO. 6216, FILE: ALTECH.DWG.
2. DRAWING TITLED, "SURVEY OF PROPERTY OF ALLEGHENY-LUDLUM STEEL CORP.," DATED SEPT. 21, 1976, REV. JAN. 5, 1977 AND 12-27-78.
SCALE, FEET
120 80 40 0 120 240
REVISIONS
DATE
DESCRIPTION
BY
SEAL
DRAWN
CHECKED
APPROVED
EXCEEDANCES OF POTENTIALLY APPLICABLE CRITERIA FOR GROUNDWATER SAMPLES
AL TECH SPECIALTY STEEL CORPORATION
DUNKIRK, NEW YORK
PHASE I RFI
ENVIRONMENTAL STRATEGIES CORPORATION
Four Penn Center West
Suite 315
Pittsburgh, PA 15276
(412) 787-5100
Figure 6-1
Drawing Number
483803-E25

7.0 Investigation Analysis

The following sections present an analysis of conditions at the site, including an evaluation of potential impact from the SWMUs, AOCs, and CAMUs on relevant environmental media and identification of necessary subsequent actions, if any. Consistent with the previous sections, these summaries are presented on an area-by-area basis.

During implementation of the Phase I RFI, samples were collected for chemical laboratory analysis from four environmental media: soil, groundwater, surface water, and sediment. The evaluation and discussion of impact from associated units to site soil and groundwater conditions is generally focused on key metals (hexavalent chromium, total chromium, molybdenum, and nickel) and TCL VOCs, SVOCs, and PCBs, and miscellaneous indicator parameters (chloride, fluoride, sulfate, and nitrate). Conditions which appear to be indicative of general impact from site operations are typically not discussed below. These conditions include:

- the presence of total chromium, molybdenum, and nickel at elevated concentrations in the shallow soil samples collected across the site (0 to 3 in-bgs and 0 to 2 ft-bgs)
- total chromium present at elevated concentrations in several deeper, subsurface soil samples collected from the site
- the presence of molybdenum at elevated concentrations in site groundwater samples

In addition, several metals were nearly consistently detected in groundwater samples at concentrations above the potentially applicable criteria and are believed to be indicative of local water quality and may not be representative of impact purely from the site (e.g., aluminum, beryllium, iron, manganese, sodium). Therefore, no further action has been identified to address these constituents at elevated concentrations in groundwater.

A summary of recommended and anticipated future actions for all SWMUs, AOCs, and CAMUs, as discussed in the following sections, is presented in Table 7-1.

The results of the Air Pathways Analysis for the site are summarized in Section 7.5. The Air Pathways Analysis report is presented in its entirety in Appendix R.

7.1 Analysis of SWMU Conditions

7.1.1 SWMU 5/Former Grinding Room Pickling Process

Potential SWMU-related materials associated with this unit include: acid-related constituents, lime, chromium, and nickel. Potential indication of impact from operation of this unit on environmental media is limited to the varying pH levels reported for the three samples collected at RB-01:

- 4.48 s.u. in the 0 to 2 ft-bgs sample
- 7.37 s.u. in the 5 to 7 ft-bgs sample
- 10.93 s.u. in the 7 to 9 ft-bgs sample

pH levels in site soils typically ranged from 7 to 8.5 s.u. This observation and the type of operations performed at this unit suggest some impact to the underlying soils.

Soil conditions in this area have apparently been impacted by operation of this SWMU. However, no further action is currently warranted for this SWMU there is no current potential for exposure to the soils containing elevated concentrations of metals.

There is no apparent groundwater impact associated with this SWMU. Similar parameters to those associated with this SWMU that were present in the groundwater samples from Wells MW-3, RFI-07, and RFI-17 are believed to be indicative of impact from operation of the BFS Pickling Facility (Section 7.3.3).

7.1.2 SWMU 9/Former TCA Container Storage Area

Potential SWMU-related materials associated with operation of this unit include: trichloroethane, oils, solvents, paints, and thinners. Potential indications of impact from operation of the unit on environmental media include the presence of TCL VOCs (trichloroethene, toluene, and styrene) and VOC TICs in soil samples collected at RB-02. Despite limited apparent impact from SWMU operations on soil conditions, no further action is warranted for this SWMU, because there is no current potential for exposure to the soils containing elevated concentrations of metals and VOCs.

None of these constituents were detected at elevated concentrations, suggesting apparent impact from this unit is minimal. This also suggests low potential for groundwater impact from this unit. Similar parameters to those associated with this SWMU that were present in groundwater samples from Well LAE-4 are believed to be indicative of impact from operation of the 1,1,1-trichloroethane tank area within the Former LAP East Pickling Facility (Section 7.3.4).

7.1.3 SWMU 11/Shark Pit Residual Material Loading Area

Potential SWMU-related materials associated with operation of this unit include: metal oxides, oil, oily sludges, and PCBs. Potential indications of impact on environmental media in this area, which are not necessarily attributable to this SWMU, include:

- the presence of SVOC TICs at concentrations above background in soil samples collected from 2 to 4 and 9 to 10 ft-bgs at RFI-10
- the presence of sulfate and chloride at elevated concentrations in groundwater samples collected from RFI-10
- the presence of nitrate in groundwater samples collected from RFI-10

Placement of Well RFI-10 was appropriate for monitoring groundwater quality downgradient of this SWMU. However, given the distance between SWMU 11 and the RFI-10 boring it is not certain that the soil impact observed at this location from SVOC TICs is indicative of impact from this SWMU. The source is more likely associated with SWMU 13C, Crucible Disposal Area, than SWMU 11. Consequently, investigation of soil conditions immediately proximate to SWMU 11 will be performed as part of the Phase II RFI to address this data gap. Given the nature of the constituents associated with SWMU 11, impact to soil, if any, is anticipated to be limited.

The Phase II RFI will include the development of site-specific risk-based action levels for RCRA and facility-related metals (and PAHs). These action levels will be compared with the site surface and subsurface soil data to identify the need for an ICM or further evaluation of site soil as part of the CMS.

Based on the water quality data generated for groundwater samples collected from RFI-10, there is no apparent impact to groundwater quality from SWMU 11. Consequently, no further evaluation of potential impact from this SWMU on groundwater quality is warranted. Impact to groundwater quality from sulfate, chloride, and nitrate, in this area will be monitored as part of an anticipated compliance monitoring program along the facility's downgradient property boundaries.

7.1.4 SWMU 13/Crucible Disposal Areas and SWMU 14/Waste Disposal Areas

Potential SWMU-related materials associated with operation of SWMU 13 include: metals, metal salts, and mill scale. Potential SWMU-related materials associated with operation of SWMU 14 include: metals (from swarf, slag, and crucibles).[1]

Potential indications of impact to environmental media in these areas include:

- one or more PAHs (TCL SVOCs) were detected at elevated concentrations in the surface soil samples (0 to 2 ft-bgs) collected from TP-04 and RFI-04 and the surficial soil sample (0 to 3 in-bgs) collected from TP-07

- SVOC TICs were detected at total concentrations above background in the majority of soil samples collected from these locations, particularly in the shallow samples (0 to 3 in-bgs and 0 to 2 ft-bgs)

- PCB Aroclor 1260 was detected at an elevated concentration in the sample collected at RFI-11 from 8 to 10 ft-bgs (SWMU 13C)

Operation of this SWMUs is believed to be the source of these constituents in soil. However, no further action is currently warranted for soils in these areas based on the following factors.

- Site soils will be compared with site-specific risk-based action levels for RCRA and facility-related metals and PAHs as part of the Phase II RFI (Section 7.1.3).

- Although Aroclor was detected at a concentration of 31 mg/kg in the sample collected from 8 to 10 ft-bgs at RFI-11, which exceeds the PCB Spill Cleanup limit of 25 mg/kg in surface and subsurface soils in restricted areas (40 CFR 761.125), there is currently no complete exposure pathway to the subsurface soil.

The absence of key metals (excluding molybdenum) at elevated concentrations and the absence of TCL SVOCs and SVOC TICs in groundwater samples collected from RFI-04 and

[1] The following units and sample locations are associated as noted:

SWMU 13A - TP-08	SWMU 14A - TP-07
SWMU 13B - RFI-04 and TP-04	SWMU 14B - RFI-04 and TP-04
SWMU 13C - RFI-11	SWMU 14C - TP-11

RFI-11 suggest little impact from operation of these disposal areas on site groundwater quality. Therefore, no further evaluation of groundwater quality in these areas is warranted.

7.1.5 SWMU 15/Former Waste Acid Surface Impoundments

Potential SWMU-related materials associated with operation of this unit include: nitric, sulfuric, and hydrofluoric acids, lime, and metals. The soil and groundwater sample data collected from RFI-02 do not indicate impact consistent with the materials handled in this SWMU. However, the boring and monitoring well location may not have been installed at the most appropriate location to detect impacts from this unit (Figure 2-1).

During the Phase II RFI, a soil boring/monitoring well will be installed within or immediately downgradient (i.e., to the south) of the former impoundments to address this data gap. The need for future potential action, in response to elevated metals concentrations in soil, will be addressed during the Phase II RFI, as discussed in Section 7.1.3.

7.1.6 SWMU 16/Willowbrook Pond

Potential SWMU-related materials associated with operation of this unit include: metals and PCBs. Potential indications of impact on environmental media in this area include:

- PCB Aroclor 1248 was detected at an elevated concentration in the surficial soil sample collected from RFI-15
- cis-1,2-dichloroethene and trichloroethene (TCL VOCs) were detected at elevated concentrations in groundwater samples collected from WP-4 and RFI-15
- ammonia was detected at an elevated concentration in a groundwater sample collected from WP-4

The presence of PCBs in the surficial soil sample collected from RFI-15 is not typical of site conditions. However, the only means of migration from the pond to the ground surface would be via overflow from the pond and Willowbrook Pond is not known to have overflowed its berms in recent years. Consequently, the source of the low PCB concentration reported for this sample is uncertain.

The presence of TCL VOCs in groundwater samples collected from WP-4 and RFI-15 is not typical of site conditions. However, the source of these constituents is not believed to be Willowbrook Pond, based on the detection of these constituents in the groundwater sample collected during Round 1 from RFI-16, which appears to be hydraulically upgradient of both WP-4 and RFI-15. Similarly, the source of ammonia in the groundwater sample collected from WP-4 is not believed to be Willowbrook Pond.

Although impact to soil and groundwater has occurred in this area, it is not believed to have resulted from operation of this SWMU. No further action is required to address the PCBs detected in the surface soil sample collected from RFI-15, because the reported concentration of 2.6 is below the PCB Spill Cleanup limit of 25 mg/kg for soil in restricted areas. The need for future potential action, in response to elevated metals concentrations in soil, will be addressed during the Phase II RFI, as discussed in Section 7.1.3. Groundwater quality in the area of WP-4 and RFI-15, and RFI-16 (which is hydraulically upgradient of Willowbrook Pond), will be evaluated during the Phase II RFI to determine the source and extent of TCL VOC impact.

7.1.7 SWMU 17/Closed Surface Impoundment and SWMU 22/Wastewater Treatment Plant Areas

No further action for soil is currently warranted for this area. The need for future potential action, in response to elevated concentrations of metals in soil will be addressed during the Phase II RFI, as discussed in Section 7.1.3.

Groundwater quality in this general has been impacted by plant operations. The impacted wells include WT-1A, WT-1B, WT-2, WT-3, WT-4, RFI-09, RFI-10, and RFI-11. The parameters indicative of impact include: TCL VOCs and VOC TICs, TCL SVOCs and SVOC TICs, metals and miscellaneous parameters.

Because of the overlapping physical nature of these operations and similarities in the associated substances of concern, accurate identification of the source is difficult. Consequently, AL Tech proposes to evaluate groundwater quality associated with this general area as a CAMU (i.e., CAMU E), which is addressed in Section 7.3.5.

7.1.8 SWMU 18/Grinding Dust Transfer Pile

Potential SWMU-related materials associated with historical operation of this unit include: metals (from grindings and grinding wheel grit), and oils. Potential indications of impact to environmental media from operation of this unit appear to be limited to the presence of

SVOC TICs at total concentrations at concentrations above background in each of the soil samples collected from TP-02.

Although soil in this area appears to have been impacted by unit operations, no further action is currently warranted for soils. The need for future potential action, in response to elevated concentrations of metals in soil, will be addressed during the Phase II RFI, as discussed in Section 7.1.3.

There is no apparent impact to downgradient groundwater quality from this SWMU.

7.1.9 SWMU 19/Former Waste Pile

Potential SWMU-related materials associated with operation of this unit include: metals (from grinding wheels, scrap, shavings), coal, and oils. Potential indications of impact to environmental media from operation of this unit appear to be limited to the presence of benzo(a)anthracene (PAH) at an elevated concentration in the soil sample collected from 9 to 10 ft-bgs at TP-06 and the presence of SVOC TICs at concentrations above background in each of the soil samples collected from this location.

Soil in this area has been impacted, possibly by unit operations. No further action is currently warranted for soils. The need for future potential action, in response to elevated concentrations of metals and benzo(a)anthracene (a PAH) in soil, will be addressed during the Phase II RFI, as discussed in Section 7.1.3.

There is no apparent impact to downgradient groundwater quality from this SWMU. Groundwater quality for Wells WT-1A, WT-1B, and WT-4 (downgradient of this SWMU) is believed to be indicative of impact from other sources.

7.1.10 SWMU 20/Waste Asbestos Accumulation Area

Asbestos is the only SWMU-related material associated with this unit. Asbestos was present in either of the two surface soil samples collected from this area during the Phase I RFI. Therefore, it is apparent that unit operations have not impacted site conditions.

Soil in this area has been impacted, although not by operation of this SWMU. No further action is currently warranted for soils. The need for future potential action, in response to elevated metals concentrations in soil, will be addressed during the Phase II RFI, as discussed in Section 7.1.3.

7.1.11 SWMU 21/Grinding Swarf Storage Area

Potential SWMU-related materials associated with operation of this unit include: metals (from grinding wheels and scrap). Potential indications of impact to environmental from operation of this unit include the presence of SVOC TICs at concentrations above background concentrations in each of the soil samples collected from TP-03.

Soil in this area has been impacted, possibly by SWMU operations. No further action is currently warranted for soils. The need for future potential action, in response to elevated concentrations of metals in soil, will be addressed during the Phase II RFI, as discussed in Section 7.1.3.

There is no apparent impact to downgradient groundwater quality from this SWMU.

7.1.12 SWMU 23/API Oil/Water Separator

Potential SWMU-related materials associated with operation of this unit include: oils, mill scale, and metals. Potential indications of impact to environmental media in this area, but which are not necessarily related to SWMU operations include:

- phenanthrene (TCL SVOC/PAH) was detected at an elevated concentration in the surface soil sample collected from 0 to 2 ft-bgs at RFI-03; SVOC TICs were detected in the surficial soil sample (0 to 3 in-bgs) collected from this location at a total concentration above background

- molybdenum was detected at elevated concentrations and at the highest concentrations reported in nonunit-specific monitoring wells (i.e., site or perimeter wells) in the groundwater samples collected from RFI-03 during both sampling rounds

- hexavalent chromium was detected in a groundwater sample collected from RFI-03 during Round 2 (but was not detected in the second sample collected during Round 2 or in the sample collected during Round 1)

- fluoride was detected at an elevated concentration and at the highest concentration reported for non-specific monitoring wells (i.e., site or perimeter wells) in the groundwater samples collected from RFI-03 during both sampling rounds

Only phenanthrene is potentially indicative of operations-related impact. The source of groundwater impact is not known.

Soil in this area has been impacted, possibly by SWMU operations. No further action is currently warranted for soils. The need for future potential action, in response to elevated concentrations of metals and phenanthrene (a PAH) in soil, will be addressed during the Phase II RFI, as discussed in Section 7.1.3.

Groundwater quality in this area has been impacted, although probably not as a result of SWMU operations. Due to the location of this area within the central portion of the facility (i.e., limited potential for offsite migration) and an anticipated compliance monitoring program at the facility's downgradient property boundaries, no further action is necessary to address the presence of metals or miscellaneous parameters at elevated concentrations in groundwater samples from RFI-03.

7.2 Analysis of AOC Conditions

7.2.1 AOC 1/Transformers

Potential AOC-related materials associated with operation of the transformers include: PCBs and oils. Potential indications of impact to soils near Transformers T1, T2, and T3 include:

- PCB Aroclors were detected at elevated concentrations in three of the four soil samples collected from Transformer T3

- TPH was detected in soil samples collected from each of the transformer areas at higher concentrations than typically observed in other site samples, particularly samples collected from T3

Both constituents suggest impact from operation or maintenance of these transformers.

The presence of total chromium, molybdenum, and nickel at elevated concentrations (as discussed in Section 6) is typical of site conditions as well as the slag used to cover these areas. The presence of PCBs (which were otherwise rarely detected in site soil samples) and the notably higher concentrations of TPH, are clearly believed to be related to operation of these units.

Soil in this area has been impacted. No further action is currently warranted to address the presence of elevated concentrations of metals in the soil. The need for future potential action, in response to metals, will be addressed during the Phase II RFI, as discussed in Section 7.1.3. Further action in this area is, however, required to address the presence of PCBs at a concentration above the PCB Spill Cleanup limit of 25 mg/kg for restricted areas in one location in Transformer T3. AL Tech proposes to implement an ICM (Section 8.2.2).

There was no evaluation of potential impact to groundwater quality from these units as neither PCBs nor TPH would be anticipated to be present or present at notable concentrations in groundwater.

7.2.2 AOC 3/Cooling Towers

Potential AOC-related materials associated with these units (AOC 3A and AOC 3B) include: oils, metals, and PCBs.

7.2.2.1 AOC 3A/Rust Furnace Cooling Tower

Indications of potential impact to environmental in this area include:

- the presence of SVOCs
  - 1,4-dichlorobenzene was detected at an elevated concentration in the sample collected from 6 to 8 ft-bgs at RB-07; 1,3-dichlorobenzene, 1,2,4-trichlorobenzene, dibenzofuran, and carbazole, were detected in samples collected from 0 to 2 and 6 to 8 ft-bgs
  - PAHs were detected at elevated concentrations in samples collected from 0 to 2 and 6 to 8 ft-bgs at this location
  - SVOC TICs were detected at concentrations above background in soil samples collected from 0 to 2, 6 to 8, and 8 to 10 ft-bgs at this location

- PCB Aroclors were detected at elevated concentrations in samples collected from 0 to 2 and 6 to 8 ft-bgs at RB-07

Both of these factors suggest impact from operation of this unit. However, the presence of the SVOC TICs, PAHs and PCBs could also be related to the historical operation of a former transformer in this area.

Soil in this area has been impacted, possibly as a result of operation of this SWMU. No further action is currently warranted for soil containing metals and PAHs at elevated concentrations. The need for future potential action, in response to elevated concentrations of metals and PAHs in soil samples, will be addressed during the Phase II RFI, as discussed in

Section 7.1.3. No further action is required to address PCBs in this area because the reported concentrations were below the PCB Spill Cleanup limit of 25 mg/kg for soil in restricted areas.

There was no evaluation of potential impact to groundwater quality from this unit as neither the SVOCs nor PCBs would be anticipated to be present or present at notable concentrations in groundwater.

7.2.2.2 AOC 3B/HAP Cooling Tower

The only potential indication of impact to environmental media in the area of this unit, is the detection of SVOC TICs in the surface soil sample collected from RB-06 (0 to 2 ft-bgs) at a total concentration higher than reported in background samples.

Additional surface soil samples will be completed in immediately proximity of this cooling tower during the Phase II RFI. The location in which RB-06 was completed during the Phase I RFI was not appropriate for evaluating potential impacts from this AOC. The need for future potential action, in response to elevated concentrations of metals in soil samples collected from RB-06, will be addressed during the Phase II RFI, as discussed in Section 7.1.3.

There was no elevation of potential impact to groundwater quality from this unit as neither the SVOCs nor PCBs would be anticipated to be present or present at notable concentrations in groundwater.

7.2.3 AOC 6/Former Above Ground Fuel Oil Tank

Fuel oil and its constituents are the only potential AOC-related materials associated with this unit. Indications of potential impact to environmental media in this area, from operation of AOC 6, include:

- the presence of PAHs (TCL SVOCs) at elevated concentrations in the soil sample collected at TP-09 from 0 to 2 ft-bgs
- the presence of SVOC TICs at total concentrations above background, and increasing total SVOC TIC concentrations with increased sample depth
- the presence of TPH at concentrations above those typically observed in site soil samples, particularly in the sample collected from 0 to 2 ft-bgs

The location in which RB-06 was completed during the Phase I RFI was not appropriate for evaluating potential impacts from this AOC. Additional surface soil samples will be completed in immediately proximity of this cooling tower during the Phase II RFI. The need for future potential action, in response to elevated concentrations of metals and PAHs in soil samples collected from RB-06, will be addressed during the Phase II RFI, as discussed in Section 7.1.3.

There is no apparent impact to groundwater quality data from this AOC. Groundwater quality for Well WT-1A is not believed to be indicative of impact from AOC 6, due to the nature of the constituents detected in samples collected from this well.

7.2.4 AOC 7/Scrap Steel Storage Areas

Potential AOC-related materials associated with operation of these units (AOC 7A, 7B, and 7C) include: oils and metals.[2] Indications of potential impact to environmental media included:

- the presence of PAHs (TCL SVOCs) at elevated concentrations in samples collected at TP-05 from ground surface to a depth of 3 feet
- the presence of SVOC TICs at total concentrations higher than those reported for background in each of the three samples collected from TP-01, three of four samples collected from TP-05, and in both samples collected from TP-10

In addition, total chromium and nickel were detected at elevated concentrations in most of the samples collected from test is completed in these areas to depths of 9 feet (TP-01, TP-05, and TP-10), which is somewhat unusual for site soils.

Soil in this area has been impacted, possibly as a result of operation of this SWMU. No further action is currently warranted for soil. The need for future potential action, in response to elevated concentrations of metals in soil samples, will be addressed during the Phase II RFI, as discussed in Section 7.1.3.

There is no apparent impact to downgradient groundwater quality from operation of these areas.

[2] The following units and sample locations are associated as noted:
AOC 7A - TP-01, AOC 7B - TP-05, AOC 7C - TP-10

7.2.5 AOC 8/Former Coal Storage Area

Potential AOC-related materials associated with operation of this unit include: PAHs (TCL SVOCs). The only indication of potential impact from operation of this unit is the presence of PAHs at elevated concentrations in the shallow soil sample(s) collected at RB-03. However, no further action is currently warranted for soil. The need for future potential action, in response to elevated concentrations of metals and PAHs in soil samples, will be addressed during the Phase II RFI, as discussed in Section 7.1.3.

There was no evaluation of potential impact to groundwater quality from this unit. In addition, PAHs would not typically be anticipated to be present or present at notable concentrations in groundwater.

7.2.6 AOC 11/Former Coal Gasification Plant

Potential AOC-related materials associated with operation of this unit include: coal derivatives and cyanide. Impact from operation of this unit would be anticipated to include the presence of PAHs and cyanide at elevated concentrations throughout the soil column or in groundwater or both. The only potential indication of impact from this unit is the detection of five PAHs at elevated concentrations in the sample collected at RFI-06 from 0 to 3 in-bgs; phenanthrene was also detected at an elevated concentration in the sample collected at this location (0 to 2 ft-bgs).

The presence of elevated concentrations of PAHs at the ground surface in this area may also be related to the nearby Former Coal Storage Area (AOC 8), because the coal storage area was accessed through the area in which RFI-06 was completed.

Soil in this area has been impacted, possibly as a result of operation of this AOC. No further action is currently warranted for soil. The need for future potential action, in response to elevated concentrations of metals and PAHs in soil samples, will be addressed during the Phase II RFI, as discussed in Section 7.1.3.

There was no apparent impact to groundwater quality from this unit.

7.3 Analysis of CAMU Conditions

Four CAMUs were identified in the NYSDEC-approved Work Plan, including:

- CAMU A – Former LAP West Pickling Facility Area
- CAMU B – Former BRP Pickling Facility Area
- CAMU C – BFS Pickling Facility
- CAMU D – Former LAP East Pickling Facility Area

As stated in Section 7.1, AL Tech proposes to classify another area as a CAMU, CAMU E. AL Tech believes this classification is appropriate based on the variety of constituents detected in groundwater proximate to SWMU 13C, SWMU 17, and SWMU 22, and the variety of activities that have historically taken place in this area.

7.3.1 CAMU A/Former LAP West Pickling Facility

Each of the following factors indicates impact from operation of this unit on adjacent soil and groundwater quality:

- lead was detected in the TCLP extract for the soil sample collected from 0 to 2 ft-bgs at RB-04 at a concentration above the TC limit

- hexavalent chromium was detected at an elevated concentration in the soil sample collected from 2 to 4 ft-bgs at RB-05; pHs in the soil samples collected from this location ranged from approximately 4 s.u. (0 to 4 ft-bgs) to 9.93 s.u. (8 to 10 ft-bgs)

- hexavalent chromium was detected at elevated concentrations in soil samples collected from 6 to 8 ft-bgs at LWB-02 and LWB-03; pHs in the soil samples collected from the interior borings ranged widely with depth at each location (from 3.52 to 11.06 s.u.)

- total chromium was detected in the TCLP extract for the soil sample collected from 6 to 8 ft-bgs at LWB-03 at a concentration above the TC limit

- a wide range of metals and cyanide were detected at elevated concentrations in one or more groundwater samples collected from LAW-5 and LAW-6

- total chromium and hexavalent chromium were detected at elevated concentrations in the groundwater samples collected from LAW-5 and LAW-6

- pHs in the groundwater samples collected from LAW-6 were more basic than typically observed in site groundwater (8.98 and 9.19 s.u.)

- fluoride, chloride, nitrate, and sulfate were detected at elevated concentrations in one or more groundwater samples collected from LAW-5 and LAW-6

Soil and groundwater in this area have been affected. AL Tech prepared and submitted an ICM work plan to perform additional investigation and, as appropriate, implement corrective measures (ESC 1997) for this CAMU and CAMU C. The work plan was approved by NYSDEC (1997). Implementation of the work plan began in September 1997; a summary of the findings to date is presented in Appendix S. Additional ICM work is anticipated to be performed during the fall of 1998. The additional work will include a soil ICM to address conditions at RB-04 (Section 8.2.2).

As part of the effort to address this area, AL Tech also performed limited remediation of the pickle house area which consisted of the removal of 95 percent of the crystalline Kolene bath and the sodium hydride bath and repair of the LAP West Pickle House roof. A summary of these activities is also presented in Appendix S.

7.3.2 CAMU B/Former BRP Pickling Facility

Only two factors indicate impact from operation of this unit on adjacent soil and groundwater: pH levels in soil samples collected from the interior borings varied from 4.48 to 10.32 s.u. and sulfate was detected at elevated concentrations in the groundwater samples collected from MW-1.

Based on the current understanding of groundwater flow at the site, RFI-13 may not have been appropriately located to evaluate potential impact of this CAMU on groundwater quality. Consequently, two shallow monitoring wells will be installed at locations downgradient of the former BRP Pickle Facility during the Phase II RFI to evaluate groundwater quality.

The need for future potential action, in response to elevated concentrations of metals in soil samples collected from RFI-13, will be addressed during the Phase II RFI, as discussed in Section 7.1.3.

7.3.3 CAMU C/BFS Pickling Facility

Three factors indicate impact to environmental media from operation of this unit:

- total chromium and hexavalent chromium were detected at elevated concentrations in groundwater samples collected from MW-3

- total chromium was detected at elevated concentrations in groundwater samples collected from RFI-17

- chloride, nitrate, and sulfate were detected at elevated concentrations in groundwater samples collected from MW-3, RFI-07, and RFI-17.

Soil and groundwater in this area have been affected by pickling operations. AL Tech prepared and submitted an ICM work plan to perform additional investigation and, as appropriate, implement corrective measures (ESC 1996a) for this CAMU and CAMU A. The work plan was approved by NYSDEC (1997). Implementation of the ICM work plan for this area has not been initiated, because CAMU C is located within the central portion of the facility and poses negligible potential for offsite impact and because BFS is currently operational.

7.3.4 CAMU D/Former LAP East Pickling Facility

Each of the following factors indicates impact to environmental media from operation of this unit on soil and groundwater quality:

- trichloroethene (TCL VOC) was detected at elevated concentrations in 5 of 7 soil samples collected at interior boring locations at depths to 13 feet and cis-1,2-dichloroethene (TCL VOC) was detected at an elevated concentration in samples collected from 7 to 9 and 11 to 13 ft-bgs at LEB-03

- vinyl chloride, 1,1-dichloroethene, trans-1,2-dichloroethene, cis-1,2-dichloroethene, and trichloroethene (TCL VOCs) were detected at elevated concentrations in the groundwater samples collected from LAE-4; VOC TICs were also detected in the groundwater samples collected from this location

- naphthalene (TCL SVOC/PAH) was detected at an elevated concentration in a groundwater sample collected from LAE-4

Soil and groundwater in this area have been affected by CAMU operations. The source and extent of TCL VOCs in both media will be defined during the Phase II RFI. The need for future potential action, in response to elevated concentrations of metals and PAHs in soil samples, will be addressed during the Phase II RFI, as discussed in Section 7.1.4.

7.3.5 CAMU E/Northwest Quadrant Fill Area

The detection of SVOC TICs at concentrations above background in several of the soil samples collected from RFI-09 and RFI-10 indicate potential impact from facility operations in this area. The presence of the TICs does not warrant further investigation of soils. The need for future potential action, in response to elevated concentrations of metals in soil, will be addressed during the Phase II RFI, as discussed in Section 7.1.3.

Indications of impact from facility operations on groundwater quality in this area include:

- vinyl chloride, cis-1,2-dichloroethene, and trichloroethene (TCL VOCs) at elevated concentrations in groundwater samples collected from WT-2
- fluoride was detected at an elevated concentration in a groundwater sample collected from WT-3
- chloride was detected at an elevated concentration in a groundwater sample collected from WT-1B
- sulfate was detected at elevated concentrations in groundwater samples collected from WT-3 and WT-4
- pH, total phenols, and ammonia were detected at elevated concentrations in the groundwater samples collected from WT-2

The presence of most of these constituents is not indicative of impact from general operations but a variety of potential sources.

The nature of these constituents, excluding the TCL VOCs, do not warrant further investigation. In addition, the location of this CAMU limits the potential for offsite migration of these constituents at elevated concentrations. However, groundwater quality downgradient of this CAMU is anticipated to be evaluated as part of a compliance monitoring program along the downgradient boundaries of the facility.

The nature of the TCL VOCs suggests that additional evaluation of this area, particularly in proximity to WT-2, should be addressed during the Phase II RFI.

7.4 Analysis of General and Perimeter Site Conditions

The general site and perimeter environmental media sample locations include GS-01 through GS-05, RFI-01, RFI-08, RFI-12, and RFI-16 (GS-01 and GS-02 were also addressed in Section 7.1.10). The only indications of impact from site operations, in addition to elevated concentrations of total chromium, molybdenum, and nickel in the soil and molybdenum in the groundwater, include:

- lead was detected in the TCLP extract for the soil sample collected from 0 to 3 in-bgs at RFI-08 at a concentration above the TC limit
- the presence of PAHs (TCL SVOCs) at elevated concentrations in the surficial soil sample collected from RFI-08
- pHs of 8.5 s.u. and higher in soil samples collected from RFI-16
- the presence of cis-1,2-dichloroethene and trichloroethene at elevated concentrations in the groundwater sample collected from RFI-16 (Round 1)

The exact location and nature of the sources of impact are not known.

Except for RFI-08, the need for future potential action in response to elevated concentrations of metals and PAHs in soil samples, will be addressed during the Phase II RFI, as discussed in Section 7.1.3.

Because lead was also detected at an elevated concentration in one of the groundwater samples collected from RFI-08 and this well is located near the downgradient facility boundary, additional investigation of groundwater quality is warranted during the Phase II RFI. A soil ICM will also be performed to address the presence of lead above the TC limit in the surficial soil sample collected from this location. Both scopes of work are addressed in Section 8.2.

As discussed in Sections 7.1.6, additional investigation of soil and groundwater in the area of RFI-16 will also be performed during the Phase II RFI.

7.5 Unnamed Tributary to Crooked Brook

7.5.1. Surface Water

Only one constituent was detected at an elevated concentration in the surface water samples collected during implementation of the Phase I RFI: iron was detected in each of the samples collected from S-01, S-02, and S-03 at concentrations slightly above the Class D water quality standard.

Based on these data, it does not appear that surface water quality in the unnamed tributary to Crooked Brook has been adversely affected by facility operations. Therefore, no further action is necessary for surface water.

7.5.2 Sediment

The data for sediment samples collected from S-01, S-02, and S-03 suggest impact to sediment. This conclusion is based on these factors:

- arsenic, cadmium, copper, manganese, nickel, and lead were detected at concentrations above the Lowest Effect Level in one or more samples collected from each of the three locations

- chromium was detected at concentrations above the Lowest Effect Level in samples collected from S-01 and S-03 (duplicate)

- nickel was detected at a concentration above the Severe Effect Level in the samples collected from S-02 and S-03

- lead was detected at a concentration above the Severe Effect Level in the sample collected from S-03

- hexavalent chromium was detected in the sample collected from S-01 at a concentration slightly above the detection limit (there is no established criteria applicable to hexavalent chromium in sediment)

- PAHs (TCL SVOCs) were detected at elevated concentrations in samples collected from S-01 (chrysene only) and S-03 (chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, and benzo(a)pyrene

- SVOC TICs were detected in samples collected from S-01 and S-02 (there is no established criteria applicable to SVOC TICs in sediment)

- chloride was detected in the sample collected from S-01 at a notably higher concentration (15 to 20 times) than in the samples collected from S-02 and S-03

Due to the apparent impact to the stream and uncertainty as to "background" conditions based on the location of S-01, additional investigation of sediments in the tributary is warranted as part of the Phase II RFI.

7.6 Air Pathways Analysis Summary

The evaluation of predicted fenceline and off-site ambient air concentrations of PM_{10} and TAL Inorganics using the ISCST3 model were shown to be below state and federal ambient concentration limits. The impact of TAL Inorganics on off-site receptors was less than one percent of the cited state limit for all compounds. The 24-hour and annual concentration of PM_{10} was found to be 80 percent and 81 percent, respectively of the federal limit.

7.7 Process Pits and Sewers

7.7.1 Process Pits

The findings of the process pit inspections suggest there is not a significant potential for any of the pits to have affected adjacent soil and groundwater quality. The only pits proximate to sampling locations for soil or groundwater were those associated with the facility's WWTP, RFI-09. Although this location appears to have been generally impacted by site operations, there is no clear indication that any of the impact is associated with the inspected pits (Nos. 26, 27, and 29).

The inspection did, however, identify the need to perform repairs, cleanouts, or both for several of the pits, including:

Pit No./Description	Status	Proposed Action
Nos. 3E and 3W/Drawing Oil Storage Pits	inactive	cleanout
No. 8/Shark Pit	active	cleanout/repair
No. 11/Olson Pump Pit	active	repair
No. 16/Shape Mill Pit (scale pit only)	active	repair
and Mini Mill Pit	active	cleanout/repair

Pit No./Description	Status	Proposed Action
No. 17/HAP Pump Pit	active	repair
No. 29/Serpentine Outfall	active	repair

7.7.2 Process Sewers

It appears that the handling of process wastewaters has had a limited affect on groundwater quality and (to a less defined extent) soils, in a limited area of the site based on:

- the known locations of the historical and current process sewers
- history of reportable releases
- groundwater conditions proximate to the WWTP and former closed surface impoundment,

AL Tech is currently evaluating the most appropriate means of upgrading the existing pickling process sewer system (SWMU 24). The upgrade is anticipated to remove further significant sources of pickling wastes to site groundwater, as discussed in Section 5.

Table 7-1

RCRA Corrective Action Program Summary
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Unit No. (a)	Unit Description (b)	Action Items (c)				
		Identified Action Items (d)		Anticipated Action Items (e)		
		Order	Phase I RFI	Phase II RFI	ICM	CMS
SWMUs						
SWMU 5	Former Grinding Room Pickling Process	RFI	NFA	-	-	-
SWMU 9	Former TCA Container Storage Area	RFI	NFA	-	-	-
SWMU 10 (f)	Waste Container Accumulation Areas	NFA	-	-	-	-
SWMU 10A	- near BFS					
SWMU 10B	- in Old Hot Top Building/HAP					
SWMU 10C	- in Warehouse/HAP					
SWMU 11	Shark Pit Residual Material Loading Area	RFI	Phase II RFI (g)	NFA	-	-
SWMU 12	Former Lime Disposal Area	RFI	NFA	-	-	-
SWMU 13	Crucible Disposal Areas	RFI	NFA	-	-	-
SWMU 13A	- near BFS					
SWMU 13B	- near HAP Parking Lot					
SWMU 13C	- near BRP					
SWMU 14	Waste Disposal Facilities	RFI	NFA	-	-	-
SWMU 14A	- near BFS					
SWMU 14B	- near HAP Parking Lot					
SWMU 14C	- near BRP					
SWMU 15	Former Waste Acid Surface Impoundments (15A and 15B)	RFI	Phase II RFI (g)	NFA	-	-
SWMU 16 (h)	Willowbrook Pond					
	- investigation	RFI	Phase II RFI (i)	CMS	-	CM
	- closure	-	-	-	-	CM (j)
SWMU 17	Closed Surface Impoundment	RFI	NFA	-	-	-
SWMU 18	Grinding Dust Transfer Pile	RFI	NFA	-	-	-
SWMU 19	Former Waste Pile	RFI	NFA	-	-	-
SWMU 20	Waste Asbestos Accumulation Area	RFI	NFA	-	-	-
SWMU 21	Grinding Swarf Storage Area	RFI	NFA	-	-	-
SWMU 22	Wastewater Treatment Plant	RFI	NFA	-	-	-
SWMU 23	API Oil/Water Separator	RFI	NFA	-	-	-
SWMU 24	Process Sewers	RFI	NFA (k)	-	-	-
AOCs						
AOC 1	Transformers					
	- Transformer T1	RFI	NFA	-	-	-
	- Transformer T2	RFI	NFA	-	-	-
	- Transformer T3	RFI	ICM	-	CMS	NFA
	- Transformer T4	RFI (l)	NFA (l)	-	-	-
	- Transformer T5	RFI (l)	NFA (l)	-	-	-
	- Transformer T6	RFI (l)	NFA (l)	-	-	-
AOC 2 (f)	Battery Storage Areas	NFA	-	-	-	-
AOC 3	Cooling Towers and Process Pits	RFI				
AOC 3A	- Rust Furnace Cooling Tower		NFA	-	-	-
AOC 3B	- HAP Cooling Tower		Phase II RFI (g)	NFA	-	-
Process Pits			NFA (m)	-	-	-
AOC 4 (f)	Former Heat Treating Facility	NFA	-	-	-	-
AOC 5	Lucas Avenue Oil Tanks	RFI	NFA	-	-	-
AOC 5A	- LAP West Oil Tanks					
AOC 5B	- LAP East Oil Tanks					
AOC 6	Former Aboveground Fuel Oil Tank	RFI	NFA	-	-	-
AOC 7	Scrap Steel Storage Areas	RFI	NFA	-	-	-
AOC 7A	- HAP					
AOC 7B	- BFS west					
AOC 7C	- BFS east					
AOC 8	Former Coal Storage Area	RFI	NFA	-	-	-
AOC 9	Unnamed Tributary to Crooked Brook	RFI	Phase II RFI	CMS	-	CM
AOC 10 (f)	Oiled Roads	NFA	-	-	-	-
AOC 11	Former Coal Gasification Plant	RFI	NFA	-	-	-

Table 7-1 (continued)

RCRA Corrective Action Program Summary
Phase I RFI
AL Tech Specialty Steel Corporation
Dunkirk, New York Facility

Unit No.	Unit Description	Action Items: Identified Action Items: Order	Identified Action Items: Phase I RFI	Anticipated Action Items: Phase II RFI	Anticipated Action Items: ICM	Anticipated Action Items: CMS
CAMUs						
CAMU A	**Former LAP West Pickling Facility**	RFI	ICM	-	CMS	CM (n)
SWMU 1 (o)	Former LAP West Pickle Facility					
SWMU 6	Former Barium Chloride Bath					
SWMU 7B	Continuous Lead Coating					
SWMU 7C	Batch Lead Coating					
SWMU 7E (p)	Non-Electrolytic Copper Coating					
SWMU 8 (f)	Former LAP West Neutralization Plant					
CAMU B	**Former BRP Pickling Facility**	RFI	Phase II RFI (i)	CMS	-	CM
SWMU 2 (q)	Former BRP Pickle Facility					
CAMU C	**BFS Pickling Facility**	RFI	ICM	-	NFA	-
SWMU 3	BFS Pickle Facility					
CAMU D	**Former LAP East Pickling Facility**	RFI	Phase II RFI	ICM	CMS	CM
SWMU 4	Former LAP East Pickle Facility					
SWMU 7A	Continuous Lead Coating					
SWMU 7D	Copper Coating					
CAMU E (r)	**Northwest Quadrant Fill Area**	NA	Phase II RFI	CMS	-	NFA
Other	Site Soils (r)	RFI	Phase II RFI (t)	CMS	-	CM
	RFI-08	NA	Phase II RFI (u) and ICM (v)	NFA (u)	CMS (v)	NFA (v)

a/ Unit numbers are as listed in the Order, not necessarily as defined in the RCRA Facility Assessment (RFA).
SWMU = solid waste management unit; AOC = area of concern; CAMU = corrective action management unit.

b/ TCA = 1,1,1-Trichloroethane; BFS = Bar Finishing & Storage; HAP = Howard Avenue Plant; BRP = Brigham Road Plant;
LAP = Lucas Avenue Plant.

c/ Identified Action Items include those actions required under the Order and as identified based on the findings of the Phase I RCRA Facility Investigation.
Anticipated Action Items include those actions that have yet to be identified in an approved document.

d/ RFI = RCRA Facility Investigation (Phase I RFI); ICM = interim corrective measure; NFA = no further action; "-" = not applicable.

e/ CMS = Corrective Measure Study; CM = corrective measure.

f/ The Order indicates that no further action was required for these SWMUs and AOCs based on information presented in the RCRA Facility Assessment (Appendix B, Section C).

g/ Investigation during the Phase II RFI is necessary to address data gaps identified during the Phase I RFI (i.e., inaccurate location of monitoring wells or soil samples).

h/ The Order requires both the investigation of this area as part of the RFI and closure of the impoundment (Appendix B, Prioritization Schedule, Tier II).

i/ At present, it is not believed that the source of chlorinated volatile organic compounds at concentrations above the potentially applicable criteria (detected in groundwater samples collected from WP-4, RFI-15, and RFI-16) is Willowbrook Pond. The SWMU has been identified to provide an understanding of the general area of interest.

j/ A conceptual plan for closure of the impoundment was previously developed. It is likely that AL Tech may wish to re-evaluate the existing plan as part of the CMS.

k/ As part of facility operations practices, AL Tech intends to perform periodic pressure testing of the process sewers to ensure their integrity.
No further action is believed to be warranted under the RCRA Corrective Action Program.

l/ As agreed to by representatives of AL Tech and NYSDEC, these transformer areas were cleaned and wipe test performed.
Additional cleaning and confirmatory sampling of T4 and T6 are to be performed.

m/ As part of facility operations practices, AL Tech intends to make necessary repairs to the process pits. No further action is believed to be warranted under the RCRA Corrective Action Program.

n/ The corrective measure is anticipated to address groundwater. It is anticipated that the ICM for soil at RB-04 will suffice as a final measure.

o/ The Order requires both the investigation of this area as part of the RFI and demolition of the Former LAP West Pickling Facility (Appendix C, Prioritization Schedule, Tier II).

p/ During the Phase I RFI, it was determined that the non-electrolytic copper coating system was never constructed.

q/ The Order requires both the investigation of this area as part of the RFI and closure of the waste acid pit (Appendix B, Prioritization Schedule, Tier II).

r/ This CAMU includes areas potentially impacted by SWMUs 13C, 17, and 22, and historical and recent process line leaks.

s/ Surface and subsurface soil samples were collected throughout the facility, including locations not associated with a specific unit (i.e., general sample locations).
Impact to the soils typically appears to be associated with general operations and CAMU-, SWMU-, or AOC-specific operations. Therefore, further evaluation of soils during the Phase II RFI, with regard to metals and PAHs, will be on a facility-wide basis.

t/ The Phase II RFI will include the calculation of site-specific risked-based action levels for metals and PAHs in soil for further evaluation in the CMS, consistent with that performed for the AL Tech facility in Watervliet, New York.

u/ Groundwater quality at RFI-08 will be re-evaluated as part of the Phase II RFI; no further action is anticipated.

v/ Surface soil conditions at RFI-08 will be addressed through an ICM. It is anticipated that the ICM for soil at RFI-08 will suffice as a final measure.

8.0 Summaries and Recommendations

Summaries and recommendations resulting from the Phase I RFI are presented by environmental media in Section 8.1. Only the SWMUs, AOCs, and CAMUs for which additional work has been identified are discussed. The recommended scopes of additional work to be implemented as part of the Phase II RFI or an ICM are presented in Section 8.2.

As shown in Table 7-1, no further action (NFA) has been determined for the most of the SWMUs and AOCs. Of the 17 site SWMUs not incorporated into CAMUs, only three have been identified for additional action under the RCRA Corrective Action Program:

- SWMU 11 – Shark Pit Residual Material Loading Area
- SWMU 15 – Former Waste Acid Surface Impoundments (15A and 15B)
- SWMU 16 – Willowbrook Pond

Investigation of SWMUs 11 and 15 during the Phase II RFI has only been proposed to address data gaps (i.e., inappropriate placement of soil borings/well during the Phase I RFI). Investigation of SWMU 16 during the Phase II RFI has been proposed to evaluate the extent and source of VOCs in groundwater proximate to and hydraulically upgradient of Willowbrook Pond, although the pond itself is not believed to be a source of impact or to have been impacted.

Of the 11 site AOCs, only three have been identified for additional action:

- AOC 1 – Transformer T3[1]
- AOC 3B – HAP Cooling Tower
- AOC 9 – Unnamed Tributary to Crooked Brook

AL Tech proposes to implement an ICM at Transformer T3, which is anticipated to be the final measure selected for this area. Investigation of AOCs 3B and 9 during the Phase II RFI has only been proposed to address data gaps (i.e., inappropriate placement of soil boring/sample locations during the Phase I RFI).

Each of the CAMUs specified in the NYSDEC-approved work plan (CAMUs A through D) and proposed CAMU E, have been identified for additional action:

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[1] Additional cleaning and confirmatory sampling for Transformers T4 and T6 will be performed by AL Tech. The results will be included in the report of findings for the Phase II RFI.

- CAMU A – Former LAP West Pickling Facility Area
- CAMU B – Former BRP Pickling Facility Area
- CAMU C – BFS Pickling Facility
- CAMU D – Former LAP East Pickling Facility Area
- CAMU E – Northwest Quadrant Fill Area

Further evaluation of the areas proximate to CAMU B, CAMU D, and CAMU E is proposed as part of the Phase II RFI. CAMU A and CAMU C are to be addressed through implementation of ICMs.

Additional work has been recommended for the location of Well RFI-08 as part of the Phase II RFI and an ICM.

8.1 Site Summaries

Sections 8.1.1 through 8.1.3 present a generalized summary of site soil, groundwater, and surface water and sediment conditions based on analytical parameter groups (e.g., TAL Inorganics). SWMUs, AOCs, and CAMUs identified for additional work based on apparent or potential impact from the various parameter groups are also identified.

8.1.1 Site Soil

Soil samples collected at the site were typically analyzed for metals, VOCs, SVOCs, and PCBs. As would be expected at a steel-making facility, the data indicated that site soils were generally not impacted, except by metals.

Limited investigation of soil in specific areas has been proposed for implementation during either a Phase II RFI or an ICM to address the presence of TAL Inorganics, TCL VOCs, TCL SVOCs, and TCL PCBs, as described below.

Potential impact to groundwater from site soil will be evaluated through the implementation of a compliance monitoring program along the facility's downgradient boundaries.

8.1.1.1 TAL Inorganics

AL Tech currently recommends no further action for most site soil.

Based on the findings of the Air Pathway Analysis, site soils do not pose an offsite risk. However, as part of the Phase II RFI, it is recommended that site-specific risk-based action levels for onsite soils be calculated for select TAL Inorganics and PAHs. These action levels will then be used to determine if further evaluation of site soil is to be included as part of the CMS. A similar approach has been used at AL Tech's facility in Watervliet, New York.

In addition, the need to address site surface soil conditions will be re-evaluated during the Phase II RFI based on the results of the additional sediment sampling program for the unnamed tributary (i.e., if offsite sediments have been impacted by facility operations some action may be required).

The following activities are recommended as part of the Phase II RFI or an ICM:

- Phase II RFI
  - SWMU 11, Shark Pit Residual Material Loading Area, based on the absence of soil samples in the immediate area of this SWMU
  - SWMU 15, Former Waste Acid Impoundment, based on the absence of soil samples and monitoring well within or downgradient of the closed impoundments
  - CAMU B, BRP Pickling Facility, based on the absence of soil samples and monitoring well within or downgradient of the pickling area

- ICM
  - CAMU A, Former LAP West Pickling Facility, based on exceedance of the TC limits in soil samples collected from RB-04 (for lead) and LWB-03 (for total chromium) and metals and miscellaneous parameters at elevated concentrations in groundwater samples collected from LAW-5 and LAW-6 (work plan addressing groundwater previously approved)
  - RFI-08, based on exceedance of the TC limit for lead in the surficial soil sample collected from RFI-08 and the detection of lead at an elevated concentration in a groundwater sample collected from this location (further evaluation of groundwater in this area will be addressed through the Phase II RFI)

8.1.1.2 TCL VOCs

TCL VOCs were detected at elevated concentrations in one soil sample collected from AOC 3A, Rust Furnace Cooling Tower, and five soil samples collected from within CAMU D, Former LAP East Pickling Facility.

Additional investigation is not warranted to address the detection of 1,3-dichlorobenzene in the sample collected from 6 to 8 ft-bgs at RB-07, in AOC 3A. This constituent was not detected in any other site environmental media samples.

Chlorinated volatile compounds were detected in soil samples collected within CAMU D. Similar constituents were also detected in groundwater samples collected from nearby LAE-4. Further evaluation of CAMU D will be performed during the Phase II RFI to address and identify the extent of potential risks associated with these conditions.

8.1.1.3 TCL SVOCs

TCL SVOCs (typically PAHs) were detected in approximately one-half of the sampling locations across the site at elevated concentrations and typically in the surface soil samples (0 to 3 in-bgs and 0 to 2 ft-bgs). Additional investigation is not needed to address PAHs at this time. However, as part of the Phase II RFI, site-specific risk-based action levels for site soils will be calculated for select TAL Inorganics and PAHs, as discussed in Section 8.1.1.1.

8.1.1.4 TCL PCBs

The location of RB-06 was inappropriate for the evaluation of potential impact from AOC 3B, HAP Cooling Tower. Consequently, the collection of surface soil samples in the immediate vicinity of this AOC is recommended as part of the Phase II RFI.

PCBs were detected at concentrations above the PCB Spill Cleanup limit for soils in restricted areas of 25 mg/kg in surface soil samples collected from AOC 1, Transformer T3. An ICM is recommended for this area. It is anticipated that the ICM will be selected as the final measure for Transformer T3.

8.1.2 Site Groundwater

Limited investigation of site groundwater conditions is proposed for implementation during either the Phase II RFI or an ICM to address the presence of TAL Inorganics (including molybdenum and hexavalent chromium) and TCL VOCs. The presence of elevated levels of miscellaneous parameters is typically addressed through the proposed scopes of work developed for areas impacted by TAL Inorganics. No further action is required to address TCL SVOCs, based on the general absence of these constituents in site groundwater samples and the presence of only one constituent at an elevated concentration in site groundwater samples. No further action is required to address TCL PCBs, based on the complete absence of PCB Aroclors in site groundwater samples.

8.1.2.1 TAL Inorganics

Each site groundwater sample collected during one or both of the Phase I RFI sampling rounds contained elevated concentrations of one or more of the TAL Inorganics, molybdenum, hexavalent chromium, or free cyanide.

Background conditions for groundwater are based on data for Wells B-1 and RFI-01. Constituents that were detected at elevated concentrations in groundwater samples collected from these wells during the Phase I RFI included: aluminum, beryllium, iron, magnesium, manganese, sodium, and thallium. Deleting these constituents from consideration, data for the following locations indicate one or more metals at elevated concentrations:

	Constituents Present at Elevated Concentrations										
Location	As	Cd	Cr^{+3}/ Cr^{+6}	Mo	Ni	Pb	Sb	Se	Vn	Zn	CN^-
SWMU 16, Willowbrook Pond											
WP-4	-	X	-	X	-	-	-	-	-	-	-
WP-5	-	X	-	-	-	-	-	-	-	-	-
RFI-14	-	X	-	-	-	-	X	-	-	-	-
RFI-15	-	X	-	-	-	-	-	-	-	-	-
CAMU A, Former LAP West Pickling Facility											
LAW-5	-	-	-	X/X	X	-	-	X	-	-	-
LAW-6	-	X	X	X/X	X	-	-	X	X	X	-
CAMU B, Former BRP Pickling Facility											
MW-1	-	-	-	X	-	-	-	-	-	-	-
RFI-13	-	X	-	-	-	-	X	-	-	-	-
CAMU C, BFS Pickling Facility											
MW-3	-	X	X/X	X	-	-	X	-	-	-	-
RFI-07	-	X	-	X	-	-	X	-	-	-	-
RFI-17	-	X	X/-	X	-	-	-	-	-	-	-

			Constituents Present at Elevated Concentrations								
Location	As	Cd	Cr^{+3}/ Cr^{+6}	Mo	Ni	Pb	Sb	Se	Vn	Zn	CN^-
CAMU E, Northwest Quadrant Fill Area											
WT-1A	-	-	X	-	X	-	-	X	-	-	-
WT-1B	-	-	-	-	-	-	-	-	-	-	-
WT-2	-	X	-	X	X	X	-	-	-	-	-
WT-3	-	X	-	X	-	-	-	-	-	-	-
RFI-09	X	X	-	X	-	-	X	X	-	-	X
RFI-10	-	X	-	-	-	-	-	-	-	-	-
RFI-11	-	-	-	-	-	-	-	-	-	-	-
Site											
RFI-02	-	X	-	-	-	-	-	-	-	-	-
RFI-03	-	-	-	X	-	-	-	-	-	-	-
RFI-08	-	X	-	-	-	X	-	-	-	-	-
RFI-12	-	-	-	-	-	-	-	-	-	X	-
RFI-16	-	-	-	X	-	-	-	-	-	-	-

AL Tech has identified the following need for additional work, based on the presence of metals in groundwater samples, for the following.

- CAMU A, which is to be addressed through the NYSDEC-approved ICM.
- CAMU B, for which additional wells are to be installed in this area during the Phase II RFI to address the absence of downgradient monitoring locations.
- CAMU C, which is to be addressed through the NYSDEC-approved ICM.
- CAMU E, is recommended to evaluate TCL VOCs during the Phase II RFI; analysis of groundwater samples from the existing and recommended wells will include molybdenum and fluoride.
- RFI-08, which is to be addressed through additional investigation during the Phase II RFI (specifically for lead; refer also to Section 8.1.1.1).

In the vicinity of SWMU 16 and in general site wells, further action is only warranted for RFI-08. This decision takes into consideration the following factors:

- only a limited number of metals were detected at elevated concentrations in these wells

- the absence of any exposure pathway; groundwater is not used for potable purposes

- an anticipated groundwater compliance monitoring program along the facility's downgradient boundaries that will be used to evaluate potential offsite migration of impacted groundwater

- RFI-08 is located along a downgradient boundary of the facility

8.1.2.2 TCL VOCs

TCL VOCs were detected at elevated concentrations in groundwater samples collected from four areas of the site:

- SWMU 15, Former Waste Acid Surface Impoundments, at RFI-02
- SWMU 16, Willowbrook Pond at WP-4, RFI-15, and RFI-16
- CAMU D, Former LAP East Pickling Facility, at LAE-4
- CAMU E, Northwest Quadrant Fill Area, at WT-2

Further investigation of the presence of VOCs in each of these areas is proposed for the Phase II RFI, except near SWMU 15. Additional investigation to address the detection of carbon disulfide at SWMU 15 is not recommended, because:

- carbon disulfide was detected at an elevated concentration in only one groundwater sample collected from the site

- carbon disulfide is a laboratory contaminant

- carbon disulfide is not anticipated to be associated with operation of this unit or any other units

Installation of an overburden monitoring well downgradient of SWMU 15 and RFI-02 during the Phase II RFI is recommended, however, to address an identified data gap (i.e., inappropriate placement of the well).

8.1.2.3 Miscellaneous Parameters

One or more of the miscellaneous parameters (pH, total phenols, chloride, fluoride, nitrate, sulfate, and ammonia) were detected at elevated concentrations in groundwater samples collected from at least one well in four units and three general site wells:

- CAMU A, Former LAP West Pickling Facility
- CAMU B, Former BRP Pickling Facility
- CAMU C, BFS Pickling Facility
- CAMU E, Northwest Quadrant Fill Area
- Site
  - RFI-02
  - RFI-03
  - RFI-06

AL Tech does not believe that, independent of other constituents, the presence of these miscellaneous parameters at elevated levels requires additional investigation. However, in consideration of other groundwater quality data, AL Tech will be evaluating groundwater quality proximate to each of the specific units as part of the Phase II RFI or an ICM. In addition, groundwater quality downgradient of each of these general site wells is currently monitored or is anticipated to be part of the compliance monitoring program for the site.

8.1.3 Surface Water and Sediment

AL Tech does not recommend any additional investigation of surface water quality for the unnamed tributary to Crooked Brook (AOC 9) based on the absence of detected constituents at elevated levels in the samples collected during the Phase I RFI. AL Tech does recommend the collection of additional sediment samples from the tributary during the Phase II RFI to establish background conditions and to evaluate if the sediments have been impacted by facility operations.

8.2 Recommendations for Additional Work

Generalized scopes of work for the Phase II RFI and ICMs are presented in Section 8.2.1 and 8.2.2. Activities identified for implementation at the process pits and tanks and process sewers are presented in Section 8.2.3.

8.2.1 Phase II RFI

The Phase II RFI scope of work will address the SWMUs, AOCs, CAMUs, or general areas:

- SWMU 11 – Shark Pit Residual Material Loading Area (a)
- SWMU 15 – Former Waste Acid Surface Impoundments (a)
- SWMU 16 – Willowbrook Pond area (b)
- AOC 3B – HAP Cooling Tower (a)
- AOC 9 – Unnamed Tributary to Crooked Brook (a)
- CAMU B – Former BRP Pickling Facility (a)
- CAMU D – Former LAP East Pickling Facility
- CAMU E – Northwest Quadrant Fill Area
- RFI-08 (c)

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a/ Investigations of SWMUs, AOCs, and CAMU are proposed to address data gaps (i.e., inappropriate placement of borings/wells during the Phase I RFI).

b/ The TCL VOCs detected at elevated concentrations in groundwater samples in the vicinity of SWMU 16 are not believed to be related to operation of the pond. This unit had merely been cited to indicate the area of interest.

c/ Groundwater quality at RFI-08 will be further evaluated during the Phase II RFI. The presence of lead in soil at an elevated total concentration and in the TC extract will be addressed by an ICM.

The generalized scopes of work to be implemented during the Phase II RFI for the areas are presented below.

- SWMU 11 – Shark Pit Residual Material Loading Area
  - completion of one soil boring
  - collection and analysis of one surface and two subsurface soil samples from this boring for analysis of RCRA and facility-related metals, TCL SVOCs, and TCL PCBs

- SWMU 15 – Former Waste Acid Surface Impoundments
  - installation of one downgradient shallow groundwater monitoring well
  - collection and laboratory analysis of two subsurface soil samples from this well boring for RCRA and facility-related metals
  - two rounds of groundwater sample collection and laboratory analysis for RCRA and facility-related metals and miscellaneous parameters from:
    - the proposed Phase II RFI well
    - two existing nearby wells (RFI-02 and RFI-03)

- SWMU 16 – Willowbrook Pond Area
  - completion of adequate soil borings (maximum of six)
  - installation of adequate shallow temporary monitoring wells (maximum of three)
  - collection and laboratory analysis of a maximum of 10 subsurface soil samples from the soil and well borings for TCL VOCs
  - two rounds of groundwater sample collection and laboratory analysis for TCL VOCs and miscellaneous parameters from:
    - three proposed Phase II RFI wells
    - five existing nearby wells (RFI-15, RFI-16, WP-1, WP-2, and WP-4)

- AOC 3B – HAP Cooling Tower
  - collection and laboratory analysis of a maximum of six surface soil samples for TCL PCBs

- AOC 9 - Unnamed Tributary to Crooked Brook
  - collection and laboratory analysis of sediment samples for RCRA and facility-related metals and PAHs from:
    - a minimum of two upstream samples to be collected south of Willowbrook Avenue
    - one sample to be collected at the culvert discharge point immediately west of Brigham Road
    - two samples to be collected downstream of S-3

- CAMU B – Former BRP Pickling Facility
  - installation of two downgradient shallow groundwater monitoring wells
  - collection and laboratory analysis of four subsurface soil samples from the well borings for RCRA and facility-related metals
  - two rounds of groundwater sample collection and laboratory analysis for RCRA and facility-related metals and miscellaneous parameters from:
    - two proposed Phase II RFI wells
    - three existing nearby wells (RFI-13, MW-1, and RFI-14)

- CAMU D – Former LAP East Pickling Facility
  - completion of adequate soil borings (maximum of six)
  - installation of adequate shallow temporary groundwater monitoring wells (maximum of four)
  - collection and laboratory analysis of a maximum of 15 subsurface soil samples from the soil and well borings TCL VOCs
  - two rounds of groundwater sample collection and laboratory analysis for TCL VOCs and miscellaneous parameters from:
    - four proposed Phase II RFI wells
    - two existing nearby wells (LAE-4 and RFI-05)

- CAMU E – Northwest Quadrant Fill Area
  - installation of one shallow downgradient perimeter monitoring well
  - completion of adequate soil borings (maximum of six)
  - installation of adequate shallow temporary monitoring wells (maximum of three)
  - collection and laboratory analysis of a maximum of 15 subsurface soil samples from the soil and well borings for TCL VOCs
  - two rounds of groundwater sample collection and laboratory analysis for TCL VOCs, molybdenum, and miscellaneous parameters from:
    - one proposed perimeter monitoring Phase II RFI well (samples from this well will also be submitted for analysis of RCRA and facility-related metals)
    - three proposed Phase II RFI Wells
    - four existing nearby wells (WT-1A, WT-1B, WT-2, and WT-3)

- RFI-08
  - collection of total and dissolved groundwater aliquots for laboratory analysis of lead

As discussed previously, AL Tech recommends no further action for facility soils impacted by metals (except as expressly identified above) or PAHs. However, as part of the Phase II RFI, AL Tech proposes to calculate site-specific risk-based action levels for metals and PAHs in soil based on potential risk to human health. These values will be used to determine if it is necessary to evaluate facility soils as part of the CMS. These values will also be used to develop necessary and appropriate health and safety requirements for potential construction scenarios in which exposure to subsurface soils might occur.

8.2.2 ICMs

ICMs have been approved by NYSDEC for CAMU A, Former LAP West Pickling Facility, and CAMU C, BFS Pickling Facility. A summary discussion of the approved ICMs is presented in Section 8.2.2.1. The ICMs proposed for AOC 1 (Transformer T3) and RFI-08 are discussed in Section 8.2.2.2. Based on the presence of lead at elevated concentrations in the surface soil sample collected from RB-04, in CAMU A, AL Tech is proposing a supplement to the approved ICM for this CAMU, which is also addressed in Section 8.2.2.2.

8.2.2.1 NYSDEC-Approved ICMs

Implementation of the ICM for CAMU A was begun in September 1997. The scope of work completed to date includes the following:

- installation of temporary wells monitoring shallow groundwater quality (TW-1 through TW-4) and monitoring bedrock groundwater quality (TPZ-1)

- collection of groundwater samples for laboratory analysis of hexavalent chromium from TW-1 through TW-4, TPZ-1, LAW-5, and LAW-6

- excavation of two test pits to evaluate the condition of the sewer line in this area and determine if water, containing hexavalent chromium was migrating along the sewer line or through the sewer line backfill

Hexavalent chromium was present at concentration above the potentially applicable action level (0.05 mg/l) in groundwater samples from each of the shallow temporary wells and LAW-5 and LAW-6. The findings of the sewer line evaluation indicated that the lines were in good condition and that water was not present in the backfill material. Summaries of this investigation and its findings are presented in Appendix S. Additional investigation and implementation of an ICM are necessary for this area. The scope of the next phase of work will be proposed to NYSDEC under separate cover.

The NYSDEC-approved scope of work for a CAMU C includes the following:

- installation of a groundwater recovery well immediately adjacent to Well MW-3

- collection of samples of recovered water on a monthly basis for analysis of hexavalent chromium

- operation of the system until hexavalent chromium levels reach 0.05 mg/l, or a CMS defines an alternative cleanup standard or corrective measure

- installation of two temporary wells downgradient of MW-3 for groundwater sampling and analysis for hexavalent chromium and water-level monitoring

8.2.2.2 <u>Proposed ICMs</u>

At AOC 1, Transformer T3, AL Tech proposes to delineate the extent of surface soil samples containing PCBs at concentrations above the PCB Spill Cleanup limit of 25 mg/kg for soil in restricted areas. Soils containing PCBs at concentrations above this limit will be either removed and disposed offsite (in accordance with applicable federal, state, and local requirements) or the area will be fenced off to prohibit access to onsite workers.

At RFI-08 and RB-04 (in CAMU A), AL Tech proposes to delineate the extent of surface soil samples containing lead in TCLP extract at concentrations above the TC limit. Soils containing lead above this limit will be either removed and disposed offsite (in accordance with applicable federal, state, and local requirements) or the areas will be covered to prevent future potential migration of lead to groundwater and exposure to onsite workers.

8.2.3 Process Pits and Tanks and Process Sewers

Repairs, cleanout, or both have been identified as appropriate for the following process pits:

Pit/Description	Status	Proposed Action
Nos. 3E and 3W/Drawing Oil Storage Pits	inactive	cleanout
No. 8/Shark Pit	active	cleanout/repair
No. 11/Olson Pump Pit	active	repair
No. 16/Shape-Mill Pit (scale pit only)	active	repair
and Mini-Mill Pit	active	cleanout/repair
No. 17/HAP Pump Pit	active	repair
No. 29/Serpentine Outfall	active	repair

The cleanout and repair of these pits will be handled as part of routine maintenance activities at the facility. Reports summarizing these activities will be provided to the NYSDEC as they are performed.

Metals and miscellaneous parameters detected in groundwater samples in the vicinity of SWMU 17 and SWM 22 are believed to have resulted from historical and recent leaks in the process sewer lines. The impact from historical lines will decrease with time. AL Tech pressure tested the two existing lines to confirm their integrity in the fall of 1998. The findings are summarized in Appendix T. Periodic testing will be performed in the future as part of routine facility maintenance. If the test results indicate leakage at any time, necessary repairs will be made and subsequent replacement of the line(s) will be considered. Testing and potential line replacement activities will be summarized and provided to the NYSDEC as they are completed.

Based on the location of this area within the central portion of the facility and probable long-term downgradient perimeter monitoring of groundwater, further investigation of the process lines is not currently warranted.

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40 Code of Federal Regulations, Parts 141-143. Safe Drinking Water Act. "Final Maximum Contaminant Levels (MCLs)."

40 Code of Federal Regulations, Part 264, Subpart S, Vol. 55, No. 145, July 27, 1990.

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