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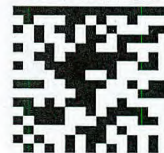
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REMEDIAL INVESTIGATION (RI) REPORT

- TEXT

DUVA PROPERTY

TOWN OF CLAY, NEW YORK

NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION SITE NO. 7-34-051

PREPARED AS REQUIRED BY
NYSDEC ORDER ON CONSENT
INDEX NO. A7-0233-90-05

PRINTED ON

MAR 31 1992

MARCH 1992

REFERENCE NO. 3442 (12)

CONESTOGA-ROVERS & ASSOCIATES

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CERTIFICATION

I, Richard J. Snyder, a Professional Engineer in the State of New York, certify, based on a review of documentation submitted to me and interviews with persons directly responsible for performing the work, that the activities which comprised the Remedial Investigation at the Duva Property located in Clay, New York, were performed in general accordance with the document entitled, "Remedial Investigation/Feasibility Study, Volume I Work Plan, Duva Property, Syracuse, New York" dated November 1990 and subsequent revisions. Deviations from the Work Plan are described in the Remedial Investigation Report.

Richard J. Snyder

Richard J. Snyder, P.E.



3-30-92

Date

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1.0 INTRODUCTION

1.1 GENERAL

The Duva Property (referred to herein as "Site") is located in the Town of Clay, north of Syracuse, New York, and occupies approximately five acres of a partially wooded field. A number of abandoned drums (which were believed to contain hazardous materials including solvents and resins) were discovered on the Site in 1987. Under the direction of the New York State Department of Environmental Conservation (NYSDEC), the abandoned drums were removed and some underlying soils were removed and/or staged on Site.

In mid 1989, groundwater in the basement sumps of several homes adjacent to the Site was sampled and found to contain solvents. As a result, an interim remedial measures (IRM) program was initiated to address groundwater contamination at the Site.

In August 1989, the NYSDEC listed the Site on the Registry of Inactive Hazardous Waste Disposal Sites in New York State (Site #734051) and classified the Site as a "significant threat to the public health or environment, action required" (Classification "2"). Subsequently, the NYSDEC requested that a remedial investigation/feasibility study (RI/FS) be conducted and additional interim remedial measures be considered to address residual soil contamination at the Site. Accordingly, in July 1990, an IRM program was initiated which included soil sampling and characterization with specific provisions for removal/disposal of soil, if

warranted. In addition, an RI/FS Work Plan and associated project specific plans were submitted to the NYSDEC by letter dated November 27, 1990. The NYSDEC subsequently approved the RI/FS Work Plan and associated project specific plans as modified by letter dated November 20, 1990.

Implementation of the RI/FS for the Duva property began in December 1990 under the terms and conditions of an Order on Consent (Index No. A7-0233-90-05) entered into by the NYSDEC and the participating respondents (PRs) including General Electric Company (GE), the Estate of Peter Duva, and Donald W. Miller, Inc.. The RI field activities were performed by Conestoga-Rovers & Associates (CRA) between December 1990 and December 1991.

This RI report has been developed to summarize and present information collected during the RI and to provide the basis upon which to conduct a feasibility study for selection of appropriate remedial actions for the Site.

1.2 PROGRAM DESCRIPTION

The RI/FS work activities were performed as described in the following documents:

- i) "Remedial Investigation/Feasibility Study, Duva Property, Volume I, Work Plan, Syracuse, New York", dated November 1990 (Work Plan);

- ii) "Remedial Investigation/Feasibility Study, Duva Property, Volume II, Quality Assurance Project Plan, Syracuse, New York", dated November 1990 (QAPP);
- iii) "Remedial Investigation/Feasibility Study, Duva Property, Volume III, Health and Safety Plan, Syracuse, New York", dated November 1990 (HASP);
- iv) NYSDEC letter dated November 13, 1990 (K.S. Maiurano, NYSDEC to R.J. Brunoizzi, GE) granting approval of the RI/FS Work Plan documents contingent on incorporating additional NYSDEC comments;
- v) CRA letter dated November 20, 1990 (R.T. Pyle, CRA to K.S. Maiurano, NYSDEC) which responded to the November 13, 1990 NYSDEC letter;
- vi) NYSDEC letter dated November 27, 1990 (K.S. Maiurano, NYSDEC to R.J. Brunoizzi, GE) granting formal approval of the RI/FS Work Plan;
- vii) Additional Data Requirement Program (ADRP) Work Plan, dated October 29, 1991 and associated correspondence;
- viii) GE letter dated December 10, 1991 (M. Ianniello, GE to C. Jackson, NYSDEC) which proposed changes to the ADRP Work Plan; and

- ix) NYSDEC letter dated December 19, 1991 (K.S. Maiurano, NYSDEC to M. Ianniello, GE) which formally approves the December 10, 1991 proposed changes.

The primary objective of the RI was to determine the nature and extent of any existing or potential threat to public health or welfare or to the environment that may occur as a result of a release or threatened release of hazardous substances from the Site. The information obtained during the RI, as presented herein, will be used in the FS to assess the potential effects of various corrective and mitigative strategies on the Site.

The RI work tasks performed, as described in the approved RI/FS Work Plan, include the following:

- i) development and submission of the RI/FS project specific plans and project schedules;
- ii) performance of community relations tasks;
- iii) description of current conditions;
- iv) procurement of qualified contractors and subcontractors;
- v) performance of Site investigation activities including a magnetometer survey, development of a Site Specific Parameter List (SSPL), soil sampling, hydrogeologic investigation, surface water and sediment

sampling, related air monitoring and collection of additional data, as required in the ADRP Work Plan;

- vi) sample analyses;
- vii) data evaluation;
- viii) assessment of risks (public health evaluation and environmental assessment); and
- ix) preparation of the RI report.

1.3 ELEMENTS OF RI REPORT

This RI report summarizes the data collected and the conclusions drawn from the investigation and includes the following information:

- i) an updated Site description and background;
- ii) Site maps;
- iii) description of field investigation activities;
- iv) results of the hydrogeologic investigation;

- v) presentation of Site data and analytical results;
- vi) characterization of Site contamination; and
- vii) results of the environmental risk assessment.

A public health evaluation (PHE) was performed, as part of the RI, by the Weinberg Consulting Group, Inc. The PHE characterizes potential current and/or future risks to human health associated with residual contamination at the Site. The results of the PHE are presented under separate cover in the document entitled "Public Health Evaluation for the Miller/Duva Site, Town of Clay, New York".

2.0 BACKGROUND

2.1 SITE DESCRIPTION

The Site is located in the Town of Clay, New York approximately four miles north of the City of Syracuse, New York. The Site encompasses former agricultural land and is situated south of West Taft Road and immediately north of a residential development, Platinum Drive. The general location and layout of the Site are illustrated on Figures 2.1 and 2.2, respectively.

Property immediately to the south and west of the Site consists of recently constructed, single family residential homes; property immediately east and north of the Site consists of undeveloped land. All residential development in the vicinity of the Site is serviced by municipal water and sewer.

The Site occupies approximately five acres of land and is secured with a chain-link fence. The Site itself is partially wooded with heavier vegetation lying immediately to the east. The surface of the Site is grassed and gently slopes from north to south. The topography of the Site and significant surficial features are illustrated on Plan 1.

2.2 SITE HISTORY

The Site was originally owned by Mr. Peter Duva who operated a truck farm business on the property. In December 1986, Mr. Duva sold the property to Donald W. Miller, Inc. Mr. Duva subsequently passed away and Mr. Duva's interests in the Site were assumed by the Duva Estate.

In mid-1987, residents of the adjacent properties contacted the NYSDEC and reported the presence of drums on the Site. In July 1987, the NYSDEC inspected the Site and found numerous drums staged in three separate areas of the property (refer to Figure 2.2). The NYSDEC reportedly collected several samples of the drummed material and of stained soils near the drums. Some of the drum contents and surrounding soils were found to contain resins and low levels of solvents.

Mr. Duva, Donald W. Miller, Inc., and General Electric Company were subsequently identified by the NYSDEC as potentially responsible parties for the Site.

In late 1988, Industrial Oil Tank Service Corporation was retained to remove the drums from the Site and dispose of them at an appropriate off-Site disposal facility. Underlying soils from the drum disposal area were also disposed of and/or staged on the Site. The drum removal program was performed under the direction of the NYSDEC.

In mid 1989, the NYSDOH collected groundwater samples from the basement sumps of several homes adjacent to the Site which were

found to contain solvents. The PRs were notified of the findings by the NYSDOH and NYSDEC. The PRs engaged Malcolm-Pirnie to address groundwater contamination attributable to the Site. The basement sumps in four homes located immediately adjacent to the Site were subsequently sealed in an enclosure and vented to the outside.

An interim remedial measures (IRM) program was implemented in accordance with the terms and conditions of an Order on Consent (Index No. A7-0225-90-03) entered into by the PRs and the NYSDEC to address groundwater contamination attributable to the Site. The groundwater IRM work activities began in mid 1990 and included: installation and sampling of monitoring wells, the installation of a groundwater collection trench and sump on the downgradient side of the Site and the installation of an on-Site water treatment plant.

In August 1989, the NYSDEC listed the Site on the "Registry of Inactive Hazardous Waste Disposal Sites in New York State" and classified it as a Class 2 site. A Class 2 site is defined as a "significant threat to the public health or environment - action required". At that time, the PRs were requested by the NYSDEC to investigate and remediate potential soil contamination at the Site. The documents entitled "Focused Remedial Investigation/Feasibility Study, Duva Property, Volume I, Work Plan" (Work Plan), Quality Assurance Project Plan (QAPP), and Health and Safety Plan (HASP) were subsequently developed and submitted to the NYSDEC on April 27, 1990.

During a meeting with the NYSDEC on May 11, 1990, an agreement was reached between the PRs and the NYSDEC to proceed with the following additional work:

- i) the development of a soil IRM program to address immediate concerns relative to the contaminated soils in the former drum staging areas (discussed in Section 2.3); and
- ii) the development and implementation of a Remedial Investigation/Focused Feasibility Study (RI/FFS) program to examine the soil, surface water, and groundwater media after overall completion of the IRM programs.

In July 1990, the soil IRM program was implemented, in accordance with the terms and conditions of an Order on Consent (Index No. A7-0232-90-05) entered into by the PRs and the NYSDEC. The soil IRM program included soil sampling, characterization, and provisions for excavation and removal of contaminated soils, as warranted. After completion of the field investigation phase of this IRM program, the soil stockpiled on Site, which had been generated during the original drum removal program, was removed.

The NYSDEC provided comments on the original focused RI/FS Work Plan submittals by letter dated May 23, 1990. The NYSDEC requested receipt of a scoping document and formal Work Plan for the RI/FS by letter dated July 25, 1990. The RI/FFS, Scope of Work, Duva Property (dated August 9, 1990) was developed and submitted to the NYSDEC in

response to this request. No formal comments were provided with respect to the Scope of Work.

A revised RI/FS Work Plan, Quality Assurance Project Plan, and Health and Safety Plan were submitted to the NYSDEC on August 31, 1990. The NYSDEC provided comments on the proposed RI/FS documents by letter dated September 27, 1990. The NYSDEC comments were further discussed in a meeting with representatives of the NYSDEC on October 11, 1990. The RI/FS Work Plan documents were revised and resubmitted to the NYSDEC on November 6, 1990. The NYSDEC subsequently approved the RI/FS Work Plan, QAPP, and HASP, all of which are dated November 1990. Implementation of the RI/FS program began in December 1990.

2.3 HISTORIC INVESTIGATIONS

2.3.1 General

The principal investigative activities conducted at the Site prior to the RI consisted of: soil sampling in early 1989 following the completion of the drum removal project; groundwater sampling performed in 1989 as part of the groundwater IRM program; and soil sampling performed in 1990 as part of the soil IRM program.

The following discussion briefly summarizes each sampling program. Available data and associated documentation from each

program have been reviewed in accordance with the quality assurance/quality control (QA/QC) requirements of the RI. The QA/QC review and complete historic databases are presented in Appendix A of this report.

2.3.2 1989 Soil Sampling Program

In January 1989, after the drum and soil removal project was complete, the remaining soil in the three drum staging areas was sampled by J.D. Plumley Engineering, P.C. of Syracuse, New York. A total of 29 sample aliquots were collected and composited in six samples for analyses. Each composite sample represented a suspected "hot spot" within the former drum staging areas. The locations of the soil samples and suspected hot spots are shown on Figure 2.3. The six composite samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), TCL base/neutral/acid extractable (BNA) compounds, TCL pesticides, polychlorinated biphenyls (PCBs), and Target Analyte List (TAL) metals, and cyanides. Appendix A presents a summary of the parameters detected in the soil samples. The samples were analyzed by Upstate Laboratories, Inc.. The NYSDEC obtained "split samples" at the Upstate Laboratories facility and had them analyzed by H2M Labs, Inc.. A limited amount of field and laboratory QA/QC data pertaining to this program were available for review.

2.3.3 Soil IRM Investigations

The proposed soil IRM Program was presented in the "Interim Remedial Measures Work Plan, Duva Property, Town of Clay, New York", dated June 26, 1990. This plan was conditionally approved by the NYSDEC by letter dated June 27, 1990. Implementation of the soil IRM Program began in July 1990 under the terms and conditions of an Order on Consent (Index No. A7-0232-90-05) entered into by the NYSDEC and the PRs.

The soil IRM Program consisted of the performance of three major tasks, as identified in the soil IRM Work Plan, which included:

- i) investigation/characterization of soils by performance of a magnetometer survey of the Site and the collection of soil samples;
- ii) removal of significantly contaminated soils, if any, which represent an imminent risk or hazard to public health or the environment; and
- iii) temporary securement/isolation of residually contaminated soils remaining on Site, if appropriate.

The field investigative component of the soil IRM Work Plan consisted of a field survey to establish horizontal control (20 foot by 20 foot grid); performance of a magnetometer survey over the Site; the screening of surficial soils for organic vapors using a photoionization detector (PID); and the collection and analysis of surficial and subsurface soil samples for VOCs. This work was conducted by CRA on behalf of the PRs in July 1990.

The data from this investigation has been presented in the report entitled "Soil Interim Remedial Measures, Interim Data Report, Duva Property, Town of Clay, New York", dated September 1990 (CRA) and is included in Appendix A of this report.

Magnetometer Survey

A magnetometer survey was conducted over the entire 5 acre Site to locate and delineate, if present, subsurface debris and/or disposal areas. A description of the survey and the results are discussed in Sections 4.3 and 6.3 of this RI report. Although some anomalies were reported, no underground disposal areas were found. These anomalies were investigated as part of the RI field investigation program.

Surficial Soil Screening

A soil vapor screening survey was conducted across the former drum staging areas. Field measurements of organic vapors were obtained from shallow boreholes (depth 12 inches) using an HNU photoionization detector (HNU). The grid points started within each individual drum staging area and were extended outward until all perimeter readings were less than 5 ppm total organic vapors in each shallow borehole. The results of the organic vapor screening are illustrated on Figure 2.4.

Soil Sampling

Following completion of the soil screening survey, 33 surface and 48 subsurface soil samples were collected from 48 locations and submitted for analyses. The sample locations were selected based on the areas screened

during the surficial soil survey. Surficial samples were collected from ground surface to 6 inches below ground surface (BGS). The depths of collection of subsurface samples ranged from the interval of 1.5 feet to 2.5 feet BGS to a maximum depth of 17 feet to 18 feet BGS. The samples were analyzed for the parameters listed on Table 2.1; sample locations are shown on Figure 2.5.

Based on the soil IRM data, the soils located within or adjacent to the former disposal areas did not appear to represent an imminent threat to human health or the environment. However, in order to address visual contamination observed in the soil which had been stockpiled on Site during the original drum removal program, the removal and off-Site disposal of this soil had been recommended and was performed in early 1991. This soil stockpile removal program is further discussed in Section 2.4.2 of this RI Report.

2.3.4 IRM Groundwater Sampling Program

The investigative component of the groundwater IRM program included the installation and sampling of four groundwater monitoring wells and sampling of adjacent residential basement sumps.

In May 1989, the New York State Department of Health (NYSDOH) sampled basement sumps in homes adjacent to the Site. Samples were analyzed for VOCs by Methods 502.1 and 503.1.

In June 1989, groundwater samples were collected from each of the four monitoring wells and analyzed for VOCs by Methods 502.1 and 503.1. The locations of the groundwater monitoring wells sampled are shown on Figure 2.3.

The analytical data obtained from these sampling events were previously reported in the document entitled "Interim Remedial Measures, Duva Property, Town of Clay, New York, Site Code 7-34-051, Volume III", March 23, 1990 (Malcolm Pirnie), and are summarized in Appendix A. Additional data which have been generated during the on-going operation of the groundwater collection trench and on-Site water treatment plant and which are presented under separate cover include: water level measurements, analytical data for extracted groundwater and analytical data from adjacent monitoring wells.

2.3.5 1990 Indoor Air Monitoring

Indoor air monitoring was conducted in four homes immediately adjacent to the southeast perimeter of the Site by NYSDOH in January and March 1990. This monitoring was intended to determine the impact the Site may have had on air quality within the adjacent homes and the effectiveness of the corrective measures which had been implemented to seal and vent the basement sumps of these same residences located immediately downgradient of the Site earlier in 1990. The results of this program are presented in Appendix A.

In March 1992, additional monitoring of the indoor air quality in four homes adjacent to the southeast perimeter of the Site was performed by Malcolm Pirnie, Inc. in consultation with the Weinberg Consulting Group. Data from this air monitoring program (see Appendix A) was used to supplement the existing indoor air monitoring data base for use in the PHE.

2.4 INTERIM REMEDIAL MEASURES IMPLEMENTED TO DATE

Two separate programs, one for groundwater and one for soils, have been developed and implemented as interim remedial measures for the Site. These programs are discussed below.

2.4.1 Groundwater Interim Remedial Measures

In mid-1989, an interim remedial measures program was implemented pursuant to the Order on Consent (Index No. A7-0225-90-03) to address groundwater contamination attributable to the Site. This program, conducted by Malcolm Pirnie, Inc., included: the groundwater and basement sump sampling discussed in Section 2.3.3; installation and sampling of groundwater monitoring wells and piezometers; and the subsequent design and construction of a groundwater collection trench to intercept groundwater beneath the Site and prevent its migration off Site.

The system includes a groundwater collection trench installed downgradient of the former drum staging areas between the Site and the downgradient residential area and an on-Site activated carbon treatment system. Groundwater collected in the sumps of the downgradient residences which showed the presence of Site contaminants is also pumped into the on-Site collection trench for subsequent treatment at the on-Site water treatment facility. Treated groundwater is discharged to an off-Site storm sewer system in accordance with the terms and conditions of the groundwater IRM Consent Order (Index No. A7-0225-90-03) which substantively complies with New York State Pollutant Discharge Elimination System (SPDES) requirements.

Details of the design of the groundwater collection and treatment systems were submitted to the NYSDEC in the report entitled "Interim Remedial Measures, Duva Property, Town of Clay, New York", March 23, 1990 (Malcolm Pirnie, Inc.). The system was installed and put into operation during the summer of 1990.

2.4.2 Soils Interim Remedial Measures

In July 1990, the field investigation phase of the soil IRM Program (as discussed in Section 2.3.2 of this RI Report) was performed in accordance with the approved soil IRM Work Plan. Based on the soil IRM investigative results, it was recommended that soil generated during the original drum removal program and which had been stockpiled on Site be removed and disposed off Site in order to address visual contamination

observed in the stockpile. By letter dated November 1, 1990, NYSDEC agreed with the recommendation and further requested that additional soil stockpiled on Site as a result of the groundwater interim remedial measures be removed.

The proposed work was presented in the Work Plan entitled "Soil Interim Remedial Measures, Soil Stockpile Removal, Work Plan, Duva Property", dated November 1990. The Work Plan was approved by the NYSDEC November 28, 1990 and the program was implemented in February 1991. A description of activities performed during implementation of the Soil Stockpile Removal Work Plan is presented in the "Soil Interim Remedial Measures, Soil Stockpile Removal/Disposal Final Engineering Report, Duva Property, Town of Clay, New York", dated October 1991.

Approximately 250 cubic yards of previously stockpiled soil were placed into lugger boxes (19 boxes). In addition, the top 6-inch layer of soil immediately underlying the soil piles was excavated and placed into the lugger boxes. The area was regraded with a clean soil upon completion of soil removal activities. Full lugger boxes were staged on Site and sampled for waste characterization purposes. Based on the waste characterization data, the soils in the boxes were classified as non-hazardous and were disposed of at BFI's CECOS International, Inc. facility in Niagara Falls, New York. All lugger boxes were removed from the Site during the period of July 23 to 31, 1991. A complete description of the soil stockpile removal program has been provided in the report entitled "Soil Interim Remedial Measures, Soil Stockpile Removal/Disposal, Final Engineering Report, Duva Property", dated October 1991.

3.0 REGIONAL SETTING

3.1 DEMOGRAPHICS

The Site is located in the southwestern corner of the Town of Clay, approximately 400 feet north of the Town of Salina border. The population of the Town of Clay, according to the 1990 census, is 59,660. Figure 2.1 is a current map for the area located within a 1 to 1-1/2 mile radius of the Site and identifies the surrounding municipalities.

Approximately 600 feet north of the Site there is a small residential area of seven homes and an abandoned barn. North of this area is West Taft Road. Another residential area, a dental office, and a Wegmans Supermarket are situated immediately north of West Taft Road. The eastern edge of the Site is bordered by a wooded undeveloped area. Approximately 100 feet to the south of the Duva Site is a developed residential area which continues into the Town of Salina. Approximately 0.25 miles west of the Site is a residential area and a professional office building; agricultural land lies between the Site and the developed land to the west. Figure 3.1 illustrates the ownership of the adjacent property. Figure 3.2 presents the current zoning for the area, based on information provided by the Town of Clay and the Town of Salina.

3.2 PHYSIOGRAPHY

The Site is located in northern Onondaga County, near the center of upstate New York. The northern half of Onondaga County lies within the Erie-Ontario Plain. Dominant landforms in this area are lowlying till plains, drumlin fields, several outwash plains, and numerous areas of lacustrine origin. Relief in this area ranges from 380 feet to 425 feet above mean sea level (AMSL) in the lacustrine deposits and from 425 feet to 600 feet AMSL on the till plains to the peaks of the highest drumlins and hills. The hills and well-formed drumlins show molding both in form and direction by the force of the glacier that overran the area.

3.3 CLIMATE

The climate of the Syracuse, New York area is primarily continental and comparatively humid. Seasonal variations in temperature are pronounced and marked; autumn, winter and spring display wide variability throughout the season and day. Winters are usually cold, with daytime temperatures in the 30°F range and night time temperatures below 20°F. Snowfall is characterized as "moderately heavy", averaging somewhat over 100 inches per year. Precipitation is well distributed, averaging approximately 3 inches per month (NOAA, 1990).

Review of compiled data from 1970 to 1990 indicates the following averages over the 20 year period:

- average annual precipitation 43.5 inches
- average annual temperature 50°F
- average annual snowfall on ground 119.5 inches

Snowfall typically begins in November and snow remains on the ground until April of the following year; however, it may begin as early as October and remain as late as May. Temperatures tend to peak in July and August at about 70°F from an average low of 24-28°F in January and December. Precipitation tends to peak in June, July and August from an average low reported during December, January and February.

Summaries of the reported annual average precipitation, temperature, and snowfall data are presented on Table 3.1 for the years 1970 to 1989; Table 3.2 provides 1990 and 1991 monthly averages for these parameters.

3.4 REGIONAL GEOLOGY

3.4.1 General

The regional geology in the vicinity of the Site has been interpreted from available documented geological maps and from the work of Hopkins (1913), the accepted published work of the Syracuse area.

3.4.2 Surficial Geology

The surficial geology of northern Onondaga County and vicinity has been compiled by Cadwell and Muller (1986) as part of the Surficial Geology Map of the State of New York. While it is interpreted largely from U.S. Soils and Agricultural Services data, it is considered accurate in its major features. This map indicates northern Onondaga County to be largely covered by glaciolacustrine silts, sands, and clays mantling lodgment till in an almost monotonous lake plain of very low relief. The glacial cover over Central New York is widespread as virtually no outcrop is visible between the City of Syracuse and the shores of Lake Ontario.

3.4.3 Bedrock Geology

Bedrock beneath the Site and a good share of northern Onondaga County consists of the Vernon Shale member. In this area the Vernon Shale is approximately 700 feet thick (Hopkins, 1913).

The Vernon Shale is a soft, argillaceous, red shale but in a number of places the red is mottled with green colored shale. In places the green occurs in small masses the size of one's hand; elsewhere it forms huge masses of the deposit, and sometimes there is an intermingling of the two colors. The bright red color is due to diffused anhydrous ferrous oxide. The green color in the shale is due to iron in the ferrous or lower oxide state (Hopkins, 1913).

The largest outcrops of the Vernon Shale in the Syracuse quadrangle are probably in the bluffs on the north of Onondaga Lake along the Oswego Canal (Hopkins, 1913). Due to its lithologically weak nature, it generally tends not to outcrop but instead has been covered by glacial drift and lacustrine deposits. No bedrock outcrops were noted in the immediate vicinity of the Site.

3.5 REGIONAL HYDROGEOLOGY

3.5.1 General

This section outlines the general waterbearing characteristics of the stratigraphic units described in the preceding sections.

3.5.2 Overburden Hydrogeology

As presented by Kantrowitz, (1964) many surficial aquifers are located in the northern half of Onondaga County, New York. These aquifers contain soils derived from lake-laid sands and gravels, as well as glacial outwash materials.

A till sheet, commonly about 30 feet thick, mantles the entire upland area in the Appalachian and Tug Hill Plateaus and a large part of the Ontario Lowland. Adequate supplies of water for domestic and farm

supplies are generally available from springs or wells dug into this till and overlying units, where present.

Stratified drift mantles the remainder of the area, notably in the valleys of the Appalachian Plateau, most of the Ontario Lowland and the lower parts of the valleys of the Tug Hill Plateau. Deposition of stratified drift occurred under four conditions (Muller, 1964):

- i) proglacial deposition during free drainage;
- ii) deposition in ice-dammed valleys;
- iii) deposition during Great Lakes drainage; and
- iv) deposition in Lake Iroquois.

Coarse-grained glaciofluvial deposits consisting largely of sand and gravel are found south of the valley head moraine and in many places form a large part of the moraine itself. The sand and gravel are well sorted and are probably the most permeable waterbearing material in the area (Muller, 1964).

During deglaciation of the Appalachian Plateau, lakes existed in the major valleys, dammed between the bedrock divide to the south and the ice tongue to the north. Small but adequate domestic and farm water supplies can generally be obtained from wells dug in lacustrine sand, silt, or clay (Kantrowitz, 1964) left behind as depositional residue from these lakes.

Deposition of sand and gravel occurred wherever the Great Lakes waters entered standing water in the north-south valleys. These sand and gravel deposits are probably not as permeable as the valley train materials south of the valley head moraine. However, they are a potential source of groundwater supplies because they generally occur in areas where stream infiltration is possible (Kantrowitz, 1964).

During the last stages of deglaciation in the Syracuse area, Lake Iroquois, a proglacial ancestral Lake Ontario, occupied the lowland area of the Appalachian escarpment. Melt water streams deposited outwash deltas in the lake which were subsequently reworked and covered by finer grained lacustrine deposits as the ice continued to recede. The sand and gravel, where it is in hydraulic contact with a surface water body, may yield large quantities of water (Kantrowitz, 1964).

For the most part, none of the unconsolidated deposits in the Syracuse area have undergone significant transport by ice or meltwater. The chemical nature of the deposits and the quality of the groundwater derived from them is generally similar to that of the underlying bedrock (Kantrowitz, 1964). Groundwater derived from these deposits and from the bedrock is generally not potable due to the presence of high concentrations of naturally occurring dissolved solids.

Groundwater yields in the lacustrine silt, sand and clay throughout the northern part of the Onondaga County range from 0.1 to 100 gpm. The sand yields from 5 to 100 gpm and yields from silt and clay are quite low, in the general range of 0.1 to 0.5 gallons per minute (gpm).

3.5.3 Bedrock Hydrogeology

Groundwater occurs in fractures and bedding joints of consolidated rocks and in pore spaces of unconsolidated deposits. Groundwater quality in this area is generally poor due to natural conditions such as hardness and sulfates contributed by mineralization in the bedrock.

As reported by Kantrowitz (1964), all but the largest public water systems in the Syracuse area obtain their supply from wells or springs.

The average yield of wells completed in bedrock is approximately 15 gpm. Some bedrock wells in the limestone units, and the Camillus Shale, Syracuse Salt, and Vernon Shale will yield as much as 230 gpm because of enlargement of fractures by the solution of the carbonates and evaporites. The yield of wells drilled in these units for domestic, farm, and other small supplies averages about 15 to 20 gpm (Kantrowitz, 1964).

The hardness and sulfate contents of groundwaters of the Vernon Shale are generally elevated above their respective New York State Maximum Contaminant Levels (MCLs) for drinking water supplies (as provided in the New York State Sanitary Code Part 5) due to the dissolution of readily soluble intercalated gypsum, chemically CaSO_4 . Therefore, groundwater usage from this unit is inadequate for most public and/or industrial needs.

3.5.4 SURFACE AND GROUNDWATER USAGE

Surface water supplies are plentiful throughout Onondaga County. Rainfall is adequate to recharge the six lakes adjacent to or entirely within the County. Many streams and creeks flow into the lakes or into the Oneida, Oswego, or Seneca Rivers which flow through the County or along the County boundaries. Several reservoirs, large ponds, and many smaller ponds, occur throughout the County.

Numerous towns and villages obtain water from groundwater sources. Other areas receive their water supply from Otisco Lake or Skaneateles Lake. A large amount of water is available from a 6 foot diameter pipeline from Lake Ontario which is sold to communities and industry as a supplemental source.

Most rural residents depend on deep or shallow wells for their water supply. Many rural landowners have developed ponds as a supplemental source of water for livestock, fire protection, and recreational use. In a few places, ponds that have a rapid recharge are used for irrigation. In the more developed areas such as the City of Syracuse and suburbs such as the Town of Clay where the Site is found, municipal water distribution systems are the source of most domestic supply.

Due to the poor groundwater quality in this area from natural conditions (hardness and excessive sulfates), most groundwater is marginally useable for domestic purposes.

4.0 DESCRIPTION OF RI FIELD ACTIVITIES

4.1 GENERAL

The characterization of the nature and extent of contamination at the Site was achieved through the completion of the various field activities as proposed in the approved RI/FS Work Plan. These activities were designed to meet the specific objectives of the RI and included the following:

- i) topographic survey of the Site;
- ii) magnetometer survey of the area north and west of the Site;
- iii) collection of soil samples for the development of a Site Specific Parameter List (SSPL);
- iv) investigation of surficial and/or shallow subsurface soils in the area north and east of the westernmost drum staging area and within and adjacent to the former drum staging areas;
- v) collection of subsurface soil samples;
- vi) excavation of test pits;

- vii) installation and sampling of three monitoring wells within the till unit and five shallow monitoring wells within the shallow sand unit overlying the till;
- viii) collection of surface water and sediment samples in drainage swales and ponded areas upstream and downstream of the drum staging areas;
- ix) related air monitoring; and
- x) collection of additional subsurface soil samples as part of the RI's Additional Data Requirement Program (ADRP).

A summary of the RI field activities is presented in the subsections which follow.

All RI field activities were conducted in accordance with the RI Order on Consent and the NYSDEC approved Work Plan (CRA Volume 1, 1990), QAPP (CRA Volume 2, 1990), and Health and Safety Plan (CRA Volume 3, 1990), except as noted herein. In addition, in general, sampling locations were selected with concurrence of the NYSDEC.

All samples collected for chemical analyses were submitted to Galson Laboratories (Galson) of Syracuse, New York.

4.2 SITE MAPPING

A topographic survey of the Site and surrounding area was performed by Phillips & Associates of Liverpool, New York. Plan 1 presents the topographic map of the Site and surrounding area generated from the survey data. The topographic map is drawn to a scale of 1"=40' with ground surface contours provided at 2 foot intervals. Major surficial features were located during the survey and are also presented on the topographic map.

The topographic map encompasses an area of approximately eight acres; bounded on the south by the Jewell Manor Section G subdivision; on the east by a mixed hardwood/conifer woods; on the north by open field owned by Woodside and Meadowland Developers; and on the west by undeveloped land owned by Woodside Developers.

The Site slopes gradually to the south with elevations of 440 feet AMSL at the northern end of the Site to 426 feet AMSL at the southern end of the Site. Elevations are referred to the National Geodetic Vertical Datum of 1929.

A title search was performed by Phillips & Associates to identify historical and current owners of the property and the surrounding area. Figure 3.1 depicts the ownership of the adjacent property.

In addition, aerial photographs of the Site were obtained and reviewed. Photographs dated 1959, 1967 and 1985 were reviewed.

Disturbance of the ground surface and the presence of debris in the three drum staging areas was noted on Site in the 1959 and 1967 aerial photographs.

4.3 MAGNETOMETER SURVEY

A magnetometer survey was performed over the Site in July 1990 as part of the soil IRM program. The results of this magnetometer survey were originally reported in the "Soil Interim Remedial Measures, Interim Data Report, Duva Property, Town of Clay, New York", dated November 1990. Figure 4.1 depicts the area where the IRM magnetometer survey was performed; Plans 2 and 3 present the survey results. Although the results do not suggest the presence of major subsurface disposal areas, several anomalies were detected which could have been indicative of incidental buried or surficial debris. These anomalies were investigated during the RI test pit excavation activities.

During the RI, the magnetometer survey was extended to cover adjacent land west and north of the Site. These areas were surveyed in March and May 1991 as part of the RI field activities. Figure 4.1 depicts the specific areas where the RI magnetometer survey was performed.

A Scintex Model MP-2 total field magnetometer was utilized for the survey. A cartesian coordinate grid system was laid out by a surveying company (Phillips and Associates) prior to implementation of the survey. Individual grid points were established at 20 foot intervals over the area to be surveyed.

Readings of magnetic field strength were recorded at each grid point. Pertinent field observations (i.e. surficial debris, structures and other visible surface features) which could result in anomalous readings of magnetic field strength were also recorded. Little or no variations in the magnetic field readings were noted in the area immediately west of the Site, as a result, reading contours could not be plotted for this area.

The undeveloped wooded area (owned by Meadowland Developers, Inc.) situated northeast of the Site was not included in the magnetometer survey. Although this land was formerly owned by Mr. Duva, it was not considered readily accessible from the Site due to the presence of dense vegetation and trees. However, on April 24, 1991, a thorough inspection/walk through of this area was performed by representatives of the NYSDEC and CRA. No evidence of surficial or subsurface waste disposal was observed.

4.4 SITE SPECIFIC PARAMETER LIST DEVELOPMENT

4.4.1 Overview

Surficial and subsurface soil samples were collected from the former drum staging areas and background locations on December 12 and 13, 1990, and were analyzed for all or a subset of the Target Compound List (TCL) and Target Analyte List (TAL) parameters as referenced in the September 1989 NYSDEC Analytical Services Protocols (ASP) document. Data

from these soil samples were used to develop the SSPL. The results of this sampling event were presented in the "Site Specific Parameter List, Milestone Report, Duva Property, Syracuse, New York", dated February 1991.

Six surficial soil samples (0 to 6 inches below ground surface (BGS)) and two subsurface soil samples (2 to 4 feet BGS) were collected from six locations upgradient (north) of the Site to represent background soil conditions. These locations (BGS-1, BGS-2, BGS-3, BGS-4, BGS-5, BGS-6) are illustrated on Figure 4.2. Both a surficial and a subsurface soil sample were collected at locations BGS-1 and BGS-6. These samples were analyzed for all the TAL and TCL parameters. Surficial soil samples were collected from the remaining four background locations (BGS-2, BGS-3, BGS-4, BGS-5) and were analyzed for the TAL metals, cyanide and TCL pesticides only.

One surficial and one subsurface soil sample were collected from each of five boreholes advanced in or adjacent to the former drum staging areas. These locations are illustrated on Figure 4.2 and consist of locations BGS-7 (grid location J/2+60W), BGS-8 (L/0+20W), BGS-9 (L/0+20E), BGS-10 (L/0+60E) and BGS-11 (H/0+80E).

In addition, one composite soil sample was collected from the waste soil pile (removed during the IRM soil stockpile removal program) located adjacent to the easternmost former drum staging area. This composite soil sample was analyzed for all TCL and TAL parameters.

4.4.2 SSPL Soil Sampling Procedure

Surficial and subsurface soil samples were collected as follows:

- i) all sampling equipment was precleaned using the methanol/hexane solvent rinse sequence described in the RI QAPP prior to use at each sample location;
- ii) a new pair of disposable latex gloves was used for each sample collected;
- iii) a stainless steel bucket auger was advanced to a depth of 6 inches and retrieved from the hole; the contents of the bucket were then emptied into a precleaned stainless steel bowl and immediately screened for organic vapors;
- iv) a precleaned stainless steel spoon was used to immediately transfer a portion of the soil from the bowl to laboratory supplied sample bottles for volatile organic compound analyses; the remaining soil was homogenized in the bowl prior to transferring to sample bottles;
- v) sample bottles were labelled with the sample location, sample interval, date, time, sampler and analyses required; sample details were also recorded in a hard cover field book; the sample labels were secured with clear tape and the samples were immediately placed on ice in a laboratory supplied cooler;

- vi) where required, following collection of the surface sample, the sample collection borehole was advanced to a depth of 2 feet and inspected to ensure the borehole had stabilized and was not sloughing in the hole; the bottom of the hole was cleared of loose debris with the bucket auger; the auger was then decontaminated;
- vii) the bucket auger was then advanced to a depth of 4 feet; the bucket auger was removed from the hole and the contents combined in a precleaned stainless steel bowl; sample material was screened for organic vapors immediately upon retrieval from the borehole;
- viii) the sample was then prepared as described above;
- ix) samples were delivered by hand, to the analytical laboratory, under approved chain of custody procedures;
- x) one blind duplicate sample was collected and submitted for analyses as an investigative sample;
- xi) one rinsate blank was prepared by pouring deionized water over the precleaned sampling tools; the rinsate water was collected in appropriate sample containers and submitted for analyses;
- xii) one soil sample was collected and submitted for matrix spike (MS) and matrix spike duplicate (MSD) analyses; and

- xiii) excess soil was returned to the borehole; all disposable sampling materials such as plastic sheets and latex gloves were placed in a 55-gallon drum and are staged on Site pending disposal.

The soil sample from the waste soil pile was collected by compositing soil samples collected from four locations within the soil pile. Soil samples were collected as described above at a depth of 1 to 2 feet into the pile and were placed in a precleaned stainless steel bowl. A precleaned stainless steel spoon or knife was used to homogenize the soil and the soil was then transferred to laboratory provided sample containers.

4.5 RI SURFICIAL SOIL INVESTIGATION

The soils north and east of the westernmost drum staging area (see Figure 4.3) were screened and sampled to confirm the limits of residual volatile organic contamination. The RI Work Plan had proposed 13 additional surficial soil sampling locations within and adjacent to the former drum staging areas to be sampled for the analyses of the SSPL parameters. These sample locations were inadvertently omitted during the RI surficial soil sampling activities. However, many of these sample locations were investigated as part of the soil IRM Program or coincided with the SSPL soil sample locations.

The uppermost 12 inches of soil in the area north and east of the westernmost drum staging area was screened for the presence of organic vapor with an organic vapor photoionization detector (HNU). A

20 foot sampling grid was established over the study area. At each grid point a nominal 4-inch diameter borehole was advanced with a precleaned stainless steel hand bucket auger to a depth of 12 inches and the HNU was used immediately to measure organic vapor concentrations within the borehole. Organic vapor screening of this area was performed on December 11 and 12, 1991.

All of the detected organic vapor concentrations were below 5 ppm. The screening area was subsequently subdivided into five sectors (see Figure 4.3). Within each sector, surficial soil samples were collected from four locations and composited into one sample for analyses of the SSPL. Figure 4.3 illustrates the composite soil sampling sectors. Composite soil samples were collected as described in Section 4.4.

4.6 SUBSURFACE SOIL SAMPLING

Subsurface soil samples were collected from boreholes advanced during the installation of six of the monitoring wells (MW5, MW6, MW7, MW9, MW10 and MW11) and at 13 additional locations. Figure 4.4 illustrates the borehole locations sampled during the RI and also includes the borehole locations sampled during the soil IRM Program. Continuous soil samples were collected in advance of hollow stem augers using standard penetration methods. Subsurface soil samples were collected from May 20, 1991 to June 7, 1991. Drilling activities were performed by Empire Soils Investigations (ESI) of Groton, New York.

Subsurface soil samples were collected at 2-foot intervals to a maximum depth of 30 feet. Soil samples were collected using the following procedure:

- i) boreholes were drilled and continuously sampled with precleaned split-spoon samplers to the top of the till;
- ii) the split-spoons were wrapped in polyethylene and put on ice (during warm weather) in a cooler immediately upon withdrawal from the borehole;
- iii) when the top of till was contacted, drilling was stopped and all the collected soil samples were simultaneously opened and screened with the HNU or OVA;
- iv) if visual observations of chemical presence were made, one sample interval was selected and was submitted for SSPL analysis;
- v) if no visual observations of chemical presence were made, the sample with the highest HNU/OVA reading was submitted for analysis; and
- vi) drilling and continuous sampling with precleaned split-spoon samples continued. Till samples were screened with the HNU/OVA immediately upon removal from the borehole. The first sample of till with an HNU/OVA reading of less than 5 ppm was submitted for SSPL analysis and drilling and sampling was stopped at this point.

Alternately, drilling into the till was discontinued when auger or split-spoon refusal was encountered. This was assumed to occur when standard penetration blow-counts approached 100 or no visible evidence of auger advancement was noted during drilling.

All samples were collected in accordance with the procedures outlined in the QAPP.

Difficulties in the collection of continuous split spoon soil samples were encountered during drilling in the till due to the hardness of the till. At several borehole locations, standard penetration blow-counts exceeded 100 and required in excess of one hour to auger six inches into the till. Alternate drilling methods (i.e. use of a 300 pound hammer verses 150 pounds, use of a Dennison core barrel sampler) were used to penetrate the till; however, these attempts were not successful.

Drill cuttings generated during this stage of the investigation were containerized in 55 gallon steel drums and staged on Site. Drill cuttings shall be disposed of during implementation of the final remediation of the Site. Rinse water was collected and containerized in a polyethylene storage tank; solids were allowed to settle and the clear water was introduced into the on-Site water treatment plant.

Stratigraphic logs for each borehole are provided in Appendix B. Table 4.1 summarizes the stratigraphy of the boreholes advanced at the Site.

4.7 TEST PIT EXCAVATIONS

From April 25 to May 1, 1991, test pits were excavated to investigate anomalies identified during the magnetometer survey performed on Site as part of the soil IRM program. Figure 4.5 illustrates the test pit locations.

Eleven test pits were excavated to the glacial till contact from April 25 to May 1, 1991. Excavation activities were performed by Clean Harbors, Inc. of Syracuse, New York. Each test pit was excavated using a backhoe mounted on a John Deere 4x4 tractor. Soil was removed in 6-inch lifts and placed on plastic sheeting adjacent to the test pit. After each bucket was removed, observations on soil structure, color and moisture were noted.

Organic vapor screening was performed using an HNU with an 11.7 eV lamp on each soil horizon and recorded on the stratigraphic logs. Soil samples were not collected at any of the test pits due to the absence of any unusual or abnormal soil conditions. No evidence of buried waste material or metal debris was found at any of the test pit locations except TP-08 where an old drum top was uncovered at the surface. Table 4.2 describes the soil stratigraphy in each test pit and presents the organic vapor screening results.

4.8 HYDROGEOLOGIC INVESTIGATION

4.8.1 Monitoring Well Installation

Seven new monitoring wells were installed on or immediately adjacent to the Site (wells MW-5 through MW-11, inclusive) in June 1991. In October 1991, after obtaining access to the Town of Clay right-of-way, two new monitoring wells were installed off Site (wells MW-12 and MW-13) adjacent to two private residential properties immediately south of the Site. Well locations are shown on Figure 4.6. Three of the wells (wells MW-7, MW-8 and MW-11) were completed in the existing till unit; the remaining wells were completed in the overlying sand unit. Figure 4.6 presents the monitoring well locations.

The wells were installed by ESI using standard hollow stem augering techniques. Each overburden well was constructed of 2-inch diameter PVC (#10 slot) well screen (2 1/2 foot or 5 foot length) and a PVC riser pipe. The backfill for each well consisted of quartzite sandpack extending from the bottom of the borehole to a point two feet above the screen. On top of the sandpack, a two foot bentonite plug was installed with the remaining annular space of the borehole filled with cement grout.

The RI Work Plan required the collection of undisturbed Shelby tube soil samples from the confining layer (till unit) for permeability testing. Attempts to collect Shelby tube samples of undisturbed soils were

made at monitoring well locations MW-6 and MW-8 but were unsuccessful due to the nature of the dense till.

Stratigraphic and instrumentation logs for the newly installed monitoring wells are provided in Appendix C and are summarized on Table 4.3.

Each well was developed after installation in accordance with the procedures outlined in the RI QAPP. Appendix D contains the well development logs for each of the newly installed monitoring wells. All cuttings were containerized in drums and stored in the drum staging area on Site. Well development water was temporarily containerized and treated in the on-Site treatment system.

4.8.2 Field Permeability Testing

Falling head or slug tests were performed in each newly installed monitoring well by Malcolm Pirnie Inc. of Syracuse, New York. The water level data were evaluated using the procedure of Bouwer and Rice to estimate the hydraulic conductivity of the aquifer. Results of the field permeability testing are shown in Appendix D.

4.8.3 Groundwater Sampling

Two rounds of groundwater samples were obtained from all existing and new monitoring wells installed during the RI. The samples were collected a minimum of two weeks after well development and were analyzed for the SSPL. Well purging and sampling protocols are as follows:

Prior to sample collection, all monitoring wells were purged in accordance with the following protocol:

- i) The total depth of the well was measured prior to each sampling event. Purging took place when well water level rose to within 90 percent of static water level (as measured prior to development). Water levels in all wells were measured to ± 0.01 feet prior to purging, unless development and purging occur on the same day. In that case, a static water level was taken prior to development.
- ii) All wells were purged by one or both of the following techniques:
 - Bailing with a bottom loading stainless steel/teflon bailer. The stainless steel or teflon bailer was attached to a leader made of teflon, stainless steel wire or single strand polypropylene monofilament of at least 10 feet with nylon cord above. The bailer cord was dedicated to each well.
 - A peristaltic pump with a dedicated teflon discharge line. The small length of silicon tubing within the peristaltic pump was

not replaced between wells. New nylon rope and teflon tubing, where applicable, was used at each well location.

- iii) Purging was conducted until a minimum of three well volumes, where possible, were evacuated. After each well volume was evacuated, a sample was collected and analyzed for pH, temperature, turbidity and conductivity. Purging was considered complete when three consecutive consistent readings of pH, temperature and conductivity were obtained. Readings were considered consistent if the three conductivity and temperature values were within ten percent of the average value and the three pH readings are within ± 1 pH unit of the average value. In the event that consistent readings were not obtained, purging continued until a maximum of five well volumes were evacuated.
- iv) In the event that recharge was insufficient to conduct the purging protocol described in iv) above, the well was pumped/bailed to dryness prior to sampling. Wells which were purged to dryness were not subject to the above purging criteria. Table 4.4 summarizes well purging data.
- v) Prior to use at each well location, all water extraction and water level measuring equipment were cleaned in accordance with the decontamination protocols presented in Section 5.8 of the QAPP. All teflon tubing was dedicated to each well. Therefore, tubing cleaning was not done.

- vi) All purge water was handled in the same manner as development water. Purge water was temporarily containerized and disposed of into the groundwater treatment system.

Following well purging, monitoring well sampling was carried out according to the following protocol:

- i) Because the stability of analytes varies (e.g. metals are much more stable than volatile organics), a hierarchy for sample collection was established. The order of sample collected was as follows:
- a) in-situ measurement: temperature, pH, specific conductance, turbidity;
 - b) volatile organic compounds (VOC);
 - c) extractable organics;
 - d) PCBs
 - e) total metals; and
 - f) cyanide.
- ii) Water samples were collected for SSPL determinations using one or both of the following techniques:
- A bottom loading stainless steel or teflon bailer attached to a leader made of teflon, stainless steel wire or single strand polypropylene monofilament of at least 10 feet with nylon cord above. The bailer cord was either well dedicated or thrown away

after each use. This applies to bailers used for development, purging and sampling.

- Pumping using a peristaltic pump for all parameters other than volatile organic compounds (VOCs). The sample for VOC analyses was collected using a bailer.
- iii) In the event that the groundwater was still turbid following purging, additional purging and/or appropriate sampling techniques (i.e. low pumping rate) were implemented to collect sediment-free samples or samples that were as sediment-free as possible.
- iv) In the event that a well was purged dry, sample collection commenced on the following day and continued for up to four consecutive days to obtain the required sample volume.
- v) Sufficient groundwater was collected for chemical analyses, where possible. Required sample containers, sample preservation methods, shipping means and required sample holding times are presented in Section 5.7, and Table 5.2 of the QAPP.
- vi) Sample containers were cleaned and quality control provided in accordance with Section 5.1, Item Number 2 of the QAPP.
- vii) Field QA/QC samples were collected in accordance with the frequencies identified in Section 4.1 of the QAPP.

viii) Field measurements of pH and conductivity (using a Cole-Palmer Model DSpH3 or equivalent) as well as turbidity (using a Fisher model DRT-15C or equivalent) was taken during well development and purging. A field temperature reading was taken immediately prior to sample collection. Calibration of field instruments was undertaken as presented in Appendix B of the QAPP. Field measurements are provided on Table 4.4.

During the first groundwater sampling round (July 1991), monitoring wells MW-9 and MW-11 went dry during sample collection. Well MW-9 only yielded sufficient sample volume for the analyses of the SSPL volatile organic compounds (VOCs) and well MW-11 only yielded sufficient sample volume for analyses of the SSPL VOCs, base/neutral acid extractables (BNAs), and polychlorinated biphenyls (PCBs).

During the second groundwater sampling round (September 1991), monitoring well MW-9 was dry and could not be sampled. Monitoring wells MW-1, MW-2, MW-3, MW-5, MW-6, MW-7, MW-10 and MW-11 went dry during sample collection and only yielded sufficient sample volume for analyses of a subset of the SSPL. Monitoring well MW-5 could only be sampled for analyses of the SSPL VOCs; wells MW-1, MW-2 and MW-3 could only be sampled for analyses of the SSPL VOCs and BNAs; wells MW-6, MW-7, MW-10 and MW-11 could only be sampled for analyses of the SSPL VOCs, BNAs, and PCBs.

In addition, groundwater elevations in all monitoring wells installed on and adjacent to the Site were measured during well

development and prior to sample collection. Table 4.5 presents the collected water level data.

4.9 SURFACE WATER AND SEDIMENT SAMPLING

Surface water and sediment samples were collected from locations on and adjacent to the Site on April 24 to May 2, 1991. The sampling locations are identified on Figure 4.7.

All sampling locations were selected in consultation with the NYSDEC field representative. Sample locations SW/SED-01 and SW/SED-02 are located within minor surficial depressions upgradient of the Site which may have up to one foot of water ponded within them during the wet seasons. A "spring" located in the access road northwest of the Site discharges water to the ground surface during the wet seasons which results in water ponding in the vicinity of location SW/SED-01. At the time of sample collection, no surface water or sediment samples could be collected from locations SW/SED-01 and SW/SED-02 since these areas were dry.

Sample location SW/SED-03 is situated within a ponded depression approximately two feet deep immediately south of the westernmost former drum staging area. This ponded/depressed area is approximately 20 feet wide receives runoff from the easternmost drum staging areas.

Locations SW/SED-04 and SW/SED-05 are situated within naturally occurring low areas within the woods. Approximately one foot of water collects in these low-lying areas.

Both locations SW/SED-06 and SW/SED-07 are situated within a Town of Clay stormwater drainage swale which runs along the southern perimeter of the Site and drains to the west.

Location SW/SED-08 is situated in a depressed area adjacent to a groundwater collection trench manhole. This area was dry at the time of sample collection.

Surface water samples were collected in accordance with the following protocols:

- i) Because the stability of analytes varies (e.g. metals are much more stable than volatile organics), a hierarchy for sample collection was established. The order of sample collection was as follows:
 - a) in-situ measurement: temperature, pH, specific conductance, turbidity;
 - b) volatile organics;
 - c) extractable organics;
 - d) PCBs;
 - e) total metals; and
 - f) cyanide.

- ii) Surface water samples were collected directly in the laboratory supplied sample containers. Required sample containers, sample preservation methods, shipping means and sample holding times are presented in Section 5.7, Table 5.2 of the QAPP. Sample containers were cleaned and quality controlled in accordance with Section 5.1, Item Number ii).
- iii) Surface water sampling was conducted from the furthest downstream location and proceeded in an upstream direction to ensure collection activities did not impact unsampled downstream locations.
- iv) Care was taken to avoid disturbing sediment, debris or plants during sampling.
- v) Field QA/QC samples were collected in accordance with the frequencies identified in Section 4.1 of the QAPP.

Sediment samples were collected in accordance with the following protocols:

- i) Sediment samples were collected using stainless steel spoons. All equipment used to collect and homogenize the samples was stainless steel. All sample collection equipment was cleaned in accordance with protocols presented in Section 5.8 of the QAPP.
- ii) Sediment sampling was conducted from the furthest downstream location and proceeded upstream.

- iii) All sediment samples, except those collected for volatile organics, were homogenized using stainless steel spoons and stainless steel bowls prior to being put in the sample bottles.
- iv) Required sample bottles, sample preservation methods, shipping means and sample holding times are presented in Section 5.7, Table 5.1 of the QAPP.
- v) Sample containers were cleaned and quality control provided in accordance with Section 5.1, Item No. ii of the QAPP.
- vi) Field QA/QC samples were collected in accordance with the frequencies identified in Section 4.1 of the QAPP.

All sediment and surface water samples were submitted to Galson for analyses of the SSPL parameters. Surface water and sediment samples were not collected at three locations proposed in the RI Work Plan due to dry conditions (SW-1, 2, 8).

4.10 AIR MONITORING

Air monitoring was conducted during all ground intrusive activities performed during the RI (i.e. test pits, subsurface sample collection). Monitoring was performed to measure organic vapor, dust particles, oxygen level, and lower explosive limit (LEL), as required in the

HASP. Instruments were calibrated daily with appropriate standards and/or in accordance with the manufacturer's instruction manuals.

Air monitoring data are presented in Table 4.8 for the test pit program and Table 4.9 for the subsurface soil investigation program. Readings were obtained from the upwind locations (to represent background conditions) and from the worker breathing zone and/or from a downwind location.

4.11 ADRP SOIL SAMPLING

Based on a preliminary data sufficiency evaluation performed on the RI data collected during implementation of the above described RI activities, additional data were determined necessary to better define the vertical and horizontal extent of residual soil contamination on Site. The scope of work for the ADRP was approved by the NYSDEC in October 1991 and is presented in the document entitled "Additional Data Requirement Program, Remedial Investigation/Feasibility Study, Duva Property, Volume I, Work Plan (dated November 1990)", dated October 29, 1991 (herein referred to as ADRP Work Plan).

On October 10, 1991 and November 6-8, 1991, the ADRP was conducted to collect subsurface soil samples in accordance with the ADRP Work Plan dated October 29, 1991. The ADRP consisted of three primary components, as follows:

- i) boreholes (BHC/1+00E, BHL/0+60E) to define the vertical extent of contamination;
- ii) boreholes (BHD/0+60E, BHD/1+40E, BHK/2+20W, BHK/3+00W, BHB/0+00) to define the lateral extent of contamination; and
- iii) boreholes (BH/0+00E, BHH/1+00W, BHN/1+00W) to define the depth to the till contact.

The ADRP borehole locations are illustrated on Figure 4.4. In addition, although not a defined component of this program, soil samples were collected to determine the in-situ moisture content and organic carbon content of subsurface soils from boreholes BHK/3+00W, BHD/1+40E, BHN/1+00, BHD/0+60E and BHD/0+20E.

ESI provided drilling services for boreholes advanced on October 10, 1991. Two boreholes (BH-H/0+00, BH-H/1+00W) were advanced using hollow stem augers; split spoon samples were collected at 2 foot intervals in advance of augering to define the depth to the till contact in these areas. A modified head space analysis for organic vapors was performed, as described in the ADRP Work Plan, on each split spoon sample to identify possible volatile organic compound (VOC) contamination. A subsurface sample was collected from each borehole at the till interface for subsequent analyses.

Parratt-Wolff of East Syracuse, New York, provided drilling services for the sampling performed during the period of

November 6-8, 1991. Seven boreholes were advanced using hollow stem augers; continuous split spoon samples were collected at 2 foot intervals in advance of augering. A modified head space analysis was performed on each split spoon sample to identify the presence of VOCs. Table 4.8 presents the modified headspace results.

Six boreholes were sampled to define the lateral extent of contamination (BH-D/0+60E, BH-D/1+40E, BH-D/0+20E, BH-K/2+20W, BH-K/3+00W, BH-B/0+00). One additional borehole was advanced to define the depth to till contact (BH-N/1+00W).

All samples collected were submitted to Galson for analysis. Soil samples were submitted for analyses of TCL VOCs, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and/or TOC. Samples collected on October 10, 1991 were inadvertently analyzed for methyl tertiary butyl ether (MTBE). Also, samples were collected as a geologic record from each 2 foot interval and stored on Site.

A Dennison core barrel sampler was used at borehole location BHC/1+00E in an attempt to obtain a subsurface soil sample from the dense till unit. This borehole was subsequently abandoned, in consultation with the NYSDEC, due to continued difficulties encountered in penetrating the till and obtaining a representative sample. BHL/0+60E was also deleted from the program, in consultation with NYSDEC on-Site Representatives, to eliminate the possibility of carrying contaminants down into the till unit.

5.0 LOCAL GEOLOGY AND HYDROGEOLOGY

5.1 GENERAL

The generalized stratigraphy of the Site and hydrogeologic characteristics of the overburden at the Site are described in the subsections which follow. These descriptions were developed based on the data obtained during the RI field activities as well as historic data described in Section 3.0. Appendix B and Appendix C present the stratigraphic logs for boreholes advanced at the Site during the RI. A summary of the stratigraphy encountered in boreholes advanced at the Site is provided on Table 4.1. Figures 5.1 through 5.5, inclusive, show geologic cross-sections of selected areas of the Site.

5.2 SURFACE FEATURES

The Site is bounded on the north and west by open, formerly cultivated fields; on the south by a residential area; and on the east by a densely wooded forest of mixed hardwoods and conifers. The Site is mildly sloped from north to south with a poorly drained minor depression near the south boundary. The general Site topography and significant surface features are illustrated on the Site topographic map illustrated on Plan 1.

A small portion of the Site at the northwest edge is a densely vegetated open field. An intermittent stream/drainage swale runs from the northwest corner of the Site toward the south. The flow from the

stream is negligible but appears to be relatively constant during the spring and fall.

The remainder of the Site is densely wooded consisting of a mixture of hardwoods and conifer woods. The wooded area is densely vegetated with viney underbrush. An old stone base road runs north and south through the Site and between the two easternmost drum staging areas. The road is also overgrown with weeds and grass.

5.3 SITE GEOLOGY

Environmental effects at the Duva Property appear to be confined to the zone of glacial or overburden geology rather than bedrock geology. As the geologic cross-sections illustrate, the deepest borehole penetration is into a basal lodgement till unit. This unit is variably described in the soil boring logs as predominantly either silt or clay, red to red-brown in color with some angular gravel present. It underlies the entire Site, in so far as is known, and outcrops in the higher portions of the Site to the north near West Taft Road.

The lodgement till is described as being dominantly of silt or clay because it has a fine-grained matrix or "rock flour". This is due to the fine-grained nature of the underlying Vernon shales which, when bulldozed by the advancing glaciers, break down into very fine-grained components such as individual silt grains and clays. Fragile lithologies such as the Vernon shales normally break down almost completely to fine-grained sizes

and leave few cobble-sized fragments remaining in the tills. These larger sized lithologies in the Syracuse area are visually composed of limestones, dolostones, sandstones, and various precambrian aged exotics of the northerly Canadian shield. This is the case at the Duva Site.

Further evidence of the lithologic derivation of this fine grained matrix is provided by the red color of the tills. As was discussed in Section 3.4 (regional geology) the underlying Vernon shales are dominantly red in color due to ferrous iron oxide and have imparted a characteristic red color to the overlying lodgement tills. Except for a few instances in the southerly Tully Valley, the red tills of Onondaga County occur exclusively over the Vernon shale or immediately south of this lithology where they have been bull-dozed by the glacier.

Immediately overlying the red lodgement till on Site is a thin, wedge-shaped unit of lacustrine fine to medium-grained sands with interbedded silts. These same types of sands are prevalent throughout northern Onondaga County and are derived from relatively quiescent sedimentation in a proglacial lake. The lacustrine fine sands are absent to the north and northwest of the Site and appear to thicken in a generalized wedge shape to the east and south of the Site to a maximum recorded thickness of 8 feet (borehole BH-10-591).

Imported fill soils, principally consisting of sands, overlie all natural units in the portions of the Site where drums were found and later removed. These are not of any special significance, yet are mentioned

frequently in the boring logs simply because the majority of the boreholes were advanced near drum storage areas.

Bedrock beneath the Site was not penetrated by either a monitoring well or borehole but due to historic geologic data from the general vicinity and the color of the lodgement till, the Vernon shale can reliably be inferred to underlie the overburden at the Site. Discussions with local drillers suggest the bedrock may be within 30 feet of ground surface at this Site.

5.4 SITE HYDROGEOLOGY

Current surficial Site hydrogeology is dominated by a groundwater collection trench installed at the southern edge of the Site as part of the groundwater IRM Program. As can be seen in Figure 5.6, a contour map of groundwater elevations, the drain system induces a linear depression in groundwater flow directions in the vicinity of the drain. This feature essentially dewateres the uppermost fill and lacustrine sands except for the extreme western and southern areas of the system where some standing water was measured in shallow monitoring wells.

The upper sands were tested for bulk hydraulic conductivity during the RI by means of slug tests (refer to Section 4.8.2). Table 5.1 summarizes the hydraulic conductivities calculated from data obtained during slug tests performed on the newly installed monitoring wells. The results of these show that wells screened in the lacustrine sands

and/or partially into the upper zone of the till have hydraulic conductivities ranging from 2.41×10^{-4} cm/sec to 1.04×10^{-5} cm/sec. This is in the range of fine sands to silty sands as commonly described in the literature (Freeze and Cherry, 1979). This range is not generally considered as being very permeable. However, due to the presence of the less permeable underlying till, the lacustrine sands/silts unit is considered the uppermost waterbearing zone on Site.

Although lodgement tills are commonly thought of as being less permeable than overlying strata, this condition is very much a function of the makeup of the rock flour matrix. As the Site till is a clay-rich till, it can be expected to have a bulk hydraulic conductivity in the range of 5.0×10^{-7} cm/sec to 5.0×10^{-6} cm/sec. The till monitoring wells installed at the Site generally fall into this range with bulk hydraulic conductivities reported as follows: well MW-7 at 4.68×10^{-6} cm/sec; well MW-8 at 9.44×10^{-6} ; and, well MW-11 at 8.81×10^{-6} . Some variability in hydraulic conductivity measurements in clay-rich lodgement tills may be due to fracturing of the tills, presumably due to shrinkage from glacial unloading.

The bulk hydraulic conductivities of the Vernon shale bedrock were not measured, however, historical investigations in the area (proposed Onondaga County Municipal Landfill; Bristol Myers) noted the existence of a fairly high permeability zone of weathered, broken bedrock beneath lodgement till cover in the Vernon shale. Below this zone the shale bedrock fractures often close to form a fairly impermeable bedrock unit.

5.5 SITE HYDROLOGY

Site hydrology is governed largely by a combination of glacial geology and man-made influences. Where exposed in the central and northern portions of the Site, the relatively impermeable clay-rich soils developed over the lodgement till directly beneath tend to contain shallow ponds of water temporarily after a rain. To the south and east where soils over lacustrine sands are more permeable, ponding was not observed by the field personnel.

The east-west Town of Clay drainage swale that isolates the southern part of the Site from the Platinum Drive subdivision further to the south has a catchbasin for surface water runoff. So, too, does a ditch installed to the east of the Site south of the woods.

The majority of the runoff from the Site is ultimately intercepted by one of these two drainage features.

6.0 SITE CHARACTERIZATION

6.1 GENERAL

The RI database used to characterize the Site consists of physical information described and documented in Sections 2.0 through 5.0 as well as the analytical data obtained from the various media sampled. Characterizations of the media sampled are summarized in the sections which follow.

6.2 RI ANALYTICAL DATA

6.2.1 General

The samples collected for analyses during the RI/FS are described in Section 4.0. The matrices sampled include surficial soils, subsurface soils, sediments, surface water, and groundwater. Samples were analyzed for TCL/TAL parameters, methyl tertiary butyl ether (MTBE), and trimethylbenzenes or a representative subset thereof.

6.2.2 Analytical Methods and Validation

All investigative samples collected during the RI/FS were analyzed by Galson. The methods of analyses are detailed as follows:

Analytical Parameters⁽¹⁾Methodology⁽²⁾

GC VOCs	8020
TCL VOCs	89-1
TCL BNAs	89-2
TCL PCBs	89-3
Selected TAL Metals	200 Series CLP-M ⁽³⁾
Cyanide	335.2 CLP-M ⁽³⁾

Notes:

- (1) GC-VOCs consisted of 1,2,4 and 1,3,5-trimethylbenzene. MTBE was confirmed by, but not quantitated by, GC.
TCL-VOCs were analyzed by GC/MS and included MTBE.
Selected TAL metals included arsenic, cadmium, chromium, copper, lead, nickel, silver and zinc.
- (2) Method 8020 is referenced from USEPA SW-846, 3rd Edition and performed in accordance with the NYSDEC September 1989 ASP Category B. All remaining methods referenced from NYSDEC September 1989 ASP Superfund protocols.
- (3) CLP-M-Modified for the NYSDEC contract laboratory program.

The laboratory analytical data summary sheets are presented separately in Appendix F of this report. Summaries of complete analytical data are presented in tables discussed in this section.

The laboratory reports were assessed and validated by CRA's QA/QC officer based upon a review of standard quality control criteria established by the document entitled, "Remedial Investigation/Feasibility Study, Duva Property, Volume II, Quality Assurance Project Plan, Syracuse, New York, November 1990".

Application of the criteria was consistent with the guidelines presented in the following documents:

- i) "CLP Organics Review and Preliminary Review", SOP No. HW-6, Revision #6, March 1989";
- ii) "Laboratory Data Validation Functional Guidelines for Evaluating Organic Analyses" (February 1, 1988), Prepared by the USEPA Data Validation Work Group; and
- iii) "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses" (July 1, 1988), Prepared by the USEPA Data Review Work Group.

The data assessment and validation reports for all RI/FS data are presented in Appendix G.

On the basis of the formal data validation identified in the foregoing discussion, all data generated during the RI are acceptable for use with the specific qualifications noted herein.

6.2.3 Data Quality Summary

Problems that were encountered during the analyses of the RI samples included:

- i) sample holding time exceedances (13 out of 110 total investigatory samples*);
- ii) outlying internal standard/surrogate spike recoveries (10 out of 110 total investigatory samples*);
- iii) laboratory contamination of samples (8 out of 110 total investigatory samples*);
- iv) outlying blank spike/matrix spike/check sample recoveries (affected 23 out of 110 total investigatory samples*); and
- v) outlying field duplicate data.

The effect of these problems upon the RI data was calculated using the following formula for completeness:

$$\text{Completeness} = \frac{\text{valid data obtained}}{\text{total data planned}} \times 100 \text{ percent}$$

Approximately 95 percent of the analytical data met QA/QC criteria and did not require qualification as specified in the data validations. Approximately two percent of the data were qualified as being quantitatively estimated due to laboratory errors and/or inaccuracies; less than one percent of the analytical data were qualified as unusable due to poor surrogate spike recoveries or poor instrument response; and two percent of

* Includes field QA/QC samples, but not laboratory QA/QC samples.

the analytical data were qualified by the laboratory as being quantitatively estimated since the reported value was below the practical quantitation limit.

The USEPA typically finds that 80 to 85 percent of analytical data generated during RI/FS studies meet associated QA/QC requirements. In comparison, the amount of analytical data meeting all QA/QC criteria (95 percent) exceeds this acceptable range.

6.3 MAGNETOMETER SURVEY

A magnetometer survey was performed during the RI, as described in Section 4.3, to identify the potential presence of buried waste and/or drums not previously identified. The results of this survey were intended to supplement the magnetometer survey of the Site performed during the soil IRM Program. The survey was performed on lands previously owned by Mr. Duva which are contiguous to and accessible from the Duva Site. The survey was conducted over the lands identified on Figure 4.1. The results of the magnetometer survey are illustrated on Plans 2 and 3.

Several discreet anomalies (i.e. areas which appear as bullseyes) were identified throughout the Site itself during the soil IRM magnetometer survey. In addition, several linear anomalies were noted which could not be accounted for by surficial features. These anomalies were investigated by test pits as described in Section 6.5.4.

Three "bullseye" anomalies were also identified during the magnetometer survey performed on the field northwest of the Site (refer to Plan 3). All three anomalies, however, coincide with specific surface features noted during the survey including two concrete/rubble piles and a collapsed greenhouse.

Magnetometer results for the area west of the Site were flat (i.e. no significant variation between points) and could therefore not be contoured. Magnetometer readings ranged from 56374 to 56363 in this area.

As noted in Section 4.3, the area north and east of the Site was considered inaccessible from the Site due to dense vegetation and was therefore deleted from the magnetometer survey. A comprehensive visual inspection of the entire area was performed by representatives of CRA and NYSDEC and did not identify any evidence of surficial or subsurface disposal.

No subsurface waste or drums were identified by this phase of the field activities.

6.4 BACKGROUND SOIL DATA AND DEVELOPMENT OF THE SSPL

6.4.1 General

As part of RI Task 5-Site Investigation, an SSPL was developed based on historical data from the Site and RI data collected for the

development of the SSPL. Surficial and subsurface soil samples were collected from the former drum staging areas and background locations and analyzed for all or a subset of the TCL and TAL parameters.

The selection of a compound for placement on the SSPL was based on the following criteria, as appropriate:

- i) concentration;
- ii) frequency of occurrence;
- iii) chemical stability;
- iv) transport properties;
- v) toxicity;
- vi) known or reasonably expected major chemicals present at the Site; and
- vii) applicable rules and regulations.

The results of this program were presented in an interim data report titled, "Site Specific Parameter List, Milestone Report, Duva Property, Syracuse, New York", dated February 1991.

Surface and subsurface soil samples were collected from six background locations in an area which appeared to be representative of natural conditions and from five locations within or adjacent to the former drum staging areas. Exact locations were selected in consultation with the NYSDEC Site Representative and are presented on Figure 4.2.

Surficial and subsurface soil samples from two of the background samples and all samples collected from the drum staging areas were analyzed for the TCL VOCs, TCL BNA compounds, TCL pesticides and PCBs. Surficial samples from the remaining background sample locations were analyzed for the TAL metals and cyanide.

In addition, one composite soil sample was collected from a waste pile located adjacent to the easternmost former drum storage area and analyzed for the TCL and TAL parameters.

6.4.2 Background Samples

Background sample data are summarized on Table 6.1. None of the TCL VOCs were detected in the background samples except for trichloroethene. Trichloroethene was detected at estimated concentrations (3J $\mu\text{g}/\text{kg}$ and 5J $\mu\text{g}/\text{kg}$) below the practical quantitation limits.

BNAs, including fluoranthene, pyrene, benzo(a)anthracene, bis(2-ethylhexyl)phthalate, chrysene, benzo(a)fluoranthene (b and k isomers), were also detected at estimated concentrations below the practical quantitation limits; no other BNAs were detected.

DDD, DDE, and DDT (which are generally ubiquitous in agricultural areas) were detected in background surficial soil samples at concentrations ranging from 13J $\mu\text{g}/\text{kg}$ to 630 $\mu\text{g}/\text{kg}$. All of the TAL metals

within published concentration ranges for natural soils (see Table 6.2). No cyanide was detected in the background soil samples.

6.4.3 Site Specific Parameters List

Analytical results collected as part of the RI/FS and previous investigations were considered during development of the SSPL. Each of the TCL and TAL constituents were reviewed based on the concentrations detected and frequency of occurrence on Site; background concentrations; and toxicity of each detected constituent.

Table 6.3 lists all TCL/TAL constituents detected historically (i.e. soil IRM program and the 1989 soil sampling event) and during the SSPL sampling event at the Site. A proposed SSPL was developed by assigning each constituent a deletion criterion or criteria, where appropriate. The deletion criteria were defined as follows:

- A Detected at low concentrations. Detected concentrations are considered low if they are below or near the average detection limit or the background concentration for the constituent.
- B Low frequency of detection. Detected five or less times.
- C Naturally occurring mineral. Inert mineral naturally occurring in soils.

- D Common plant nutrient. Naturally occurring plant nutrient found in soil in high variable amounts.

Constituents were proposed for deletion from the SSPL based on any of the following combinations of assigned deletion criteria:

- i) A and B;
- ii) A and C; or
- iii) C and D.

During subsequent discussions and exchanges of correspondence with the NYSDEC and/or NYSDOH, the following additional parameters were added to the SSPL:

- i) Organic Analytes
 - benzene
 - cis-1,1-dichloroethylene
 - 1,2-dichloroethane
 - 1,1-dichloroethane
 - 1,4-dichlorobenzene
 - 1,3,5-trimethylbenzene
 - 1,2,4-trimethylbenzene
 - methyl t-butyl ether
 - vinyl chloride
- ii) Inorganic Analytes
 - cadmium
 - chromium
 - silver
 - nickel
 - arsenic

The approved SSPL, incorporating the above parameters, is presented on Table 6.4. This list was used for all subsequent analyses except where noted otherwise.

6.5 SOIL INVESTIGATION

6.5.1 General

A soil investigation was performed during the RI to:

- i) characterize surficial soil conditions;
- iii) characterize subsurface soil conditions; and
- iii) investigate anomalies identified during the magnetometer survey.

Data obtained during implementation of the soil IRM was used to supplement data obtained during the RI and is presented herein, as appropriate. The results of the investigation are summarized in the subsections which follow.

6.5.2 Surficial Soil Investigations

6.5.2.1 General

The surficial soil investigation was performed in two distinct stages including: screening of surficial soils for organic vapors; and,

collection/analyses of discrete and composite soil samples. The results of these programs are described below.

6.5.2.2 Organic Vapor Screening of Surficial Soils

During implementation of the soil IRM program, organic vapors in the upper 12-inch layer of surficial soil were monitored to delineate areas of elevated residual volatile organic contamination. Initial screening for vapors focussed on the former drum staging areas and extended aurally in each direction to a point where organic vapors detected were 5 ppm or less.

These data were supplemented during the RI by the screening of surficial soils in the area north and east of the westernmost drum staging area.

All soil screening data obtained are illustrated on Figure 6.1. As illustrated, no significant concentrations of organic vapors were detected in the soil in the area north and east of the westernmost drum staging area.

The screening indicated the highest concentrations of VOCs in surficial soils were situated in the immediate vicinity of the two easternmost drum staging areas. The screening indicated much lower concentrations of VOCs could be anticipated in the vicinity of the westernmost drum staging area. No significant concentrations of VOCs were

detected in the surficial soils outside the general vicinity of the drum staging areas.

6.5.2.3 Surficial Soil Sampling

All surficial soil samples collected during the soil IRM were analyzed for TCL VOCs. Surficial soils sampled during the RI for development of the SSPL were analyzed for all remaining TCL compounds, TAL metals, and cyanide. Composite surficial soil samples collected from the area north and east of the westernmost drum staging area were analyzed for the SSPL parameters. Analytical data for surficial soil samples collected during the RI are summarized on Tables 6.1, 6.2 and 6.5. Data obtained during the soil IRM Program are included in Appendix A. Figure 6.2 illustrates the total VOC concentrations reported in the surficial soils.

The RI sampling performed confirmed that the surficial soils in the area north and east of the westernmost drum staging area are relatively free of VOC contamination with the total VOC concentrations ranging from 0.003(J) ppm to 0.102(J) ppm. Total VOCs reported in the surficial soils in the westernmost drum staging area ranged from 0.002 ppm to 1.2 ppm. VOC concentrations in the 0 to 6 inch sample interval in the easternmost drum staging areas ranged from 0.002 ppm to a high of 225 ppm. As anticipated, the higher concentrations generally occurred within the limits of the drum staging areas.

The primary VOCs detected in the on-Site surficial soils are: 1,1,1-trichloroethane, trichloroethene, 1,2-dichloroethene, and tetrachloroethene with the most predominant VOC being trichloroethene. Other VOCs were detected in the soils at less significant concentrations.

Other constituents detected in the surficial soils included BNAs, pesticides, PCBs and metals as described below.

BNAs were generally non-detect or detected at estimated trace concentrations (low ppb range) for all surficial soil samples with the exception of locations BGS-7, BGS-8, BGS-9 and BGS-10 which are within the limits of the former drum staging areas. Primary BNAs detected at these locations are polynuclear aromatic hydrocarbons (PAHs), bis(2-ethylhexyl)phthalate and 1,2-dichlorobenzene. PAHs were detected at the highest concentrations at location BGS-7. Reported concentrations of 1,2-dichlorobenzene ranged from 37J ppb to 12,000 ppb with the highest concentration detected at BGS-9. Bis(2-ethylhexyl)phthalate was detected at BGS-7 and BGS-10 at concentrations of 830 ppb and 81,000 ppb, respectively.

Aroclor 1254 was the only PCB (Aroclor) detected in any surficial soil samples. All reported detections were at or less than 1 ppm with the exception of location BGS-11 with a reported concentration of 34 ppm.

DDE was detected in the surficial soils on Site at a concentration of 3,800 ppb at location BGS-11. Trace concentrations (6.8J ppb) of gamma BHC were also reported in one on-Site sample. No other pesticides were reported in the on-Site surficial soils.

On-Site metal concentrations in surficial soils were typically consistent with background concentrations with the exception of BGS-7, BGS-8, and BGS-11. Cadmium, copper, lead and zinc were detected above background soil concentrations at these locations. Detected concentrations for these metals are as follows:

- cadmium ranged from ND to 10.1 ppm;
- copper ranged from 37.1 ppm to 1510 ppm;
- lead ranged from 55.4J ppm to 1770 ppm; and
- zinc ranged from 53.2 ppm to 3620 ppm.

Cyanide was detected in only one location (BGS-11) at 2800 ppm.

6.5.3 Subsurface Soil Sampling

All subsurface soil samples collected during the soil IRM and RI were analyzed for TCL VOCs. In addition, subsurface soil samples collected for the development of the SSPL were analyzed for all remaining TCL compounds, TAL metals, and cyanide. Remaining subsurface samples collected during the RI were analyzed for the SSPL, except those collected during the ADRP which were analyzed for only the SSPL VOCs. Subsurface soil sample data obtained during the RI sampling events are presented on Tables 6.1 and 6.6 to 6.8, inclusive. The data for subsurface soil samples collected during the IRM are provided in Appendix A.

The primary VOCs detected in the subsurface soils are 1,1,1-trichloroethane, trichloroethene, 1,2-dichloroethene, tetrachloroethene, toluene, ethylbenzene, and xylenes.

Total VOCs reported in subsurface samples are illustrated on:

- i) Figure 6.3 for samples collected from 18 to 30 inches below grade; and
- ii) Figure 6.4 for samples collected from below a depth of 30 inches.

VOC concentrations in the 18 to 30 inch zone followed the same general distribution pattern observed in the overlying surficial samples. Detected VOCs in the subsurface soils were present at higher concentrations than those reported in the surficial soils at most locations. The highest VOC concentrations were detected at locations J/0+60E, L/0+20E, F/0+80E and H/0+60E where the total VOC concentrations in the 18 to 30 inch sample interval ranged from 1,865 ppm to 7,305 ppm. The maximum total VOC concentration detected in the 18 to 30 inch interval was 7305 ppm at location F/0+80E in the northwest corner of the easternmost drum staging area.

The highest total VOC concentration reported in any on-Site soil sample was 41,329 ppm from a depth of 8 to 9 feet below grade at station B/1+00E. The sample was collected from a sand pocket encountered immediately above the till contact. There appears to be a localized depression in the till surface at this location with the top of till being lower than the till surface beneath the northern limits of the easternmost drum staging area.

The depression in the till surface and elevated concentrations of VOCs appear to be very localized since other samples collected in the vicinity of this sample had total reported VOC concentrations which are several orders of magnitude lower than those reported at this location.

Total VOC concentrations in remaining subsurface soils varied across the Site. Total VOC concentrations reported in the shallow subsurface soils (generally consisting of sands and silts) ranged from 0.002 ppm to 5154 ppm with the highest total VOC concentration detected at station R/0+60E. The highest reported total VOC concentration in the shallow subsurface soils downgradient of the easternmost drum staging area appeared at a depth of 5.5 feet BGS. The next highest reported total VOC concentration in the shallow subsurface soils was 2,966J ppm at station L/0+20E within the center portion of the former central drum staging area.

Elevated VOC concentrations were also reported at locations J/0+60E, N/0+60E, and Q/0+60E, all of which are within or immediately downgradient of the easternmost drum staging areas.

Other constituents detected in the subsurface soils were generally consistent with those detected in the surficial soils and included: BNAs, pesticides, PCBs and metals. Concentrations of these constituents in the subsurface soils were generally, where present, reported at much lower concentrations than the corresponding overlying samples with the exception of:

- 1,2-dichlorobenzene reported at 35,000 ppb at BGS-9 (2 to 4 feet BGS)

- bis(2-ethylhexyl) phthalate reported at 81,000 ppb at BGS-10

1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene were reported in soil samples collected at monitoring well locations MW-6 and MW-7.

6.5.4 Test Pits

Test pits were advanced in areas identified as anomalous during the magnetometer survey. Test pit locations are illustrated on Figure 4.5; a summary of the stratigraphy encountered in the test pits is provided on Table 4.2.

No metallic debris or subsurface disposal areas were identified during the test pit program. A shallow buried drum lid, likely a remnant of the original drum removal program, was uncovered at test pit location TP-08.

Screening for organic vapors confirmed the presence of VOCs only in those areas where VOCs had been previously detected. Test pits excavated outside those areas previously investigated for VOCs showed no evidence of residual VOC contamination.

6.6 HYDROGEOLOGIC INVESTIGATION

A total of seven new monitoring wells were installed on or immediately adjacent to the Site and two new wells were installed off Site during this phase of the investigation. Six of the proposed wells were installed at the interface of the till and overlying sand unit. The remaining wells were installed within the till unit. Locations of new and existing wells are illustrated on Figure 4.6. Well logs are presented in Appendix C.

New and existing wells were sampled on two separate occasions during the RI. Sample data are summarized on Tables 6.9 and 6.10. Figure 6.5 illustrates the results of the VOC analyses for all wells sampled. On-Site groundwater data collected during the first groundwater sampling event were generally consistent with the second sampling event.

Groundwater elevations were also recorded during each sampling event. These elevations have been supplemented by water levels obtained as part of the operation of the groundwater IRM collection trench. Current groundwater elevations are illustrated on Figure 5.2.

Hydraulic data collected prior to construction of the groundwater collection trench indicated groundwater flow in the lacustrine sands/silts was predominantly to the south and southeast. The groundwater collection trench has had a significant impact on groundwater flow in the lacustrine sands/silts as illustrated by the groundwater contours on Figure 5.2

The primary VOCs detected in the groundwater are generally consistent with those detected in the on-Site soils and include: trichloroethene, 1,1,1-trichloroethane, tetrachloroethene, 1,1-dichloroethane, 1,2-dichloroethene, toluene and acetone.

Monitoring well MW-6 contained the greatest number of detected VOCs as well as the highest total VOC concentrations at 282.436 ppm (Round 1 data). MW-6 is completed in the lacustine sand/silt unit immediately downgradient of the easternmost drum staging areas. Monitoring well MW-7 is completed in the till unit adjacent to MW-6. Although similar VOCs were detected in MW-7, they were present at significantly lower concentrations. Total VOCs in MW-7 were reported as 1.569(J) ppm.

Monitoring well MW-1, located on the downgradient side of the groundwater collection trench, downgradient of MW-6 and MW-7, had reported total VOC concentrations of 0.290(J) ppm (Round 1 data). No significant concentrations of VOCs were detected in any other monitoring wells on or immediately adjacent to the Site.

No VOCs were detected in off-Site monitoring well MW-12. Monitoring well MW-13 had reported total VOC concentrations of 1.26J ppm and .067 ppm for the two events it was sampled.

Additional off-Site groundwater samples were collected as a result of the detection of VOCs in MW-13. These samples were collected through a temporary probe inserted into the ground and were analyzed for

VOCs only. The additional off-Site groundwater sampling locations are illustrated on Figure 6.6 and the results are summarized on Table 6.11.

These results indicate the presence of low level residual VOC contamination downgradient of the Site. Additional off-Site data shall be collected and reported under separate cover to address the residual off-Site groundwater contamination.

No BNAs were reported in the groundwater samples with the exception of trace concentrations reported in MW-6. No PCBs were detected in any of the groundwater samples. Concentrations of specific metals reported at MW-6 (including chromium, copper, lead, nickel and zinc) are elevated above concentrations reported for the other on- and off-Site monitoring wells.

6.7 SURFACE WATER AND SEDIMENT INVESTIGATION

Surface water and sediment samples were collected from two on-Site and three off-Site locations. All surface water and sediment samples were analyzed for the SSPL. Analytical data for surface water and sediment samples collected are summarized on Tables 6.12 and 6.13 respectively.

VOCs were not detected in any off-Site surface water samples. VOCs detected in off-Site sediment samples included methylene

chloride, acetone, and toluene. Total VOC concentrations in the off-Site sediment samples ranged from 0.164 ppm to 0.260 ppm.

VOCs were detected in both on-Site surface water and sediment samples. Sample location SW/SED-04, located immediately downgradient of the easternmost drum staging area, had the highest reported total VOC concentrations of 1.167(J) ppm and 0.168(J) ppm for surface water and sediment, respectively. Location SW/SED-03, located adjacent to the westernmost drum staging area, had significantly lower reported total VOC concentrations. Analytical results for the VOC samples are illustrated on Figure 6.7.

Trace concentrations of three BNAs (benzyl alcohol at 2J ppb; benzoic acid at 7J ppb and bis(2-ethylhexyl) phthalate at 16 ppb) were reported in the surface water samples collected. Sediment samples were found to contain five BNAs at concentrations estimated below the practical quantitation limits. These BNAs are 4-methylphenol, benzoic acid, 4-chloro-3-methylphenol, fluoranthene, and pyrene. Lead and zinc concentrations reported at locations SW-5 and SW-6 were slightly elevated above concentrations reported in the remaining samples. At SW-5 this may be due to the higher lead and zinc reported in the underlying sediment sample or due to turbidity in the sample.

7.0 ASSESSMENT OF CHEMICAL PRESENCE

7.1 GENERAL

The distribution and degree of contamination present in the surficial and sub-surface soils, sediments, surface water and groundwater at the Site are summarized in the sub-sections which follow.

7.2 SOILS

7.2.1 General

Soil sampling performed during the IRM program initially focussed on the former drum staging areas. During the RI, sampling was extended horizontally, from these areas, to determine the apparent limits of surficial and subsurface contamination. Additional sampling was also performed along the northern limit of the Site to address suspected contamination identified during the construction of facilities associated with the groundwater IRM.

The primary VOCs detected in the on-Site soils included: 1,1,1-trichloroethane, trichloroethene, 1,2-dichloroethene, tetrachloroethene, toluene, ethylbenzene and xylenes. Other VOCs were detected at less significant concentrations. Total VOCs reported in the soil ranged from non-detectable (ND) to a high of 41,329 ppm in borehole BH-13.

In addition, other constituents detected in the on-Site soils included: BNAs, pesticides, PCB (Aroclor 1254), metals and cyanide.

BNAs were generally non-detect or detected at estimated trace concentrations with the exception of several samples collected from within the limits of the former drum staging areas. The primary BNAs detected at these locations are polynuclear aromatic hydrocarbons (PAHs), bis (2-ethylhexyl) phthalate, and 1,2-dichlorobenzene. Reported concentrations of 1,2-dichlorobenzene ranged from 37 ppb to 35,000 ppb with the highest concentration reported at location BGS-9 (Station L0+20E) from a depth of two to four feet. Bis (2-ethylhexyl) phthalate was also detected within the former drum staging areas up to 81,000 ppb at location BGS-10 (Station L0+60E).

Aroclor 1254 was the only PCB (Aroclor) detected in any on-Site soils. All reported concentrations were less than 1 ppm with the exception of reported concentrations of 34 ppm and 1.1J ppm detected at locations BGS-11 and BGS-8, respectively.

DDE and cyanide were also detected at location BGS-11 at concentrations of 3.8 ppm (surficial soil) and 2.8 ppm, respectively.

On-Site metal concentrations were generally consistent with background soil concentrations with the exception of: cadmium, copper, lead and zinc. These metals were reported at concentrations above background soil levels at some specific sample locations in the former drum staging areas.

The presence of the BNAs, PCBs, cyanide and elevated metals all occur within areas where relatively high concentrations of VOCs were reported.

7.2.2 Surficial and Shallow Sub-Surface Soils

As anticipated, residual VOC contamination in surficial soils was greatest within or immediately adjacent to the former drum staging areas. Organic vapor concentrations recorded on Site in the upper foot of the soil horizon indicated the greatest levels of residual organic concentrations in surficial soils located along the western limit of the easternmost drum staging area. The apparent zone of contamination, based on organic vapor concentrations, extends from the northern limit of the eastern most drum storage area, runs southward along a narrow strip located between the two easternmost drum staging areas, and terminates approximately 100 feet south of these areas.

This general distribution of contaminants in the surficial soils was confirmed by the analytical results for the surficial soil samples collected on Site. Concentrations of total VOCs in surficial soils within or immediately adjacent to the former drum staging areas ranged up to 225 ppm. Total VOCs in adjacent surficial soils decreased rapidly with distance from the staging areas and are generally less than 1 ppm. No significant VOC contamination was detected in the surficial soils from the westernmost drum staging area.

The relative distribution of contaminants in the shallow subsurface soils (18 to 30 inches) is generally consistent with the surface soils. The concentrations of VOCs were, however, generally higher in this zone and ranged up to approximately 7,300 ppm with the highest VOC concentrations reported within or immediately adjacent to the former drum staging areas.

Since the drums previously removed from the Site are the suspected source of residual VOC contamination, surficial soils in intimate contact with the drums would have, at one time, contained the highest residual VOC concentrations. The lower concentrations of VOCs reported in the surficial soils are likely due to a variety of factors related to the length of time the drums were in place and previous actions taken including natural degradation, leaching into underlying soils, volatilization and/or intermixing during previous IRMs which disturbed the surficial soils. The rapid decrease in concentrations with increasing distance from the drum staging areas indicates the contamination is primarily related to the staging/handling of drums in the three drum staging areas.

7.2.3 Sub-Surface Soils

The primary VOCs detected in the on-Site sub-surface soils consisted of: 1,1,1-trichloroethane, trichloroethene, tetrachloroethene, 1,2-dichloroethene, toluene, ethylbenzene, and xylenes.

The distribution of contaminants in the sub-surface soils was generally consistent with the distribution noted in the surficial soils. VOCs were present at elevated concentrations beneath and downgradient of the drum staging areas. VOCs reported in the sub-surface soils were generally present at higher concentrations than the overlying surficial soils.

Total VOC levels in the westernmost former drum staging areas were generally less than 1 ppm in the shallow subsurface soils and in the deeper subsurface soils.

Subsurface soil contamination in the two easternmost drum staging areas did not extend significantly beyond the eastern and western limits of the drum staging areas. VOC contamination within and/or between the two easternmost former drum staging areas was present up to depths ranging from about 4 feet to 30 feet (at location BH-13-691). VOC contamination downgradient of the eastern drum staging areas was generally present to a maximum depth of approximately 10 feet BGS.

As noted in Section 6.5.3, the highest VOC concentration reported was detected in an isolated location (IRM Borehole 13) north or upgradient of the easternmost drum staging area at a depth of 8 to 9 feet BGS. This detection occurred in an apparent localized depression in the till surface. The sample was collected from a sand seam situated immediately above the till contact. Total VOC concentrations in adjacent boreholes are significantly lower (by more than three orders of magnitude). VOC contamination at this isolated location may be attributable to past drum removal activities as no evidence of drum disposal had been noted in this area.

The greatest concentrations of VOCs in the remaining sub-surface soils appeared at or above the till contact beneath and downgradient of the easternmost drum staging areas. Soils above the till contact tended to be consistently wet to moist and displayed the highest concentrations of VOCs throughout the Site suggesting this zone represents the primary contaminant migration pathway at this Site. The lower permeability till underlying the Site appears to retard the vertical migration of groundwater and contaminants. This is confirmed by the rapid decrease in VOC concentrations with depth in the till where samples were collected.

7.3 GROUNDWATER

As was anticipated due to the dense, low permeability nature of the till beneath the Site, groundwater analyses confirmed the most significant groundwater contamination is present on Site in the lacustrine sands overlying the till. The highest estimated total VOC concentrations of 281.136 ppm and 342.816 ppm were reported in monitoring well MW-6, a shallow well completed above the till contact. Total VOC concentrations were several orders of magnitude lower in monitoring well MW-7 (1.569J ppm and 0.887J ppm), the deeper well of the pair completed in the till. VOC concentrations were also lower in monitoring well MW-1 (0.290J ppm and 1.526J ppm) located downgradient of MW-6 on the downgradient side of the groundwater collection trench.

The significantly lower concentrations of VOCs in the till further suggest this layer is retarding the vertical migration of contaminants at the Site.

The significant reduction in contaminant concentrations in MW-1, MW-10, MW-2, MW-9 and MW8, immediately downgradient of the groundwater collection trench, confirm the trench is effectively containing contaminants to the Site. Fluctuations in VOC concentrations in well MW-1 (as well as others on Site) appears to be related to groundwater conditions with higher concentrations reported during relatively dry periods. As a result, no reduction in VOC concentrations have been observed in this well.

No significant concentrations of VOCs were reported in the remaining monitoring wells installed on or adjacent to the Site. Consequently, the lateral extent (east-west) of on-Site groundwater contamination has been defined and is limited in an east-west or cross-gradient direction. This pattern of contamination is consistent with what would be expected from a discreet source of contamination such as the drum staging areas.

Monitoring well MW-13, installed adjacent to Platinum Drive, downgradient of the Site, had reported total VOC concentrations of 1.26J ppm and 0.67 ppm during the two events it was sampled.

No VOCs were detected in monitoring well MW-12, located west of MW-13. However, the samples collected from temporary probes advanced downgradient of MW-13 also contained residual low level VOCs.

7.4 SEDIMENT AND SURFACE WATER

Surface water and sediment samples were collected at two on-Site and three downgradient off-Site locations.

VOCs were not detected in any of the off-Site surface water samples collected. VOCs were detected in the off-Site sediment samples at total VOC concentrations ranging from 0.164 ppm to 0.260 ppm.

VOCs were detected in both on-Site surface water and sediment samples. The highest total VOC concentrations reported were 1.167(J) ppm for surface water and 0.168(J) ppm for sediment at location SW/SED-04, immediately downgradient of the easternmost drum staging area. Significantly lower concentrations of VOCs were reported in the surface water and sediment samples collected downgradient of the westernmost drum staging area.

The results indicate residual soil contamination at the Site has had a limited effect on on-Site surface water and sediment quality and a negligible effect on sediment located off-Site. No effect on off-Site surface water was observed.

7.5 ON-SITE AIR QUALITY

Total VOCs were measured in the worker breathing zone and around the perimeter of active work areas during all ground intrusive activities conducted at the Site. Although VOCs were detected in the immediate vicinity of some soils disturbed during the investigation, total VOC concentrations rapidly dissipated and no effects on air quality were noted downwind of the active work zones.

Undisturbed soils at the Site are not expected to have any significant effect on ambient air quality based on existing Site conditions including:

- i) the vegetative cover established over the on-Site soils;
- ii) reported concentrations and limited extent of contaminants in the surficial soils; and
- iii) lack of any surface discharge of sub-surface contaminants.

This scenario is supported by the fact that even disturbed contaminated soils, which would have the greatest potential effect on ambient air quality, had a minimal effect on air quality at the Site.

8.0 ECOLOGICAL ENVIRONMENTAL ASSESSMENT

The primary objective of the ecological/environmental assessment is to present a qualitative evaluation of potential ecological impacts attributable to the presence of Site-related contaminants at the Site. Based on collected data and available ecological information, an assessment of the relative bioavailability and toxicity of selected contaminant groups to resident plant communities and terrestrial species possibly existing on or in the vicinity of the Duva Site is presented herein.

Guidance for completing the Environmental Evaluation is provided in the USEPA document entitled: "Risk Assessment Guidance for Superfund, Volume II: Environmental Evaluation Manual", EPA/540/1-89/001, March 1989.

The potential contaminant sources considered in this assessment include surficial and subsurface soils, surface water, sediments, groundwater and ambient air.

8.1 CHARACTERIZATION OF EXPOSURE SETTING

The physical setting of the Site is presented in Sections 2.0, 3.0 and 5.0 of this report.

As discussed previously, the Site is located in the Town of Clay, New York and occupies approximately five partially wooded acres of

former agricultural land. Residential areas are located immediately south and west of the Site while areas north and east of the Site are undeveloped land.

Generally, grasslands including mixed plant communities and woodlots characterize the majority of the Site. No endangered, threatened, or special concern wildlife species, rare plant, animal or natural community occurrences, or other significant habitats are known or expected to exist in the immediate vicinity of the Site.

A variety of ecosystems could potentially be affected by contamination on Site. Each type of ecosystem may respond differently to contamination depending on the unique physical, chemical and biological characteristics of the ecosystem. Resident species may be affected by contamination to varying degrees depending on the physical and chemical structure of the respective ecosystem. Grassland meadows, for example, may have less contamination than a densely forested region because of photolytic degradation of contaminant compounds.

8.2 POTENTIAL EXPOSURE PATHWAYS

Surface soil, subsurface soil, surface water, sediments, groundwater and ambient air have been sampled at the Site. Potential exposure pathways by plant and animal species parallel the potential human exposure routes.

No pathways exist by which plants or animal species can be currently exposed to Site-related chemicals in the groundwater because this media is not accessible to potential receptors.

There is limited occurrence of surface water and sediment in the vicinity of the Site. Treated water from the groundwater IRM water treatment plant flows into Bloody Brook in compliance with an Order on Consent. Bloody Brook is not impacted by surface runoff or groundwater discharge from the Site, therefore, the potential effects of Site-related chemicals on Bloody Brook are considered to be negligible.

Surface water and sediment analytical data collected from the municipal drainage easement (swale) located south of the Site and intermittent ponded areas on the Site demonstrate low levels of Site-related chemicals. Potential exposure of animals or birds via incidental ingestion or dermal contact to Site-related chemicals in surface water and/or sediments associated with these areas is also considered to be negligible.

The chemicals of potential concern consist of volatile organic compounds (VOCs) which are present in surficial and subsurface soils. The VOCs in the surface and subsurface soils are detected in localized areas with concentrations increasing with depth in the upper six to ten feet of the soil horizon. Terrestrial animal populations or birds may be exposed to Site-related chemicals by several pathways:

- ingestion of soils while foraging or grooming;

- ingestion of organisms that may have been affected by Site-related chemicals from soil (i.e. earthworms);
- dermal absorption from direct contact with surface soil; and
- inhalation of volatiles from surface soil and subsurface soils.

The Site is heavily vegetated which minimizes the exposure of animal populations to surface soil. The subsurface soils have higher concentrations of VOCs, however, potential exposure to subsurface soils is limited to burrowing animals.

Another exposure route is the inhalation of volatilized chemicals from the soils. This exposure pathway does not present a significant concern since VOC levels in the surface soils are localized in a small area at low concentrations. In addition, the Site is vegetated which minimizes the contribution of volatiles to the ambient air. Volatilization of organic compounds from the subsurface soils will be minimal, if not negligible, as long as deeper soils remain covered. Although reported VOC levels increase with depth to a depth of about six to ten feet, potential exposure is limited to burrowing animals.

Generally, it is very difficult to determine the ecological impact of Site-related chemicals on plant species in the natural environment where several factors contribute to the apparent manifestations of toxic effects. The concentrations at which Site-related chemicals cause toxic effects in plants are very difficult to assess for each individual chemical of concern. The complexity of the problem is compounded by the fact that toxicities observed in plants result from direct exposure to a combination of chemicals

in addition to factors that vary with specific soil types, plant species and Site conditions (available moisture and plant nutrients).

The presence of healthy plant growth at the Duva Property demonstrates that Site-related chemicals in soils do not have any adverse effect to the plant growth at the Site. There is no evidence of stressed vegetation found on Site other than vegetation which has been physically disturbed as a result of investigative or IRM field activities.

8.3 SUMMARY

Primary exposure pathways include ingestion and dermal contact with surficial and subsurface soil. However, exposure to subsurface soils is limited to burrowing animals.

A qualitative evaluation of the exposure point concentrations and potential exposures of terrestrial and avian species indicate that minimal exposures would occur and no adverse effects would be anticipated.

The Site is covered by vegetation and there is no evidence of stress attributable to the presence of Site-related chemicals on any plant species. Based on these observations it is concluded that there is no adverse impact on plant species.

9.0 CONCLUSIONS

Based on the results of the RI and the health and environmental risk assessments, the following conclusions are made:

- i) The overburden geology of the Site is dominated by the presence of a lacustrine sand and silt unit which overlies a compacted stiff glacial clay/silt till unit.
- ii) A waterbearing zone is present in the lacustrine sand/silt unit immediately above the less permeable till. Measured hydraulic conductivities in the lacustrine sand/silt unit range from 2.4×10^{-4} cm/sec to 6.4×10^{-4} cm/sec and average 4.0×10^{-4} cm/sec.
- iii) The top of the till varies from approximately 2.5 feet BGS to 8.6 feet BGS and is generally deeper in the southern half of the Site. Measured hydraulic conductivities in the till range from 4.7×10^{-6} cm/sec to 9.4×10^{-6} cm/sec and average 7.6×10^{-6} cm/sec. The low permeability till layer beneath the Site limits the downward migration of groundwater and contaminants from the Site. In addition, the lack of a prominent gradient in the lacustrine sand/silt and underlying till units reduces the potential for downward migration of groundwater.
- iv) The primary Site contaminants are volatile organic compounds, consisting of trichloroethene, 1,1,1-trichloroethane, 1,2-dichloroethene, tetrachloroethene, toluene, acetone, ethylbenzene

and xylene. The most predominant Site contaminant is trichloroethene.

- v) Elevated VOC concentrations were primarily evident within and immediately downgradient of the former drum staging areas. VOC concentrations in the vicinity of the westernmost drum staging area are several orders of magnitude lower than those detected in the vicinity of the two eastern drum staging areas.
- vi) Residual groundwater contamination is present on Site in the lacustrine sands and silts. Contamination in groundwater wells installed in the underlying till unit exhibited VOC concentrations several orders of magnitude lower than the wells installed in the lacustrine sand/silt unit.
- vii) The groundwater collection trench was keyed into the till approximately two feet below the contact between the lacustrine sand/silt unit and the till unit. The water levels measured in adjacent monitoring wells and piezometers confirm that the groundwater collection trench is effectively limiting off-Site migration of groundwater. The presence of significantly lower contaminant concentrations in monitoring wells immediately downgradient of the groundwater collection trench compared to those immediately upgradient confirms that the trench is effectively containing contaminants to the Site.

- viii) The results of the surface water and sediment sampling indicate that the residual soil contamination at the Site has a limited effect on on-Site surface water and sediment quality and a negligible effect on off-Site sediment. No effect on off-Site surface water was observed.
- ix) Residual contamination in the Site soils are expected to have a negligible effect on ambient air quality due to the limited aerial extent of contaminants in surficial soils, the vegetative cover established over the on-Site soils, and the lack of any surface discharge of subsurface contaminants.
- x) Based on the qualitative environmental/ecological assessment, the presence of residual Site contaminants would not have any adverse effects on terrestrial and avian species and on plant species.

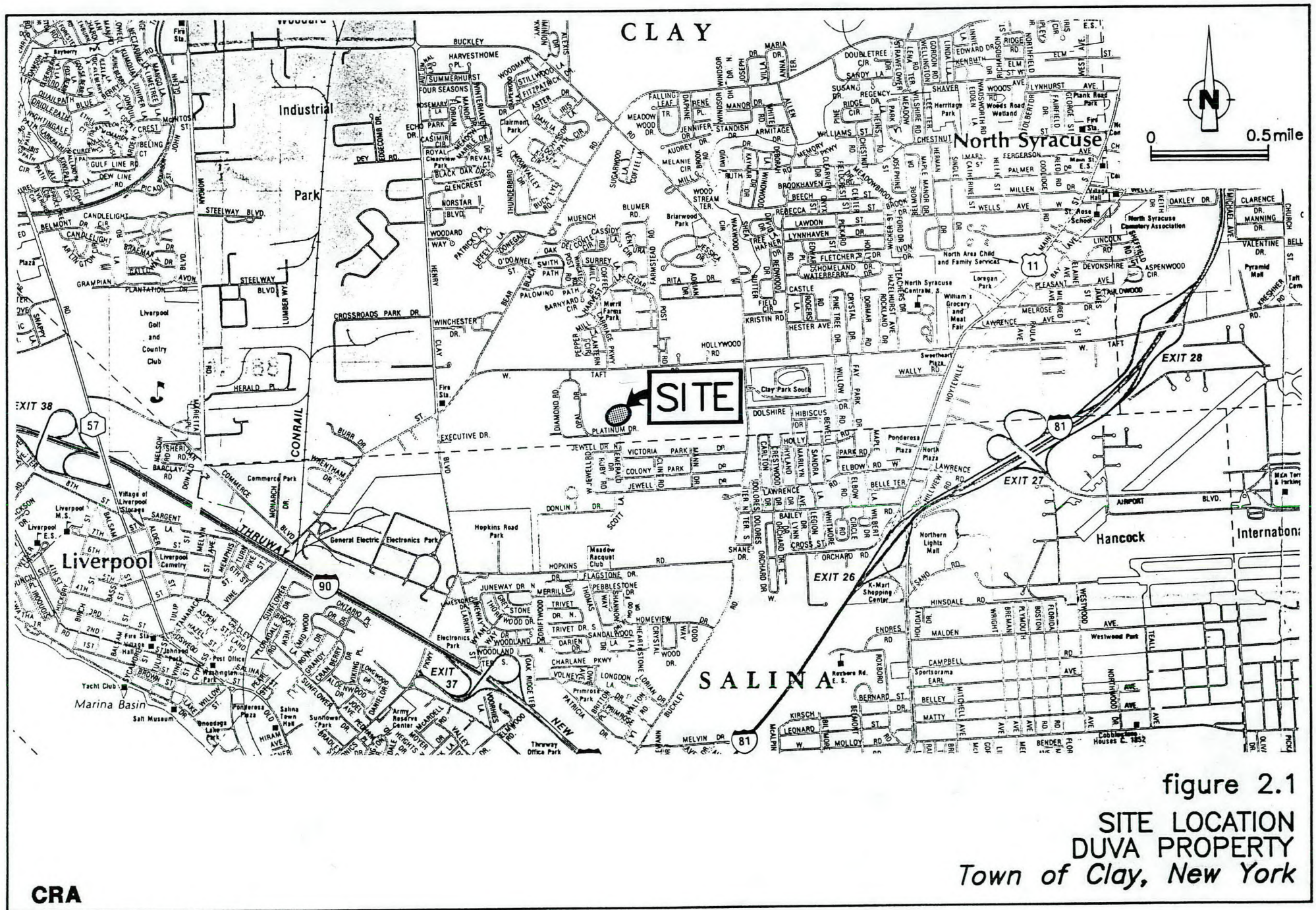
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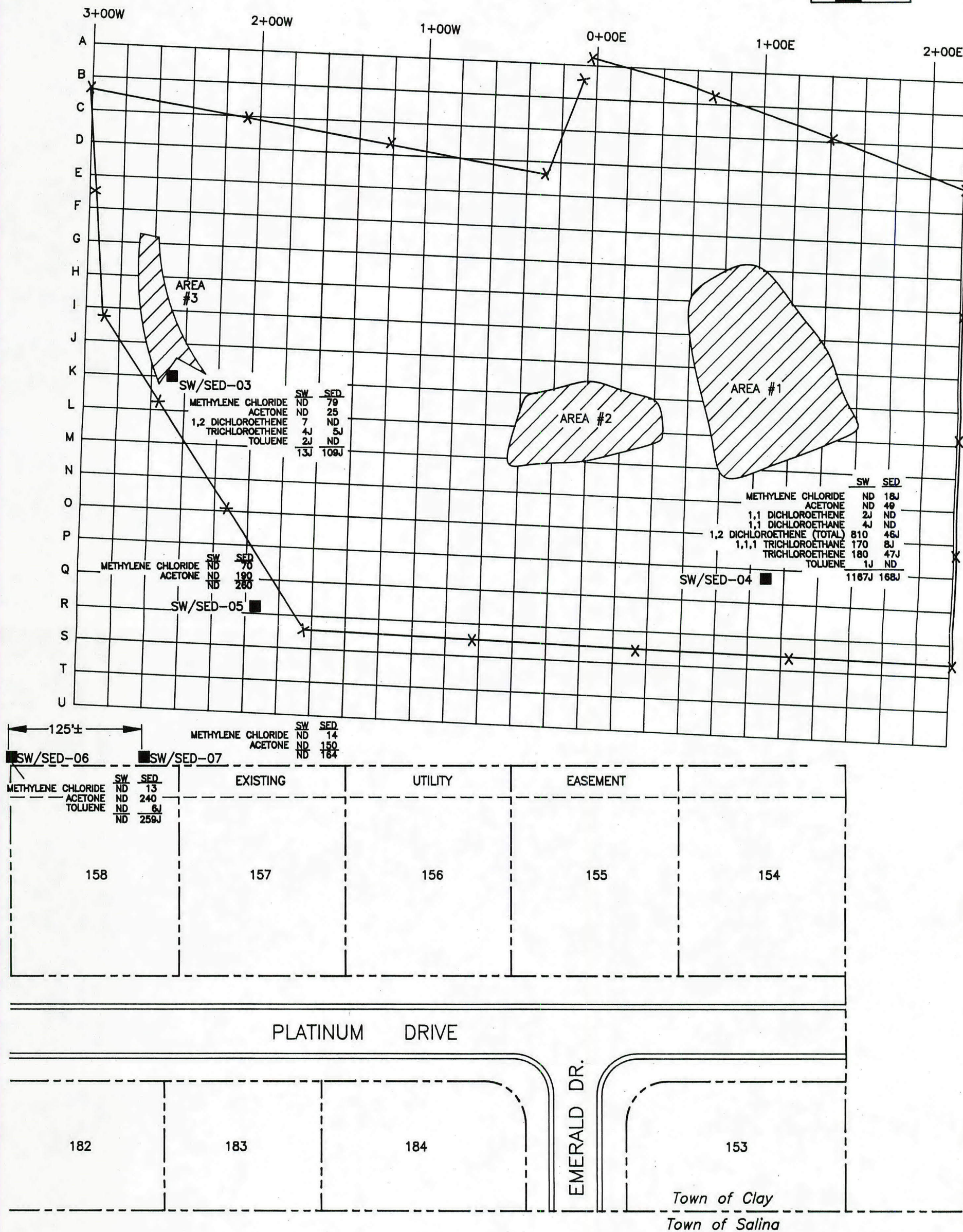
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FIGURES





0 30 60 ft



LEGEND

- SW/SED-04 ■ SURFACE WATER/SEDIMENT SAMPLING LOCATION
- 240 TOTAL VOC's (ppb)
- J ESTIMATED VALUE
- ND NOT DETECTED

figure 6.7
TOTAL VOC CONCENTRATIONS
SURFACE WATER AND SEDIMENT SAMPLES
DUVA PROPERTY
Town of Clay, New York

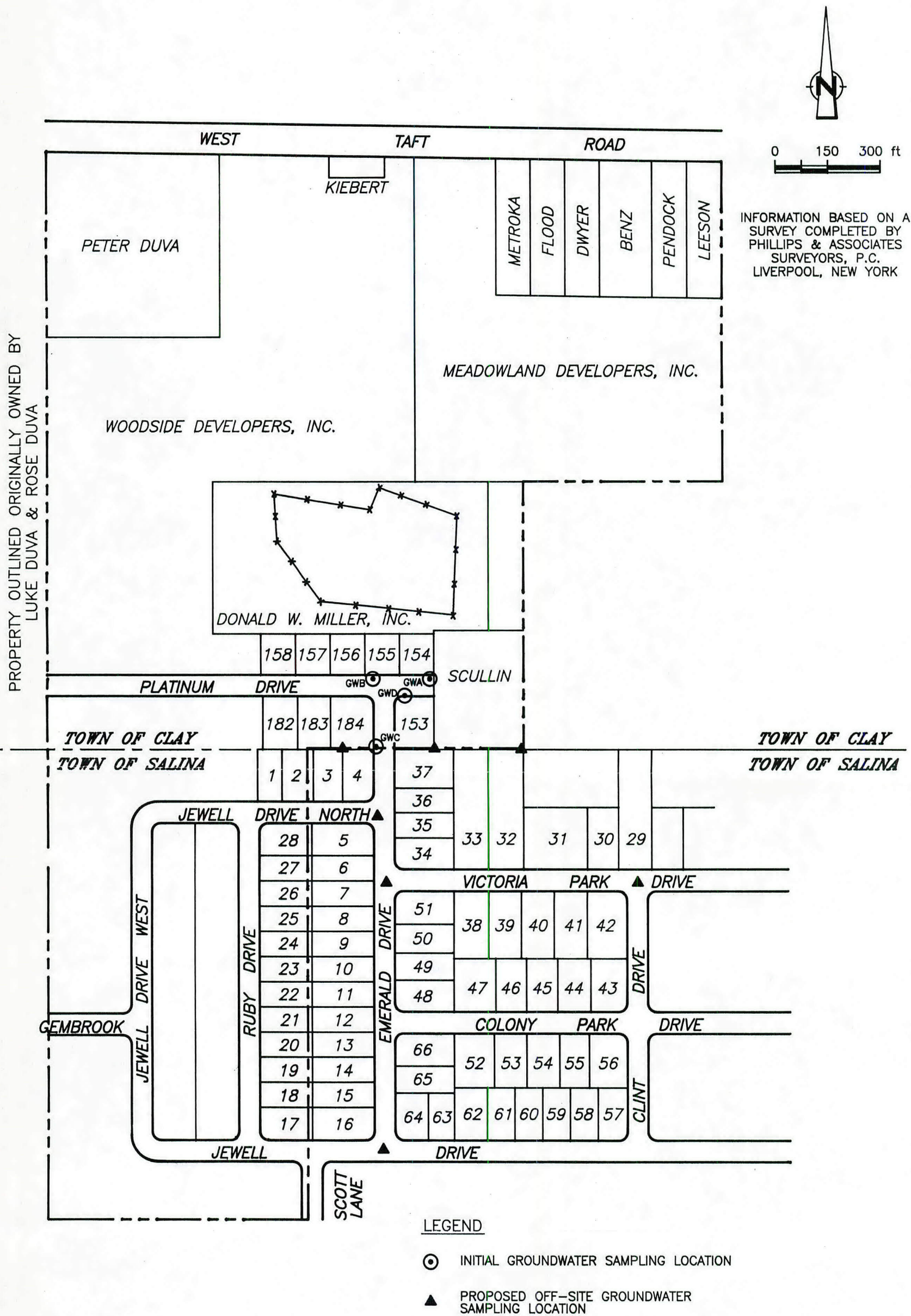
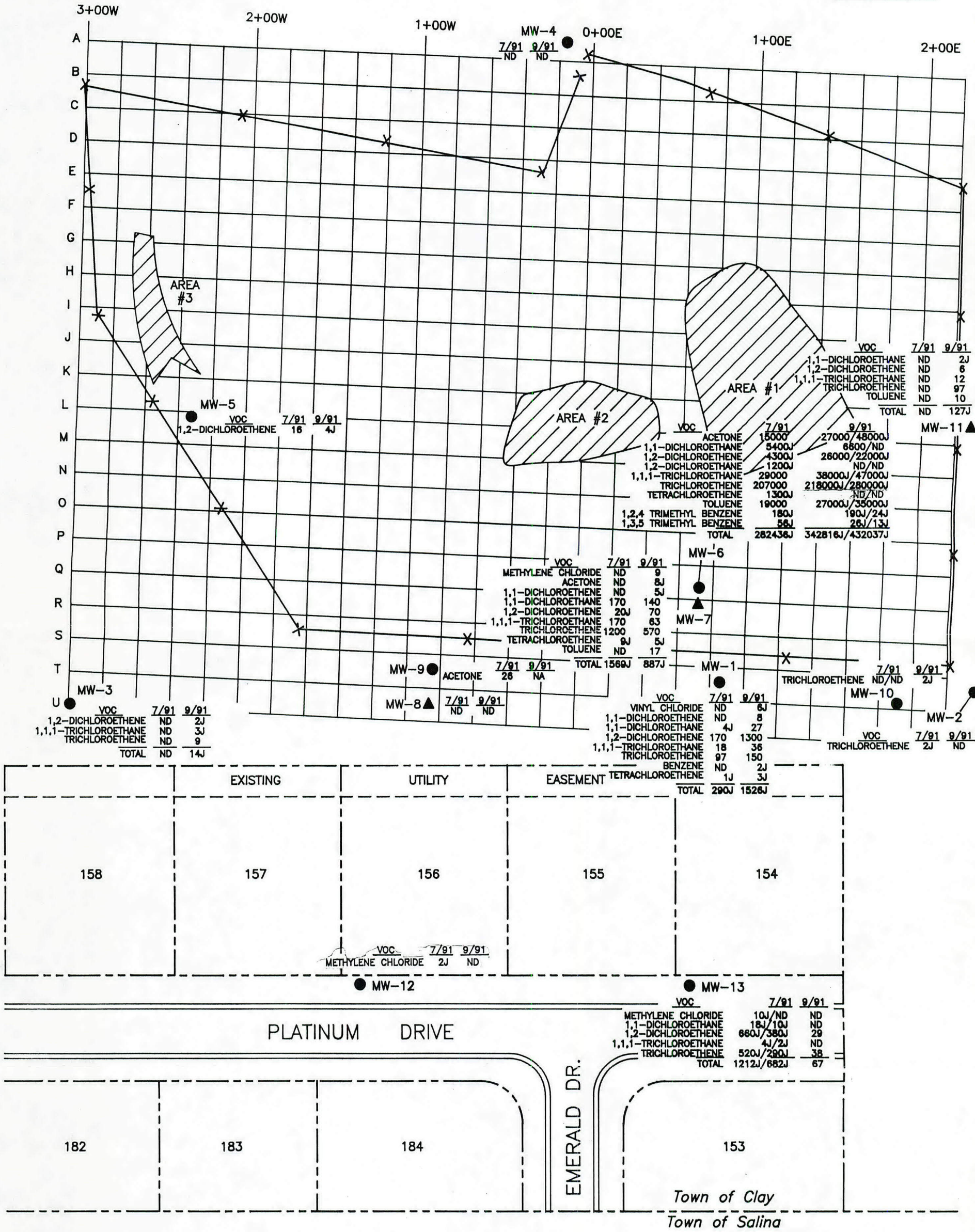
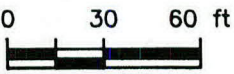
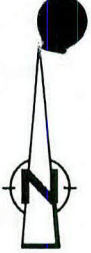


figure 6.6
OFF-SITE GROUNDWATER SAMPLE LOCATIONS
DUVA PROPERTY
Town of Clay, New York



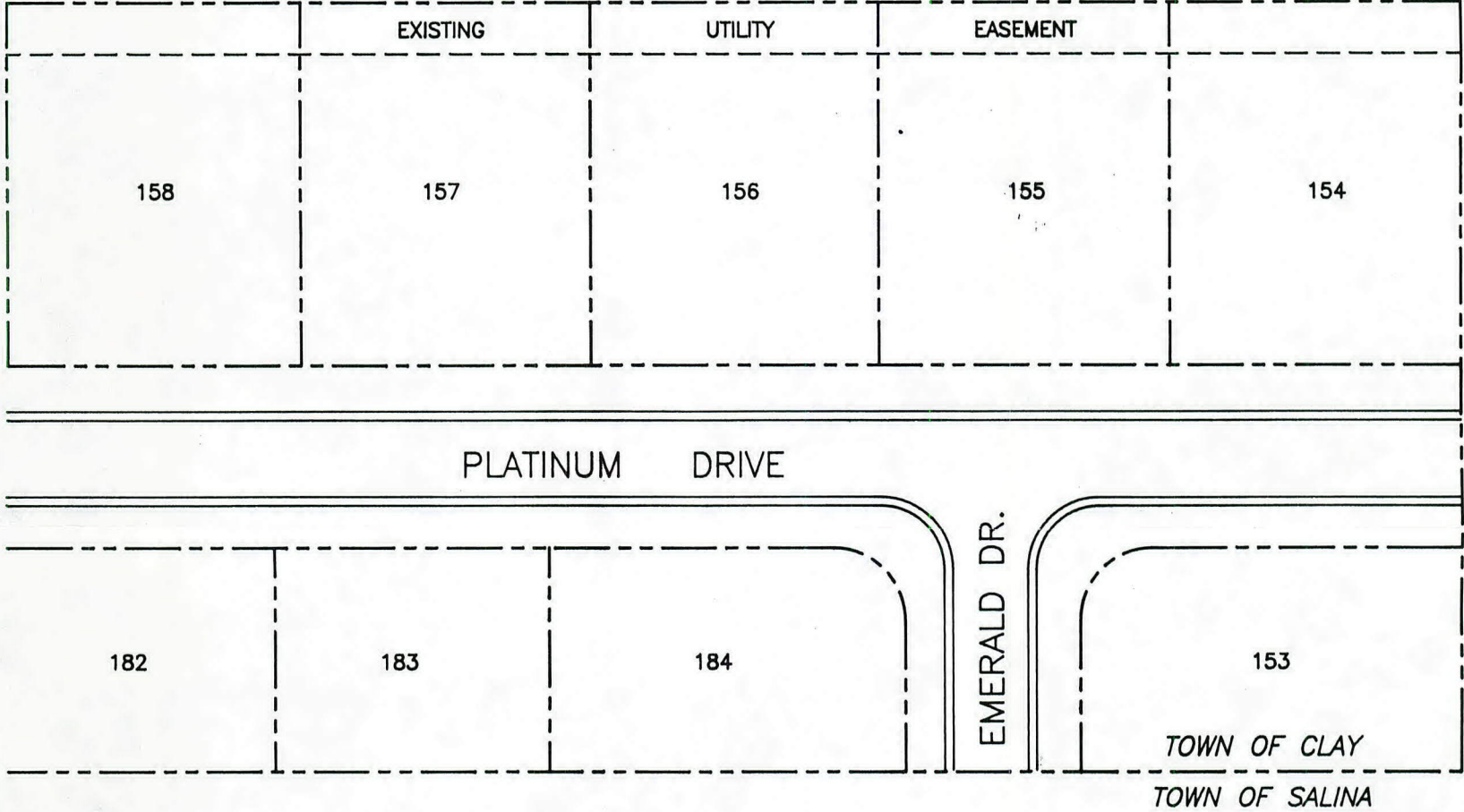
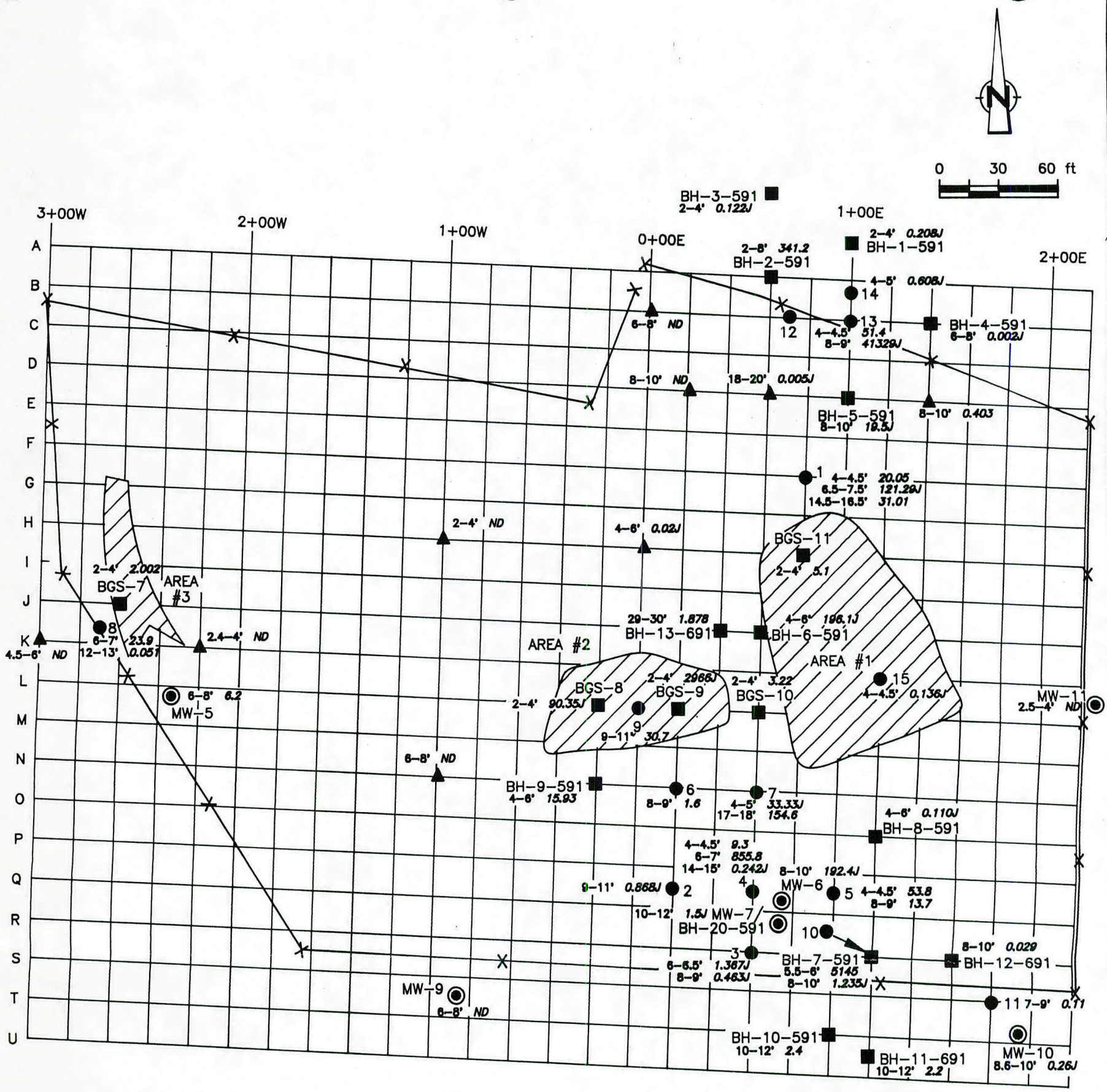
LEGEND

- MW-4 ● MONITORING WELL COMPLETED IN ALLUVIUM
- J ESTIMATED VALUE
- ▲ MONITORING WELL COMPLETED IN TILL

NOTES:

- MW-11 LOCATED 105'± EAST OF GRIDLINE 2+20E
- MW-2 LOCATED 185'± EAST OF SOUTHEAST CORNER OF FENCE
- ALL VOC's REPORTED IN ppb

figure 6.5
TOTAL VOC CONCENTRATIONS
IN GROUNDWATER
DUVA PROPERTY
Town of Clay, New York



LEGEND

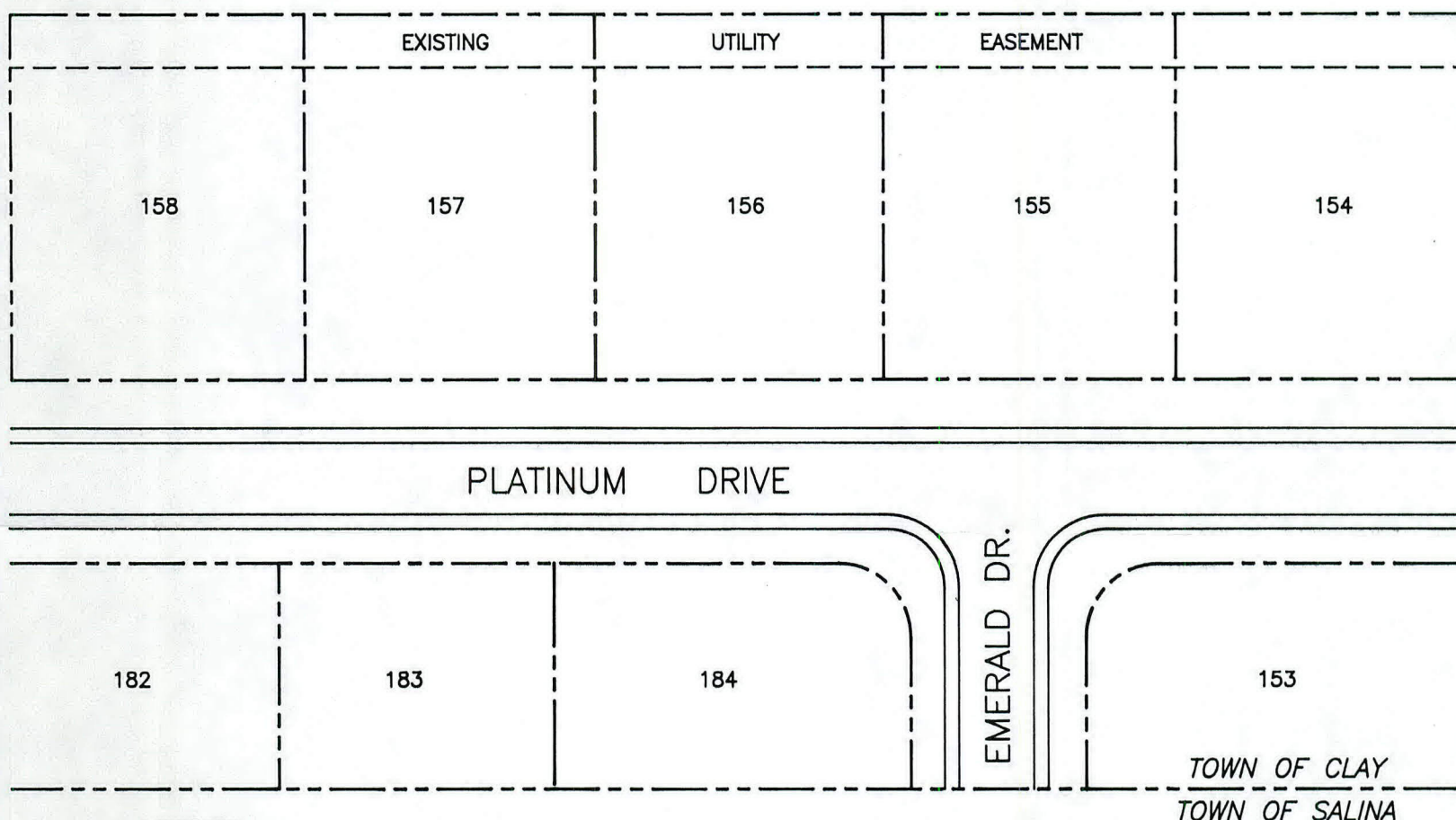
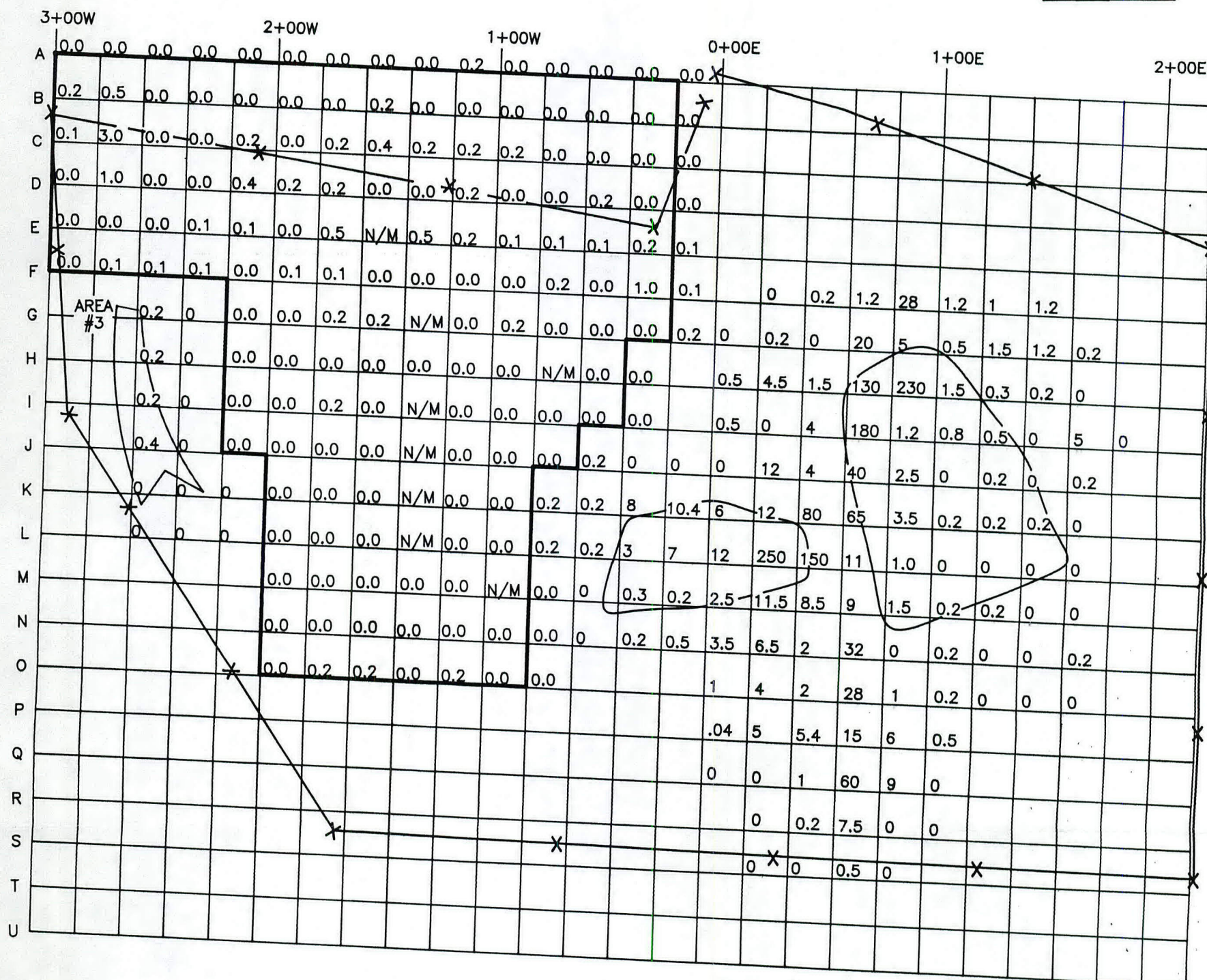
- IRM BOREHOLE SAMPLING LOCATION
- RI BOREHOLE SAMPLING LOCATION
- ▲ ADRP BOREHOLE SAMPLING LOCATION
- ⊙ MONITORING WELL

figure 6.4
TOTAL VOC CONCENTRATIONS (ppm)
IN SUB-SURFACE SOILS (>30")
DUVA PROPERTY
Town of Clay, New York

CRA



0 30 60 ft



LEGEND



APPROXIMATE LOCATION OF FORMER
DRUM STAGING LOCATION

12

ORGANIC VAPOR
CONCENTRATIONS (ppm)

N/M

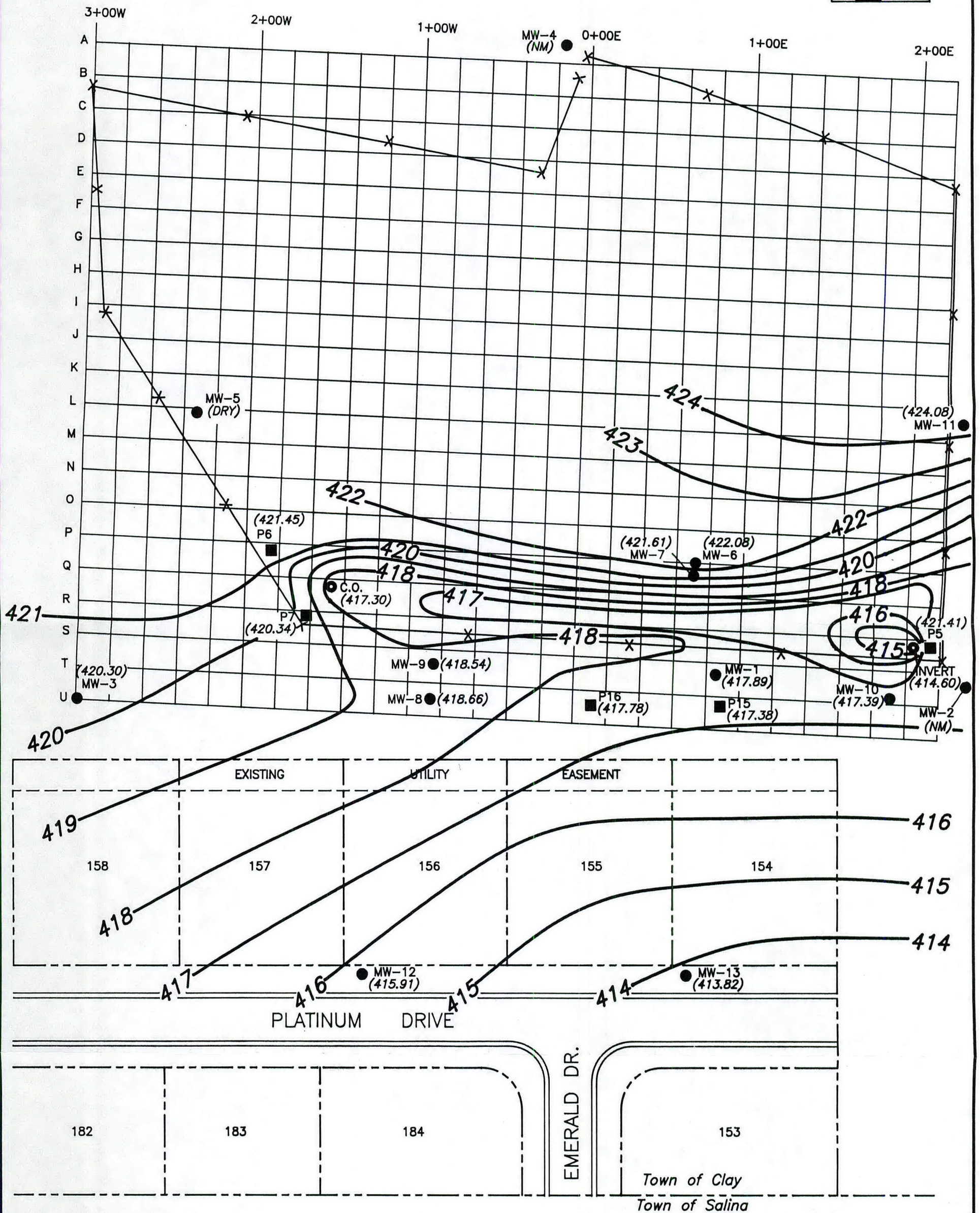
NOT MEASURED DUE TO DRIVEWAY,
STUMP PILE, OR PONDED AREA



AREA INVESTIGATED
DURING THE RI

CRA

figure 6.1
ORGANIC VAPOR CONCENTRATIONS
SURFICIAL SOIL INVESTIGATION
DUVA PROPERTY
Town of Clay, New York



LEGEND

- MW-4 ● MONITORING WELL
- (415.91) ELEVATION (ft)
- PIEZOMETER
- GROUNDWATER CONTOUR

NOTES:

1. MW-11 LOCATED 105'± EAST OF GRIDLINE 2+20E
2. MW-2 LOCATED 185'± EAST OF SOUTHEAST CORNER OF FENCE

CRA

3442-19/03/92-(NF)-12 (P-12)

figure 5.6
GROUNDWATER ELEVATIONS
NOVEMBER 8, 1991
DUVA PROPERTY
Town of Clay, New York

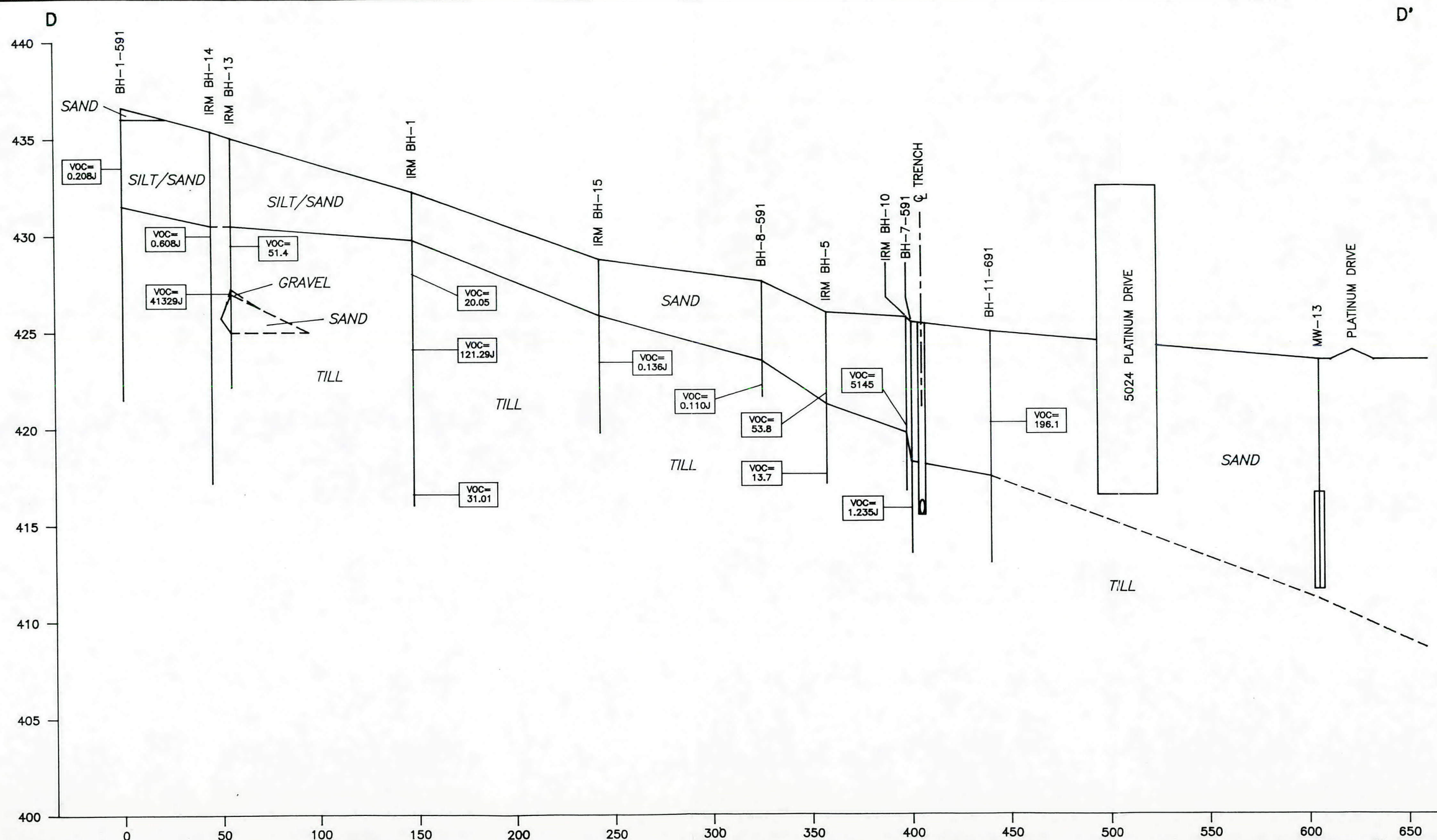
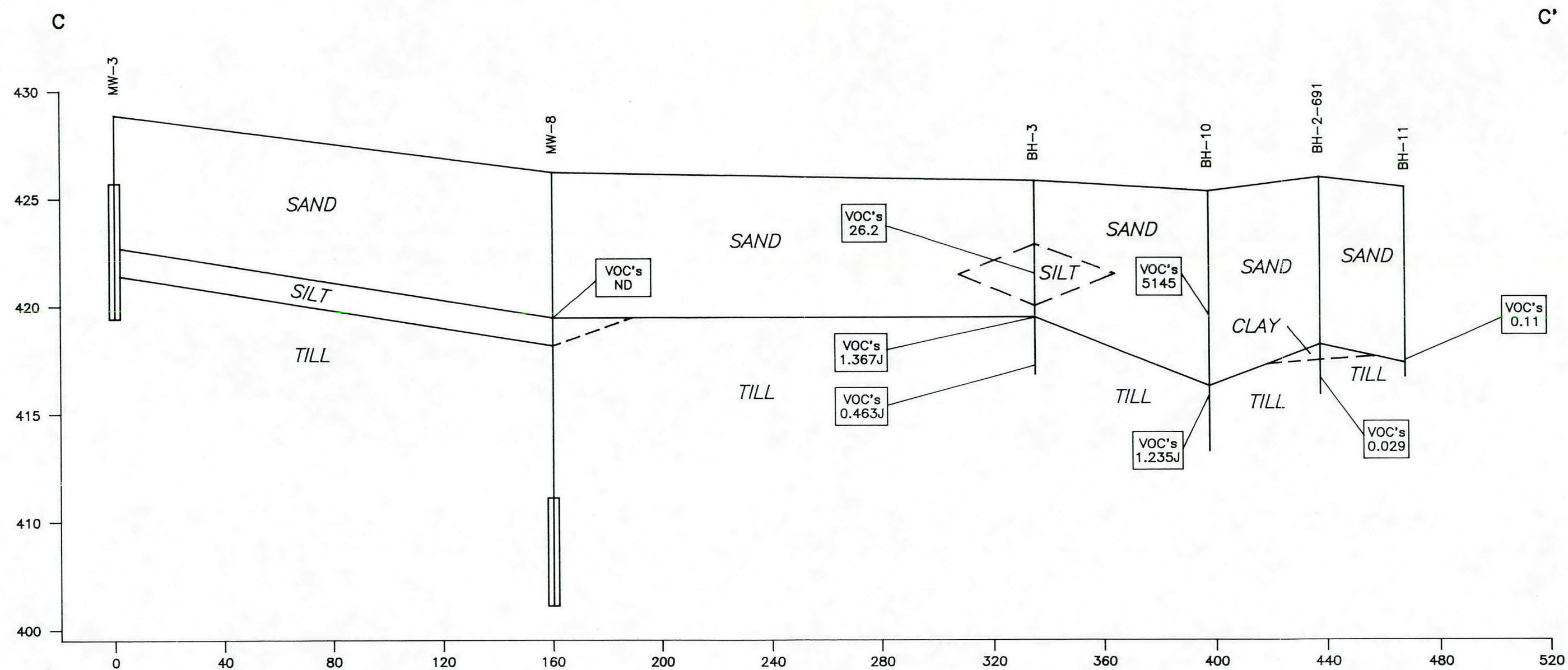


figure 5.5

CROSS SECTION D-D'
 DUVA PROPERTY
 Town of Clay, New York



CROSS SECTION C-C'

SCALE: HORIZ: 1"=40'
VERT: 1"=5'

figure 5.4
CROSS SECTION C-C'
DUVA PROPERTY
Town of Clay, New York

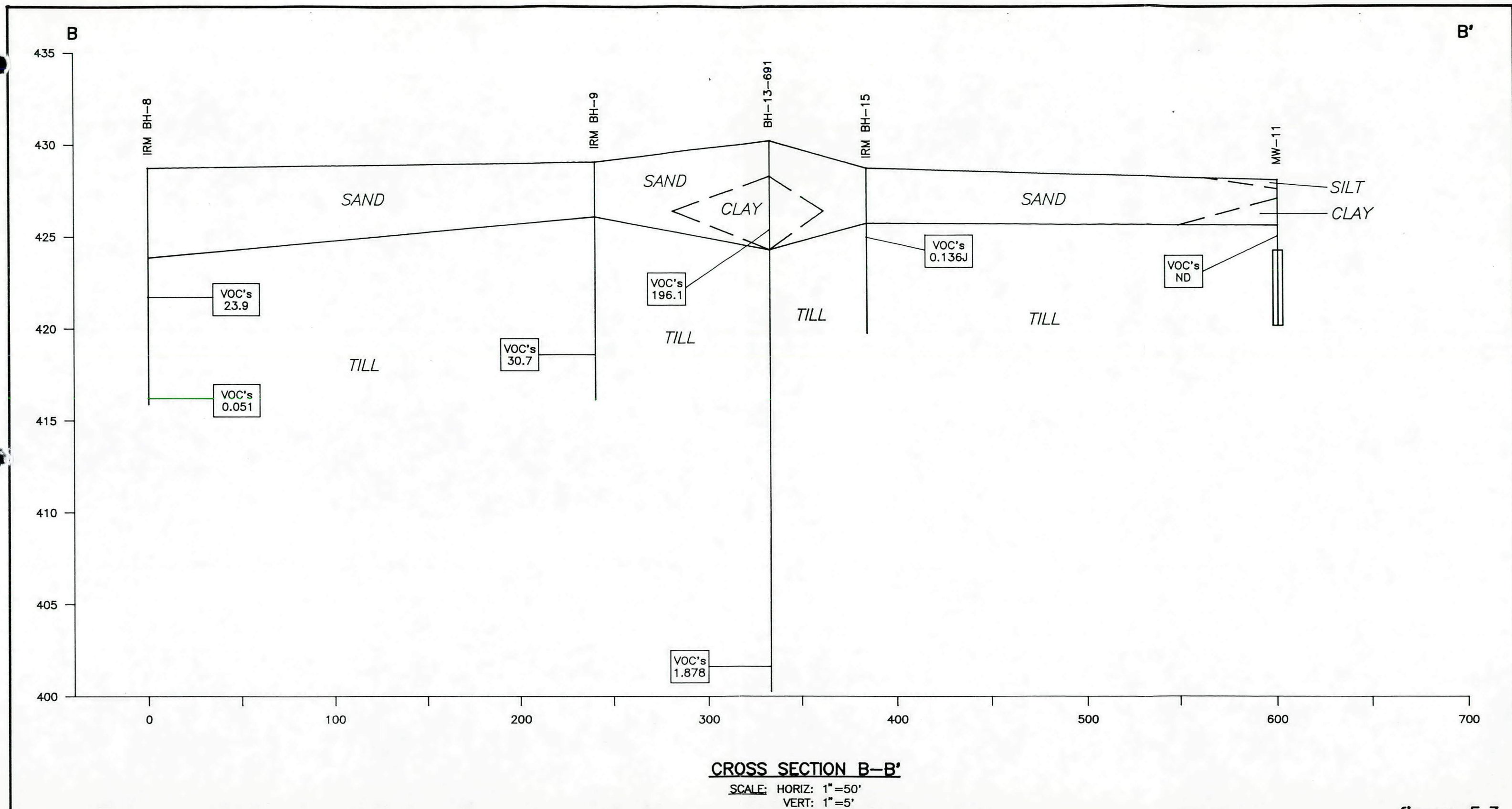
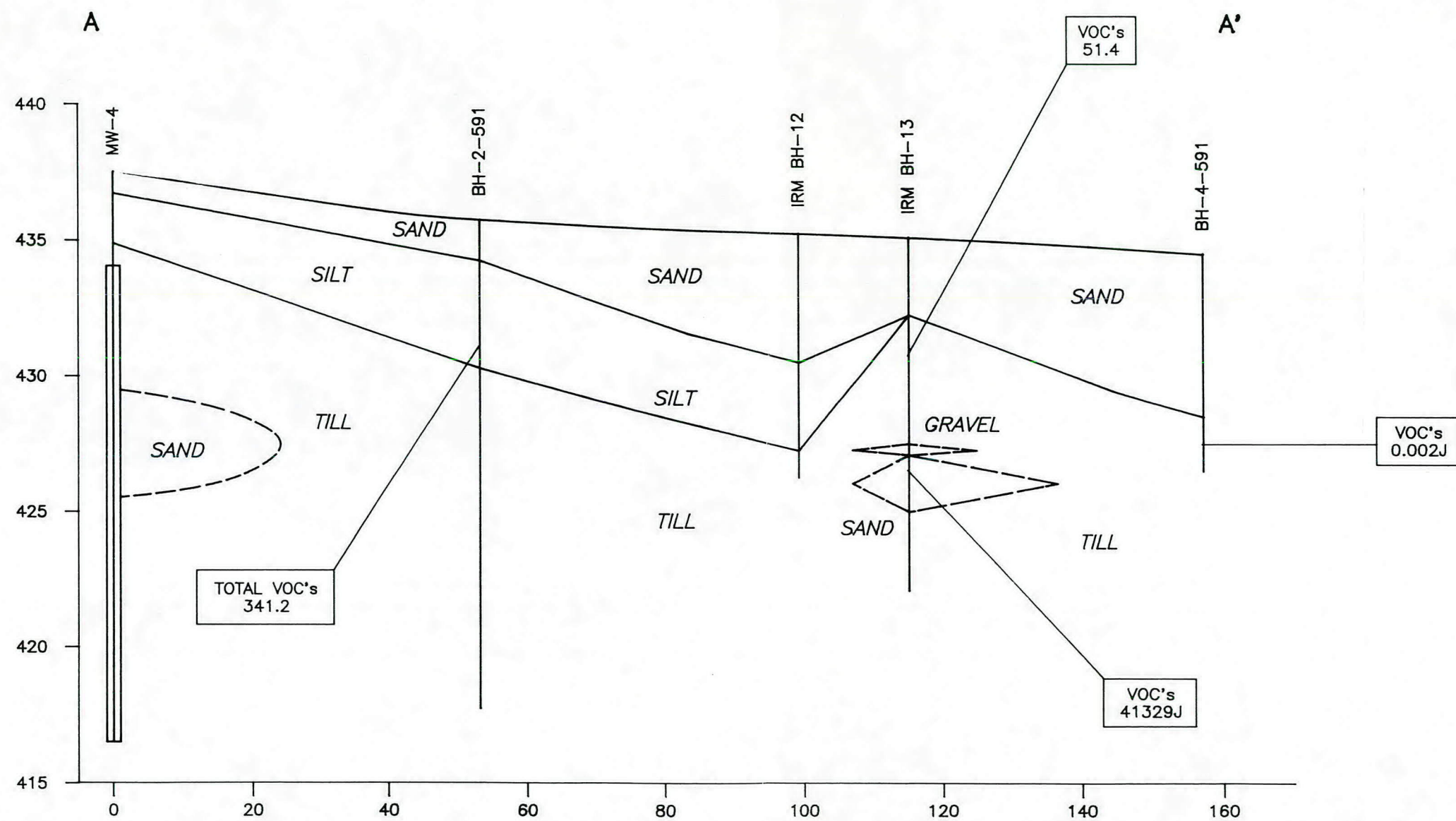


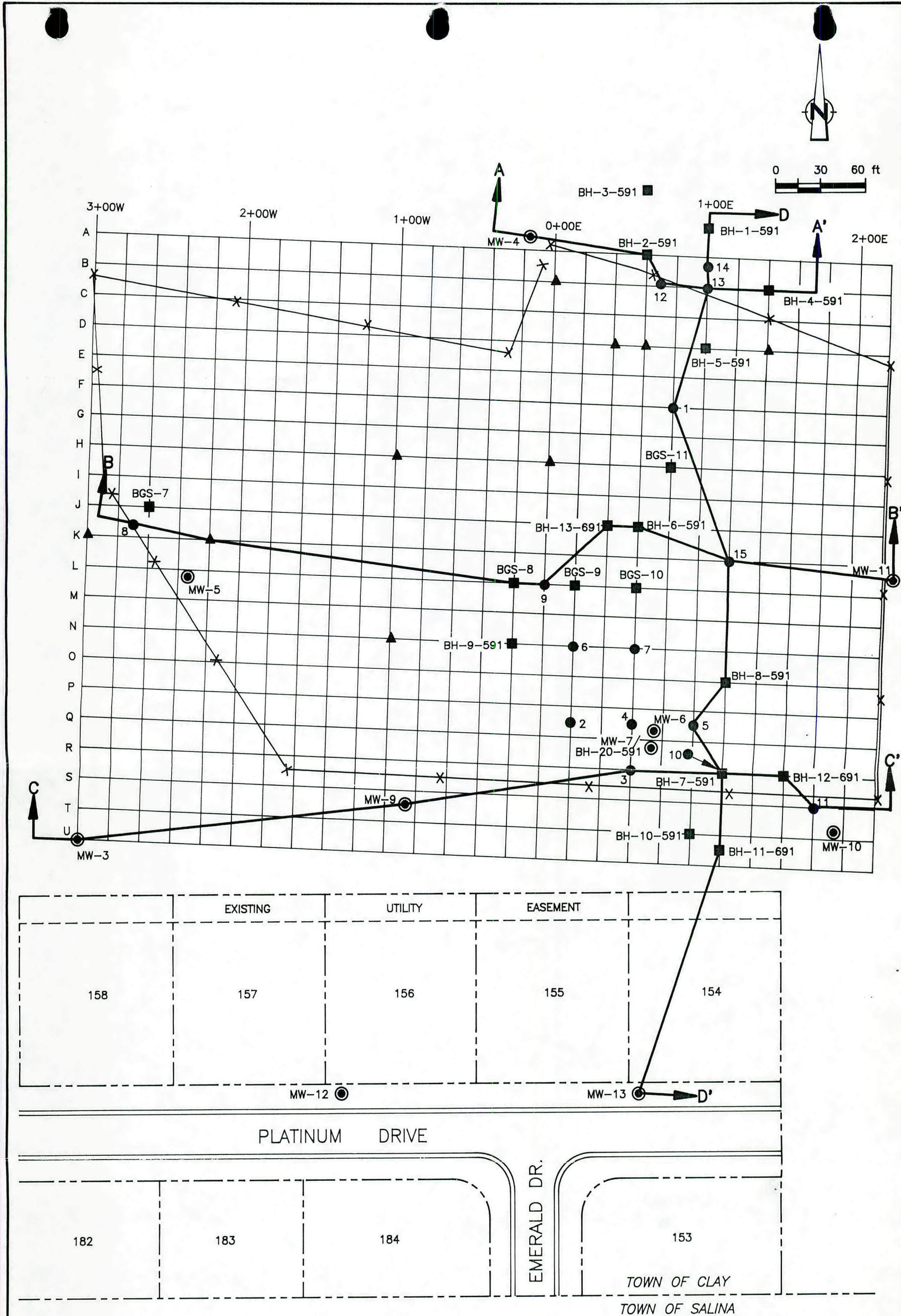
figure 5.3
CROSS SECTION B-B'
DUVA PROPERTY
Town of Clay, New York



CROSS SECTION A-A'

SCALE: HORIZ: 1"=20'
VERT: 1"=5'

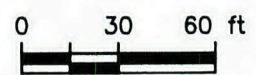
figure 5.2
CROSS SECTION A-A'
DUVA PROPERTY
Town of Clay, New York



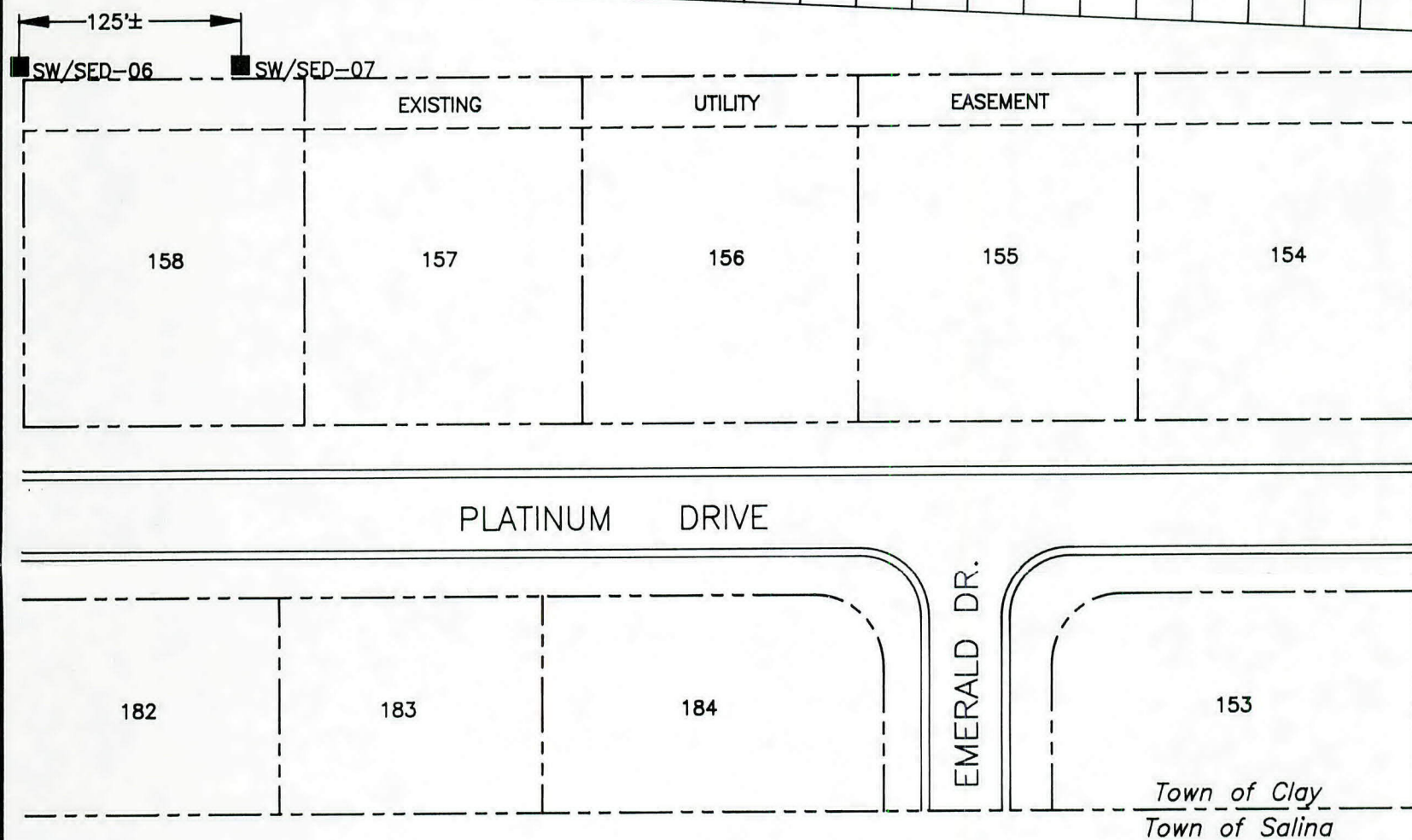
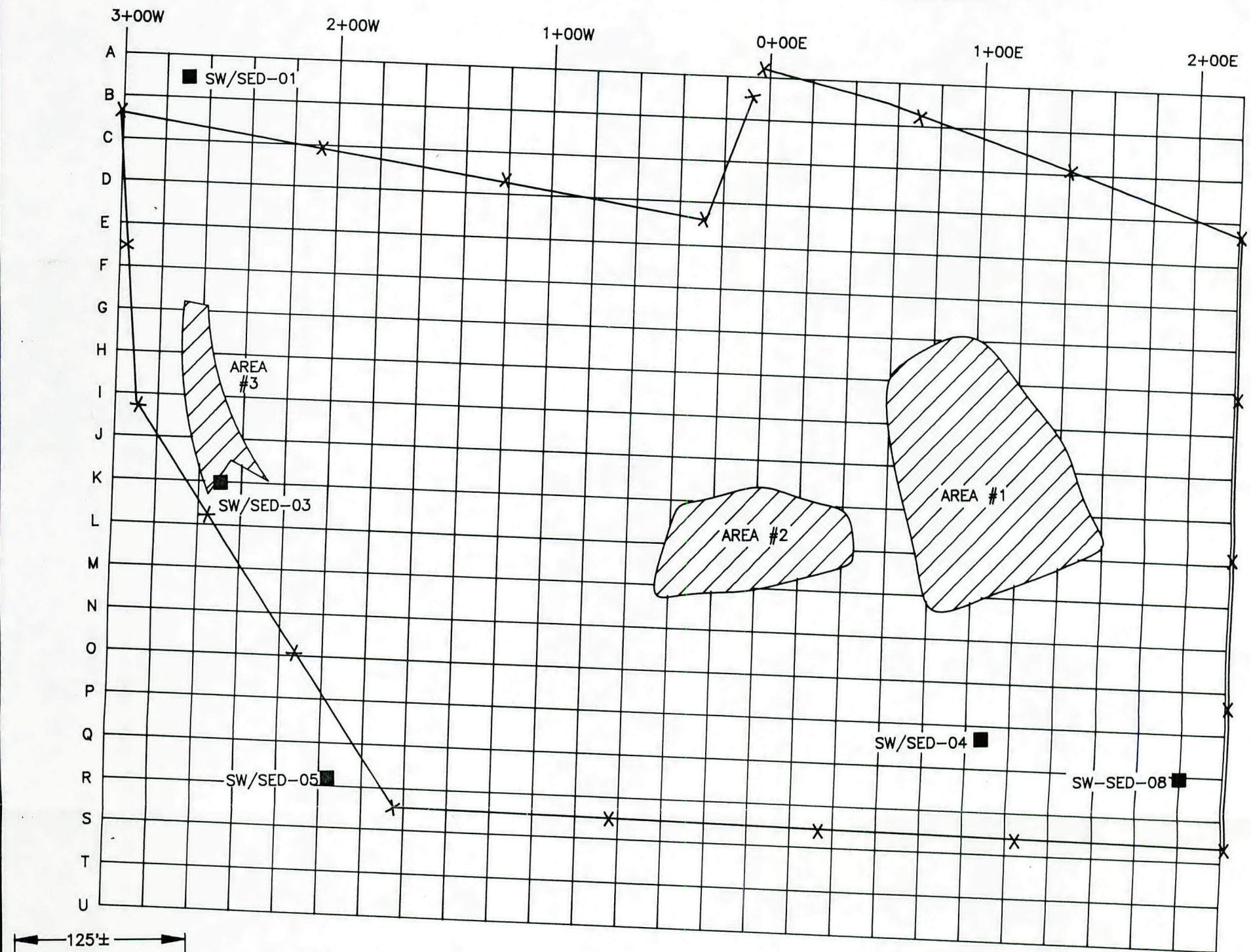
LEGEND

- IRM BOREHOLE SAMPLING LOCATION
- BH-8-591 RI BOREHOLE SAMPLING LOCATION
- ▲ ADRP BOREHOLE SAMPLING LOCATION
- ⊙ MONITORING WELL

figure 5.1
GEOLOGIC CROSS SECTION LOCATIONS
DUA PROPERTY
Town of Clay, New York



■ SW/SED-02

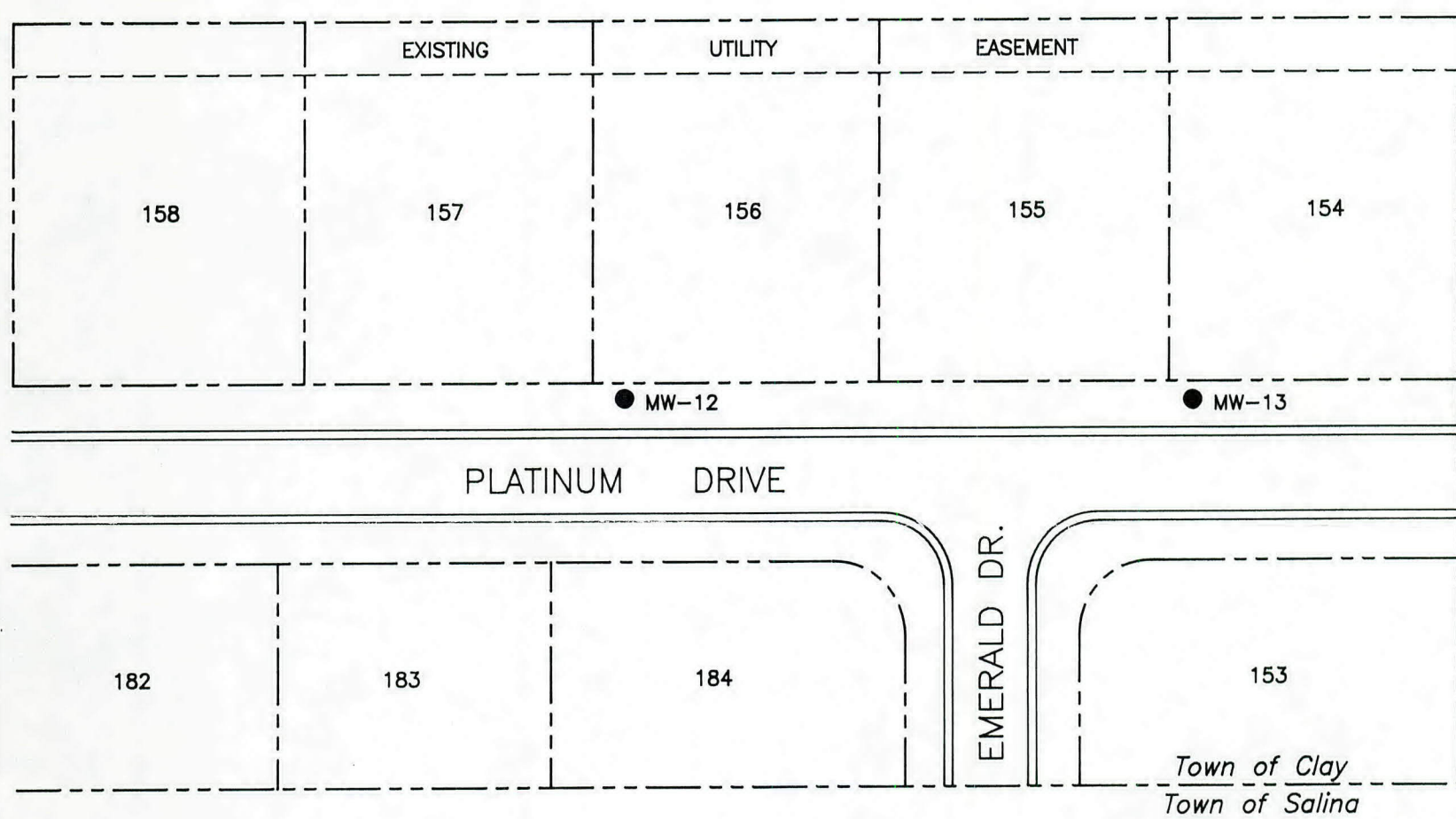
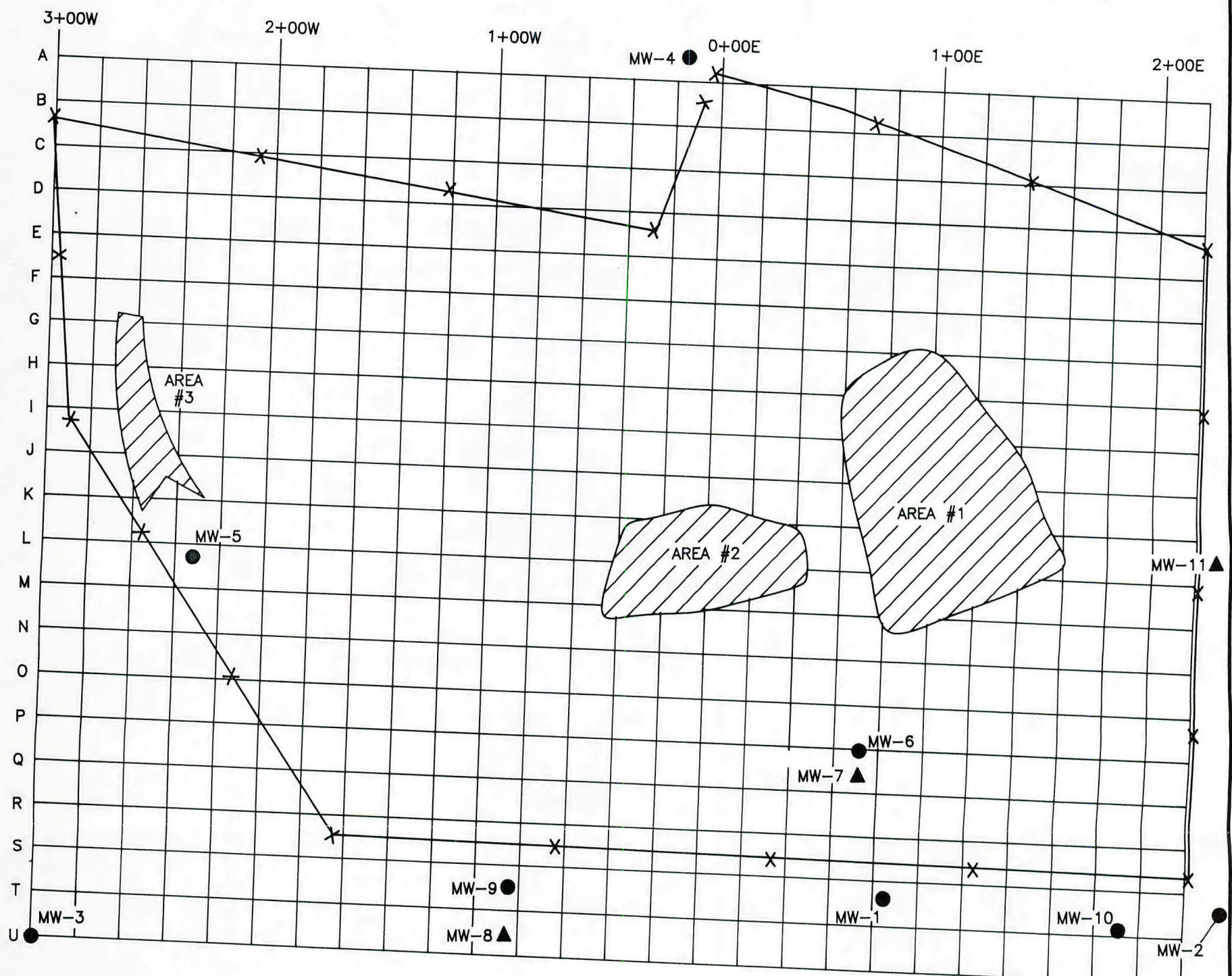
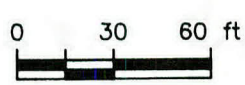
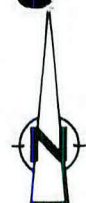


LEGEND

SW/SED-04 ■ SURFACE WATER/SEDIMENT SAMPLING LOCATION

figure 4.7
SURFACE WATER/SEDIMENT
SAMPLING LOCATIONS
DUVA PROPERTY
Town of Clay, New York

CRA



LEGEND

- MW-4 ● MONITORING WELL COMPLETED IN UPPER SAND UNIT
- MW-7 ▲ MONITORING WELL COMPLETED IN TILL

NOTES:

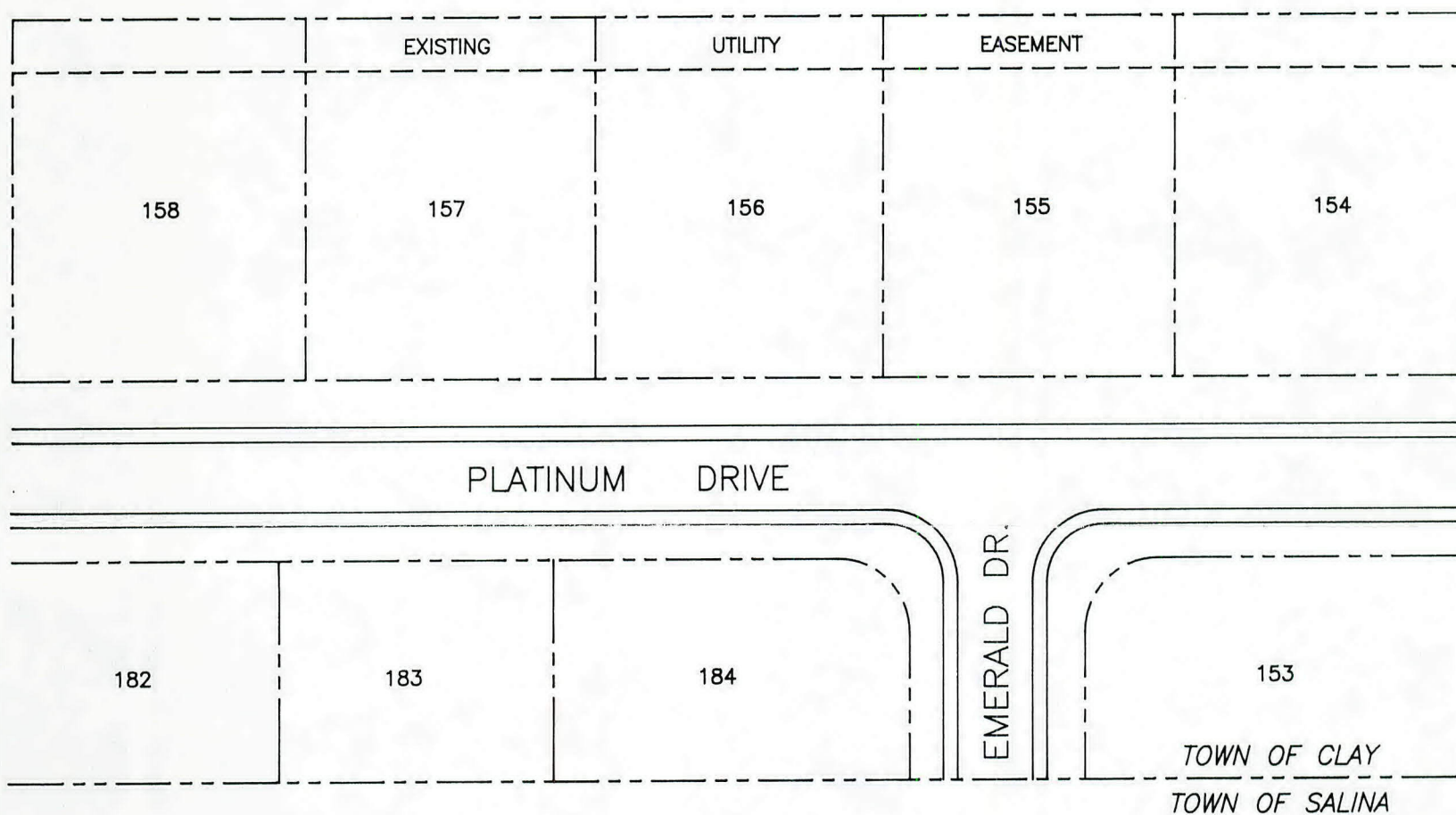
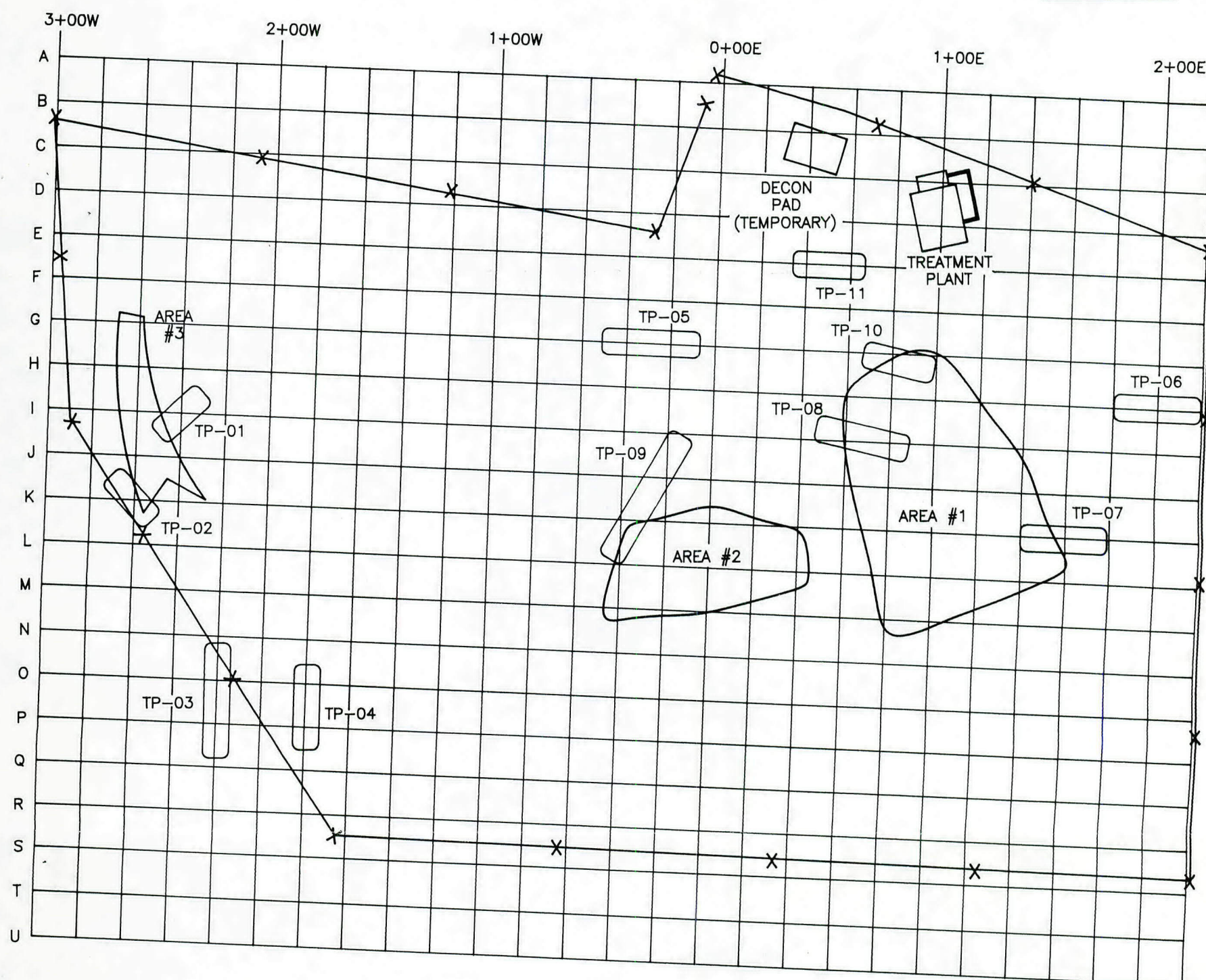
1. MW-11 LOCATED 105'± EAST OF GRIDLINE 2+20E
2. MW-2 LOCATED 185'± EAST OF SOUTHEAST CORNER OF FENCE

figure 4.6
MONITORING WELL LOCATIONS
DUVA PROPERTY
Town of Clay, New York

CRA



0 30 60 ft



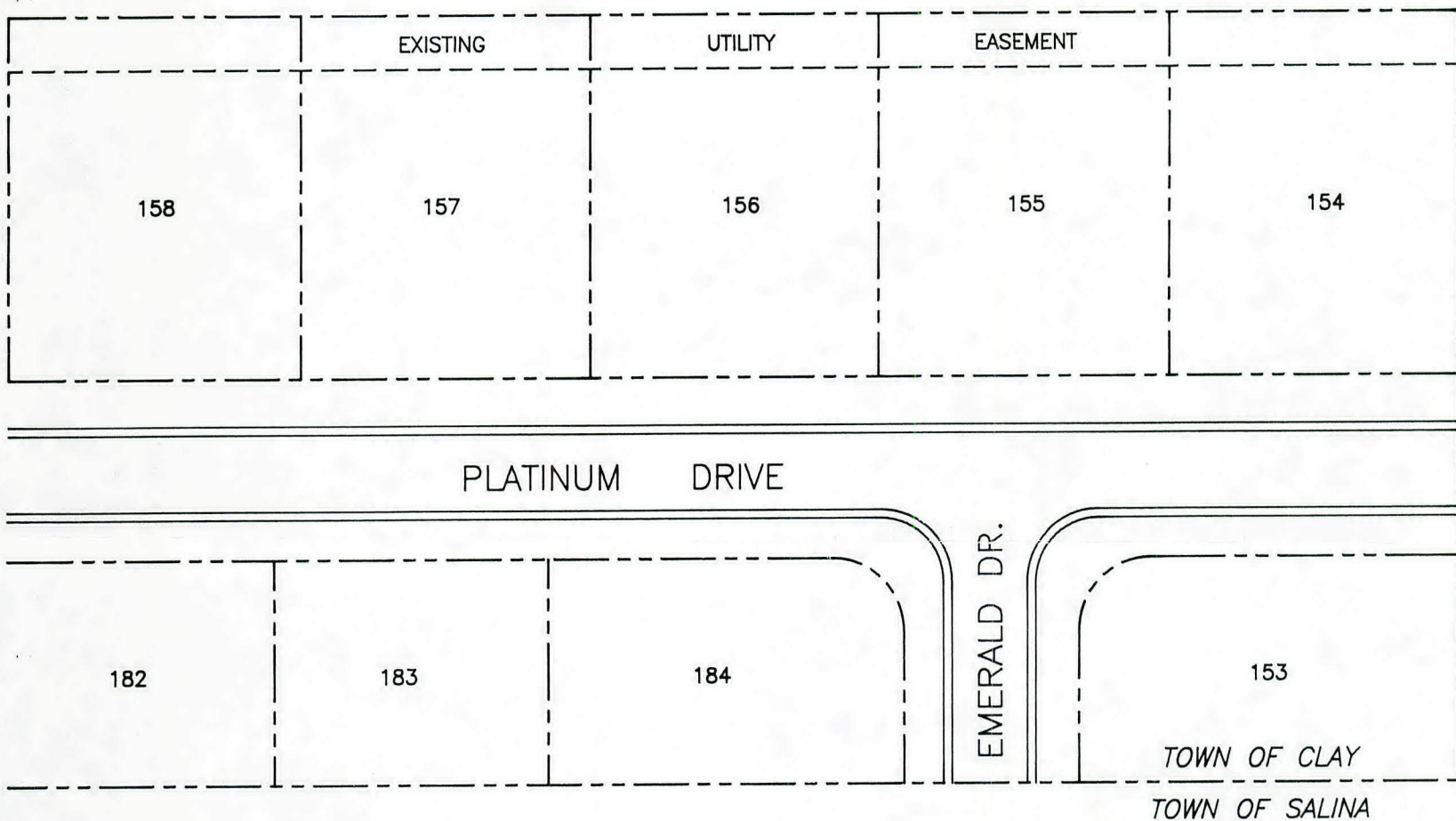
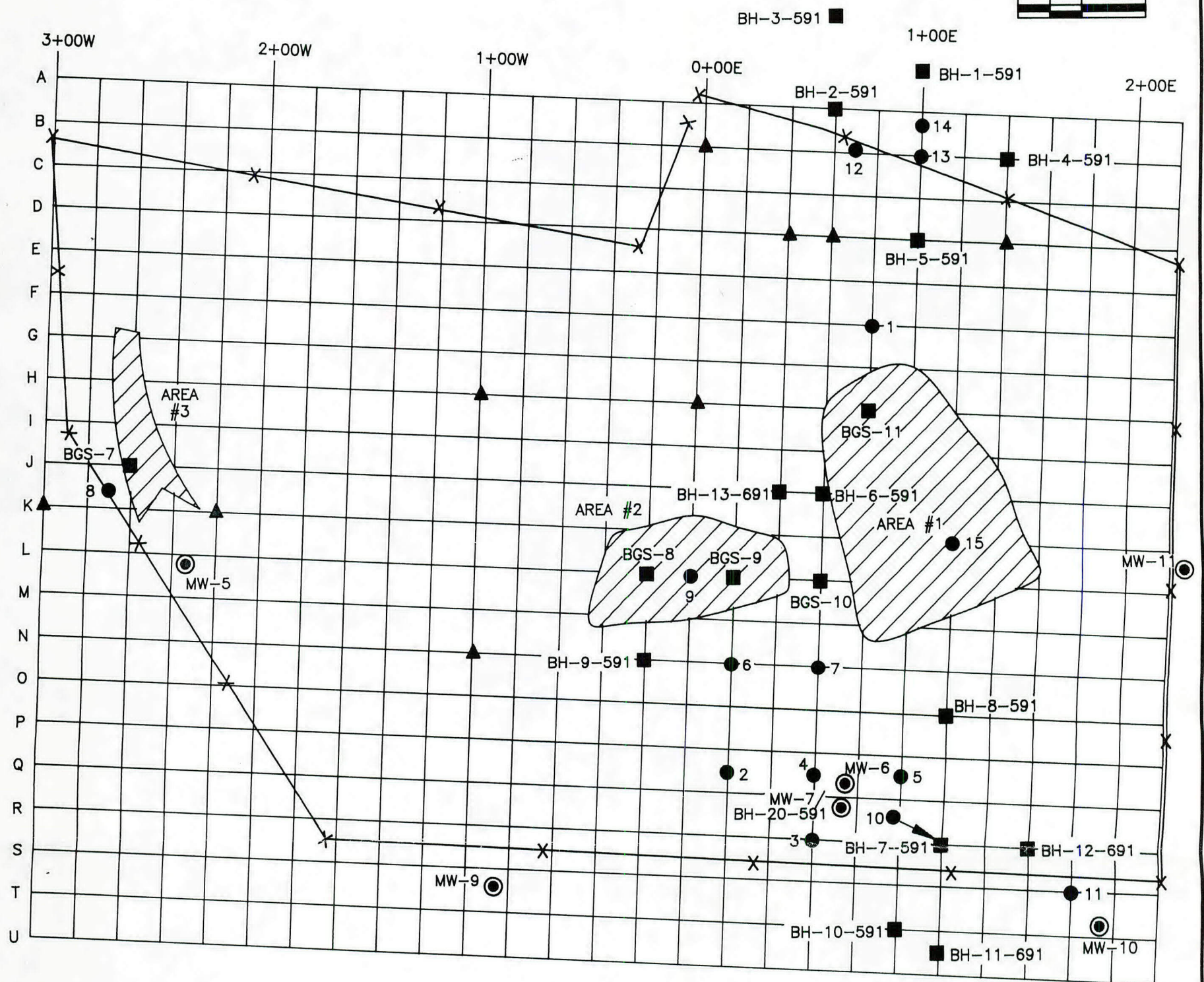
LEGEND

TP-06
TEST PIT LOCATION

AREA #2
APPROXIMATE LOCATION OF FORMER
DRUM STAGING AREA

figure 4.5
TEST PIT LOCATIONS
DUVA PROPERTY
Town of Clay, New York

CRA

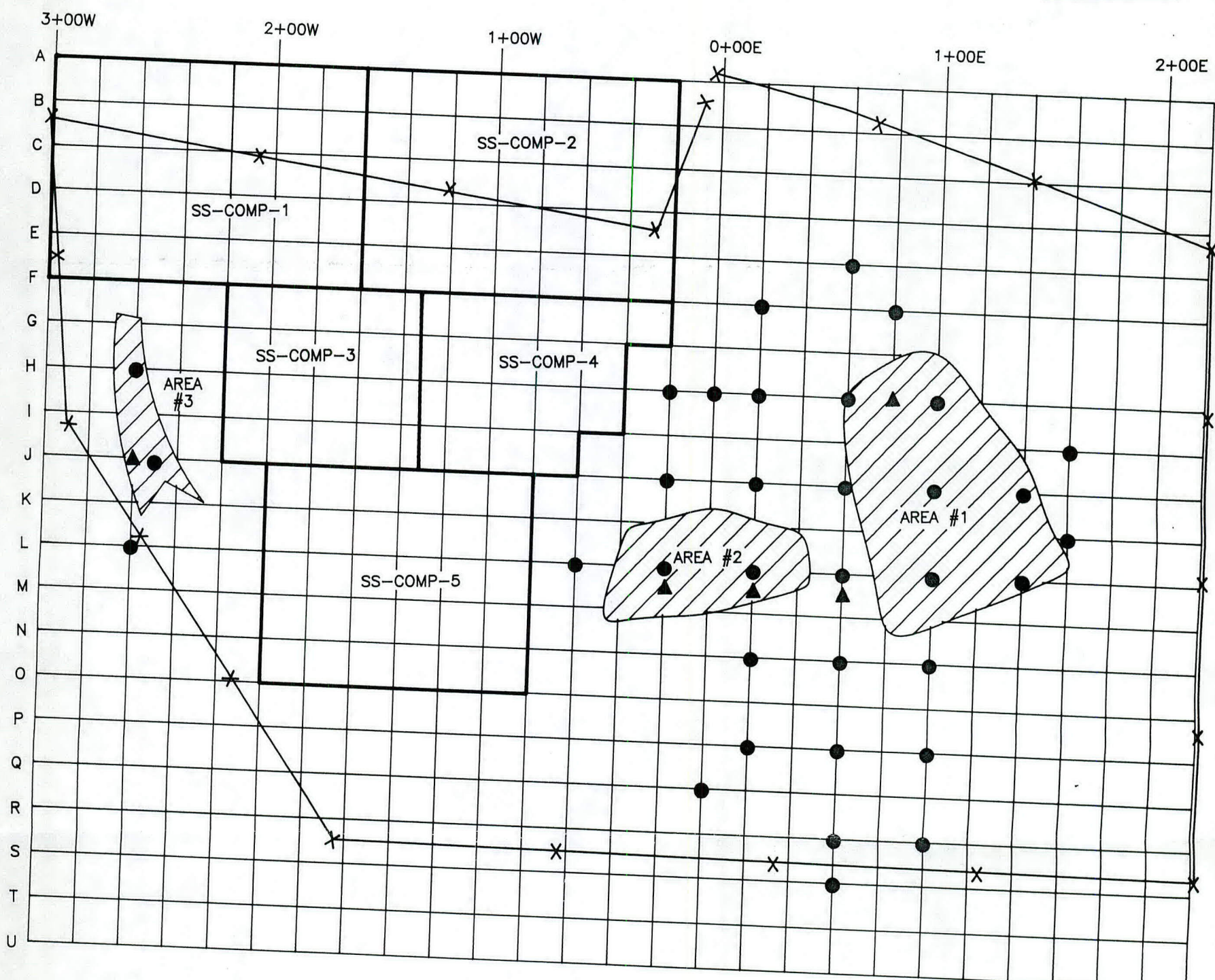


LEGEND

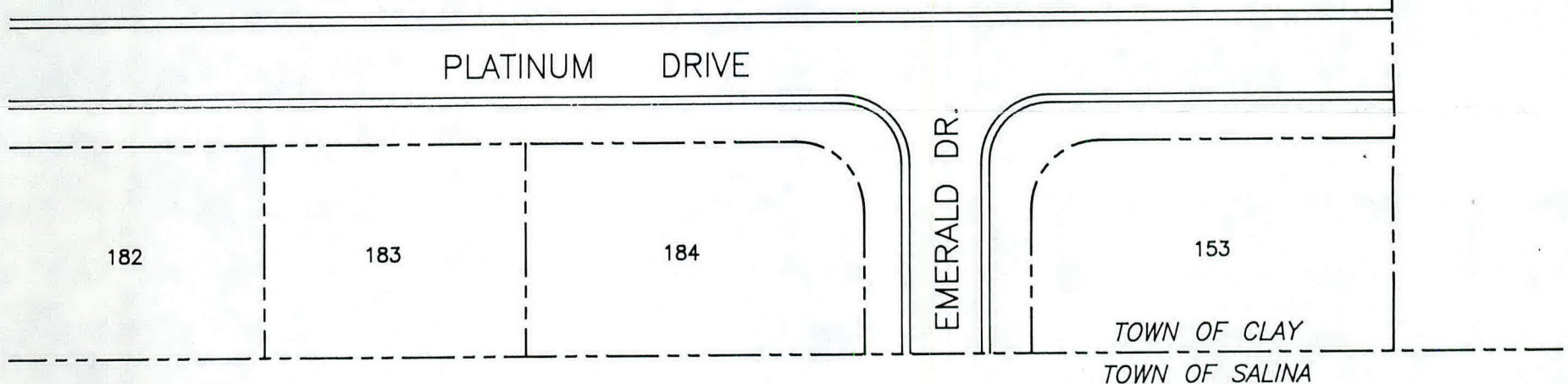
- 4 ● IRM BOREHOLE SAMPLING LOCATION
- BH-8-591 ■ RI BOREHOLE SAMPLING LOCATION
- ▲ ADRP BOREHOLE SAMPLING LOCATION
- ⊙ MONITORING WELL

figure 4.4
SUBSURFACE SOIL SAMPLING LOCATIONS
DUVA PROPERTY
Town of Clay, New York

CRA



	EXISTING	UTILITY	EASEMENT	
158	157	156	155	154

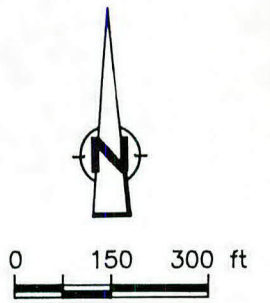


LEGEND

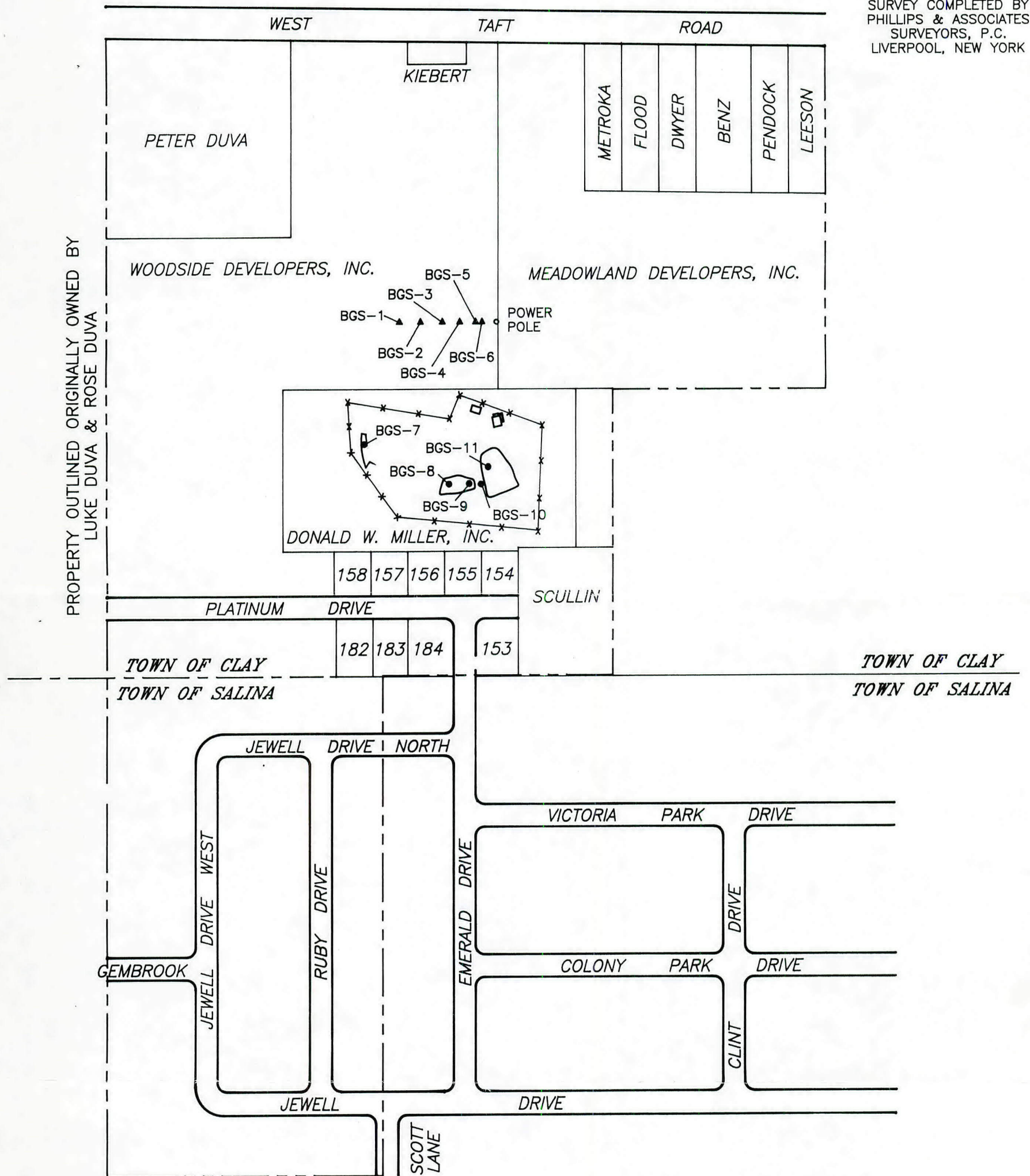
- IRM SURFICIAL SOIL SAMPLING LOCATION
- ▲ RI SURFICIAL SOIL SAMPLING LOCATION - DISCREET
- RI SURFICIAL SOIL SAMPLING LOCATION - COMPOSITE

figure 4.3
SURFICIAL SOIL SAMPLE LOCATIONS
DUVA PROPERTY
Town of Clay, New York

CRA



INFORMATION BASED ON A
SURVEY COMPLETED BY
PHILLIPS & ASSOCIATES
SURVEYORS, P.C.
LIVERPOOL, NEW YORK



LEGEND



APPROXIMATE LOCATION OF FORMER
DRUM STAGING AREA

BGS-7 SUBSURFACE AND SURFICIAL SAMPLE LOCATIONS

BGS-1 SURFICIAL SAMPLE LOCATION ONLY

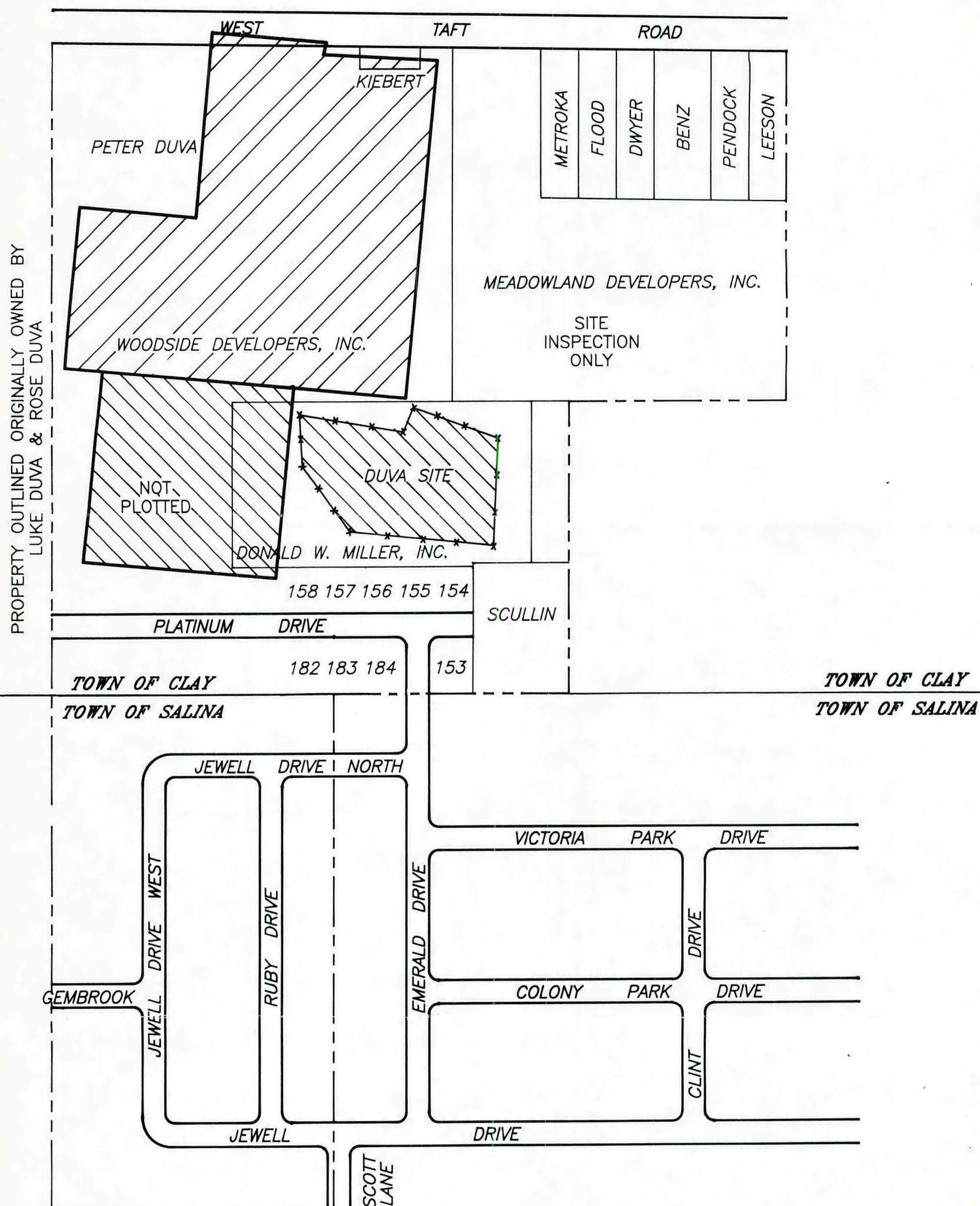
figure 4.2

SSPL SAMPLE LOCATIONS
DUVA PROPERTY
Town of Clay, New York



0 150 300 ft

INFORMATION BASED ON A
SURVEY COMPLETED BY
PHILLIPS & ASSOCIATES
SURVEYORS, P.C.
LIVERPOOL, NEW YORK



LEGEND



IRM MAGNETOMETER
SURVEY AREA



RI MAGNETOMETER
SURVEY AREA

CRA

figure 4.1

MAGNETOMETER SURVEY AREAS
DUVA PROPERTY
Town of Clay, New York



APPROXIMATE SCALE 1"=1600'

LEGEND

-  ZONED COMMERCIAL/INDUSTRIAL
-  ZONED RESIDENTIAL

NOTES:

1. 1 MILE RADIUS FROM SITE IS SHOWN
2. AREAS WITHIN 1 MILE RADIUS ARE PLOTTED

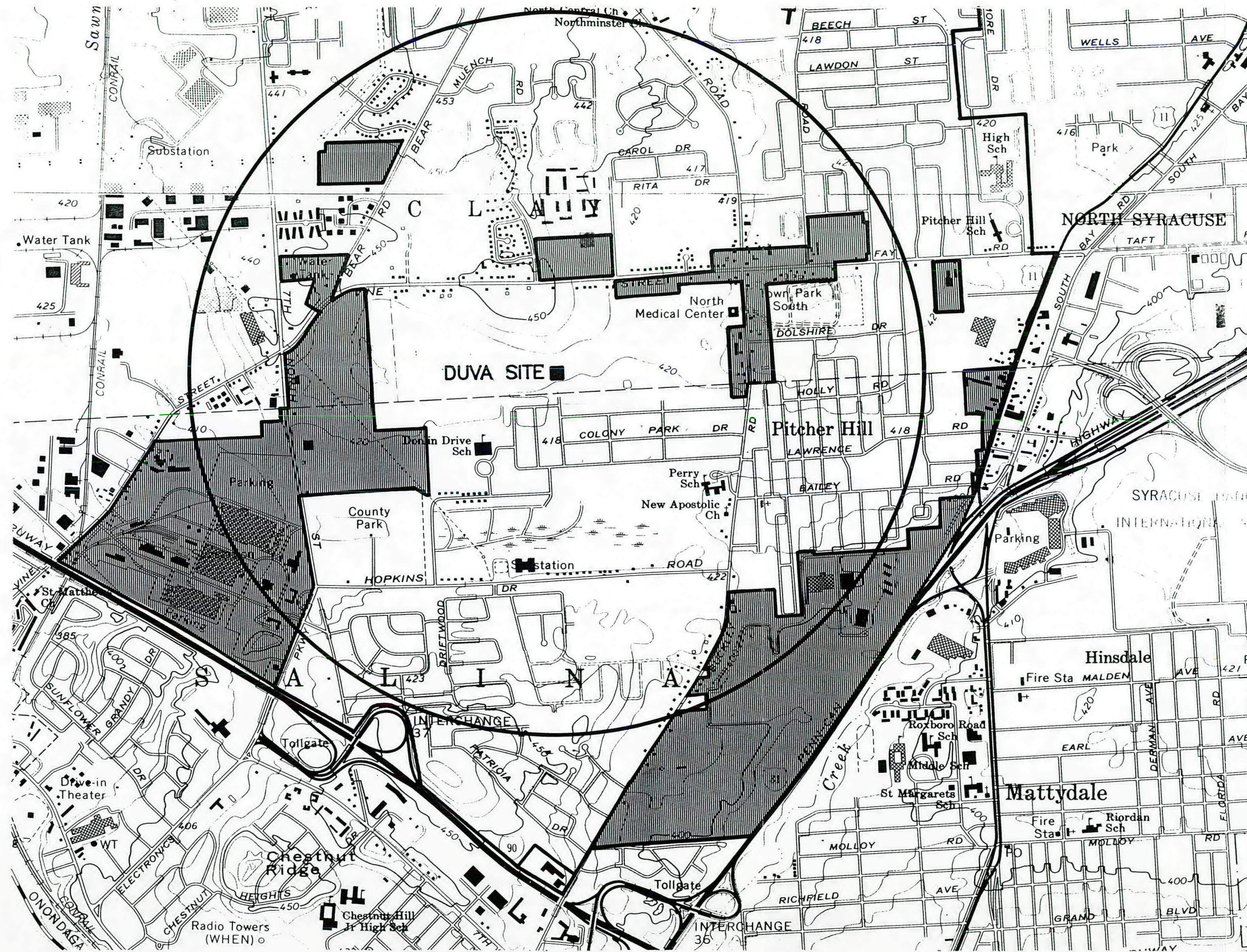
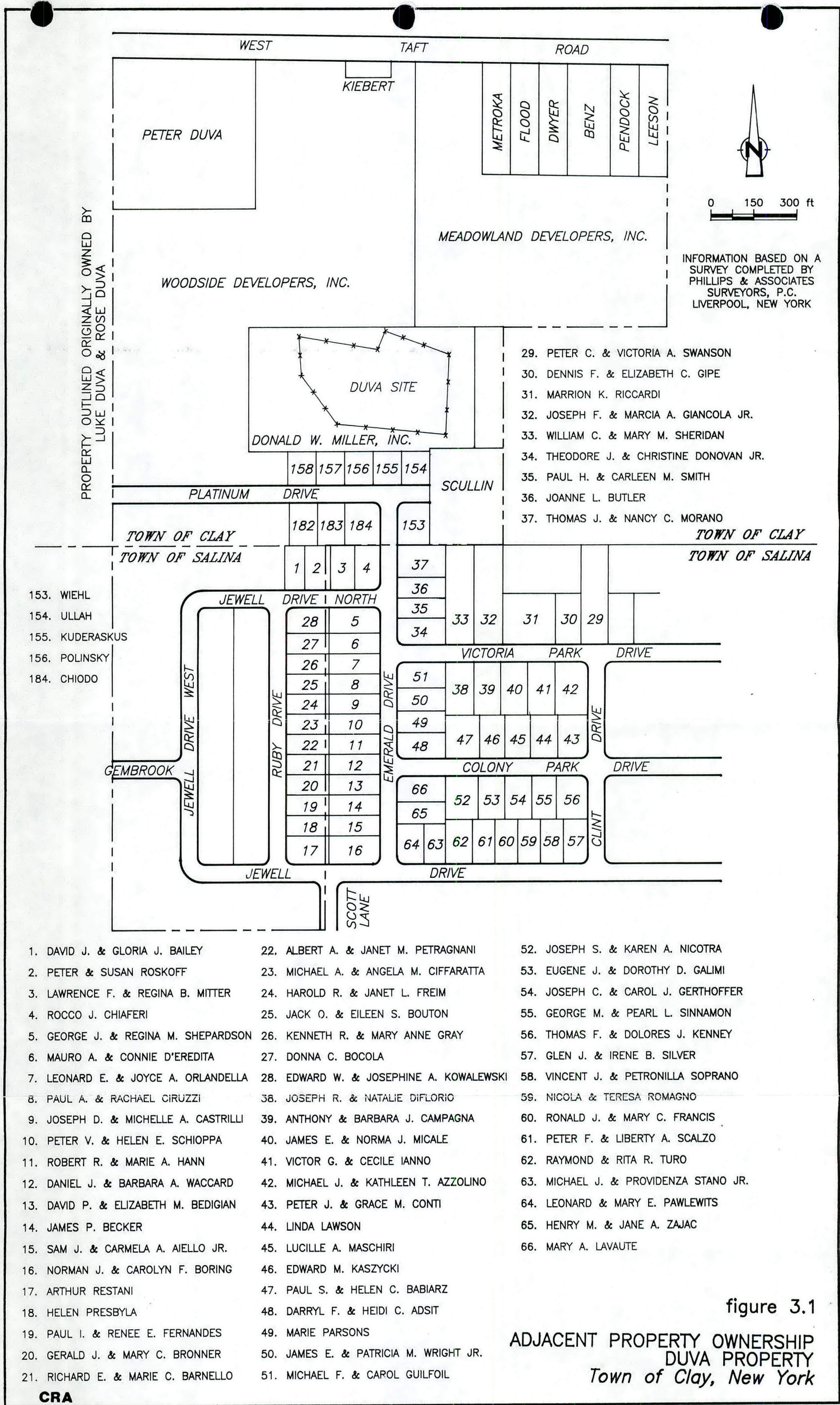
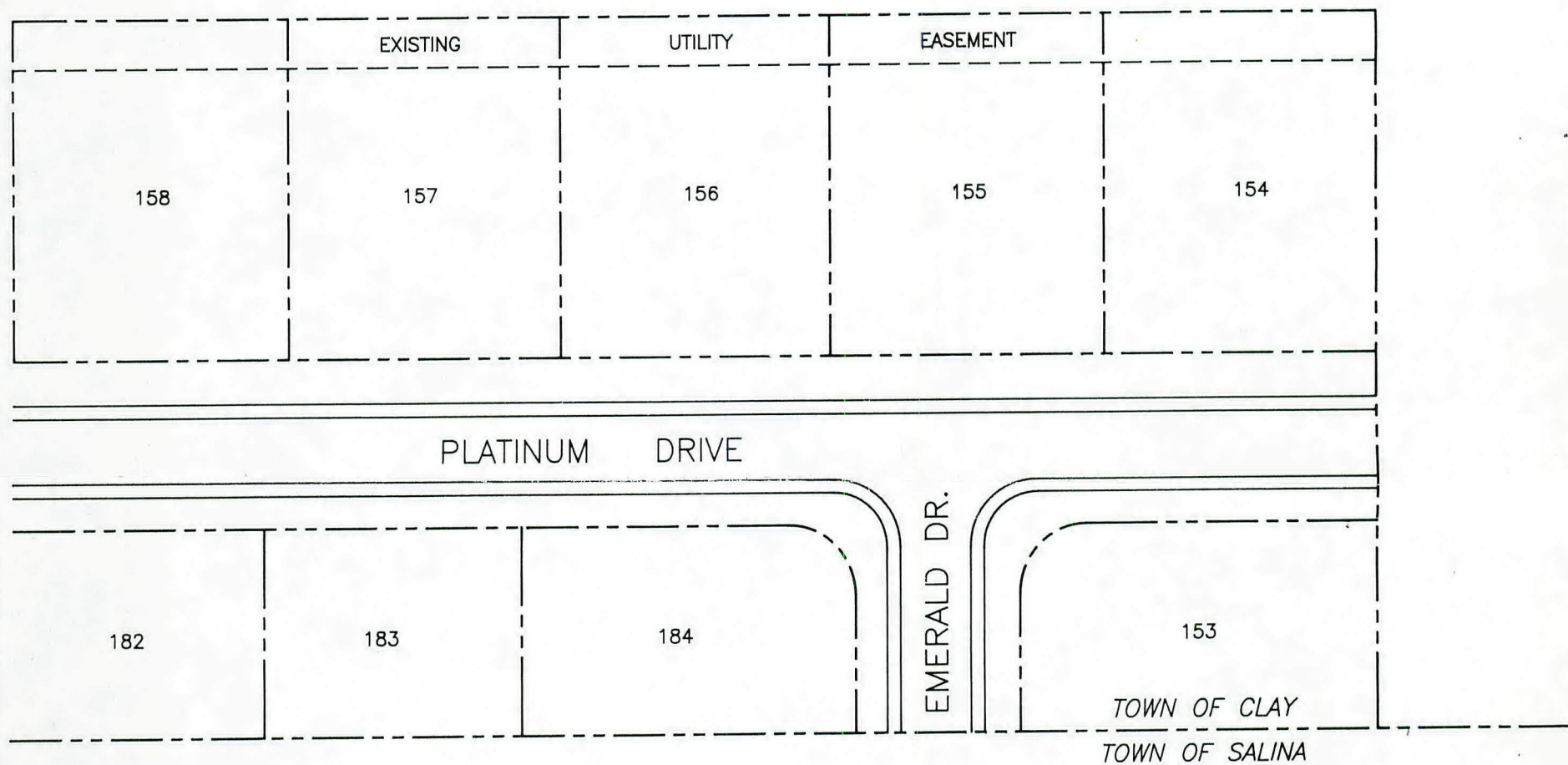
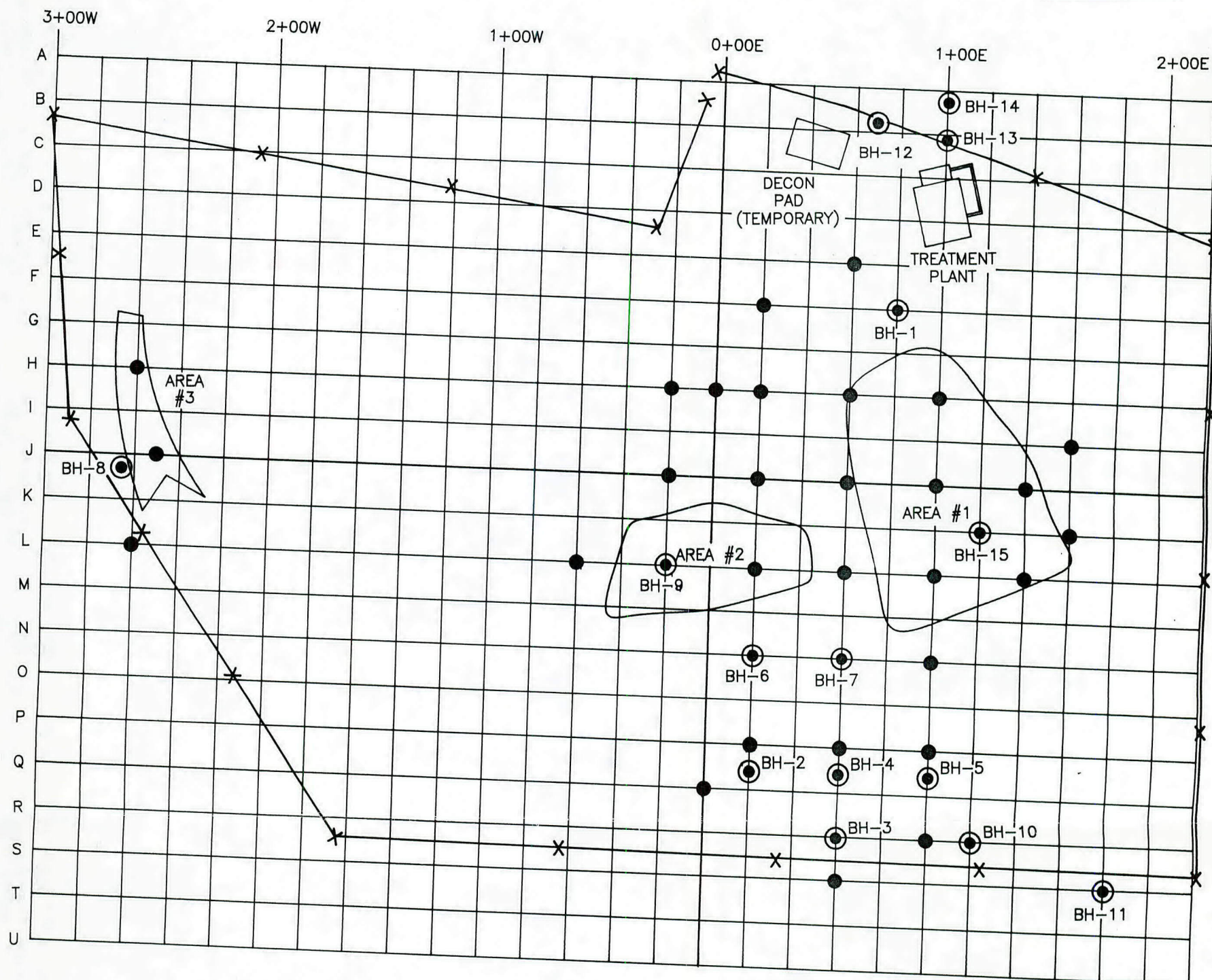


figure 3.2
ZONING MAP
DUVA PROPERTY
Town of Clay, New York





0 30 60 ft



LEGEND

- SURFACE/ SHALLOW SUBSURFACE SAMPLING LOCATION
- ⊙ BOREHOLE SAMPLING LOCATION
- BH-2

○ APPROXIMATE LOCATION OF FORMER DRUM STAGING AREA

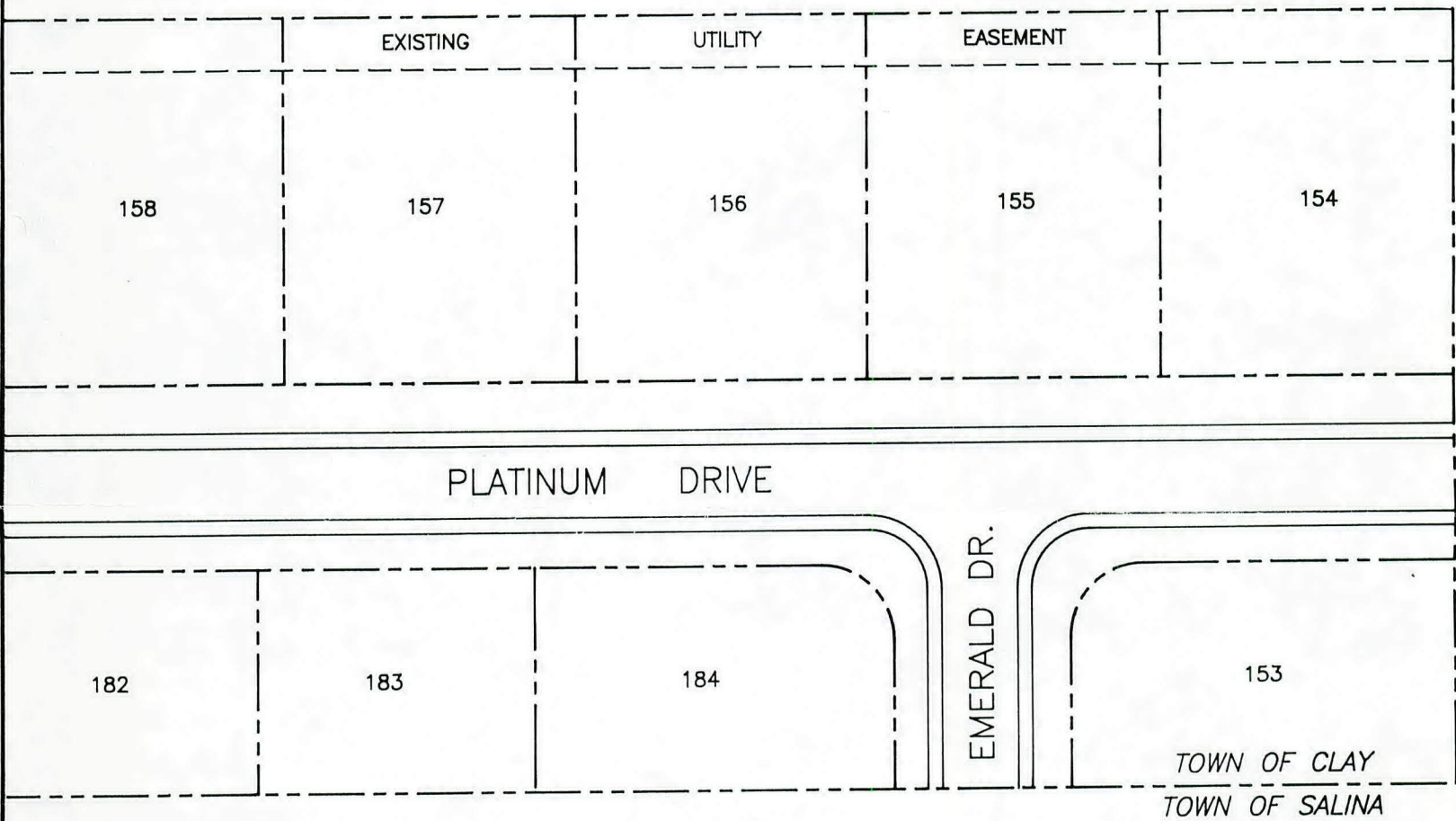
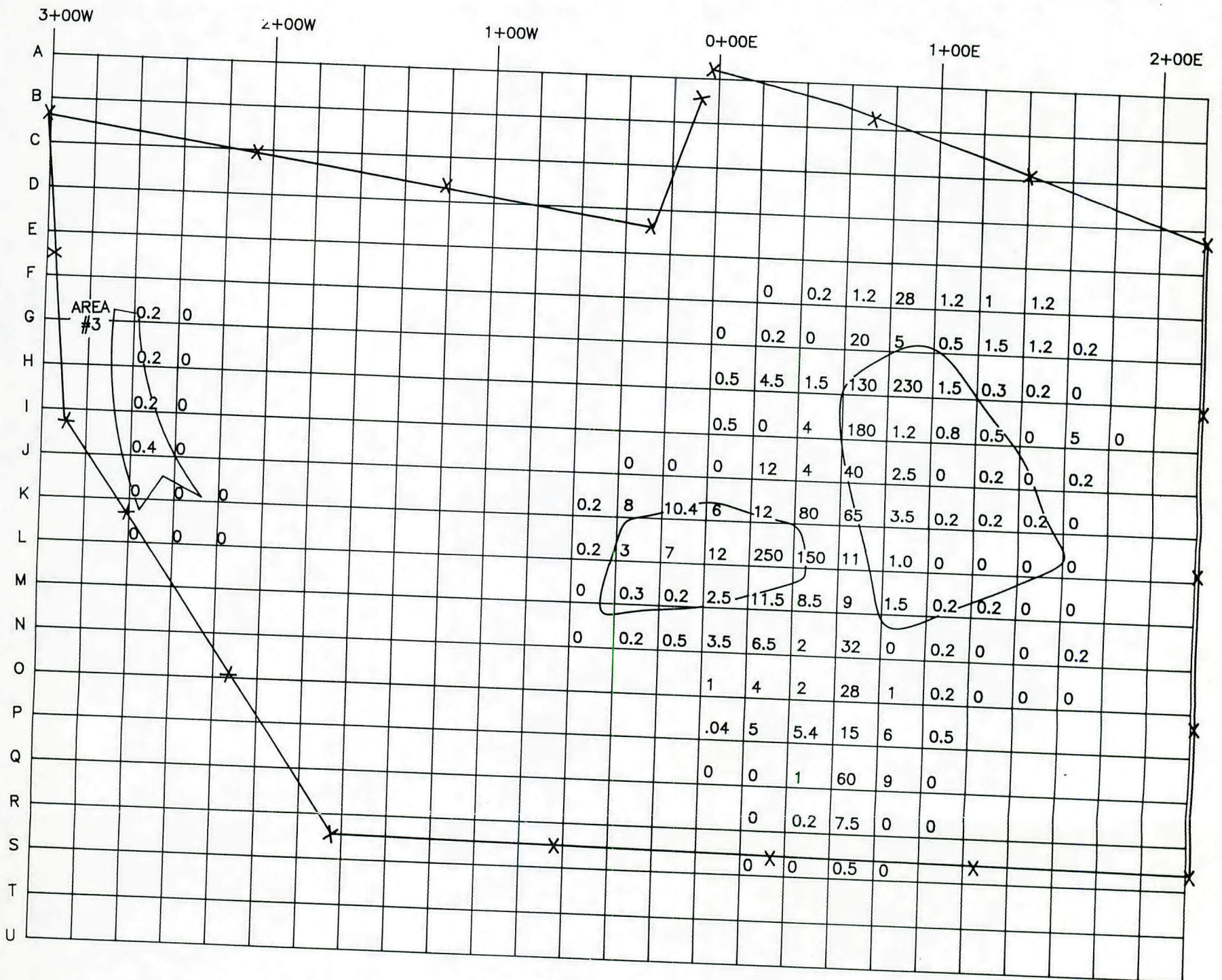
NOTE:
1. SURFACE/SHALLOW SUBSURFACE SAMPLE TAKEN AT OR ADJACENT TO BOREHOLE SAMPLING LOCATION

figure 2.5
SOIL IRM SAMPLING LOCATIONS
DUVA PROPERTY
Town of Clay, New York

CRA



0 30 60 ft



LEGEND



APPROXIMATE LOCATION OF FORMER
DRUM STAGING LOCATION

12

ORGANIC VAPOR
CONCENTRATIONS (ppm)

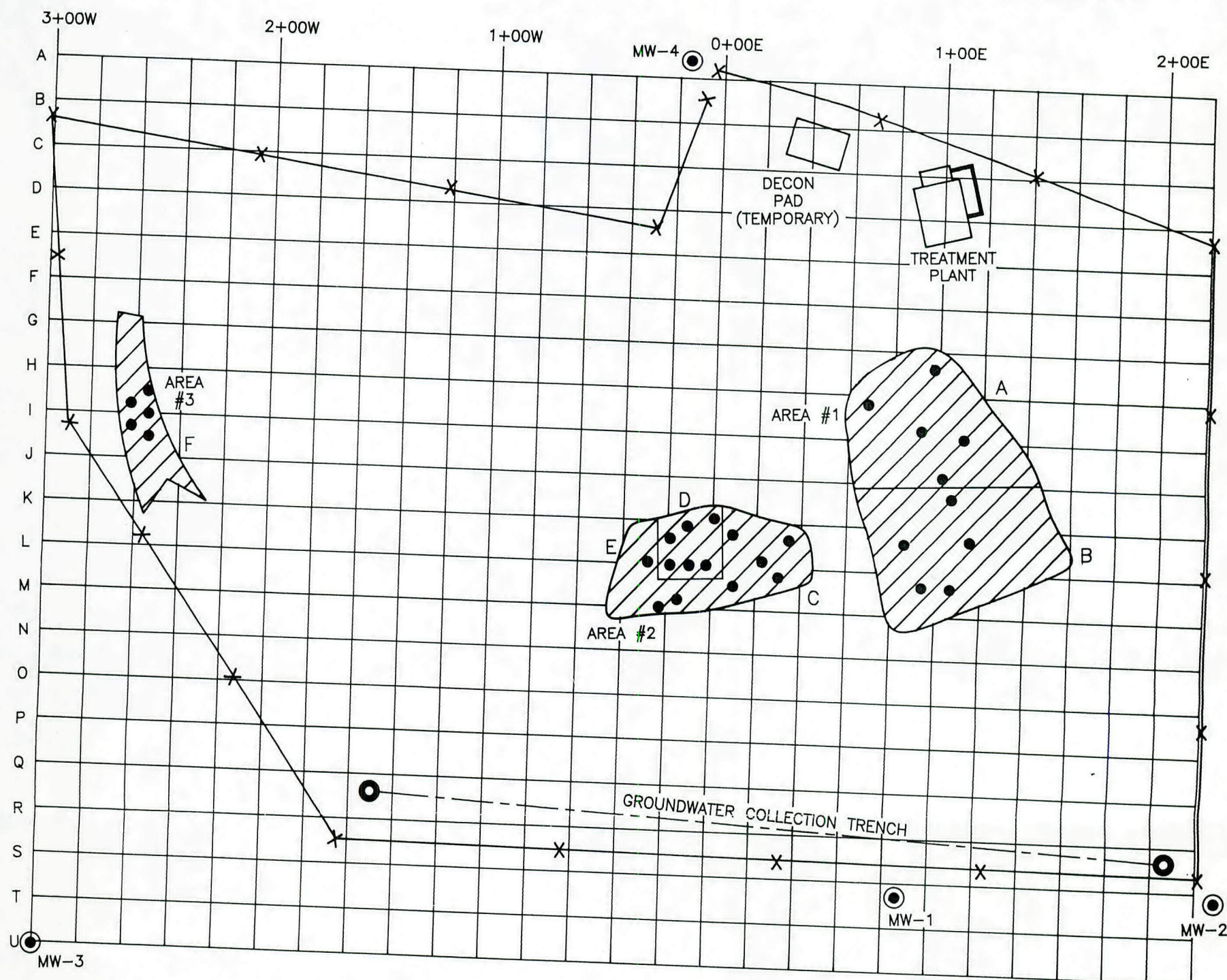
figure 2.4

ORGANIC VAPOR CONCENTRATIONS
IRM SOIL INVESTIGATION
DUVA PROPERTY
Town of Clay, New York

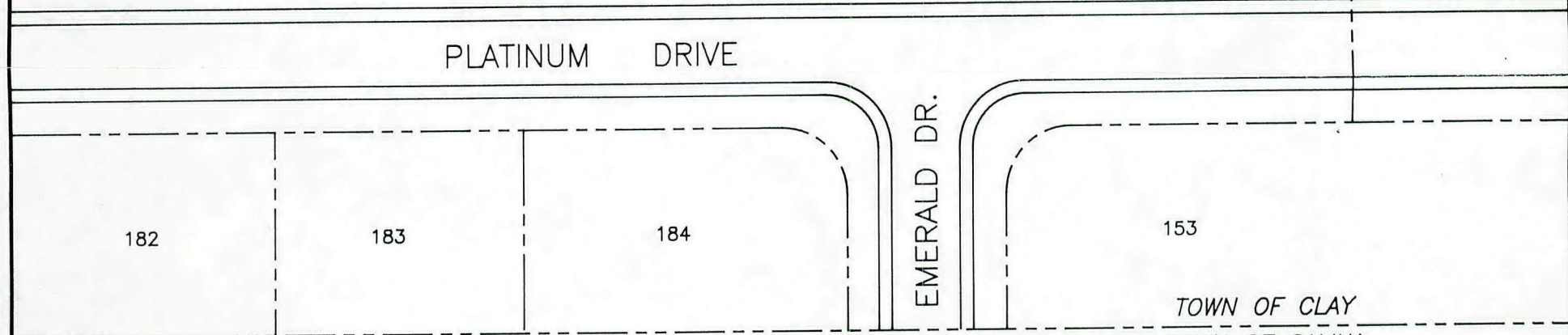
CRA



0 30 60 ft



EXISTING		UTILITY		EASEMENT	
158		157		156	
155		154			



LEGEND



APPROXIMATE LOCATION OF FORMER DRUM STAGING AREA



SOIL SAMPLING LOCATION



MW-2

EXISTING MONITORING WELL

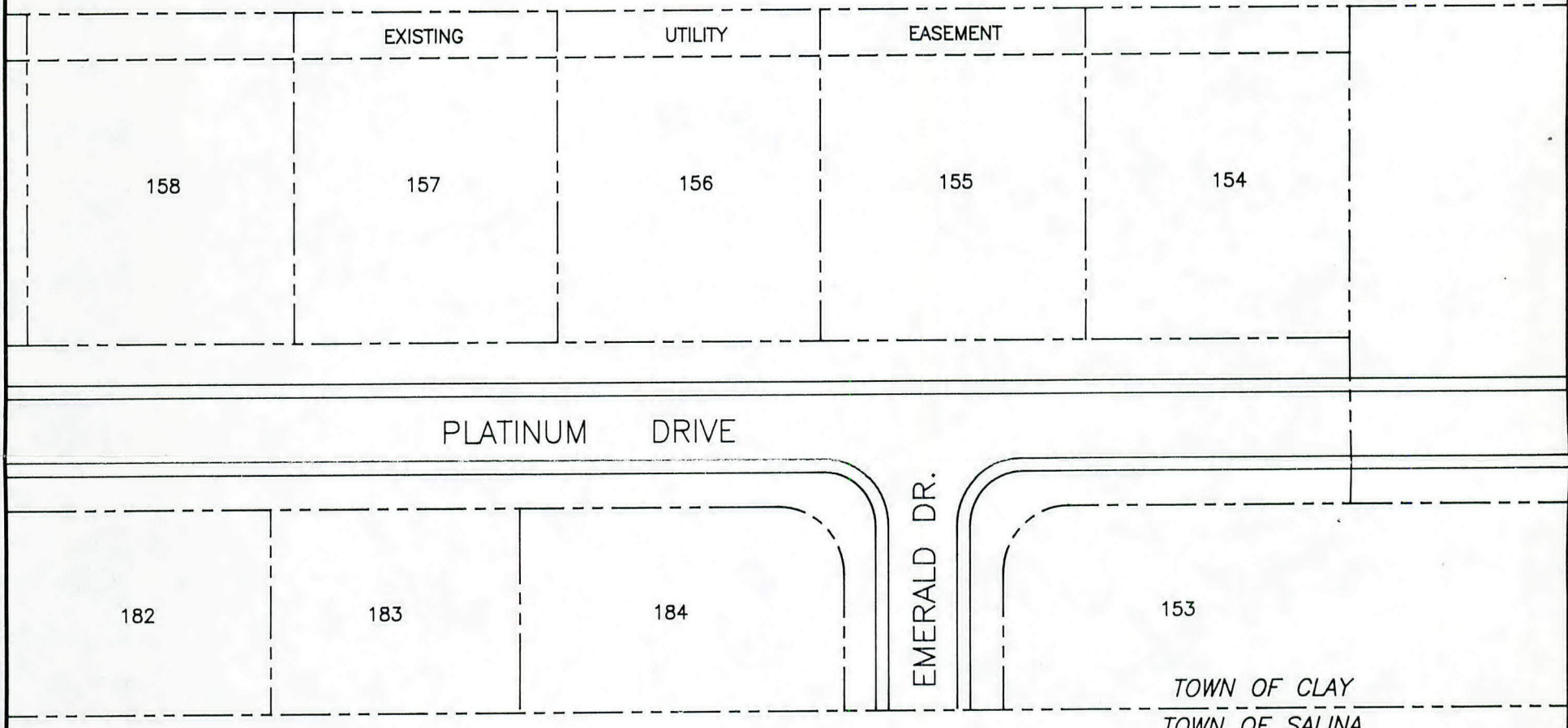
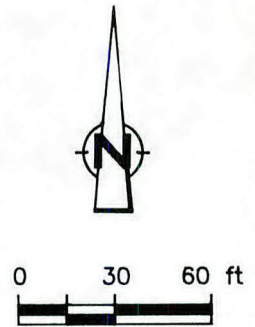
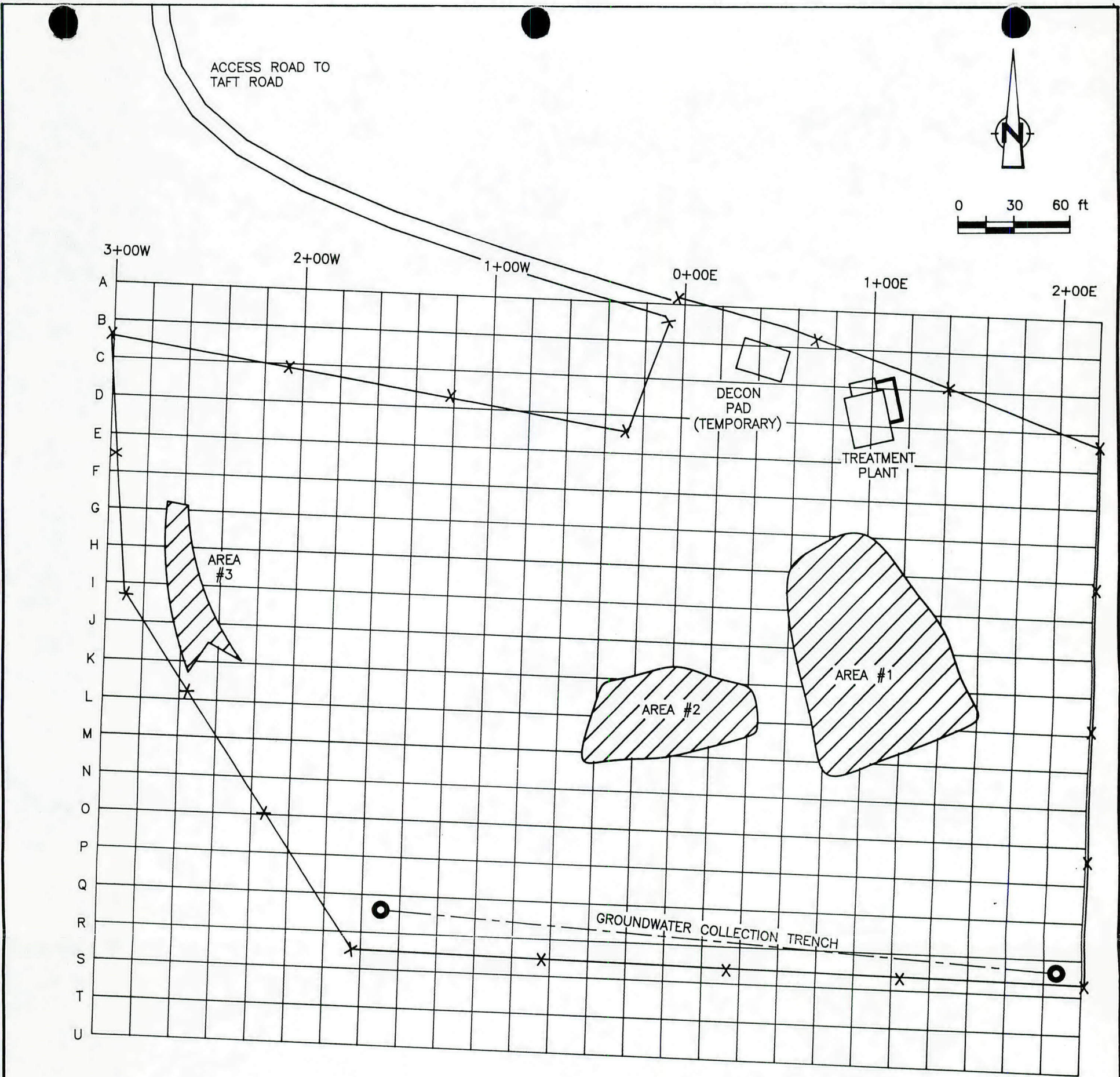
NOTE:

1. MW-2 LOCATED 185'± EAST OF SOUTHEAST CORNER OF FENCE

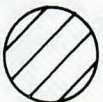
figure 2.3

1989 SOIL AND GROUNDWATER
SAMPLING LOCATIONS
DUVA PROPERTY
Town of Clay, New York

CRA



LEGEND



APPROXIMATE LOCATION OF FORMER
DRUM STAGING AREA

figure 2.2
SITE LAYOUT
DUVA PROPERTY
Town of Clay, New York

CRA

TABLES

TABLE 2.1
ANALYTICAL PARAMETER LIST
SOIL IRM INVESTIGATION
DUVA PROPERTY

Methylene Chloride

Acetone

1,2-Dichloroethene

1,1,1-Trichloroethane

Trichloroethene

Tetrachloroethene

Toluene

Ethylbenzene

Xylenes

2-Butanone

4-Methyl-2-pentanone

2-Hexanone

1,1,2-Trichloroethane

TABLE 3.1
HISTORICAL CLIMATOLOGICAL DATA SUMMARY
DUVA PROPERTY
TOWN OF CLAY, NEW YORK

<i>Year</i>	<i>Total Precipitation (Inches)</i>	<i>Average Annual Temperature (°F)</i>	<i>Snowfall (Inches)</i>
1970	38.23	46.5	121.3
1971	39.18	47.6	132.5
1972	55.41	46.9	144.6
1973	52.65	49.6	80.3
1974	50.23	46.9	112.0
1975	51.90	48.6	101.5
1976	58.17	46.3	117.9
1977	44.64	48.0	144.5
1978	35.07	46.4	154.6
1979	38.53	47.8	89.1
1980	32.08	47.3	114.1
1981	35.21	48.6	92.8
1982	35.14	47.0	100.0
1983	36.33	47.1	85.0
1984	37.97	46.5	110.2
1985	32.50	48.0	124.2
1986	42.93	48.0	93.6
1987	33.69	49.0	100.1
1988	34.44	48.0	120.2
1989	36.93	46.6	135.0

Source: Local Climatological Data, 1990 Annual Summary with Comparative Data, Syracuse, New York; National Oceanic and Atmospheric Administration; National Climatic Data Center, Asheville, North Carolina (data obtained at Hancock International Airport, Syracuse, New York).

TABLE 3.2
RECENT CLIMATOLOGICAL DATA SUMMARY
DUVA PROPERTY
TOWN OF CLAY, NEW YORK

<i>Month/Year</i>	<i>Total Precipitation (Inches)</i>	<i>Average Monthly Temperature (°F)</i>	<i>Snowfall (Inches)</i>
January 1990	2.13	33.2	27.4
February 1990	3.95	29.0	33.3
March 1990	3.70	37.5	15.2
April 1990	4.09	49.3	8.6
May 1990	5.62	54.5	0
June 1990	2.92	67.3	0
July 1990	3.72	71.8	0
August 1990	5.33	70.3	0
September 1990	3.45	61.2	0
October 1990	6.09	52.8	0.2
November 1990	3.23	42.2	7.8
December 1990	<u>5.24</u>	<u>33.5</u>	<u>24.5</u>
1990 TOTAL	49.47	1990 AVG. 50.2	1990 TOTAL 117.
January 1991	2.44	24.3	30.9
February 1991	1.54	29.8	27.7
March 1991	4.07	37.7	2.8
April 1991	3.90	51.0	3.0
May 1991	3.90	62.8	0
June 1991	1.67	68.4	0
July 1991	2.86	72.4	0
August 1991	4.03	71.8	0
September 1991	4.20	60.5	0
October 1991	2.62	53.1	0
November 1991*	2.72	40.0	5.5
December 1991*	<u>3.10</u>	<u>30.7</u>	<u>37.9</u>
1991 TOTAL	37.05	1991 AVG. 50.2	1991 TOTAL 107.8

Source: Local Climatological Data, 1990 Annual Summary with Comparative Data, Syracuse, New York; National Oceanic and Atmospheric Administration; National Climatic Data Center, Asheville, North Carolina (data obtained at Hancock International Airport, Syracuse, New York).

* Preliminary Data.

TABLE 4.1
OVERBURDEN STRATIGRAPHIC INFORMATION SUMMARY
DUVA PROPERTY
TOWN OF CLAY, NEW YORK

Borehole Number	Grid Location	Ground Surface	Till Interface	
		Elevation (Ft. AMSL)	Depth (BGS)	Elevation (Ft. AMSL)
<u>IRM Boreholes</u>				
IRM BH-1	F/0+80E	432.3	2.5	429.8
IRM BH-2	P/0+20E	436.1	7.0	429.1
IRM BH-3	R/0+60E	425.9	6.0	419.9
IRM BH-4	P/+0+60E	425.4	5.0	421.4
IRM BH-5	P/1+00E	426.1	5.0	421.1
IRM BH-6	N/0+20E	427.7	4.0	423.7
IRM BH-7	N/0+60E	427.6	2.5	425.1
IRM BH-8	J/2+60W	428.9	5.0	423.9
IRM BH-9	L/0+20W	429.1	3.0	426.1
IRM BH-10	R/1+20E	425.7	6.0	419.7
IRM BH-11	S/1+80E	425.6	8.0	417.6
IRM BH-12	B/0+70E	435.2	8.0	427.2
IRM BH-13	B/1+00E	435.1	2.5	432.6
IRM BH-14	A/1+00E	435.4	2.5	432.9
IRM BH-15	K/1+2-E	428.8	3.0	425.8
<u>RI Boreholes</u>				
BH-1-591	Off-Site	436.6	5.0	431.6
BH-2-591	A/0+60E	436.1	6.0	430.1
BH-3-591	Off-Site	437.6	8.0	429.6
BH-4-591	B/1+40E	434.5	6.0	428.5
BH-5-591	D/1+00E	433.8	4.0	429.0
BH-6-591	J/1+60E	430.3	6.0	424.3
BH-7-591	R/1+20E	425.5	7.3	418.2
BH-8-591	O/1+20E	427.6	4.5	423.1
BH-9-591	N/0+20W	427.4	3.8	423.6
BH-10-591	T/1+00E	425.4	8.0	417.4
BH-11-591	U/1+20E	425.0	8.0	417.0
BH-12-591	R/1+60E	425.8	8.2	417.6
BH-13-591	J/0+40E	430.2	6.0	424.2
<u>Monitoring Well Boreholes</u>				
MW-5	M/2+30W	428.6	-	-
MW-6	P/0+70E	425.8	-	-
MW-7	Q/0+70E	425.9	8.0	417.9
MW-8	U/0+90W	426.2	8.0	418.2
MW-9	T/0+90W	426.4	-	-
MW-10	T/1+90E	425.5	8.6	416.9
MW-11	Off-Site	428.1	2.5	425.6
MW-12	Off-Site	424.1	8.7	415.4
MW-13	Off-Site	423.5	12.4	411.1

TABLE 4.1
OVERBURDEN STRATIGRAPHIC INFORMATION SUMMARY
DUVA PROPERTY
TOWN OF CLAY, NEW YORK

<i>Borehole Number</i>	<i>Grid Location</i>	<i>Ground Surface</i>	<i>Till Interface</i>	
		<i>Elevation (Ft. AMSL)</i>	<i>Depth (BGS)</i>	<i>Elevation (Ft. AMSL)</i>
<u>ADRP Boreholes</u>				
BHD/1+40E	D/1+40E	434.0	4.0	430.0
BHH/0+00	H/0+00E	431.9*	4.0	427.9
BHB/0+00 0	B/0+00B	436.0*	4.8	431.2
BHH/1+00W	H/1+00W	431.1*	-	-
BHD/0+60E	D/0+60E	434.0*	3.0	431.0
BHD/0+20E	D/0+20E	434.1*	4.0	430.1
BHK/2+20W	K/2+20W	428.7*	2.5	426.2
BHK/3+00W	K/3+00W	428.5*	4.5	424.0
BHN/1+00W	N/1+00W	427.7*	5.8	421.9

Note:

- * Ground surface elevation was estimated using a Site topographic contour map dated May 1, 1991, developed by Phillips & Associates.

TABLE 4.2
TEST PIT LOG
DUVA PROPERTY
TOWN OF CLAY, NEW YORK

<i>Test Pit ID.</i>	<i>Depth (ft. BGS)</i>	<i>Organic Vapor Reading (HNU Units)</i>	<i>Description</i>
TP-01	0 - 1	0.0	(Top of pile approximately 4 feet above grade). Red-brown silty clay. Moist.
	1 - 2	0.0	Sand, some silt and clay. Red-brown. Wet.
	2 - 3	0.0	Sand, some clay and silt. Black. Wet.
	3 - 5	0.0	Clay, some silt and sand. Red-brown. Moist.
	5 - 6	0.0	Clay, some silt, cobbles. Orange-red. Moist.
	6 - 7	0.0	Silt, some clay, cobbles present. Orange-red. Dry.
	7		Till.
TP-02	0 - 0.5	2.4	Sand, some silt. Black. Moist.
	0.5 - 1.2	0.0	Sand, some silt. Red-brown. Moist to wet.
	2.2 - 3.5	0.0	Sand, some silt, trace clay. Red-brown. Moist to wet.
	3.5 - 5.0	0.0	Silt, some clay, cobbles. Red-brown. Wet.
	5.0		Till.
TP-03	0 - 0.2	0.0	Sand, some silt and vegetation. Black. Wet.
	0.2 - 2.5	0.0	Sand, some silt. Orange-tan. Saturated.
	2.5 - 3.0	0.0	Clay, some silt. Gray. Moist.
	3.0 - 4.0	0.0	Clay, some silt. Red-brown. Moist.

TABLE 4.2
TEST PIT LOG
DUVA PROPERTY
TOWN OF CLAY, NEW YORK

<i>Test Pit ID.</i>	<i>Depth. (ft. BGS)</i>	<i>Organic Vapor Reading (HNU Units)</i>	<i>Description</i>
TP-03	4.0 - 4.5	0.0	Sand, some silt, fine to medium angular to subangular gravel. Tan. Moist to wet.
	4.5 - 5.0	0.0	Silt, some clay, cobbles present. Red-brown. Moist.
	5.0		Till.
TP-04	0 - 0.3	0.0	Sand, some clay, trace silt, vegetation. Black. Moist.
	0.3 - 2.0	0.0	Sand, some silt. Orange. Moist.
	2.0 - 3.5	0.0	Sand, some silt, some fine to medium angular to subangular gravel. Orange. Moist to wet.
	3.5 - 4.0	0.0	Silt, trace sand, some clay, some fine to medium angular to subangular gravel. Tan. Moist to wet.
	4.0 - 5.0	0.0	Silt, some clay, trace sand. Orange with tan mottling. Wet.
	5.0 - 6.4	0.0	Silt, some clay, some fine to medium cobbles. Red-brown. Dry to moist.
	6.4		Till.
TP-05	0 - 1.5	0.0	Sand, ash, cinders, burned vegetation, decayed vegetation. Gray to black. Moist. Fill.
	1.5 - 4.0	0.0	Clay, some silt, some fine to medium angular subangular and rounded gravel. Red-brown with orange mottling. Moist.
	4.0 - 4.5	0.0	Clay, some silt. Gray-green clay. Wet.

TABLE 4.2
TEST PIT LOG
DUVA PROPERTY
TOWN OF CLAY, NEW YORK

<i>Test Pit ID.</i>	<i>Depth (ft. BGS)</i>	<i>Organic Vapor Reading (HNU Units)</i>	<i>Description</i>
TP-05	4.5 - 6.0	0.0	Silt, some clay, some fine to medium angular to subangular gravel, some fine to medium cobbles. Red-brown. Wet at top, dry at bottom.
	6.0		Till.
TP-06	0 - 1.0	0.0	Sand. Tan. Fill.
	1.0 - 2.3	0.0	Sand, some clay, trace silt. Black. Moist.
	2.3 - 4.0	0.0	Silt, some clay, some fine to medium angular to subangular gravel, some fine to medium cobbles. Red-brown. Moist to wet at top, dry on bottom.
	4.0		Till.
TP-07	0 - 1.5	2 - 3	Sand, some silt, some clay, some vegetation. Brown-black. Moist.
	1.5 - 3.0	2 - 4	Clay, some silt. Red-brown. Moist to wet.
	3.0 - 4.0	2 - 3	Clay, some silt. Red-brown with some orange mottling. Trace gray-green mottling. Moist.
	4.0 - 4.5	1 - 2	Silt, some clay, some fine to medium angular to subangular gravel. Red-brown. Moist to dry.
	4.5		Till.

TABLE 4.2
TEST PIT LOG
DUVA PROPERTY
TOWN OF CLAY, NEW YORK

<i>Test Pit ID.</i>	<i>Depth (ft. BGS)</i>	<i>Organic Vapor Reading (HNU Units)</i>	<i>Description</i>
TP-08	0 - 1.5	12	Sand, topsoil, some silt. Black, trace tan sludge, metal debris, drum tops. Moist. Fill.
	1.5 - 3.0	13	Clay, some silt. Red-brown. Wet.
	3.0 - 4.0	16 - 45	Silt, some clay, some fine to medium angular to subangular gravel, some fine to medium cobbles. Red-brown. Moist to dry. Odor.
	4.0		Till.
TP-09	0 - 0.5	0.0	Sand, some clay, some vegetation. Black.
	0.5 - 2.0	0.0	Clay, some silt, some fine to medium cobbles. Red-brown, some orange mottling, trace green clay. Moist to wet.
	2.0 - 4.0	0.0	Clay, some silt, some fine to medium cobbles. Red-brown. Moist.
	4.0 - 4.5	0.0	Silt, some clay, some fine to medium cobbles. Red-brown. Dry.
	4.5		Till.
TP-10	0 - 1.0	16	Sand, some clay, some vegetation. Black. Moist.
	1.0 - 3.0	50 - 300	Clay, some silt. Red-brown. Moist to wet.
	3.0 - 3.5	60 - 210	Silt, some clay, some fine to medium cobbles. Red-brown. Moist to dry.
	3.5		Till.

TABLE 4.2
TEST PIT LOG
DUVA PROPERTY
TOWN OF CLAY, NEW YORK

<i>Test Pit ID.</i>	<i>Depth (ft. BGS)</i>	<i>Organic Vapor Reading (HNU Units)</i>	<i>Description</i>
TP-11	0 - 0.5	2.0	Sand, some granular sludge material. Black-gray. Moist. Fill.
	0.5 - 3.0	1.0	Clay, some silt. Red-brown with some orange and green mottling. Moist to wet.
	3.0 - 4.0	25	Silt, some clay. Some fine to medium cobbles. Red-brown. Moist to dry.
	4.0		Till.

TABLE 4.3
MONITORING WELL INSTRUMENTATION SUMMARY
DUVA PROPERTY
TOWN OF CLAY, NEW YORK

<i>Well I.D.</i>	<i>Ground Elevation (Ft. AMSL)</i>	<i>Top of Casing Elevation (Ft. AMSL)</i>	<i>Sandpack Interval (Ft. BGS)</i>	<i>Sandpack Elevation (Ft. AMSL)</i>	<i>Well Screen Interval (Ft. BGS)</i>	<i>Well Screen Elevation (Ft. AMSL)</i>	<i>Bottom of Well (Ft. AMSL)</i>
MW5	428.6	431.18	4.0 - 8.0	424.6 - 420.6	5.5 - 8.0	423.1 - 420.6	420.6
MW6	425.8	428.05	5.0 - 8.0	428.8 - 417.8	5.5 - 8.0	420.3 - 417.8	417.8
MW7	425.9	428.54	9.0 - 16.0	416.9 - 409.9	10.5 - 15.5	415.4 - 410.4	410.4
MW8	426.2	428.88	12.8 - 19.0	413.4 - 407.2	14.0 - 19.0	412.2 - 407.2	407.2
MW9	426.4	429.13	4.0 - 8.0	422.4 - 418.4	5.5 - 8.0	420.9 - 418.4	418.4
MW10	425.5	427.57	4.0 - 10.0	421.5 - 415.5	5.0 - 10.0	420.5 - 415.5	415.5
MW11	428.1	430.35	3.8 - 8.0	424.3 - 420.1	5.5 - 8.0	422.6 - 420.1	420.1
MW12	424.1	424.11	3.0 - 12.0	421.1 - 412.1	5.0 - 10.0	419.1 - 414.1	414.1
MW13	423.57	423.50	5.0 - 14.0	418.57 - 409.57	6.9 - 11.9	416.67 - 411.67	411.67

TABLE 4.4
MONITORING WELL PURGING SUMMARY
DUVA PROPERTY
TOWN OF CLAY, NEW YORK

Well I.D.	Date	Water Level (Ft. BTOC)	Casing Volume (Gal.)	Purged Volume (Gal.)	pH (Std. Units)	Conductivity ($\mu\text{mhos}/\text{cm}^3$)	Turbidity (NTU)	Temperature (°C)
<u>ROUND 1</u>								
MW1	7/09/91	9.00	0.4	0.25 (1)	6.69	870	>200	-
MW2	7/09/91	6.80	0.5	0.5 (1)	6.58	420	>200	-
MW3	7/09/91	7.95	0.3	0.1 (1)	6.89	570	>200	-
MW4	7/09/91	5.86	1.73	8.5 (2)	6.44	60	>200	-
MW5	7/09/91	7.20	0.5	1.4	6.70	40	20.1	-
MW6	7/09/91	5.12	0.7	0.9 (1)	6.59	2850	>200	-
MW7	7/09/91	6.10	1.9	4.7	6.57	37	102.3	-
MW8	7/09/91	9.5	2.0	2.5 (1)	6.59	1160	2.3	-
MW9	7/09/91	10.35	0.04	0.12 (1)	6.16	610	40.5	-
MW10	7/09/91	9.80	0.3	1.0 (1)	6.51	280	>200	-
MW11	7/09/91	6.00	0.6	0.6 (1)	6.50	560	>200	-
MW12	10/18/91	8.16	0.3	1.5 (2)	7.28	672	>100	17.5
MW13	10/18/91	9.72	0.2	1.2 (2)	6.59	776	>100	17.5
<u>ROUND 2</u>								
MW1	9/09/91	10.08	0.2	0.2 (1)	-	-	-	-
MW2	9/09/91	7.86	0.3	0.3 (1)	-	-	-	-
MW3	9/09/91	8.36	0.2	0.2 (1)	-	-	-	-
MW4	9/09/91	7.48	1.5	4.5 (1)	-	-	-	-
MW5	9/09/91	9.63	0.1	0.4	6.05	1180	-	-
MW6	9/09/91	6.38	0.5	1.0 (1)	5.31	2740	-	18.3
MW7	9/09/91	6.10	1.9	4.2 (1)	4.87	2900	-	16.6
MW8	9/09/91	10.73	1.7	2.5 (1)	4.68	3170	-	12.6
MW9	9/09/91	Dry	-	-	-	-	-	-
MW10	9/09/91	10.23	0.2	0.3 (1)	4.68	788	-	15.9
MW11	9/09/91	8.30	0.25	0.25 (1)	4.85	1950	-	17.1
MW12	12/12/91	9.45	0.1	0.88	7.24	704	87	17.5
MW13	12/12/91	10.60	0.1	1.35	6.92	728	90	17.5

Notes:

- (1) Purged to dryness.
- (2) Maximum of five well volumes removed.
- Not measured.

TABLE 4.5
WELL LEVEL DATA
DUVA PROPERTY
TOWN OF CLAY, NEW YORK

Well I.D.	6/13/91 ⁽¹⁾	7/8/91 ⁽²⁾	9/09/91 ⁽²⁾	10/10/91 ⁽¹⁾	10/18/91 ⁽²⁾	11/08/91	12/12/91 ⁽²⁾
MW1	-	419.01	417.93	-	-	Obstructed	-
MW2	-	419.98	418.92	-	-	Obstructed	-
MW3	-	420.88	420.47	-	-	Obstructed	-
MW4	-	433.78	432.16	-	-	Obstructed	-
MW5	424.06	423.98	421.55	-	-	431.18 (Dry)	-
MW6	423.90	422.93	421.67	-	-	422.08	-
MW7	411.26	422.44	421.01	-	-	421.61	-
MW8	420.08	419.38	418.15	-	-	418.66	-
MW9	419.53	418.78	429.13 (Dry)	-	-	429.13 (Dry)	-
MW10	419.40	417.77	417.34	-	-	417.39	-
MW11	422.33	424.35	422.05	-	-	424.08	-
MW12	NI ⁽³⁾	NI	NI	415.91	415.95	415.92	414.66
MW13	NI	NI	NI	413.77	413.85	413.83	412.97

Notes:

- (1) Predevelopment well level.
- (2) Presampling well level.
- (3) NI = Not Installed.
- Not measured.

TABLE 4.6
TEST PIT EXCAVATIONS/AIR MONITORING DATA
DUVA PROPERTY
TOWN OF CLAY, NEW YORK

<i>Test Pit</i>	<i>Date</i>	<i>Time</i>	<i>HNU (ppm)</i>	<i>Dust (Sibata) (CFM)</i>	<i>O2 Percent</i>	<i>LEL Percent</i>
TP-01	4/25/91	0930	0.0	15	20.8	0
TP-01	4/25/91	0930	0.0	15	20.8	0
		0945	0.0	15	20.8	0
		1000	0.0	14	20.8	0
TP-02	5/1/91	1000	2.4	14	20.3	0
		1005	0.0	14	20.3	0
		1007	0.0	14	20.3	0
		1010	0.0	14	20.3	0
TP-03	4/26/91	0835	0.0	14	21.2	0
		0840	0.0	14	21.2	0
		0850	0.0	14	21.2	0
		0855	0.0	14	21.3	0
		9000	0.0	16	21.3	0
		0930	0.0	12	21.3	0
		1000	0.0	12	21.3	0
TP-04	4/25/91	1115	0.0	12	21.1	0
		1120	0.0	12	21.1	0
		1130	0.0	12	21.1	0

TABLE 4.6
TEST PIT EXCAVATIONS/AIR MONITORING DATA
DUVA PROPERTY
TOWN OF CLAY, NEW YORK

<i>Test Pit</i>	<i>Date</i>	<i>Time</i>	<i>HNU (ppm)</i>	<i>Dust (Sibata) (CFM)</i>	<i>O2 Percent</i>	<i>LEL Percent</i>
TP-01	4/25/91	0930	0.0	15	20.8	0
TP-05	4/26/91	1340	0.0	17	21.3	0
		1345	0.0	17	21.3	0
		1350	0.0	17	21.3	0
		1355	0.0	17	21.3	0
TP-06	5/1/91	1300	0.0	17	20.3	0
		1305	0.0	17	20.3	0
		1310	0.0	17	20.3	0
		1315	0.0	17	20.3	0
TP-07	4/29/91	1130	2.0-3.0	20	20.4	0
		1135	2.0-3.0	20	20.4	0
		1140	2.0-3.0	20	20.4	0
		1145	1.0-2.0	20	20.4	0
TP-08	4/30/91	1345	0.0	NM	19.9	0
		1400	12.0	NM	19.9	0
		1405	13.0	NM	19.9	0
TP-09	4/29/91	1400	0.0	40	20.5	0
		1405	0.0	19	20.5	0
		1410	0.0	19	20.5	0

TABLE 4.6
TEST PIT EXCAVATIONS/AIR MONITORING DATA
DUVA PROPERTY
TOWN OF CLAY, NEW YORK

<i>Test Pit</i>	<i>Date</i>	<i>Time</i>	<i>HNU (ppm)</i>	<i>Dust (Sibata) (CFM)</i>	<i>O2 Percent</i>	<i>LEL Percent</i>
TP-01	4/25/91	0930	0.0	15	20.8	0
TP-10	4/30/91	1500	16.0	10	20.3	0
		1503	50.0	11	20.3	0
		1505	60.0	10	20.3	0
		1510	210.0	10	20.2	0
TP-11	4/30/91	1545	2.0	11	20.3	0
		1600	1.0	10	20.0	0
		1605	25.0	11	20.0	0

Notes:

NM No measurement.

TABLE 4.7
 DRILLING ACTIVITIES/AIR MONITORING DATA
 SUBSURFACE INVESTIGATION
 DUVA PROPERTY
 TOWN OF CLAY, NEW YORK

<i>Borehole Number</i>	<i>Date</i>	<i>Time</i>	<i>Organic Vapor OVA/HNU (ppm)</i>	<i>Dust Sibata (ppm)</i>	<i>Oxygen Percent ISD</i>	<i>LEL Percent ISD</i>
BH-1-591	05/20/91	1145	1.0	16	21.7	0
		1200	6.0	15	21.8	0
		1210	0.0	16	21.8	0
BH-2-591	05/20/91	1540	0.0	15	21.7	0
		1600	0.0	16	21.8	0
	05/21/91	0800	0.0	17	20.6	0
		0830	0.0	14	20.4	0
		0900	0.0	15	20.6	0
		0915	0.0	15	20.5	0
BH-3-591	05/21/91	1450	0.0	21	20.8	0
		1515	0.0	25	20.6	0
		1540	0.0	26	20.6	0
MW-11	05/22/91	0945	0.0	31	NR	NR
		1000	0.0	31	NR	NR
		1015	0.0	31	NR	NR
MW-8/9	05/22/91	1510	0.8	35	NR	NR
		1620	1.2	29	NR	NR
	05/23/91	0820	9-10	34	NR	NR
		0920	9.0	22	NR	NR
		1020	9.0	22	NR	NR
MW-5	05/24/91	0810	4.4	22	NR	NR
BH-4-591	05/28/91	1310	0.0	15	20.7	0
		1320	0.0	14	20.6	0
		1330	0.0	14	20.7	0
		1340	0.0	14	20.6	0
BH-5-591	05/29/91	0740	0.0	15	20.5	0
		0800	9.2	14	20.3	0
		0820	0.0	14	20.3	0
		0900	0.0	14	20.3	0
		0920	0.0	14	20.3	0
		1000	0.0	14	20.3	0

TABLE 4.7
 DRILLING ACTIVITIES/AIR MONITORING DATA
 SUBSURFACE INVESTIGATION
 DUVA PROPERTY
 TOWN OF CLAY, NEW YORK

<i>Borehole Number</i>	<i>Date</i>	<i>Time</i>	<i>Organic Vapor OVA/HNU (ppm)</i>	<i>Dust Sibata (ppm)</i>	<i>Oxygen Percent ISD</i>	<i>LEL Percent ISD</i>
BH-6-591	05/30/91	1300	0.0	19	20.7	0
		1330	0.0	13	20.6	0
		1400	0.0	14	20.5	0
		1430	0.0	13	20.6	0
		1500	0.0	14	20.7	0
		0730	4.2	21	21.2	1
		0745	1.2	50	21.0	1
		0815	0.0	22	21.0	1
		0845	0.0	18	21.0	1
		0900	0.0	16	21.0	1
BH-7-591	05/30/91	1340	0.0	14	21.0	0
		1400	0.0	14	21.0	0
		1430	0.0	15	21.0	0
BH-8-591	05/31/91	0815	0.0	35	21.1	2
		0830	0.0	33	21.0	2
		0845	0.0	35	21.2	2
BH-9-591	05/31/91	1015	0.0	23	21.0	2
		1030	0.0	23	21.0	2
BH-10-691	06/03/91	0920	0.0	24	21.0	1
		0940	0.0	12	21.0	1
		1000	0.0	12	21.1	1
BH-11-691	06/03/91	1300	0.0	11	21.1	1
		1330	0.0	12	21.1	1
		1345	0.0	11	21.0	1
BH-12-691	06/03/91	1500	0.0	17	20.9	1
		1515	0.0	11	21.1	2
		1530	0.0	12	21.1	1
MW-6	06/04/91	0815	0.0	12	20.9	1
		0830	0.0	12	20.9	1
		0845	0.0	11	20.9	1
		1100	1.4	35	20.9	1
		1127	3.5	35	20.9	1
		1241	1.2	9	20.9	1

TABLE 4.7
 DRILLING ACTIVITIES/AIR MONITORING DATA
 SUBSURFACE INVESTIGATION
 DUVA PROPERTY
 TOWN OF CLAY, NEW YORK

<i>Borehole Number</i>	<i>Date</i>	<i>Time</i>	<i>Organic Vapor OVA/HNU (ppm)</i>	<i>Dust Sibata (ppm)</i>	<i>Oxygen Percent ISD</i>	<i>LEL Percent ISD</i>
MW-7	06/07/91	0905	0.0	10	21.1	1
		0930	0.0	9	21.1	1
		0945	0.0	10	21.1	1
		1000	0.0	9	21.1	1
BH-13-691	06/07/91	1315	0.0	9	20.9	1
		1330	100	10	21.1	1
		1345	5	10	21.0	1
		1400	5	9	20.9	1
		1415	0	10	20.9	1

Notes:

NR No reading due to equipment malfunction.

TABLE 4.8
MODIFIED HEADSPACE ANALYSIS
ADDITIONAL DATA REQUIREMENT PROGRAM
DUVA PROPERTY
TOWN OF CLAY, NEW YORK

<i>Borehole Identification</i>	<i>Interval Depth (feet)</i>	<i>Date</i>	<i>Instrument Reading (ppm)</i>	<i>Comment</i>
BH-H/0+00	0-2	10/10/91	NA	HNU invalid.
	2-4	10/10/91	NA	No recovery.
	4-6	10/10/91	NA	HNU invalid.
BH-H/1+00W	0-2	10/10/91	NA	HNU invalid.
	2-4	10/10/91	NA	HNU invalid.
BH-B/0+00	0-2	11/6/91	5.0 (OVA)	
	2-4	11/6/91	2.0 (OVA)	
	4-6	11/6/91	7.0 (OVA)	
	6-8	11/6/91	3.0 (OVA)	
	8-10	11/6/91	2.0 (OVA)	
BH-K/2+20W	0-2	11/6/91	4.2 (OVA)	
	2-4	11/6/91	2.0 (OVA)	
BH-K/3+00W	0-2	11/7/91	0.2 (OVA)	
	2-4	11/7/91	4.2 (OVA)	
	4-6	11/7/91	2.0 (OVA)	
BH-N/1+00W	0-2	11/7/91	1.6 (OVA)	
	2-4	11/7/91	1.6 (OVA)	
	4-6	11/7/91	4.2 (OVA)	
	6-8	11/7/91	1.2 (OVA)	
BH-D/1+40E	0-2	11/7/91	3.0 (OVA)	
	2-4	11/7/91	12.0 (OVA)	
	4-6	11/7/91	10.8 (OVA)	
	6-8	11/7/91	10.2 (OVA)	
	8-10	11/7/91	4.8 (OVA)	
	10-12	11/7/91	4.2 (OVA)	

TABLE 4.8
MODIFIED HEADSPACE ANALYSIS
ADDITIONAL DATA REQUIREMENT PROGRAM
DUVA PROPERTY
TOWN OF CLAY, NEW YORK

<i>Borehole Identification</i>	<i>Interval Depth (feet)</i>	<i>Date</i>	<i>Instrument Reading (ppm)</i>	<i>Comment</i>
BH-D/0+60E	0-2	11/7/91	2.6 (OVA)	
	2-4	11/7/91	3.6 (OVA)	
	4-6	11/7/91	18.0 (OVA)	
	6-8	11/7/91	28.0 (OVA)	
	8-10	11/7/91	8.0 (OVA)	
	10-12	11/7/91	8.0 (OVA)	
	12-14	11/7/91	6.0 (OVA)	
	14-16	11/7/91	8.0 (OVA)	
	16-18	11/7/91	11.2 (OVA)	
	18-20	11/8/91	10.5 (OVA)	
BH-D/0+20E	0-2	11/8/91	5.5 (OVA)	
	2-4	11/8/91	3.2 (OVA)	
	4-6	11/8/91	7.2 (OVA)	
	6-8	11/8/91	6.4 (OVA)	
	8-10	11/8/91	4.2 (OVA)	

Notes:

NA Not analyzed.

TABLE 5.1
SUMMARY OF CALCULATED HYDRAULIC CONDUCTIVITIES
DUVA PROPERTY RI/FS

<i>Well No.</i>	<i>Date of Test</i>	<i>Type of Test</i>	<i>Length of Screened Interval (Inches)</i>	<i>Hydrogeologic Unit of Screened Interval</i>	<i>Calculated Hydraulic Conductivity (cm/sec)</i>
MW-5	02/25/92	Slug	76.2	Mixed (1)	1.69×10^{-5} cm/sec
MW-6	02/25/92	Slug	76.2	Mixed	1.04×10^{-5} cm/sec
MW-7	02/26/92	Slug	152.4	Lodgement Till	4.68×10^{-6} cm/sec
MW-8	02/25/92	Slug	152.4	Lodgement Till	9.44×10^{-6} cm/sec
MW-9	02/25/92	Slug	76.2	Lacustrine Sands	6.41×10^{-4} cm/sec
MW-10	02/25/92	Slug	152.4	Lacustrine Sands	2.41×10^{-4} cm/sec
MW-11	02/25/92	Slug	76.2	Lodgement Till	8.81×10^{-6} cm/sec
MW-12	02/25/92	Slug	152.4	Mixed	7.95×10^{-4} cm/sec
MW-13	02/25/92	Slug	152.4	Lacustrine Sands	3.26×10^{-4} cm/sec

Note:

(1) Screen at the interface of the lacustrine sands and the lodgement till.

TABLE 6.1
SSPL AND BACKGROUND SOIL SAMPLING DATA (1)
DUVA PROPERTY R/FS

Sample I.D.: Units: Sample Location: Sample Depth: Sample Date:	Background Soil Samples								SSPL Soil Samples												Waste µg/kg -	FR µg/kg -
	BGS-1	BGS-1	BGS-2	BGS-3	BGS-4	BGS-5	BGS-6	BGS-6	BGS-7	BGS-7	BGS-8	BGS-8	BGS-9	BGS-9	BGS-10	BGS-10	BGS-11	BGS-11	BGS-12			
	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg			
	Background	Background	Background	Background	Background	Background	Background	Background	J260W	J260W	L20W	L20W	L20E	L20E	L60E	L60E	H80E	H80E	J260W			
	0 - 6 In.	2 Ft.-4 Ft.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	2 Ft.-4 Ft.	2 Ft.-4 Ft.	Pile	Blank
	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90
Analytes																						
METALS																						
ALUMINUM	8740	4030	5760	5460	5650	5750	4280	5380	9320	3480J	9170	6530	13400	8350	7930	6280	5470	7930	7260J	6520	45	
ANTIMONY	ND 0.76	ND 0.54	ND 0.61	ND 0.56	ND 0.74	ND 0.67	ND 0.73	ND 0.82J	1.8	ND 0.90	ND 0.76	ND 0.72	ND 0.77	ND 0.73	ND 0.96J	ND 0.65R	ND 1.1	ND 0.75	ND 0.78	ND 0.68J	ND 3.4	
ARSENIC	5.4	1.7	5	4	7.1	4.9	4.6	3.3	8.6	19J	5.6	3	4.5	4.3	3.8	4.2	9.6	7	5.5J	4.4	ND 1.0	
BARIUM	52.9	51.2	52	41.4	35.4	20	21.8	27.3	148	32.2	165	61.9	120	55.2	102	33.7	163	64.2	79.7J	58	ND 1.0	
BERYLLIUM	0.67	0.48	0.36	0.49	0.43	0.59	0.22	0.73	1.6	0.26	0.9	0.64	1.1	ND 0.21	ND 0.28	0.19	2.3	0.22	0.46	0.8	ND 1.0	
CADMIUM	ND 0.45	0.32	ND 0.36	ND 0.33	0.43	ND 0.39	ND 0.43	ND 0.48	10.1	ND 0.53	6.3	ND 0.43	1.4	3.2	2.5	ND 0.38	22.3	1.1	ND 0.46	ND 0.40	ND 2.0	
CALCIUM	1340	3480	1460	643	910	498	272	1090	12800	8070	61400	31700	3710	28900	5490	50900	16600	3300	40200J	36800	141	
CHROMIUM	123	7.1	8.6	8.4	8.3	8.4	5.8	9	29.5	7.7	333	14.3	28.6	34.9	14.3	9.5	61	13.6	19.2	10.1	5	
COBALT	2.9	4	3.1	5.3	5.2	3.7	3.2	5.5	7	4.7	8.8	11.5	11.1	8.8	9	7.2	11.1	4.2	10.3	7.4	ND 5.0	
COPPER	19.8	13.5	13	9.1	11.6	12	9.9	24.8	1510	22.3	130	36.7	39.6	52.2	37.1	23.8	336	17.7	41.6	28.6	ND 5.0	
IRON	13200	9690	10400	13100	13500	11700	8810	13300	40400	9340	21600	16200	23400	15800	16100	14300	70500	22400	17000	13500	65	
LEAD	18.2	4.5	17.9	18.8	13	10.8	11.8	3.6	198	10.4	1770	5.9	55.4	49.9	74.5	9.6J	1180	18.9	20.3	47.5	2.3	
MAGNESIUM	1570	2450	1180	1650	1870	1430	1000	2150	2930	4300J	6160	14500	3050	11500	2270	17000	2770	3540	18600J	10000	48	
MANGANESE	361	269	641	755	842	310	244	337	819	209	704	555	625	548	1330	475	616	842	548	594	1	
MERCURY	0.41	ND 0.10	0.19	ND 0.10	ND 0.10	ND 0.09	0.1	ND 0.10	0.39	ND 0.10	0.15	ND 0.10	ND 0.10	ND 0.10	ND 0.10	ND 0.10	0.71	ND 0.10	ND 0.10	ND 0.10	ND 0.20	
NICKEL	5.2	6	3.6	5	6	5.5	4.3	8	37.2	7	19.8	15.3	12.7	15.4	12.6	14.6	57	10.4	17.3	13.1	ND 8.0	
POTASSIUM	831	589	666	577	491	392	294	748	1020	583	1270	1330	2010	1980	1170	1320	787	1300	1220	1400	ND 800	
SELENIUM	0.35	ND 0.22	0.3J	0.23J	ND 0.20	0.25J	ND 0.21	ND 0.24	0.68	0.24	ND 0.24	ND 0.21J	ND 0.26J	ND 0.25J	0.40J	ND 0.22J	ND 0.27	ND 0.22J	ND 0.23J	ND 0.23	ND 1.0	
SILVER	ND 1.1	ND 0.8	ND 0.90	ND 0.82	ND 1.1	ND 0.98	ND 1.1	ND 1.2	3.1	ND 1.3J	26.1	1.5	ND 1.1	ND 1.1	ND 1.4	ND 0.95	8.6	ND 1.1	17.1J	ND 1.0	ND 5.0	
SODIUM	50.2	34.6	33.9	30.5	37.6	37.5	33.9	47.2	226	70.7	56	65.7	219	293	54.2	42.5	133	4890	59.2	42.4	70	
THALLIUM	ND 0.23J	ND 0.22J	ND 0.23J	ND 0.21J	ND 0.20J	0.38J	ND 0.20J	ND 0.24J	ND 0.38J	ND 0.24J	ND 0.24J	ND 0.21J	ND 0.26J	ND 0.25J	ND 0.27J	ND 0.22J	ND 0.27J	ND 0.22J	0.23J	ND 0.23J	ND 1.0	
VANADIUM	15	9	9.5	10.9	9.8	9.4	5.4	9.4	15.5	7	38.4	23.8	29.6	27	18.6	28.2	21.7	17.8	30.1	24	ND 15.0	
ZINC	58.7	18.3	43.2	37.6	37.2	31.2	23.3	24	1010	55.4	344	48.2	53.2	45.7	93.7	37.6	3620	2640	77.7	52.4	ND 7.0	
CYANIDE	ND 1.2	ND 1.2	ND 1.2	ND 1.1	ND 1.1	ND 1.1	ND 1.1	ND 1.2	ND 2.0	ND 1.3	ND 1.3	ND 1.2	ND 1.3	ND 1.2	ND 1.5	ND 1.2	2800	2800	ND 1.2	ND 1.1	ND 10.0	

Notes:

ND Not detected at stated detection limit.

- Associated value or detection limit is estimated.

R Unusable data.

(1) Source: "Site Specific Parameter List, Milestone Report, Duva Property, Syracuse, New York", Dated February 1991, by Conestoga-Rovers & Associates.

TABLE 6.1
SSPL AND BACKGROUND SOIL SAMPLING DATA (1)
DUVA PROPERTY R/F/S

Sample I.D.: Units: Sample Location: Sample Depth: Sample Date:	Background Soil Samples								SSPL Soil Samples												Waste µg/kg -	FR µg/kg -	
	BGS-1	BGS-1	BGS-2	BGS-3	BGS-4	BGS-5	BGS-6	BGS-6	BGS-7	BGS-7	BGS-8	BGS-8	BGS-9	BGS-9	BGS-10	BGS-10	BGS-11	BGS-11	BGS-12				
	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg				
	Background	Background	Background	Background	Background	Background	Background	Background	J260W	J260W	L20W	L20W	L20E	L20E	L60E	L60E	H80E	H80E	J260W				
	0 - 6 In.	2 Ft.-4 Ft.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	2 Ft.-4 Ft.				
Analytes	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90
PESTICIDES/PCBS																							
ALPHA-CHLORDANE	ND 190	ND 94	ND 890	ND 220	ND 180	ND 88	ND180	ND 100	ND 270	ND 180	ND 110J	ND 95	ND 100	ND 200	ND 120	ND 46	ND 6500	ND 93	ND 93	NA	ND 0.56		
ALDRIN	ND 19	ND 9.4	ND 89	ND 22	ND 18	ND 8.8	ND18	ND 10	ND 27	ND 18	ND 11J	ND 9.5	ND 10	ND 20	ND 12	ND 4.6	ND 650	ND 9.3	ND 9.3	NA	ND 0.06		
ALPHA-BHC	ND 19	ND 9.4	ND 89	ND 22	ND 18	ND 8.8	ND18	ND 10	ND 27	ND 18	ND 11J	ND 9.5	ND 10	ND 20	ND 12	ND 4.6	ND 650	ND 9.3	ND 9.3	NA	ND 0.06		
AROCHLOR-1016	ND 190	ND 94	ND 890	ND 220	ND 180	ND 88	ND 37	ND 100	ND 270	ND 180	ND 110J	ND 95	ND 100	ND 200	ND 120	ND 46	ND 6500	ND 93	ND 93	NA	ND 0.56		
AROCHLOR-1221	ND 190	ND 94	ND 890	ND 220	ND 180	ND 88	ND 37	ND 100	ND 270	ND 180	ND 110J	ND 95	ND 100	ND 200	ND 120	ND 46	ND 6500	ND 93	ND 93	NA	ND 0.56		
AROCHLOR-1232	ND 190	ND 94	ND 890	ND 220	ND 180	ND 88	ND 37	ND 100	ND 270	ND 180	ND 110J	ND 95	ND 100	ND 200	ND 120	ND 46	ND 6500	ND 93	ND 93	NA	ND 0.56		
AROCHLOR-1242	ND 190	ND 94	ND 890	ND 220	ND 180	ND 88	ND 37	ND 100	ND 270	ND 180	ND 110J	ND 95	ND 100	ND 200	ND 120	ND 46	ND 6500	ND 93	ND 93	NA	ND 0.56		
AROCHLOR-1248	ND 190	ND 94	ND 890	ND 220	ND 180	ND 88	ND 37	ND 100	ND 270	ND 180	ND 110J	ND 95	ND 100	ND 200	ND 120	ND 46	ND 6500	ND 93	ND 93	NA	ND 0.56		
AROCHLOR-1254	ND 370	ND 190	ND 1800	ND 440	ND 360	ND 180	56 J	ND 100	ND 540	ND 370	1100J	300	ND 210	ND 400	270	ND 91	34000	ND 190	340	NA	ND 0.56		
AROCHLOR-1260	ND 370	ND 190	ND 1800	ND 440	ND 360	ND 180	ND 75	ND 100	ND 540	ND 370	ND 210J	ND 190	ND 210	ND 400	ND 230	ND 91	ND 13000	ND 190	ND 190	NA	ND 0.56		
BETA-BHC	ND 19	ND 9.4	ND 89	ND 22	ND 18	ND 8.8	ND18	ND 10	ND 27	ND 18	ND 11J	ND 9.5	ND 10	ND 20	ND 12	ND 4.6	ND 650	ND 9.3	ND 9.3	NA	ND 0.06		
4,4'-DDD	33 J	ND 19	170 J	54	ND 36	ND 18	ND36	ND 20	ND 54	ND 37	ND 21J	ND 19	ND 21	ND 40	ND 23	ND 9.1	ND 1300	ND 19	ND 19	NA	ND 0.11		
4,4'-DDE	ND 37	ND 19	630	92	ND 36	ND 18	ND36	ND 20	ND 54	ND 37	ND 21J	ND 19	ND 21	ND 40	ND 23	ND 9.1	3800	ND 19	ND 19	NA	ND 0.11		
4,4'-DDT	160	ND 19	470	132	13 J	22	ND36	ND 20	ND 54	ND 37	ND 21J	ND 19	ND 21	ND 40	ND 23	ND 9.1	ND 1300	ND 19	ND 19	NA	ND 0.11		
DELTA-BHC	ND 19	ND 9.4	ND 89	ND 22	ND 18	ND 8.8	ND18	ND 10	ND 27	ND 18	ND 11J	ND 9.5	ND 10	ND 20	ND 12	ND 4.6	ND 650	ND 9.3	ND 9.3	NA	ND 0.06		
DIELDRIN	ND 37	ND 19	ND 180	ND 44	ND 36	ND 18	ND36	ND 20	ND 54	ND 37	ND 21J	ND 19	ND 21	ND 40	ND 23	ND 9.1	ND 1300	ND 19	ND 19	NA	ND 0.11		
ENDRIN KETONE	ND 37	ND 19	ND 180	ND 44	ND 36	ND 18	ND36	ND 20	ND 54	ND 37	ND 21J	ND 19	ND 21	ND 40	ND 23	ND 9.1	ND 1300	ND 19	ND 19	NA	ND 0.11		
ENDOSULFAN SULFATE	ND 37	ND 19	ND 180	ND 44	ND 36	ND 18	ND36	ND 20	ND 54	ND 37	ND 21J	ND 19	ND 21	ND 40	ND 23	ND 9.1	ND 1300	ND 19	ND 19	NA	ND 0.11		
ENDOSULFAN I	ND 19	ND 9.4	ND 89	ND 22	ND 18	ND 8.8	ND18	ND 10	ND 27	ND 18	ND 11J	ND 9.5	ND 10	ND 20	ND 12	ND 4.6	ND 650	ND 9.3	ND 9.3	NA	ND 0.06		
ENDOSULFAN II	ND 37	ND 19	ND 180	ND 44	ND 36	ND 18	ND36	ND 20	ND 54	ND 37	ND 21J	ND 19	ND 21	ND 40	ND 23	ND 9.1	ND 1300	ND 19	ND 19	NA	ND 0.11		
ENDRIN	ND 37	ND 19	ND 180	ND 44	ND 36	ND 18	ND36	ND 20	ND 54	ND 37	ND 21J	ND 19	ND 21	ND 40	ND 23	ND 9.1	ND 1300	ND 19	ND 19	NA	ND 0.11		
GAMMA-CHLORDANE	ND 190	ND 94	ND 890	ND 220	ND 180	ND 88	ND180	ND 100	ND 270	ND 180	ND 110J	ND 95	ND 100	ND 200	ND 120	ND 46	ND 6500	ND 93	ND 93	NA	ND 0.56		
HEPTACHLOR EPOXIDE	ND 19	ND 9.4	ND 89	ND 22	ND 18	ND 8.8	ND18	ND 10	ND 27	ND 18	ND 11J	ND 9.5	ND 10	ND 20	ND 12	ND 4.6	ND 650	ND 9.3	ND 9.3	NA	ND 0.06		
HEPTACHLOR	ND 19	ND 9.4	ND 89	ND 22	ND 18	ND 8.8	ND18	ND 10	ND 27	ND 18	ND 11J	ND 9.5	ND 10	ND 20	ND 12	ND 4.6	ND 650	ND 9.3	ND 9.3	NA	ND 0.06		
GAMMA-BHC (LINDANE)	ND 19	ND 9.4	ND 89	ND 22	ND 18	ND 8.8	ND18	ND 10	ND 27	ND 18	ND 11J	ND 9.5	ND 10	6.8 J	ND 12	ND 4.6	ND 650	ND 9.3	ND 9.3	NA	ND 0.06		
METHOXYCHLOR	ND 190	ND 94	ND 890	ND 220	ND 180	ND 88	ND180	ND 100	ND 270	ND 180	ND 110J	ND 95	ND 100	ND 200	ND 120	ND 46	ND 6500	ND 93	ND 93	NA	ND 0.56		
TOXAPHENE	ND 370	ND 190	ND 1800	ND 440	ND 360	ND 180	ND360	ND 200	ND 540	ND 370	ND 210J	ND 190	ND 210	ND 400	ND 230	ND 91	ND 13000	ND 190	ND 190	NA	ND 1.1		

TABLE 6.1
SSPL AND BACKGROUND SOIL SAMPLING DATA (1)
DUVA PROPERTY R/F/S

Sample ID.: Units: Sample Location: Sample Depth: Sample Date:	Background Soil Samples								SSPL Soil Samples												Waste µg/kg -	FR µg/kg -
	BGS-1	BGS-1	BGS-2	BGS-3	BGS-4	BGS-5	BGS-6	BGS-6	BGS-7	BGS-7	BGS-8	BGS-8	BGS-9	BGS-9	BGS-10	BGS-10	BGS-11	BGS-11	BGS-12			
	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg			
	Background	Background	Background	Background	Background	Background	Background	Background	J260W	J260W	L20W	L20W	L20E	L20E	L60E	L60E	H80E	H80E	J260W			
	0 - 6 In.	2 Ft.-4 Ft.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	2 Ft.-4 Ft.	Pile		
12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	
Analyses																						
PHENANTHRENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	3600	ND 390	470 J	190 J	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	150 J	42 J	ND 10	
ANTHRACENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	850	ND 390	81 J	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
DI-N-BUTYLPHthalate	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
FLUORANTHENE	100 J	ND 400	NA	NA	NA	NA	47 J	ND 430	4200	ND 390	590 J	47 J	ND 860	ND 2100	660 J	ND 390	64 J	ND 400	32 J	63 J	ND 10	
PYRENE	93 J	ND 400	NA	NA	NA	NA	37 J	ND 430	3900	28 J	980	46 J	ND 860	ND 2100	580 J	ND 390	53 J	ND 400	49 J	63 J	ND 10	
BUTYLBENZYLPHthalate	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	460 J	ND 390	ND 890	ND 810	ND 860	ND 2100	4600 J	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
3,3'-DICHLOROBENZIDINE	ND 780	ND 790	NA	NA	NA	NA	ND 770	ND 850	ND 1100	ND 780	ND 1800	ND 1600	ND 1700	ND 4200	ND 9900	ND 780	ND 1100	ND 790	ND 790	ND 760	ND 20	
BENZO(A)ANTHRACENE	45 J	ND 400	NA	NA	NA	NA	27 J	ND 430	2400	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
BIS(2-ETHYLHEXYL)PHthalate	ND 390	ND 400	NA	NA	NA	NA	140 J	330 J	830	520J	ND 890	4000	2500	2700	81000	130 J	670	120 J	2800J	1200	ND 10	
CHRYSENE	72 J	ND 400	NA	NA	NA	NA	ND 380	ND 430	2500	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	61 J	ND 400	ND 400	44 J	ND 10	
DI-N-OCTYLPHthalate	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
BENZO(B)FLUORANTHENE	55 J	ND 400	NA	NA	NA	NA	ND 380	ND 430	2500	ND 390	560 J	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
BENZO(K)FLUORANTHENE	65 J	ND 400	NA	NA	NA	NA	ND 380	ND 430	2100	ND 390	550 J	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
BENZO(A)PYRENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	2100	ND 390	490 J	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
INDENO(1,2,3-CD)PYRENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	1600	ND 390	520 J	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
DIBENZO(A,H)ANTHRACENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	520 J	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
BENZO(G,H,I)PERYLENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	1200	ND 390	540 J	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	

TABLE 6.1
SSPL AND BACKGROUND SOIL SAMPLING DATA (1)
DUVA PROPERTY R/Fs

Sample I.D.:	Background Soil Samples								SSPL Soil Samples												Waste	FR
	BGS-1	BGS-1	BGS-2	BGS-3	BGS-4	BGS-5	BGS-6	BGS-6	BGS-7	BGS-7	BGS-8	BGS-8	BGS-9	BGS-9	BGS-10	BGS-10	BGS-11	BGS-11	BGS-12			
	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg			
	Background	Background	Background	Background	Background	Background	Background	Background	J260W	J260W	L20W	L20W	L20E	L20E	L60E	L60E	H80E	H80E	J260W			
Sample Location:	0 - 6 In.	2 Ft.-4 Ft.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	2 Ft.-4 Ft.			
Sample Depth:	0 - 6 In.	2 Ft.-4 Ft.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	2 Ft.-4 Ft.			
Sample Date:	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90			
Analytes																						
BNAs																						
PHENOL	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	1100	15000	290 J	ND 390	ND 540	120 J	ND 400	ND 380	ND 10	
BIS(2-CHLOROETHYL)ETHER	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
2-CHLOROPHENOL	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
1,3-DICHLOROBENZENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
1,4-DICHLOROBENZENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	990	2000 J	ND 5000	ND 390	71 J	ND 400	ND 400	ND 380	ND 10	
BENZYL ALCOHOL	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
1,2-DICHLOROBENZENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390J	320 J	4900	12000	35000	3700 J	1000	570	37 J	2600J	170 J	ND 10	
2-METHYLPHENOL	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
BIS(2-CHLOROISOPROPYL)ETHER	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
4-METHYLPHENOL	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
N-NITROSO-DI-N-PROPYLAMINE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
HEXACHLOROETHANE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
NITROBENZENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
ISOPHORONE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	11 J	ND 10	
2-NITROPHENOL	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
2,4-DIMETHYLPHENOL	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
BENZOIC ACID	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	610 J	ND 390	ND 540	ND 400	ND 400	40 J	ND 10	
BIS(2-CHLOROETHOXY)METHANE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
2,4-DICHLOROPHENOL	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
1,2,4-TRICHLOROBENZENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	390 J	ND 2100	ND 5000	ND 390	47 J	ND 400	ND 400	ND 380	ND 10	
NAPHTHALENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	590	ND 390	ND 890	390 J	540 J	1400 J	ND 5000	48 J	58 J	ND 400	240 J	ND 380	ND 10	
4-CHLOROANILINE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
HEXACHLOROBUTADIENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
4-CHLORO-3-METHYLPHENOL	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
2-METHYLNAPHTHALENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	350 J	ND 390J	ND 890	820	110 J	250 J	ND 5000	ND 390	55 J	ND 400	470J	ND 380	ND 10	
HEXACHLOROCYCLOPENTADIENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
2,4,6-TRICHLOROPHENOL	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
2,4,5-TRICHLOROPHENOL	ND 2000	ND 2000	NA	NA	NA	NA	ND 1900	ND 2100	ND 2900	ND 2000	ND 4400	ND 4100	ND 4300	ND 11000	ND 25000	ND 2000	ND 2700	ND 2000	ND 2000	ND 1900	ND 50	
2-CHLORONAPHTHALENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
2-NITROANILINE	ND 2000	ND 2000	NA	NA	NA	NA	ND 1900	ND 2100	ND 2900	ND 2000	ND 4400	ND 4100	ND 4300	ND 11000	ND 25000	ND 2000	ND 2700	ND 2000	ND 2000	ND 1900	ND 50	
DIMETHYLPHTHALATE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	ND 570	ND 390	500 J	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
ACENAPHTHYLENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	56 J	ND 390	69 J	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
3-NITROANILINE	ND 2000	ND 2000	NA	NA	NA	NA	ND 1900	ND 2100	ND 2900	ND 2000	ND 4400	ND 4100	ND 4300	ND 11000	ND 25000	ND 2000	ND 2700	ND 2000	ND 2000	ND 1900	ND 50	
ACENAPHTHENE	ND 390	ND 400	NA	NA	NA	NA	ND 380	ND 430	370 J	ND 390	ND 890	ND 810	ND 860	ND 2100	ND 5000	ND 390	ND 540	ND 400	ND 400	ND 380	ND 10	
2,4-DINITROPHENOL	ND 2000	ND 2000	NA	NA	NA	NA	ND 1900	ND 2100	ND 2900	ND 2000	ND 4400	ND 4100	ND 4300	ND 11000	ND 25000	ND 2000	ND 2700	ND 2000	ND 2000	ND 1900	ND 50	
4-NITROPHENOL	ND 2000	ND 2000	NA	NA	NA	NA	ND 1900	ND 2100	ND 2900	ND 2000	ND 4400	ND 4100	ND 4300	ND 11000	ND 25000	ND 2000	ND 2700	ND 2000	ND 2000	ND 1900	ND 50	
DIBENZOFURAN	ND 390																					

TABLE 6.1
SSPL AND BACKGROUND SOIL SAMPLING DATA (1)
DUVA PROPERTY R/F/S

Sample I.D.: Units: Sample Location: Sample Depth: Sample Date:	Background Soil Samples								SSPL Soil Samples												Waste µg/kg -	FR µg/kg -
	BGS-1	BGS-1	BGS-2	BGS-3	BGS-4	BGS-5	BGS-6	BGS-6	BGS-7	BGS-7	BGS-8	BGS-8	BGS-9	BGS-9	BGS-10	BGS-10	BGS-11	BGS-11	BGS-12			
	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg			
	Background	Background	Background	Background	Background	Background	Background	Background	J260W	J260W	L20W	L20W	L20E	L20E	L60E	L60E	H80E	H80E	J260W			
	0 - 6 In.	2 Ft.-4 Ft.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	0-6 In.	2 Ft.-4 Ft.	2 Ft.-4 Ft.	Pile		
	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	12/13/90	
Analytes																						
VOCS																						
CHLOROMETHANE	ND 12	ND 11	NA	NA	NA	NA	ND 11	ND 12	ND 22	ND 12	ND 1500	ND 3000	ND 1600	ND 38000	ND 1800	ND 1500	ND 2100	ND 16J	ND 15000	ND 11	ND 10J	
BROMOMETHANE	ND 12	ND 11	NA	NA	NA	NA	ND 11	ND 12	ND 22	ND 12	ND 1500	ND 3000	ND 1600	ND 38000	ND 1800	ND 1500	ND 2100	ND 16J	ND 15000	ND 11	ND 10J	
VINYL CHLORIDE	ND 12	ND 11	NA	NA	NA	NA	ND 11	ND 12	ND 22	ND 12	ND 1500	ND 3000	ND 1600	ND 38000	ND 1800	ND 1500	ND 2100	ND 16J	ND 15000	ND 11	ND 10J	
CHLOROETHANE	ND 12	ND 11	NA	NA	NA	NA	ND 11	ND 12	ND 22	ND 12	ND 1500	ND 3000	ND 1600	ND 38000	ND 1800	ND 1500	ND 2100	ND 16J	ND 15000	ND 11	ND 10J	
METHYLENE CHLORIDE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
ACETONE	ND 12	ND 11	NA	NA	NA	NA	ND 11	ND 12	ND 22	ND 12	ND 1500	ND 3000	7900	100000J	ND 1800	ND 1500	ND 2100	5100J	ND 15000	ND 11	ND 10J	
CARBON DISULFIDE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
1,1-DICHLOROETHENE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
1,1-DICHLOROETHANE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
1,2-DICHLOROETHENE (TOTAL)	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	10 J	82J	780	750 J	15000	15000 J	2900	820	2200J	75J	ND 7300	7	ND 5J	
CHLOROFORM	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
1,2-DICHLOROETHANE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
2-BUTANONE	ND 12	ND 11	NA	NA	NA	NA	ND 11	ND 12	ND 22	ND 12	ND 1500	ND 3000	ND 1600	ND 38000	ND 1800	ND 1500	ND 2100	660 J	ND 15000	ND 11	ND 10J	
1,1,1-TRICHLOROETHANE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	990	246000J	240 J	ND 740	ND 1100	7J	ND 7300	ND 6	ND 5J	
CARBON TETRACHLORIDE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
VINYL ACETATE	ND 12	ND 11	NA	NA	NA	NA	ND 11	ND 12	ND 22	ND 12	ND 1500	ND 3000	ND 1600	ND 38000	ND 1800	ND 1500	ND 2100	ND 16J	ND 15000	ND 11	ND 10J	
BROMODICHLOROMETHANE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
1,2-DICHLOROPROPANE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
CIS-1,3-DICHLOROPROPENE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
TRICHLOROETHENE	5 J	3 J	NA	NA	NA	NA	3 J	ND 6	76	600J	5800	7500	2500	2070000	460 J	2400	2700	440 J	20000J	33	ND 5J	
DIBROMOCHLOROMETHANE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
1,1,2-TRICHLOROETHANE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
BENZENE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
TRANS-1,3-DICHLOROPROPANE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
BROMOFORM	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
4-METHYL-2-PENTANONE	ND 12	ND 11	NA	NA	NA	NA	ND 11	ND 12	ND 22	120	ND 1500	ND 3000	ND 1600	ND 38000	ND 1800	ND 1500	ND 2100	290 J	ND 15000	ND 11	ND 10J	
2-HEXANONE	ND 12	ND 11	NA	NA	NA	NA	ND 11	ND 12	ND 22	ND 12	ND 1500	ND 3000	ND 1600	ND 38000	ND 1800	ND 1500	ND 2100	ND 16J	ND 15000	ND 11	ND 10J	
TETRACHLOROETHENE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	1000 J	1400	65000	290 J	ND 740	ND 1100	ND 8J	ND 7300	4 J	ND 5J	
1,1,2,2-TETRACHLOROETHANE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
TOLUENE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	1200J	ND 770	77000	5000	286000	ND 910	ND 740	ND 1100	ND 200J	207000J	ND 6	ND 5J	
CHLOROBENZENE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
ETHYLBENZENE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	1200	30000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
STYRENE	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND 6	ND 770	ND 1500	ND 800	ND 19000	ND 910	ND 740	ND 1100	ND 8J	ND 7300	ND 6	ND 5J	
XYLENE (TOTAL)	ND 6	ND 6	NA	NA	NA	NA	ND 6	ND 6	ND 11	ND6J	ND 770	4100	5800	154000	ND 910	ND 740	ND 1100	36J	7200 J	ND 6	ND 5J	

TABLE 6.2
BACKGROUND METAL CONCENTRATIONS IN SOILS
DUVA PROPERTY RI/FS

Chemical Parameter	Concentrations (mg/kg)			
	<u>Published Concentrations⁽¹⁾⁽²⁾</u>		<u>Duva Background Concentrations</u>	
	Range	Mean	Range	Mean
Silver	NR	NR	ND	ND
Aluminum	4,500-100,000	NR	4,030-8,740	5,631
Arsenic	<1.0 - 93.2	7.0	1.7 - 7.1	5
Barium	>0 - 3000	560	20 - 52.9	38
Beryllium	<1 - 5	1.6	0.22 - 0.73	0.50
Calcium	NR	NR	272 - 3480	1,212
Cadmium	0.4 - 1.1	0.5	ND - 0.43	0.43 ⁽³⁾
Cobalt	3 - 50	10.5	2.9 - 5.5	4.1
Chromium	7 - 1500	50	5.8 - 12.3	8.5
Copper	3 - 300	26	9.1 - 24.8	14
Iron	0.5 - 5%	NR	8810 - 13,500	11,713
Mercury	0.02 - 1.5	0.17	ND - 0.41	0.23 ⁽³⁾
Potassium	NR	NR	294 - 831	574
Magnesium	NR	NR	1000 - 2450	1,663
Manganese	20 - 3000	490	244 - 842	470
Sodium	NR	NR	30.5 - 50.2	38.2
Nickel	<5 - 150	18.5	3.6 - 8.0	5.5
Lead	<10 - 70	26	3.6 - 18.8	12
Antimony	0.25 - 0.6	NR	ND	ND
Selenium	<0.1 - 4.0	0.31	ND - 0.35	0.28 ⁽³⁾
Thallium	0.02 - 2.8	NR	ND - 0.38	0.38 ⁽³⁾
Vanadium	0.7 - 98	NR	5.4 - 15	9.8
Zinc	13 - 300	73.5	18.3 - 58.7	34
Cyanide	NR	NR	ND	ND

Notes:

- (1) Data are reported in "Trace Elements in Soils and Plants", Kabata Pendias, Alina and Itenryk Pendias, CRC Press, Inc., Boca Raton, Florida, 1985.
- (2) Data are reported for various types of surface soils in the United States.
- (3) Mean of detected concentrations.
- NR Not Reported
- ND Not Detected

TABLE 6.3
DETECTED TCL/TAL CONSTITUENTS
SSPL SOIL SAMPLING
DUVA PROPERTY RI/FS

<i>Constituents</i>	<i>Deletion Criteria</i>
VOLATILE ORGANIC COMPOUNDS	
Methylene Chloride	A
Acetone	
1,2-Dichloroethene	
2-Butanone	B
1,1,1-Trichloroethane	
Trichloroethene	
4-Methyl-2-Pentanone	B
Tetrachloroethene	
Toluene	
Ethylbenzene	
Xylene (Total)	
2-Hexanone	A, B
1,1,2-Trichloroethane	A, B
BNAs	
Phenol	
1,4-Dichlorobenzene	A, B
1,2-Dichlorobenzene	
Iosphorene	A, B
Benzoic Acid	A, B
1,2,4-Trichlorobenzene	A, B
Napthalene	A
2-Methylnaphthalene	A
Dimethylphthalate	A, B
Diethylphthalate	A, B
Fluorene	A, B
Phenathrene	
Anthracene	A, B
Fluoranthene	
Pyrene	
Butylbenzylphthalate	A, B
Benzo(a)anthracene	B
bis(2-ethylhexyl) phthalate	
Chrysene	B
Benzo(b) fluoranthene	B
Benzo(k) fluoranthene	B
Benzo(a) pyrene	B
Indeno(1,2,3-CD) pyrene	B
Dibenzo(a,h) anthracene	A, B
Benzo(g,h,i) perylene	B
<u>PCBs/PESTICIDES</u>	
Arochlor 1254	
DDD	A, B
DDE	A, B
DDT	A, B
Lindane	A, B

TABLE 6.3
DETECTED TCL/TAL CONSTITUENTS
SSPL SOIL SAMPLING
DUVA PROPERTY RI/FS

Constituents

Deletion Criteria

METALS

Aluminum	A, C
Antimony	A, C
Arsenic	A, C
Barium	A, C
Beryllium	A, C
Cadmium	A, C
Calcium	C, D
Chromium	A, C
Cobalt	A, C
Copper	C
Iron	A, C
Lead	C
Magnesium	C, D
Manganese	A, C
Mercury	A, C
Nickel	A, C
Potassium	A, C, D
Selenium	A, B, C
Silver	A, C
Sodium	A, C
Vanadium	A, C
Zinc	C
Cyanide	

Notes:

- A Detected at low concentrations
- B Detected five or less times
- C Naturally occurring mineral
- D Common plant nutrient

TABLE 6.4
APPROVED SITE SPECIFIC PARAMETER LIST
DUVA PROPERTY RI/FS

VOCS

Methylene Chloride
Acetone
1,2-Dichloroethene (Total)
2-Butanone
1,1,1-Trichloroethane
Trichloroethene
4-methyl-2-pentanone
Tetrachloroethene
Toluene
Ethylbenzene
Xylenes (Total)
Benzene (1)
cis,1-1Dichloroethylene (1)
1,2-Dichloroethane (1)
1,1-Dichloroethane (1)
Vinyl chloride (1)
Methyl t-butyl ether (1)

BNAs

Phenol
1,2-Dichlorobenzene
1,4-Dichlorobenzene (1)
Naphthalene
2-Methylnapthalene
Phenathrene
Fluoranthene
Pyrene
bis(2-ethylhexyl)phthalate
Chrysene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(a)pyrene
Indeno(1,2,3-CD) pyrene
Benzo(g,h,i) perylene
1,3,5-Trimethylbenzene (1)
1,2,4-Trimethylbenzene (1)

PCB/PESTICIDES

Arochlor 1254

METALS

Lead
Copper
Zinc
Arsenic (1)
Cadmium (1)
Chromium (1)
Nickel (1)
Silver (1)

Cyanide

Note:

(1) Constituent added at the request of NYSDEC/NYSDOH.

TABLE 6.5
RI SURFACE SOIL DATA
DUVA PROPERTY RI/FS

Sample ID.:	SS-1	SS-2	SS-3	SS-4	SS-5
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Sample Date:	06/06/91	06/06/91	06/06/91	06/06/91	06/06/91
Compound					
VOCS					
Chloromethane	ND (13)	ND (13)	ND (13)	ND (13)	ND (13)
Bromomethane	ND (13)	ND (13)	ND (13)	ND (13)	ND (13)
Vinyl chloride	ND (13)	ND (13)	ND (13)	ND (13)	ND (13)
Chloroethane	ND (13)	ND (13)	ND (13)	ND (13)	ND (13)
Methylene chloride	21	ND (6)	36	ND (6)	ND (6)/92*
Acetone	ND (13)	ND (13)	ND (13)	ND (13)	ND (13)
Carbon disulfide	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
1,1-Dichloroethene	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
1,1-Dichloroethane	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
1,2-Dichloroethene (total)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
Chloroform	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
1,2-Dichloroethane	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
2-Butanone	ND (13)	ND (13)	ND (13)	ND (13)	ND (13)
Methyl tertiary butal ether	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
1,1,1-Trichloroethane	ND (6)	ND (6)	ND (6)	3 J	2J/ND (6)*
Carbon tetrachloride	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
Vinyl acetate	ND (13)	ND (13)	ND (13)	ND (13)	ND (13)
Bromodichloromethane	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
1,2-Dichloropropane	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
cis-1,3-Dichloropropene	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
Trichloroethene	7	3 J	8	11	7 / 8*
Dibromochloromethane	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
1,1,2-Trichloroethane	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)

TABLE 6.5
RI SURFACE SOIL DATA
DUVA PROPERTY RI/FS

Sample I.D.:	SS-1	SS-2	SS-3	SS-4	SS-5
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Sample Date:	06/06/91	06/06/91	06/06/91	06/06/91	06/06/91
Compound					
<u>VOLATILES</u>					
Benzene	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
trans-1,3-Dichloropropene	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
Bromoform	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
4-Methyl-2-pentanone	ND (13)	ND (13)	ND (13)	ND (13)	ND (13) J
2-Hexanone	ND (13)	ND (13)	ND (13)	ND (13)	ND (13) J
Tetrachloroethene	ND (6)	ND (6)	ND (6)	ND (6)	ND (6) J
1,1,2,2-Tetrachloroethane	ND (6)	ND (6)	ND (6)	ND (6)	ND (6) J
Toluene	ND (6)	ND (6)	ND (6)	ND (6)	ND (6) J
Chlorobenzene	ND (6)	ND (6)	ND (6)	ND (6)	ND (6) J
Ethyl benzene	ND (6)	ND (6)	ND (6)	ND (6)	ND (6) J
Styrene	ND (6)	ND (6)	ND (6)	ND (6)	ND (6) J
Xylene (total)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6) J

TABLE 6.5
RI SURFACE SOIL DATA
DUVA PROPERTY RI/FS

<i>Sample I.D.:</i>	SS-1	SS-2	SS-3	SS-4	SS-5
<i>Units:</i>	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
<i>Sample Date:</i>	06/06/91	06/06/91	06/06/91	06/06/91	06/06/91
<i>Compound</i>					
<u>GC VOCS</u>					
1,2,4-Trimethylbenzene	ND (0.6)	ND (0.6)	ND (0.6)	ND (0.7)	ND (0.6)
1,3,5-Trimethylbenzene	ND (0.6)	ND (0.6)	ND (0.6)	ND (0.7)	ND (0.6)
Methyl tertiary butyl ether	ND (0.6)	ND (0.6)	ND (0.6)	ND (0.7)	ND (0.6)

TABLE 6.5
RI SURFACE SOIL DATA
DUVA PROPERTY RI/FS

<i>Sample I.D.:</i>	<i>SS-1</i>	<i>SS-2</i>	<i>SS-3</i>	<i>SS-4</i>	<i>SS-5</i>
<i>Units:</i>	<i>(µg/kg)</i>	<i>(µg/kg)</i>	<i>(µg/kg)</i>	<i>(µg/kg)</i>	<i>(µg/kg)</i>
<i>Sample Date:</i>	<i>06/06/91</i>	<i>06/06/91</i>	<i>06/06/91</i>	<i>06/06/91</i>	<i>06/06/91</i>
<i>Compound</i>					
<u>BNAs</u>					
Phenol	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
bis(2-Chloroethyl)ether	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
2-Chlorophenol	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
1,3-Dichlorobenzene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
1,4-Dichlorobenzene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
Benzyl alcohol	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
1,2-Dichlorobenzene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
2-Methylphenol	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
2,2'-Oxybis(1-chloropropane)	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
4-Methylphenol	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
N-nitroso-di-n-propylamine	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
Hexachloroethane	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
Nitrobenzene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
Isophorone	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
2-Nitrophenol	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
2,4-Dimethylphenol	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
Benzoic acid	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
bis(2-Chloroethoxy)methane	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
2,4-Dichlorophenol	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
1,2,4-Trichlorobenzene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
Naphthalene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
4-Chloroaniline	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
Hexachlorobutadiene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
4-Chloro-3-methylphenol	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
2-Methylnaphthalene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)

TABLE 6.5
RI SURFACE SOIL DATA
DUVA PROPERTY RI/FS

<i>Sample I.D.:</i>	<i>SS-1</i>	<i>SS-2</i>	<i>SS-3</i>	<i>SS-4</i>	<i>SS-5</i>
<i>Units:</i>	<i>(µg/kg)</i>	<i>(µg/kg)</i>	<i>(µg/kg)</i>	<i>(µg/kg)</i>	<i>(µg/kg)</i>
<i>Sample Date:</i>	<i>06/06/91</i>	<i>06/06/91</i>	<i>06/06/91</i>	<i>06/06/91</i>	<i>06/06/91</i>
<i>Compound</i>					
<u>BNAs</u>					
Hexachlorocyclopentadiene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
2,4,6-Trichlorophenol	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
2,4,5-Trichlorophenol	ND (2100)	ND (2100)	ND (2100)	ND (2100)	ND (2100)
2-Chloronaphthalene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
2-Nitroaniline	ND (2100)	ND (2100)	ND (2100)	ND (2100)	ND (2100)
Dimethylphthalate	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
Acenaphthylene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
3-Nitroaniline	ND (2100)	ND (2100)	ND (2100)	ND (2100)	ND (2100)
Acenaphthene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
2,4-Dinitrophenol	ND (2100)	ND (2100)	ND (2100)	ND (2100)	ND (2100)
4-Nitrophenol	ND (2100)	ND (2100)	ND (2100)	ND (2100)	ND (2100)
Dibenzofuran	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
2,4-Dinitrotoluene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
2,6-Dinitrotoluene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
Diethylphthalate	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
4-Chlorophenyl-phenylether	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
Fluorene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
4-Nitroaniline	ND (2100)	ND (2100)	ND (2100)	ND (2100)	ND (2100)
4,6-Dinitro-2-methylphenol	ND (2100)	ND (2100)	ND (2100)	ND (2100)	ND (2100)
N-Nitrosodiphenylamine	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
4-Bromophenyl-phenylether	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
Hexachlorobenzene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
Pentachlorophenol	ND (2100)	ND (2100)	ND (2100)	ND (2100)	ND (2100)
Phenanthrene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)

TABLE 6.5
RI SURFACE SOIL DATA
DUVA PROPERTY RI/FS

Sample I.D.:	SS-1	SS-2	SS-3	SS-4	SS-5
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Sample Date:	06/06/91	06/06/91	06/06/91	06/06/91	06/06/91
Compound					
<u>BNAs</u>					
Anthracene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
Di-n-butylphthalate	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
Fluoranthene	61 J	82 J	56 J	88 J	64 J/66 J*
Pyrene	62 J	83 J	61 J	89 J	70 J/60 J*
Butylbenzylphthalate	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
3,3'-Dichlorobenzidine	ND (840)	ND (850)	ND (840)	ND (860)	ND (850)
Benzo(a)anthracene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430)
Bis(2-Ethylhexyl)phthalate	ND (420)	79 J	ND (420)	ND (430)	ND (430)
Chrysene	ND (420)	ND (430)	ND (420)	45 J	ND (430)
Di-n-octylphthalate	ND (420)	ND (430)	ND (420)	ND (430)	ND (430) J
Benzo(b)fluoranthene	ND (420)	56 J	ND (420)	57 J	ND (430) J
Benzo(k)fluoranthene	ND (420)	15 J	ND (420)	20 J	ND (430) J
Benzo(a)pyrene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430) J
Indeno (1,2,3-cd)pyrene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430) J
Dibenzo(a,h)anthracene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430) J
Benzo(g,h,i)perylene	ND (420)	ND (430)	ND (420)	ND (430)	ND (430) J

TABLE 6.5
RI SURFACE SOIL DATA
DUVA PROPERTY RI/FS

Sample I.D.:	SS-1	SS-2	SS-3	SS-4	SS-5
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Sample Date:	06/06/91	06/06/91	06/06/91	06/06/91	06/06/91

Compound

PCBs

Aroclor - 1016	ND (50)	ND (51)	ND (50)	ND (52)	ND (51)
Aroclor - 1221	ND (50)	ND (51)	ND (50)	ND (52)	ND (51)
Aroclor - 1232	ND (50)	ND (51)	ND (50)	ND (52)	ND (51)
Aroclor - 1242	ND (50)	ND (51)	ND (50)	ND (52)	ND (51)
Aroclor - 1248	ND (50)	ND (51)	ND (50)	ND (52)	ND (51)
Aroclor - 1254	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)
Aroclor - 1260	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)

TABLE 6.5
RI SURFACE SOIL DATA
DUVA PROPERTY RI/FS

<i>Sample I.D.:</i>	<i>SS-1</i>	<i>SS-2</i>	<i>SS-3</i>	<i>SS-4</i>	<i>SS-5</i>
<i>Units:</i>	<i>(µg/kg)</i>	<i>(µg/kg)</i>	<i>(µg/kg)</i>	<i>(µg/kg)</i>	<i>(µg/kg)</i>
<i>Sample Date:</i>	<i>06/06/91</i>	<i>06/06/91</i>	<i>06/06/91</i>	<i>06/06/91</i>	<i>06/06/91</i>
<i>Compound</i>					
<u>METALS</u>					
Arsenic	4.8	5.4	1.9	2.8	4.0
Cadmium	ND (0.64)	ND (0.53)	ND (0.65)	ND (0.64)	ND (0.61)
Chromium	7.6	9.0	7.8	8.9	8.8
Copper	24.4	23.4	21.0	27.8	26.8
Lead	14.2	15.7	28.7 J	18.1	12.7
Nickel	9.5	10.0	8.9	11.3	9.2
Silver	ND (1.7)	ND (1.4)	ND (1.7)	ND (1.7)	ND (1.6)
Zinc	46.2	45.6	39.9	51.9	48.7
Cyanide	ND (1.2)	ND (1.3)	ND (1.3)	ND (1.3)	ND (1.2)

Notes:

ND() Not detected at the practical quantitation limit (PQL) stated within parenthesis.

J The associated sample is estimated.

* Duplicate analysis.

TABLE 6.6
RI SUBSURFACE SOIL DATA - BOREHOLES
DUVA PROPERTY RI/FS

Sample Location:	BH-1-591	BH-2-591	BH-3-591	BH-4-591	BH-5-591	BH-6-591	BH-7-591	BH-8-591	BH-9-591	BH-10-591	BH-11-591	BH-12-591	BH-13-591	BH-20-591
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Sample Depth:	2-4 ft.	2-8 ft.	2-4 ft.	6-8 ft.	8-10 ft.	4-6 ft.	8-10 ft.	4-6 ft.	4-6 ft.	9-12 ft.	10-12 ft.	8-10 ft.	29-30 ft.	10-12 ft.
Sample Date:	05/20/91	05/20/91	05/21/91	05/28/91	05/29/91	05/29/91	05/30/91	05/31/91	06/31/91	06/03/91	06/03/91	06/03/91	06/07/91	06/07/91
Compound														
VOCs														
Chloromethane	ND (11)	ND (15000)	ND (12)	ND (11)	ND (1400)	ND(3400)J	ND (56)	ND (11)	ND (1400)	ND (1400)	ND (1400)	ND (11)	ND (54)	ND (11)
Bromomethane	ND (11)	ND (15000)	ND (12)	ND (11)	ND (1400)	ND(3400)J	ND (56)	ND (11)	ND (1400)	ND (1400)	ND (1400)	ND (11)	ND (54)	ND (11)
Vinyl chloride	ND (11)	ND (15000)	ND (12)	ND (11)	ND (1400)	ND(3400)J	ND (56)	ND (11)	ND (1400)	ND (1400)	ND (1400)	ND (11)	ND (54)	ND (11)
Chloroethane	ND (11)	ND (15000)	ND (12)	ND (11)	ND (1400)	ND(3400)J	ND (56)	ND (11)	ND (1400)	ND (1400)	ND (1400)	ND (11)	ND (54)	ND (11)
Methylene chloride	33	ND (7400)	120	ND (5)	ND (690)	1200 J	85	46	ND (700)	ND (680)	ND (680)	23	ND (27)	24 J
Acetone	ND (11)	ND (15000)	ND (12)	ND (11)	ND (1400)	63000 J	ND (56)	ND (11)	ND (1400)	ND (1400)	ND (1400)	ND (11)	93	ND (11)
Carbon disulfide	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
1,1-Dichloroethene	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
1,1-Dichloroethane	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
1,2-Dichloroethene (total)	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	2 J	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
Chloroform	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
1,2-Dichloroethane	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
2-Butanone	ND (11)	ND (15000)	ND (12)	ND (11)	ND (1400)	5600 J	ND (56)	ND (11)	ND (1400)	ND (1400)	ND (1400)	ND (11)	ND (54)	ND (11)
Methyl tertiary butyl ether	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
1,1,1-Trichloroethane	62	10000	ND (6)	ND (5)	1900	7000 J	23 J	2 J	340 J	ND (680)	ND (680)	2 J	7 J	8 J
Carbon tetrachloride	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
Vinyl acetate	ND (11)	ND (15000)	ND (12)	ND (11)	ND (1400)	ND(3400)J	ND (56)	ND (11)	ND (400)	ND (1400)	ND (1400)	ND (11)	ND (54)	ND (11)
Bromodichloromethane	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
1,2-Dichloropropane	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
cis-1,3-Dichloropropene	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
Trichloroethene	110	279000	ND(23)	2 J	10000	60000 J	930	55	5100	2400	2200	4 J	1200	130
Dibromochloromethane	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
1,1,2-Trichloroethane	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
Benzene	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
trans-1,3-Dichloropropene	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
Bromoform	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
4-Methyl-2-pentanone	ND (11)	ND (15000)	ND (12)	ND (11)	ND (1400)	2900 J	ND (56)	5 J	ND (1400)	ND (1400)	ND (1400)	ND (11)	ND (54)	ND (11)
2-Hexanone	ND (11)	ND (15000)	ND (12)	ND (11)	ND (1400)	ND(3400)J	ND (56)	ND (11)	ND (1400)	ND (1400)	ND (1400)	ND (11)	ND (54)	ND (11)
Tetrachloroethene	ND (6)	6000 J	ND (6)	ND (5)	ND (690)	6400 J	26 J	ND (6)	1000	ND (680)	ND (680)	ND (5)	74	3 J
1,1,2,2-Tetrachloroethane	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
Toluene	3 J	19000 J	2 J	ND (5)	7100	29000 J	100	ND (6)	3100	ND (680)	ND (680)	ND (5)	300	16 J
Chlorobenzene	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
Ethyl benzene	ND (6)	8200	ND (6)	ND (5)	ND (690)	3000 J	15 J	ND (6)	890	ND (680)	ND (680)	ND (5)	34	ND (5)
Styrene	ND (6)	ND (7400)	ND (6)	ND (5)	ND (690)	ND(1700)J	ND (28)	ND (6)	ND (700)	ND (680)	ND (680)	ND (5)	ND (27)	ND (5)
Xylene (total)	ND (6)	19000	ND (6)	ND (5)	500 J	18000 J	74	ND (6)	5500	ND (680)	ND (680)	ND (5)	170	ND (5)

TABLE 6.6
RI SUBSURFACE SOIL DATA - BOREHOLES
DUVA PROPERTY RI/FS

Sample Location:	BH-1-591	BH-2-591	BH-3-591	BH-4-591	BH-5-591	BH-6-591	BH-7-591	BH-8-591	BH-9-591	BH-10-591	BH-11-591	BH-12-591	BH-13-591	BH-20-591
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Sample Depth:	2 - 4 ft	2 - 8 ft	2 - 4 ft	6 - 8 ft	8 - 10 ft	4 - 6 ft	8 - 10 ft	4 - 6 ft	4 - 6 ft	9 - 12 ft	10 - 12 ft	8 - 10 ft	29-30 ft	10 - 12 ft
Sample Date:	05/20/91	05/20/91	05/21/91	05/25/91	05/29/91	05/29/91	05/30/91	05/31/91	05/31/91	06/03/91	06/03/91	06/03/91	06/07/91	06/07/91
Compound														
BNAs														
Phenol	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	500	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
bis(2-Chloroethyl)ether	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
2-Chlorophenol	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
1,3-Dichlorobenzene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	220 J	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
1,4-Dichlorobenzene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	1200	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Benzyl alcohol	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
1,2-Dichlorobenzene	ND (370)	1400	ND (540)	ND (360)	ND (370)	5200	1200	ND (370)	NS	92 J	ND (360)	ND (370)	NS	170 J
2-Methylphenol	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
2,2'-Oxybis(1-chloropropane)	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
4-Methylphenol	ND (370)	ND (380)	ND (540)	ND (360)	33 J	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
N-nitroso-di-n-propylamine	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Hexachloroethane	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Nitrobenzene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Isophorone	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
2-Nitrophenol	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
2,4-Dimethylphenol	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Benzoic acid	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
bis(2-Chloroethoxy)methane	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
2,4-Dichlorophenol	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
1,2,4-Trichlorobenzene	ND (370)	47 J	ND (540)	ND (360)	ND (370)	450	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Naphthalene	ND (370)	ND (380)	ND (540)	ND (360)	32 J	310 J	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
4-Chloroaniline	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Hexachlorobutadiene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
4-Chloro-3-methylphenol	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
2-Methylnaphthalene	ND (370)	46 J	ND (540)	ND (360)	13 J	590	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Hexachlorocyclopentadiene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
2,4,6-Trichlorophenol	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
2,4,5-Trichlorophenol	ND (1900)	ND (1900)	ND (2700)	ND (1800)	ND (1800)	ND (1900)	ND (1800)	ND (1800)	NS	ND (1800)	ND (1800)	ND (1800)	NS	ND (1800)
2-Chloronaphthalene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
2-Nitroaniline	ND (1900)	ND (1900)	ND (2700)	ND (1800)	ND (1800)	ND (1900)	ND (1800)	ND (1800)	NS	ND (1800)	ND (1800)	ND (1800)	NS	ND (1800)
Dimethylphthalate	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Acenaphthylene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
3-Nitroaniline	ND (1900)	ND (1900)	ND (2700)	ND (1800)	ND (1800)	ND (1900)	ND (1800)	ND (1800)	NS	ND (1800)	ND (1800)	ND (1800)	NS	ND (1800)
Acenaphthene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
2,4-Dinitrophenol	ND (1900)	ND (1900)	ND (2700)	ND (1800)	ND (1800)	ND (1900)	ND (1800)	ND (1800)	NS	ND (1800)	ND (1800)	ND (1800)	NS	ND (1800)
4-Nitrophenol	ND (1900)	ND (1900)	ND (2700)	ND (1800)	ND (1800)	ND (1900)	ND (1800)	ND (1800)	NS	ND (1800)	ND (1800)	ND (1800)	NS	ND (1800)
Dibenzofuran	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
2,4-Dinitrotoluene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
2,6-Dinitrotoluene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Diethylphthalate	ND (370)	530	ND (540)	ND (360)	ND (370)	190 J	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
4-Chlorophenyl-phenylether	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)

TABLE 6.6
RI SUBSURFACE SOIL DATA - BOREHOLES
DUVA PROPERTY RI/FS

Sample Location:	BH-1-591	BH-2-591	BH-3-591	BH-4-591	BH-5-591	BH-6-591	BH-7-591	BH-8-591	BH-9-591	BH-10-591	BH-11-591	BH-12-591	BH-13-591	BH-20-591
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Sample Depth:	2 - 4 ft.	2 - 8 ft.	2 - 4 ft.	6 - 8 ft.	8 - 10 ft.	4 - 6 ft.	8 - 10 ft.	4 - 6 ft.	4 - 6 ft.	9 - 12 ft.	10 - 12 ft.	8 - 10 ft.	29-30 ft.	10 - 12 ft.
Sample Date:	05/20/91	05/20/91	05/21/91	05/28/91	05/29/91	05/29/91	05/30/91	05/31/91	05/31/91	06/03/91	06/03/91	06/03/91	06/07/91	06/07/91
Compound														
BNAs														
Fluorene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
4-Nitroaniline	ND (1900)	ND (1900)	ND (2700)	ND (1800)	ND (1800)	ND (1900)	ND (1800)	ND (1800)	NS	ND (1800)	ND (1800)	ND (1800)	NS	ND (1800)
4,6-Dinitro-2-methylphenol	ND (1900)	ND (1900)	ND (2700)	ND (1800)	ND (1800)	ND (1900)	ND (1800)	ND (1800)	NS	ND (1800)	ND (1800)	ND (1800)	NS	ND (1800)
N-Nitrosodiphenylamine	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
4-Bromophenyl-phenylether	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Hexachlorobenzene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Pentachlorophenol	ND (1900)	ND (1900)	ND (2700)	ND (1800)	ND (1800)	ND (1900)	ND (1800)	ND (1800)	NS	ND (1800)	ND (1800)	ND (1800)	NS	ND (1800)
Phenanthrene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	74 J	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Anthracene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	8 J	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Di-n-butylphthalate	ND (370)	150 J	ND (540)	ND (360)	ND (370)	110 J	54 J	ND (370)	NS	150 J	ND (360)	ND (370)	NS	ND (360)
Fluoranthene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	27 J	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Pyrene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	40 J	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Butylbenzylphthalate	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
3,3'-Dichlorobenzidine	ND (740)	ND (750)	ND (1100)	ND (730)	ND (740)	ND (770)	ND (730)	ND (740)	NS	ND (740)	ND (730)	ND (730)	NS	ND (710)
Benzo(a)anthracene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Bis(2-Ethylhexyl)phthalate	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	79 J	ND (370)	NS	110 J	ND (360)	ND (370)	NS	ND (360)
Chrysene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Di-n-octylphthalate	ND (370)	68 J	140 J	ND (360)	ND (370)	60 J	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Benzo(b)fluoranthene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Benzo(k)fluoranthene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Benzo(a)pyrene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Indeno (1,2,3-cd)pyrene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Dibenzo(a,h)anthracene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)
Benzo(g,h,i)perylene	ND (370)	ND (380)	ND (540)	ND (360)	ND (370)	ND (390)	ND (370)	ND (370)	NS	ND (370)	ND (360)	ND (370)	NS	ND (360)

TABLE 6.6
RI SUBSURFACE SOIL DATA - BOREHOLES
DUVA PROPERTY R1/F5

Sample Location:	BH-1-591	BH-2-591	BH-3-591	BH-4-591	BH-5-591	BH-6-591	BH-7-591	BH-8-591	BH-9-591	BH-10-591	BH-11-591	BH-12-591	BH-13-591	BH-20-591
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Sample Depth:	2 - 4 ft.	2 - 8 ft.	2 - 4 ft.	6 - 8 ft.	8 - 10 ft.	4 - 6 ft.	8 - 10 ft.	4 - 6 ft.	4 - 6 ft.	9 - 12 ft.	10 - 12 ft.	8 - 10 ft.	29-30 ft.	10 - 12 ft.
Sample Date:	05/20/91	05/20/91	05/21/91	05/28/91	05/29/91	05/29/91	05/30/91	05/31/91	05/31/91	06/03/91	06/03/91	06/03/91	06/07/91	06/07/91
Compound														
PCBS														
Aroclor - 1016	ND (45)	ND (220)	ND (65)	ND (44)	ND (220)	ND (230)	ND (44)	ND (220)	ND (44)	ND (44)	ND (44)	ND (43)	NS	ND (210)
Aroclor - 1221	ND (45)	ND (220)	ND (65)	ND (44)	ND (220)	ND (230)	ND (44)	ND (220)	ND (44)	ND (44)	ND (44)	ND (43)	NS	ND (210)
Aroclor - 1232	ND (45)	ND (220)	ND (65)	ND (44)	ND (220)	ND (230)	ND (44)	ND (220)	ND (44)	ND (44)	ND (44)	ND (43)	NS	ND (210)
Aroclor - 1242	ND (45)	ND (220)	ND (65)	ND (44)	ND (220)	ND (230)	ND (44)	ND (220)	ND (44)	ND (44)	ND (44)	ND (43)	NS	ND (210)
Aroclor - 1248	ND (45)	ND (220)	ND (65)	ND (44)	ND (220)	ND (230)	ND (44)	ND (220)	ND (44)	ND (44)	ND (44)	ND (43)	NS	ND (210)
Aroclor - 1254	ND (90)	ND (450)	ND (130)	ND (88)	ND (440)	570	ND (88)	ND (440)	ND (88)	ND (88)	ND (88)	ND (87)	NS	ND (420)
Aroclor - 1260	ND (90)	ND (450)	ND (130)	ND (88)	ND (440)	ND (460)	ND (88)	ND (440)	ND (88)	ND (88)	ND (88)	ND (87)	NS	ND (420)

TABLE 6.6
RI SUBSURFACE SOIL DATA - BOREHOLES
DUVA PROPERTY RI/FS

Sample Location:	BH-1-591	BH-2-591	BH-3-591	BH-4-591	BH-5-591	BH-6-591	BH-7-591	BH-8-591	BH-9-591	BH-10-691	BH-11-691	BH-12-691	BH-13-691	BH-20-691
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Sample Depth:	2 - 4 ft.	2 - 8 ft.	2 - 4 ft.	6 - 8 ft.	8 - 10 ft.	4 - 6 ft.	8 - 10 ft.	4 - 6 ft.	4 - 6 ft.	9 - 12 ft.	10 - 12 ft.	8 - 10 ft.	29-30 ft.	10 - 12 ft.
Sample Date:	06/20/91	06/20/91	05/21/91	06/28/91	05/29/91	05/29/91	05/30/91	05/31/91	05/31/91	06/03/91	06/03/91	06/03/91	06/07/91	06/07/91
Compound														
METALS														
Arsenic	4.0	5.6	7.0	2.0	2.8	3.6	2.9	3.4	NS	3.3	3.1	3.1	NS	3.6
Cadmium	ND (0.56)	ND (0.67)	ND (0.66)	ND (0.64)	ND (0.63)	ND (0.62)	ND (0.64)	ND (0.66)	NS	ND (0.63)	ND (0.54)	ND (0.51)	NS	ND (0.62)
Chromium	9.9	5.8	10.8	6.4	8.2	6.2	4.7	13.8	NS	4.6	6.5	6.2	NS	7.6
Copper	50.6	26.8	31.6	33.0	33.6	27.6	17.5	33.4	NS	19.9	15.2	93.3	NS	23.9
Lead	4.6	6.0	6.1	2.2	5.8	15.7	3.2	4.0	NS	3.9	3.9	3.6	NS	4.4
Nickel	18.9	12.7	14.8	23.6	12.0	12.1	12.2	16.9	NS	7.7 B	13.2	14.6	NS	12.0
Silver	ND (1.5)	ND (1.8)	ND (1.8)	ND (1.7)	ND (1.7)	ND (1.6)J	ND (1.7)	ND (1.8)	NS	ND (1.7)	ND (1.4)	ND (1.4)	NS	ND (1.6)
Zinc	49.7	25.0	83.4 J	21.9	26.5	39.9	22.0	25.3	NS	13.0	20.3	23.3	NS	16.1
Cyanide	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.1)	ND (1.1)J	ND (1.1)	ND (1.1)	NS	1.4	ND (1.1)	ND (1.1)	NS	ND (1.1)

Notes:

ND() Not detected at the practical quantitation limit (PQL) stated within the parenthesis.

J The associated value is estimated.

NS Not Sampled.

TABLE 6.7
RI SUBSURFACE SOIL DATA - MONITORING WELLS
DUVA PROPERTY RI/FS

<i>Sample Location:</i>	<i>MW-5</i>	<i>MW-6</i>	<i>MW-7</i>	<i>MW-9</i>	<i>MW-10</i>	<i>MW-11</i>	<i>RB-6491</i>
<i>Units:</i>	<i>(µg/kg)</i>	<i>(µg/kg)</i>	<i>(µg/kg)</i>	<i>(µg/kg)</i>	<i>(µg/kg)</i>	<i>(µg/kg)</i>	<i>Blank</i>
<i>Sample Depth:</i>	<i>6-8 ft.</i>	<i>8-10 ft.</i>	<i>10-12 ft.</i>	<i>6-8 ft.</i>	<i>8-10 ft.</i>	<i>2-4 ft.</i>	<i>(µg/L)</i>
<i>Sample Date:</i>	<i>05/24/91</i>	<i>06/04/91</i>	<i>06/07/91</i>	<i>05/23/91</i>	<i>06/04/91</i>	<i>05/22/91</i>	<i>06/04/91</i>
<i>Compound</i>							
<u>VOCs</u>							
Chloromethane	ND (1300)	ND (7300)	ND (56)	ND (13)	ND (1500)	ND (11)	ND (10)
Bromomethane	ND (1300)	ND (7300)	ND (56)	ND (13)	ND (1500)	ND (11)	ND (10)
Vinyl chloride	ND (1300)	ND (7300)	ND (56)	ND (13)	ND (1500)	ND (11)	ND (10)
Chloroethane	ND (1300)	ND (7300)	ND (56)	ND (13)	ND (1500)	ND (11)	ND (10)
Methylene chloride	ND (670)	ND (3600)	57 J	ND (7)	ND (760)	ND (6)	ND (5)
Acetone	ND (1300)	ND (7300)	ND (56)	ND (13)	ND (1500)	ND (11)	13
Carbon disulfide	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)
1,1-Dichloroethene	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)
1,1-Dichloroethane	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)
1,2-Dichloroethene (total)	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)
Chloroform	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)
1,2-Dichloroethane	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)
2-Butanone	6200	ND (7300)	ND (56)	ND (13)	ND (1500)	ND (11)	6 J
Methyl tertiary butyl ether	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)
1,1,1-Trichloroethane	ND (670)	18000	47 J	ND (7)	ND (760)	ND (6)	ND (5)
Carbon tetrachloride	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)
Vinyl acetate	ND (1300)	ND (7300)	ND (56)	ND (13)	ND (1500)	ND (11)	ND (10)
Bromodichloromethane	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)
1,2-Dichloropropane	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	23
cis-1,3-Dichloropropene	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)
Trichloroethene	ND (670)	124000	1100	ND (7)	110 J	ND (6)	ND (5)
Dibromochloromethane	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)

TABLE 6.7
RI SUBSURFACE SOIL DATA - MONITORING WELLS
DUVA PROPERTY RI/FS

Sample Location:	MW-5	MW-6	MW-7	MW-9	MW-10	MW-11	RB-6491
							Blank
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/L)
Sample Depth:	6-8 ft.	8-10 ft.	10-12 ft.	6-8 ft.	8-10 ft.	2-4 ft.	
Sample Date:	05/24/91	06/04/91	06/07/91	05/23/91	06/04/91	05/22/91	06/04/91
Compound							
VOCs							
1,1,2-Trichloroethane	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)
Benzene	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)
trans-1,3-Dichloropropene	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)
Bromoform	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)
4-Methyl-2-pentanone	ND (1300)	ND (7300)	ND (56)	ND (13)	ND (1500)	ND (11)	ND (10)
2-Hexanone	ND (1300)	ND (7300)	ND (56)	ND (13)	ND (1500)	ND (11)	ND (10)
Tetrachloroethene	ND (670)	6000	33 J	ND (7)	ND (760)	ND (6)	ND (5)
1,1,2,2-Tetrachloroethane	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)
Toluene	ND (670)	24000	200 J	ND (7)	150 J	ND (6)	ND (5)
Chlorobenzene	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)
Ethyl benzene	ND (670)	3400 J	14 J	ND (7)	ND (760)	ND (6)	ND (5)
Styrene	ND (670)	ND (3600)	ND (28)	ND (7)	ND (760)	ND (6)	ND (5)
Xylene (total)	ND (670)	17000	53 J	ND (7)	ND (760)	ND (6)	ND (5)

TABLE 6.7
RI SUBSURFACE SOIL DATA - MONITORING WELLS
DUVA PROPERTY RI/FS

Sample Location:	MW-5	MW-6	MW-7	MW-9	MW-10	MW-11	RB-6491
							Blank
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/L)
Sample Depth:	6-8 ft.	8 - 10 ft.	10 - 12 ft.	6 - 8 ft.	8 - 10 ft.	2 - 4 ft.	
Sample Date:	05/24/91	06/04/91	06/07/91	05/23/91	06/04/91	05/22/91	06/04/91
Compound							
GC - VOCs							
1,2,4-Trimethylbenzene	ND (0.5)	15000	1.5	ND (0.7)	ND (0.6)	ND (0.6)	ND (0.5)
1,3,5-Trimethylbenzene	ND (0.5)	6700	ND (0.6)	ND (0.7)	ND (0.6)	ND (0.6)	ND (0.5)
Methyl tertiary butyl ether	ND (0.5)	ND (1200)	ND (0.6)	ND (0.7)	ND (0.6)	ND (0.6)	ND (0.5)

TABLE 6.7
RI SUBSURFACE SOIL DATA - MONITORING WELLS
DUVA PROPERTY RI/FS

Sample Location:	MW-5	MW-6	MW-7	MW-9	MW-10	MW-11	RB-6491
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	Blank
Sample Depth:	6-8 ft.	8-10 ft.	10-12 ft.	6-8 ft.	8-10 ft.	2-4 ft.	
Sample Date:	05/24/91	06/04/91	06/07/91	05/23/91	06/04/91	05/22/91	06/04/91
Compound							
BNAs							
Phenol	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
bis(2-Chloroethyl)ether	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
2-Chlorophenol	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
1,3-Dichlorobenzene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
1,4-Dichlorobenzene	ND (360)	40 J	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Benzyl alcohol	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
1,2-Dichlorobenzene	ND (360)	1300	180 J	ND (410)	ND (400)	ND (360)	ND (13)
2-Methylphenol	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
2,2'-Oxybis(1-chloropropane)	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
4-Methylphenol	ND (360)	62 J	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
N-nitroso-di-n-propylamine	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Hexachloroethane	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Nitrobenzene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Isophorone	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
2-Nitrophenol	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
2,4-Dimethylphenol	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Benzoic acid	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
bis(2-Chloroethoxy)methane	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
2,4-Dichlorophenol	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
1,2,4-Trichlorobenzene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Naphthalene	ND (360)	72 J	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
4-Chloroaniline	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Hexachlorobutadiene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
4-Chloro-3-methylphenol	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)

TABLE 6.7
RI SUBSURFACE SOIL DATA - MONITORING WELLS
DUVA PROPERTY RI/FS

<i>Sample Location:</i>	<i>MW-5</i>	<i>MW-6</i>	<i>MW-7</i>	<i>MW-9</i>	<i>MW-10</i>	<i>MW-11</i>	<i>RB-6491</i>
							<i>Blank</i>
<i>Units:</i>	($\mu\text{g/kg}$)	($\mu\text{g/kg}$)	($\mu\text{g/kg}$)	($\mu\text{g/kg}$)	($\mu\text{g/kg}$)	($\mu\text{g/kg}$)	($\mu\text{g/L}$)
<i>Sample Depth:</i>	6-8 ft.	8-10 ft.	10-12 ft.	6-8 ft.	8-10 ft.	2-4 ft.	
<i>Sample Date:</i>	05/24/91	06/04/91	06/07/91	05/23/91	06/04/91	05/22/91	06/04/91
Compound							
BNAs							
2-Methylnaphthalene	ND (360)	20 J	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Hexachlorocyclopentadiene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
2,4,6-Trichlorophenol	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
2,4,5-Trichlorophenol	ND (1800)	ND (1900)	ND (1800)	ND (2100)	ND (2000)	ND (1800)	ND (67)
2-Chloronaphthalene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
2-Nitroaniline	ND (1800)	ND (1900)	ND (1800)	ND (2100)	ND (2000)	ND (1800)	ND (67)
Dimethylphthalate	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Acenaphthylene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
3-Nitroaniline	ND (1800)	ND (1900)	ND (1800)	ND (2100)	ND (2000)	ND (1800)	ND (67)
Acenaphthene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
2,4-Dinitrophenol	ND (1800)	ND (1900)	ND (1800)	ND (2100)	ND (2000)	ND (1800)	ND (67)
4-Nitrophenol	ND (1800)	ND (1900)	ND (1800)	ND (2100)	ND (2000)	ND (1800)	ND (67)
Dibenzofuran	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
2,4-Dinitrotoluene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
2,6-Dinitrotoluene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Diethylphthalate	ND (360)	490	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
4-Chlorophenyl-phenylether	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Fluorene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
4-Nitroaniline	ND (1800)	ND (1900)	ND (1800)	ND (2100)	ND (2000)	ND (1800)	ND (67)
4,6-Dinitro-2-methylphenol	ND (1800)	ND (1900)	ND (1800)	ND (2100)	ND (2000)	ND (1800)	ND (67)
N-Nitrosodiphenylamine	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
4-Bromophenyl-phenylether	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Hexachlorobenzene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)

TABLE 6.7
RI SUBSURFACE SOIL DATA - MONITORING WELLS
DUVA PROPERTY RI/FS

<i>Sample Location:</i>	<i>MW-5</i>	<i>MW-6</i>	<i>MW-7</i>	<i>MW-9</i>	<i>MW-10</i>	<i>MW-11</i>	<i>RB-6491</i>
							<i>Blank</i>
<i>Units:</i>	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/L)
<i>Sample Depth:</i>	6-8 ft.	8 - 10 ft.	10 - 12 ft.	6 - 8 ft.	8 - 10 ft.	2 - 4 ft.	
<i>Sample Date:</i>	05/24/91	06/04/91	06/07/91	05/23/91	06/04/91	05/22/91	06/04/91
Compound							
<u>BNAs</u>							
Pentachlorophenol	ND (1800)	ND (1900)	ND (1800)	ND (2100)	ND (2000)	ND (1800)	ND (67)
Phenanthrene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Anthracene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Di-n-butylphthalate	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Fluoranthene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Pyrene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Butylbenzylphthalate	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
3,3'-Dichlorobenzidine	ND (730)	ND (760)	ND (720)	ND (820)	ND (790)	ND (730)	ND (27)
Benzo(a)anthracene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Bis(2-Ethylhexyl)phthalate	ND (360)	230 J	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Chrysene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Di-n-octylphthalate	92 J	ND (380)	ND (360)	ND (410)	ND (400)	120 J	ND (13)
Benzo(b)fluoranthene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Benzo(k)fluoranthene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Benzo(a)pyrene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Indeno (1,2,3-cd)pyrene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Dibenzo(a,h)anthracene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)
Benzo(g,h,i)perylene	ND (360)	ND (380)	ND (360)	ND (410)	ND (400)	ND (360)	ND (13)

TABLE 6.7
RI SUBSURFACE SOIL DATA - MONITORING WELLS
DUVA PROPERTY RI/FS

Sample Location:	MW-5	MW-6	MW-7	MW-9	MW-10	MW-11	RB-6491
							Blank
Units:	($\mu\text{g/kg}$)	($\mu\text{g/kg}$)	($\mu\text{g/kg}$)	($\mu\text{g/kg}$)	($\mu\text{g/kg}$)	($\mu\text{g/kg}$)	($\mu\text{g/L}$)
Sample Depth:	6-8 ft.	8-10 ft.	10-12 ft.	6-8 ft.	8-10 ft.	2-4 ft.	
Sample Date:	05/24/91	06/04/91	06/07/91	05/23/91	06/04/91	05/22/91	06/04/91
Compound							
PCBs							
Aroclor - 1016	ND (44)	ND (46)	ND (86)	ND (48)	ND (47)	ND (43)	NA
Aroclor - 1221	ND (44)	ND (46)	ND (86)	ND (48)	ND (47)	ND (43)	NA
Aroclor - 1232	ND (44)	ND (46)	ND (86)	ND (48)	ND (47)	ND (43)	NA
Aroclor - 1242	ND (44)	ND (46)	ND (86)	ND (48)	ND (47)	ND (43)	NA
Aroclor - 1248	ND (44)	ND (46)	ND (86)	ND (48)	ND (47)	ND (43)	NA
Aroclor - 1254	ND (88)	ND (92)	ND (170)	ND (96)	ND (95)	ND (86)	NA
Aroclor - 1260	ND (88)	ND (92)	ND (170)	ND (96)	ND (95)	ND (86)	NA

TABLE 6.7
RI SUBSURFACE SOIL DATA - MONITORING WELLS
DUVA PROPERTY RI/FS

Sample Location:	MW-5	MW-6	MW-7	MW-9	MW-10	MW-11	RB-6491
							Blank
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/L)
Sample Depth:	6-8 ft.	8-10 ft.	10-12 ft.	6-8 ft.	8-10 ft.	2-4 ft.	
Sample Date:	05/24/91	06/04/91	06/07/91	05/23/91	06/04/91	05/22/91	06/04/91
Compound							
<u>METALS</u>							
Arsenic	3.3	3.1	3.2	3.8	9.9	5.8 J	ND (1.0)
Cadmium	ND (0.57)	ND (0.56)	ND (0.44)	ND (0.50)	ND (0.61)	ND (0.48)	ND (3.0)
Chromium	5.7	7.0	7.8	3.7	6.6	6.5	6.0
Copper	13.8	26.6	15.1	8.9	36.3	26.3	ND (5.0)
Lead	4.0	3.5	3.8	2.2	3.2	4.3	ND (1.0)
Nickel	11.5	15.5	12.5	4.7	9.0	11.1	ND (7.0)
Silver	1.7	ND (1.5)	ND (1.2)	ND (1.3)	ND (1.6)	1.5	ND (8.0)
Zinc	19.7	24.1	18.9	12.3	15.3	24.8	ND (3.0)
Cyanide	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.1)	ND (10.0)

Notes:

ND() Not detected at the practical quantitation limit (PQL) stated within the parenthesis.

J The associated value is estimated.

TABLE 6.8
ADRP SOIL SAMPLES
DUVA PROPERTY RI/FS

Sample Location:	BH-I/0+00	BH-D/0+20E	BH-D/0+60E	BH-D/1+40E	BH-K/2+20W	BH-K/3+00W	BH-N/1+00W	BH-H/0+00E	BH-H/1+00W	Field Blank
Units:	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Sample Depth:	0 - 8 ft.	8 - 10 ft.	10 - 20 ft.	8 - 10 ft.	2.4 - 4 ft.	4.5 - 6 ft.	6 - 8 ft.	4 - 6 ft.	2 - 4 ft.	
Sample Date:	11/06/91	11/06/91	11/08/91	11/07/91	11/06/91	11/07/91	11/07/91	10/10/91	10/10/91	
Compound										
VOCs										
Chloromethane	ND(11)	ND(11)	ND(11)	ND(27)	ND(11)	ND(11)	ND(11)	ND(11)	ND(11)	ND(10)
Bromomethane	ND(11)	ND(11)	ND(11)	ND(27)	ND(11)	ND(11)	ND(11)	ND(11)	ND(11)	ND(10)
Vinyl chloride	ND(11)	ND(11)	ND(11)	ND(27)	ND(11)	ND(11)	ND(11)	ND(11)	ND(11)	ND(10)
Chloroethane	ND(11)	ND(11)	ND(11)	ND(27)	ND(11)	ND(11)	ND(11)	ND(11)	ND(11)	ND(10)
Methylene chloride	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(11)	ND(11)	ND(5)
Acetone	ND(11)	ND(11)	ND(11)	ND(27)	ND(11)	ND(11)	ND(11)	ND(11)	ND(16)	37
Carbon disulfide	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
1,1-Dichloroethene	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
1,1-Dichloroethane	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
1,2-Dichloroethene (total)	ND(5)	ND(6)	5J	200	ND(6)	ND(5)	ND(6)	16	ND(6)	ND(5)
Chloroform	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
1,2-Dichloroethane	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
2-Butanone	ND(11)	ND(11)	ND(11)	ND(27)	ND(11)	ND(11)	ND(11)	ND(11)	ND(11)	ND(10)
Methyl tertiary butyl ether	ND(5)	ND(6)	NA	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
1,1,1-Trichloroethane	ND(5)	ND(6)	ND(5)	13J	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
Carbon tetrachloride	ND(5)	ND(6)	ND(11)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
Vinyl acetate	ND(11)	ND(11)	ND(5)	ND(27)	ND(11)	ND(11)	ND(11)	ND(11)	ND(11)	ND(10)
Bromodichloromethane	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
1,2-Dichloropropane	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
cis-1,3-Dichloropropene	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
Trichloroethene	ND(5)	ND(6)	ND(5)	190	ND(6)	ND(5)	ND(6)	4J	ND(6)	ND(5)
Dibromochloromethane	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
1,1,2-Trichloroethane	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
Benzene	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
trans-1,3-Dichloropropene	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
Bromoform	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
4-Methyl-2-pentanone	ND(11)	ND(11)	ND(11)	ND(27)	ND(11)	ND(11)	ND(11)	ND(11)	ND(11)	ND(10)
2-Hexanone	ND(11)	ND(11)	ND(11)	ND(27)	ND(11)	ND(11)	ND(11)	ND(11)	ND(11)	ND(10)
Tetrachloroethene	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
1,1,2,2-Tetrachloroethane	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
Toluene	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
Chlorobenzene	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
Ethylbenzene	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
Styrene	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)
Xylene (total)	ND(5)	ND(6)	ND(5)	ND(14)	ND(6)	ND(5)	ND(6)	ND(6)	ND(6)	ND(5)

TABLE 6.8
ADRP SOIL SAMPLES
DUVA PROPERTY RI/FS

Sample Location:	BH-B/0+00	BH-D/0+20E	BH-D/0+60E	BH-D/1+40E	BH-K/2+20W	BH-K/3+00W	BH-N/1+00W	BH-H/0+00E	BH-H/1+00W	Field Blank
Units:	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Sample Depth:	0 - 8 ft.	8 - 10 ft.	18 - 20 ft.	8 - 10 ft.	2.4 - 4 ft.	4.5 - 6 ft.	6 - 8 ft.	4 - 6 ft.	2 - 4 ft.	
Sample Date:	11/06/91	11/06/91	11/08/91	11/07/91	11/06/91	11/07/91	11/07/91	10/10/91	10/10/91	

Compound

BNAs

Phenol	ND(730)	ND(750)
bis(2-Chloroethyl) ether	ND(730)	ND(750)
2-Chlorophenol	ND(730)	ND(750)
1,3-Dichlorobenzene	ND(730)	ND(750)
1,4-Dichlorobenzene	ND(730)	ND(750)
Benzyl alcohol	ND(730)	ND(750)
1,2-Dichlorobenzene	ND(730)	ND(750)
2-Methylphenol	ND(730)	ND(750)
bis(2-Chloroisopropyl) ether	ND(730)	ND(750)
4-Methylphenol	ND(730)	ND(750)
n-Nitroso-di-n-propylamine	ND(730)	ND(750)
Hexachloroethane	ND(730)	ND(750)
Nitrobenzene	ND(730)	ND(750)
Isophorone	ND(730)	ND(750)
2-Nitrophenol	ND(730)	ND(750)
2,4-Dimethylphenol	ND(730)	ND(750)
Benzoic acid	ND(730)	ND(750)
bis(2-Chloroethoxy) methane	ND(730)	ND(750)
2,4-Dichlorophenol	ND(730)	ND(750)
1,2,4-Trichlorobenzene	ND(730)	ND(750)
Naphthalene	ND(730)	ND(750)
4-Chloroaniline	ND(730)	ND(750)
Hexachlorobutadiene	ND(730)	ND(750)
4-Chloro-3-methylphenol	ND(730)	ND(750)
2-Methylnaphthalene	ND(730)	ND(750)
Hexachlorocyclopentadiene	ND(730)	ND(750)
2,4,6-Trichlorophenol	ND(730)	ND(750)
2,4,5-Trichlorophenol	ND(3700)	ND(3700)
2-Chloronaphthalene	ND(730)	ND(750)
2-Nitroaniline	ND(3700)	ND(3700)
Dimethylphthalate	ND(730)	ND(750)
Acenaphthylene	ND(730)	ND(750)
3-Nitroaniline	ND(3700)	ND(3700)
Acenaphthene	ND(730)	ND(750)
2,4-Dinitrophenol	ND(3700)	ND(3700)

TABLE 6.8
ADRP SOIL SAMPLES
DUVA PROPERTY RI/FS

Sample Location:	BH-B/0+00	BH-D/0+20E	BH-D/0+60E	BH-D/1+40E	BH-K/2+20W	BH-K/3+00W	BH-N/1+00W	BH-H/0+00E	BH-H/1+00W	Field Blank
Units:	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Sample Depth:	6 - 8 ft.	8 - 10 ft.	18 - 20 ft.	8 - 10 ft.	2.4 - 4 ft.	4.5 - 6 ft.	6 - 8 ft.	4 - 6 ft.	2 - 4 ft.	
Sample Date:	11/06/91	11/06/91	11/08/91	11/07/91	11/06/91	11/07/91	11/07/91	10/10/91	10/10/91	

Compound

BNAs

4-Nitrophenol	ND(3700)	ND(3700)
Dibenzofuran	ND(730)	ND(750)
2,4-Dinitrotoluene	ND(730)	ND(750)
2,6-Dinitrotoluene	ND(730)	ND(750)
Diethylphthalate	ND(730)	ND(750)
4-Chlorophenyl-phenylether	ND(730)	ND(750)
Fluorene	ND(730)	ND(750)
4-Nitroaniline	ND(3700)	ND(3700)
4,6-Dintro-2-methylphenol	ND(3700)	ND(3700)
N-nitrosodiphenylamine	ND(730)	ND(750)
4-Bromophenyl-phenylether	ND(730)	ND(750)
Hexachlorobenzene	ND(730)	ND(750)
Pentachlorophenol	ND(3700)	ND(3700)
Phenanthrene	ND(730)	ND(750)
Anthracene	ND(730)	ND(750)
Di-n-butylphthalate	ND(730)	ND(750)
Fluoranthene	ND(730)	ND(750)
Pyrene	ND(730)	ND(750)
Butylbenzylphthalate	ND(730)	ND(750)
3,3'-Dichlorobenzidine	ND(1500)	ND(1500)
Benzo(a) anthracene	ND(730)	ND(750)
Bis(2-ethylhexyl) phthalate	ND(730)	ND(750)
Chrysene	ND(730)	ND(750)
Di-n-octylphthalate	ND(730)	ND(750)
Benzo(b) fluoranthene	ND(730)	ND(750)
Benzo(k) fluoranthene	ND(730)	ND(750)
Benzo(a) pyrene	ND(730)	ND(750)
Indeno (1,2,3-cd) pyrene	ND(730)	ND(750)
Dibenzo (a,h) anthracene	ND(730)	ND(750)
Benzo (g,h,i) perylene	ND(730)	ND(750)

TABLE 6.8
ADRP SOIL SAMPLES
DUVA PROPERTY RI/FS

Sample Location:	BH-B/0+00	BH-D/0+20E	BH-D/0+60E	BH-D/1+40E	BH-K/2+20W	BH-K/3+00W	BH-N/1+00W	BH-H/0+00E	BH-H/1+00W	Field Blank
Units:	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Sample Depth:	6 - 8 ft.	8 - 10 ft.	10 - 20 ft.	8 - 10 ft.	2.4 - 4 ft.	4.5 - 6 ft.	6 - 8 ft.	4 - 6 ft.	2 - 4 ft.	
Sample Date:	11/06/91	11/06/91	11/08/91	11/07/91	11/06/91	11/07/91	11/07/91	10/10/91	10/10/91	

Compound

PCBS

Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260

ND(88) ND(90)
ND(88) ND(90)
ND(88) ND(90)
ND(88) ND(90)
ND(88) ND(90)
ND(180) ND(180)
ND(180) ND(180)

TABLE 6.8
ADRP SOIL SAMPLES
DUVA PROPERTY RI/FS

Sample Location:	BH-B/0+00	BH-D/0+20E	BH-D/0+60E	BH-D/1+40E	BH-K/2+20W	BH-K/3+00W	BH-N/1+00W	BH-H/0+00E	BH-H/1+00W	Field Blank
Units:	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Sample Depth:	6 - 8 ft.	8 - 10 ft.	18 - 20 ft.	8 - 10 ft.	2.4 - 4 ft.	4.5 - 6 ft.	6 - 8 ft.	4 - 6 ft.	2 - 4 ft.	
Sample Date:	11/06/91	11/06/91	11/06/91	11/07/91	11/06/91	11/07/91	11/07/91	10/10/91	10/10/91	

Compound

METALS

Arsenic

4.8 12.1

Cadmium

ND(0.29) ND(0.30)

Chromium

9.3 12.9

Copper

21.6 30.4

Lead

3.8 4.8

Nickel

13.0 15.9

Silver

ND(0.39) 181

Zinc

25.4 29.5

Cyanide

ND(1.1) ND(1.1)

Notes:

ND() Not detected at stated practical quantitation limit (PQL) stated within parenthesis.

J The estimated value is estimated.

TABLE 6.8
ADRP SOIL SAMPLES
DUVA PROPERTY RI/FS

Sample Location:	BH-K/3+00W	BH-D/1+40E	BH-D/1+40E	BH-N/1+00W	BH-N/1+00W	BH-D/0+60E	BH-D/0+20E	BH-D/0+20E
Units:	(Percent)	(Percent)	(Percent)	(Percent)	(Percent)	(Percent)	(Percent)	(Percent)
Sample Depth:	2 - 4 ft.	2 - 4 ft.	8 - 10 ft.	4 - 6 ft.	6 - 8 ft.	18 - 20 ft.	4 - 6 ft.	8 - 10 ft.
Sample Date:	11/07/91	11/07/91	11/07/91	11/07/91	11/07/91	11/08/91	11/08/91	11/08/91

Compound								
TOC Percent	0.10	0.29	0.08	0.08	0.1	0.15	0.07	0.08
Total Solids Percent	91	85	90	89	92	96	90	91

Notes:

ND0 Not detected at stated practical quantitation limit (PQL) stated within parenthesis.

J The associated value is estimated.

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-1		MW-2		MW-3		MW-4	
Sample Unit:	µg/L		µg/L		µg/L		µg/L	
Sample Date:	07/09/91	09/10/91	07/09/91	09/10/91	07/09/91	09/10/91	07/09/91	09/10/91
Compounds								
VOCs								
Chloromethane	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Bromomethane	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Vinyl chloride	ND(10)	6J	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Chloroethane	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Methylene chloride	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
Acetone	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Carbon disulfide	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
1,1-Dichloroethene	ND(5)	8	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
1,1-Dichloroethane	4J	27	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
1,2-Dichloroethene (Total)	170	1300D	ND(5)	ND(5)	ND(5)	2J	ND(5)	ND(5)
Chloroform	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
1,2-Dichloroethane	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
2-Butanone	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Methyl tertiary butyl ether	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
1,1,1-Trichloroethane	18	36	ND(5)	ND(5)	ND(5)	3J	ND(5)	ND(5)
Carbon Tetrachloride	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
Vinyl acetate	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Bromodichloromethane	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
1,2-Dichloropropane	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
cis-1,3-Dichloropropene	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
Trichloroethene	97	150	2J	ND(5)	ND(5)	9	ND(5)	ND(5)
Dibromochloromethane	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
1,1,2-Trichloroethane	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
Benzene	ND(5)	2J	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
trans-1,3-Dichloropropene	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
Bromoform	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
4-Methyl-2-pentanone	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
2-Hexanone	ND(10)	ND(10)	ND(5)	ND(10)	ND(5)	ND(10)	ND(5)	ND(10)

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-1		MW-2		MW-3		MW-4	
Sample Unit:	µg/L		µg/L		µg/L		µg/L	
Sample Date:	07/09/91	09/10/91	07/09/91	09/10/91	07/09/91	09/10/91	07/09/91	09/10/91
Compounds								
VOCs								
Tetrachloroethene	1J	3J	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
1,1,2,2-Tetrachloroethane	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
Toluene	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
Chlorobenzene	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
Ethylbenzene	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
Styrene	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
Xylene (Total)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
1,2,4-Trimethylbenzene	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)J	ND(0.5)
1,3,5-Trimethylbenzene	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)J	ND(0.5)

Notes:

D Analyzed at a dilution.

J The associated value is estimated.

ND() Not detected at the practical quantitative limit (PQL) stated within parenthesis.

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-5		MW-6		MW-7		MW-8	
Sample Unit:	µg/L		µg/L		µg/L		µg/L	
Sample Date:	7/9/91	9/10/91	7/9/91	9/10/91	7/9/91	9/10/91	7/9/91	9/10/91
Compounds								
VOCs								
Chloromethane	ND(10)	ND(10)	ND(13000)D	ND(10000)D	ND(100)D	ND(10)	ND(10)	ND(10)
Bromomethane	ND(10)	ND(10)	ND(13000)D	ND(10000)D	ND(100)D	ND(10)	ND(10)	ND(10)
Vinyl chloride	ND(10)	ND(10)	ND(13000)D	ND(10000)D	ND(100)D	ND(10)	ND(10)	ND(10)
Chloroethane	ND(10)	ND(10)	ND(13000)D	ND(10000)D	ND(100)D	ND(10)	ND(10)	ND(10)
Methylene chloride	ND(5)	ND(5)	ND(6300)D	ND(5000)D	ND(50)D	9	ND(5)	ND(5)
Acetone	ND(10)	ND(10)	15000D	27000DJ	ND(100)D	8J	ND(10)	ND(10)
Carbon disulfide	ND(5)	ND(5)	ND(6300)	ND(5000)	ND(50)D	ND(5)	ND(5)	ND(5)
1,1-Dichloroethene	ND(5)	ND(5)	ND(6300)	ND(5000)D	ND(50)D	5J	ND(5)	ND(5)
1,1-Dichloroethane	ND(5)	ND(5)	5400JD	6600D	170D	140	ND(5)	ND(5)
1,2-Dichloroethene (Total)	16	4J	4300JD	26000D	20JD	70	ND(5)	ND(5)
Chloroform	ND(5)	ND(5)	ND(6300)	ND(5000)D	ND(50)D	ND(5)	ND(5)	ND(5)
1,2-Dichloroethane	ND(5)	ND(5)	1200JD	ND(5000)D	ND(50)D	ND(5)	ND(5)	ND(5)
2-Butanone	ND(10)	ND(10)	ND(13000)	ND(10000)D	ND(100)D	ND(10)	ND(10)	ND(10)
Methyl tertiary butyl ether	ND(5)	ND(5)	ND(6300)	ND(5000)D	ND(500)D	ND(5)	ND(5)	ND(5)
1,1,1-Trichloroethane	ND(5)	ND(5)	29000D	38000DJ	170D	63	ND(5)	ND(5)
Carbon Tetrachloride	ND(5)	ND(5)	ND(6300)	ND(5000)D	ND(50)D	ND(5)	ND(5)	ND(5)
Vinyl acetate	ND(10)	ND(10)	ND(13000)	ND(10000)D	ND(100)D	ND(10)	ND(10)	ND(10)
Bromodichloromethane	ND(5)	ND(5)	ND(6300)	ND(5000)D	ND(50)D	ND(5)	ND(5)	ND(5)
1,2-Dichloropropane	ND(5)	ND(5)	ND(6300)	ND(5000)D	ND(50)D	ND(5)	ND(5)	ND(5)
cis-1,3-Dichloropropene	ND(5)	ND(5)	ND(6300)	ND(5000)D	ND(500)D	ND(5)	ND(5)	ND(5)
Trichloroethene	ND(5)	ND(5)	207000D	218000DJ	1200D	570D	ND(5)	ND(5)
Dibromochloromethane	ND(5)	ND(5)	ND(6300)	ND(5000)D	ND(50)D	ND(5)	ND(5)	ND(5)
1,1,2-Trichloroethane	ND(5)	ND(5)	ND(6300)	ND(5000)D	ND(50)D	ND(5)	ND(5)	ND(5)
Benzene	ND(5)	ND(5)	ND(6300)	ND(5000)D	ND(50)D	ND(5)	ND(5)	ND(5)
trans-1,3-Dichloropropene	ND(5)	ND(5)	ND(6300)	ND(5000)D	ND(50)D	ND(5)	ND(5)	ND(5)
Bromoform	ND(5)	ND(5)	ND(6300)	ND(5000)D	ND(50)D	ND(5)	ND(5)	ND(5)
4-Methyl-2-pentanone	ND(10)	ND(10)	ND(13000)D	ND(10000)D	ND(100)D	ND(10)	ND(10)	ND(10)
2-Hexanone	ND(10)	ND(10)	ND(13000)D	ND(10000)D	ND(100)D	ND(10)	ND(10)	ND(10)

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-5		MW-6		MW-7		MW-8	
Sample Unit:	µg/L		µg/L		µg/L		µg/L	
Sample Date:	7/9/91	9/10/91	7/9/91	9/10/91	7/9/91	9/10/91	7/9/91	9/10/91
Compounds								
VOCs								
Tetrachloroethene	ND(5)	ND(5)	1300JD	ND(5000)D	9JD	5J	ND(5)	ND(5)
1,1,2,2-Tetrachloroethane	ND(5)	ND(5)	ND(6300)D	ND(5000)D	ND(500)	ND(5)	ND(5)	ND(5)
Toluene	ND(5)	ND(5)	19000D	27000DJ	ND(500)	17	ND(5)	ND(5)
Chlorobenzene	ND(5)	ND(5)	ND(6300)D	ND(5000)D	ND(500)	ND(5)	ND(5)	ND(5)
Ethylbenzene	ND(5)	ND(5)	ND(6300)D	ND(5000)D	ND(500)	ND(5)	ND(5)	ND(5)
Styrene	ND(5)	ND(5)	ND(6300)D	ND(5000)D	ND(500)	ND(5)	ND(5)	ND(5)
Xylene (Total)	ND(5)	ND(5)	ND(6300)D	ND(5000)D	ND(500)	ND(5)	ND(5)	ND(5)
1,2,4-Trimethylbenzene	ND(0.5)	ND(0.5)	180J	190J	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
1,3,5-Trimethylbenzene	ND(0.5)	ND(0.5)	56J	26J	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

Notes:

D Analyzed at a dilution.

J The associated value is estimated.

ND() Not detected at the practical quantitative limit (PQL) stated within parenthesis.

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-9		MW-10		MW-11		MW-10 (Dup.)	MW-6 (Dup.)
Sample Unit:	µg/L		µg/L		µg/L		µg/L	µg/L
Sample Date:	7/11/91	9/10/91	7/9/91	9/10/91	7/9/91	9/10/91	7/9/91	9/10/91
Compounds								
VOCs								
Chloromethane	ND(10)	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(25000)D
Bromomethane	ND(10)	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(25000)D
Vinyl chloride	ND(10)	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(25000)D
Chloroethane	ND(10)	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(25000)D
Methylene chloride	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
Acetone	26	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	48000DJ
Carbon disulfide	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
1,1-Dichloroethene	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
1,1-Dichloroethane	ND(5)	NA	ND(5)	ND(5)	ND(5)	2J	ND(5)	ND(13000)D
1,2-Dichloroethene (Total)	ND(5)	NA	ND(5)	ND(5)	ND(5)	6	ND(5)	22000DJ
Chloroform	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
1,2-Dichloroethane	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
2-Butanone	ND(10)	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(25000)D
Methyl tertiary butyl ether	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
1,1,1-Trichloroethane	ND(5)	NA	ND(5)	ND(5)	ND(5)	12	ND(5)	47000DJ
Carbon Tetrachloride	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
Vinyl acetate	ND(10)	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(25000)D
Bromodichloromethane	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
1,2-Dichloropropane	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
cis-1,3-Dichloropropene	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
Trichloroethene	ND(5)	NA	ND(5)	2J	ND(5)	97	ND(5)	28000DJ
Dibromochloromethane	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
1,1,2-Trichloroethane	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
Benzene	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
trans-1,3-Dichloropropene	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
Bromoform	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
4-Methyl-2-pentanone	ND(10)	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	7800DJ
2-Hexanone	ND(10)	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(25000)D

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-9		MW-10		MW-11		MW-10 (Dup.)	MW-6 (Dup.)
Sample Unit:	µg/L		µg/L		µg/L		µg/L	µg/L
Sample Date:	7/9/91	9/10/91	7/9/91	9/10/91	7/9/91	9/10/91	7/9/91	9/10/91
Compounds								
VOCs								
Tetrachloroethene	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
1,1,2,2-Tetrachloroethane	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
Toluene	ND(5)	NA	ND(5)	ND(5)	ND(5)	10	ND(5)	35000DJ
Chlorobenzene	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
Ethylbenzene	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
Styrene	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
Xylene (Total)	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13000)D
1,2,4-Trimethylbenzene	ND(0.5)	NA	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	24J
1,3,5-Trimethylbenzene	ND(0.5)	NA	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	13J

Notes:

D Analyzed at a dilution.

J The associated value is estimated.

ND() Not detected at the practical quantitative limit (PQL) stated within parenthesis.

NA Not analyzed due to poor well recovery.

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Sample I.D.: Sample Unit: Sample Date:	MW-1 $\mu\text{g/L}$	MW-2 $\mu\text{g/L}$	MW-3 $\mu\text{g/L}$	MW-4 $\mu\text{g/L}$
	07/10/91	09/11/91	07/09/91	09/11/91
Compounds				
BNA's				
Phenol	ND(11)	ND(10)	ND(10)	ND(10)
bis(2-Chloroethyl) ether	ND(11)	ND(10)	ND(10)	ND(10)
2-Chlorophenol	ND(11)	ND(10)	ND(10)	ND(10)
1,3-Dichlorobenzene	ND(11)	ND(10)	ND(10)	ND(10)
1,4-Dichlorobenzene	ND(11)	ND(10)	ND(10)	ND(10)
Benzyl alcohol	ND(11)	ND(10)	ND(10)	ND(10)
1,2-Dichlorobenzene	ND(11)	ND(10)	ND(10)	ND(10)
2-Methylphenol	ND(11)	ND(10)	ND(10)	ND(10)
2,2'-oxybis(1-Chloropropane)	ND(11)	ND(10)	ND(10)	ND(10)
4-Methylphenol	ND(11)	ND(10)	ND(10)	ND(10)
N-Nitroso-di-n-propylamine	ND(11)	ND(10)	ND(10)	ND(10)
Hexachloroethane	ND(11)	ND(10)	ND(10)	ND(10)
Nitrobenzene	ND(11)	ND(10)	ND(10)	ND(10)
Isophorone	ND(11)	ND(10)	ND(10)	ND(10)
2-Nitrophenol	ND(11)	ND(10)	ND(10)	ND(10)
2,4-Dimethylphenol	ND(11)	ND(10)	ND(10)	ND(10)
Benzoic acid	ND(11)	ND(10)	ND(10)	ND(10)
bis(2-Chloroethoxy) methane	ND(11)	ND(10)	ND(10)	ND(10)
2,4-Dichlorophenol	ND(11)	ND(10)	ND(10)	ND(10)
1,2,4-Trichlorobenzene	ND(11)	ND(10)	ND(10)	ND(10)
Naphthalene	ND(11)	ND(10)	ND(10)	ND(10)
4-Chloroaniline	ND(11)	ND(10)	ND(10)	ND(10)
Hexachlorobutadiene	ND(11)	ND(10)	ND(10)	ND(10)
4-Chloro-3-methylphenol	ND(11)	ND(10)	ND(10)	ND(10)
2-Methylnaphthalene	ND(11)	ND(10)	ND(10)	ND(10)
Hexachlorocyclopentadiene	ND(11)	ND(10)R	ND(10)	ND(10)R
2,4,6-Trichlorophenol	ND(11)	ND(10)	ND(10)	ND(10)
2,4,5-Trichlorophenol	ND(54)	ND(48)	ND(51)	ND(48)
2-Chloronaphthalene	ND(11)	ND(10)	ND(10)	ND(10)

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Sample I.D.: Sample Unit: Sample Date:	MW-1 $\mu\text{g/L}$	MW-2 $\mu\text{g/L}$	MW-3 $\mu\text{g/L}$	MW-4 $\mu\text{g/L}$
	07/10/91	09/11/91	07/09/91	09/11/91
Compounds				
BNA's				
2-Nitroaniline	ND(54)	ND(48)	ND(51)	ND(48)
Dimethylphthalate	ND(11)	ND(10)	ND(10)	ND(10)
Acenaphthylene	ND(11)	ND(10)	ND(10)	ND(10)
3-Nitroaniline	ND(54)	ND(48)	ND(51)	ND(48)
Acenaphthene	ND(11)	ND(10)	ND(10)	ND(10)
2,4-Dinitrophenol	ND(54)	ND(48)	ND(51)	ND(48)
4-Nitrophenol	ND(54)	ND(48)	ND(51)	ND(48)
Dibenzofuran	ND(11)	ND(10)	ND(10)	ND(10)
2,4-Dinitrotoluene	ND(11)	ND(10)	ND(10)	ND(10)
2,6-Dinitrotoluene	ND(11)	ND(10)	ND(10)	ND(10)
Diethylphthalate	ND(11)	ND(10)	ND(10)	ND(10)
4-Chlorophenyl-phenylether	ND(11)	ND(10)	ND(10)	ND(10)
Fluorene	ND(11)	ND(10)	ND(10)	ND(10)
4-Nitroaniline	ND(54)	ND(48)	ND(51)	ND(48)
4,6-Dinitro-2-methylphenol	ND(54)	ND(48)	ND(51)	ND(48)
N-Nitrosodiphenylamine	ND(11)	ND(10)	ND(10)	ND(10)
4-Bromophenyl-phenylether	ND(11)	ND(10)	ND(10)	ND(10)
Hexachlorobenzene	ND(11)	ND(10)	ND(10)	ND(10)
Pentachlorophenol	ND(54)	ND(48)	ND(51)	ND(48)
Phenanthrene	ND(11)	ND(10)	ND(10)	ND(10)
Anthracene	ND(11)	ND(10)	ND(10)	ND(10)
Di-n-butylphthalate	ND(11)	ND(10)	ND(10)	ND(10)
Fluoranthene	ND(11)	ND(10)	ND(10)	ND(10)
Pyrene	ND(11)	ND(10)	ND(10)	ND(10)
Butylbenzylphthalate	ND(11)	ND(10)	ND(10)	ND(10)
3,3'-Dichlorobenzidine	ND(22)	ND(19)	ND(20)	ND(19)
Benzo(a) anthracene	ND(11)	ND(10)	ND(10)	ND(10)
bis(2-Ethylhexyl) phthalate	ND(11)	ND(10)	ND(10)	ND(10)
Chrysene	ND(11)	ND(10)	ND(10)	ND(10)

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-1		MW-2		MW-3		MW-4	
Sample Unit:	µg/L		µg/L		µg/L		µg/L	
Sample Date:	07/10/91	09/11/91	07/09/91	09/11/91	07/09/91	09/11/91	07/09/91	09/11/91
Compounds								
BNAs								
Di-n-octylphthalate	ND(11)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Benzo(b) fluoranthene	ND(11)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Benzo(k) fluoranthene	ND(11)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Benzo(a) pyrene	ND(11)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Indeno (1,2,3-c)D pyrene	ND(11)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Dibenzo (a,h) anthracene	ND(11)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Benzo(g,h,i) perylene	ND(11)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)

Notes:

ND() Not detected at the practical quantitation limit (PQL) stated in parenthesis.

D Analyzed at a dilution.

J The associated value is estimated.

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-5		MW-6		MW-7		MW-8	
Sample Unit:	µg/L		µg/L		µg/L		µg/L	
Sample Date:	07/09/91	09/11/91	07/09/91	09/11/91	07/09/91	09/11/91	07/09/91	09/11/91
Compounds								
BNAs								
Phenol	ND(10)	NA	31	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
bis(2-Chloroethyl) ether	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
2-Chlorophenol	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
1,3-Dichlorobenzene	ND(10)	NA	4J	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
1,4-Dichlorobenzene	ND(10)	NA	34	30DJ	ND(10)	ND(10)	ND(10)	ND(10)
Benzyl alcohol	ND(10)	NA	26	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
1,2-Dichlorobenzene	ND(10)	NA	ND(13)	420DJ	ND(10)	ND(10)	ND(10)	ND(10)
2-Methylphenol	ND(10)	NA	130	73DJ	ND(10)	ND(10)	ND(10)	ND(10)
2,2'-oxybis(1-Chloropropane)	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
4-Methylphenol	ND(10)	NA	140	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
N-Nitroso-di-n-propylamine	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Hexachloroethane	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Nitrobenzene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Isophorone	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
2-Nitrophenol	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
2,4-Dimethylphenol	ND(10)	NA	18	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Benzoic acid	ND(10)	NA	190	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
bis(2-Chloroethoxy) methane	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
2,4-Dichlorophenol	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
1,2,4-Trichlorobenzene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Naphthalene	ND(10)	NA	14	12JD	ND(10)	ND(10)	ND(10)	ND(10)
4-Chloroaniline	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Hexachlorobutadiene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
4-Chloro-3-methylphenol	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
2-Methylnaphthalene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Hexachlorocyclopentadiene	ND(10)	NA	ND(13)	ND(19)DR	ND(10)	ND(10)R	ND(10)	ND(10)R
2,4,6-Trichlorophenol	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
2,4,5-Trichlorophenol	ND(51)	NA	ND(63)	ND(96)D	ND(52)	ND(48)	ND(51)	ND(48)
2-Chloronaphthalene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-5		MW-6		MW-7		MW-8	
Sample Unit:	µg/L		µg/L		µg/L		µg/L	
Sample Date:	07/09/91	09/11/91	07/09/91	09/11/91	07/09/91	09/11/91	07/09/91	09/11/91
Compounds								
BNAs								
2-Nitroaniline	ND(10)	NA	ND(63)	ND(96)D	ND(10)	ND(48)	ND(10)	ND(48)
Dimethylphthalate	ND(10)	NA	1J	3JD	ND(10)	ND(10)	ND(10)	ND(10)
Acenaphthylene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
3-Nitroaniline	ND(51)	NA	ND(63)	ND(96)D	ND(52)	ND(48)	ND(51)	ND(48)
Acenaphthene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
2,4-Dinitrophenol	ND(51)	NA	ND(63)	ND(96)D	ND(52)	ND(48)	ND(51)	ND(48)
4-Nitrophenol	ND(51)	NA	ND(63)	ND(96)D	ND(52)	ND(48)	ND(51)	ND(48)
Dibenzofuran	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
2,4-Dinitrotoluene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
2,6-Dinitrotoluene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Diethylphthalate	ND(10)	NA	14	53DJ	ND(10)	ND(10)	ND(10)	ND(10)
4-Chlorophenyl-phenylether	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Fluorene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
4-Nitroaniline	ND(51)	NA	ND(63)	ND(96)D	ND(52)	ND(48)	ND(51)	ND(48)
4,6-Dinitro-2-methylphenol	ND(51)	NA	ND(63)	ND(96)D	ND(52)	ND(48)	ND(51)	ND(48)
N-Nitrosodiphenylamine	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
4-Bromophenyl-phenylether	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Hexachlorobenzene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Pentachlorophenol	ND(51)	NA	ND(63)	ND(96)D	ND(52)	ND(48)	ND(51)	ND(48)
Phenanthrene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Anthracene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Di-n-butylphthalate	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Fluoranthene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Pyrene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Butylbenzylphthalate	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
3,3'-Dichlorobenzidine	ND(20)	NA	ND(25)	ND(38)D	ND(21)	ND(19)	ND(20)	ND(19)
Benzo(a) anthracene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
bis(2-Ethylhexyl) phthalate	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Chrysene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-5		MW-6		MW-7		MW-8	
Sample Unit:	µg/L		µg/L		µg/L		µg/L	
Sample Date:	07/09/91	09/11/91	07/09/91	09/11/91	07/09/91	09/11/91	07/09/91	09/11/91
Compounds								
BNAs								
Di-n-octylphthalate	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Benzo(b) fluoranthene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Benzo(k) fluoranthene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Benzo(a) pyrene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Indeno (1,2,3-c)D pyrene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Dibenzo (a,h) anthracene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)
Benzo(g,h,i) perylene	ND(10)	NA	ND(13)	ND(19)D	ND(10)	ND(10)	ND(10)	ND(10)

Notes:

ND() Not detected at the practical quantitation limit (PQL) stated in parenthesis.

D Analyzed at a dilution.

J The associated value is estimated.

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-9		MW-10		MW-11		MW-10 (Dup.)	MW-6 (Dup.)
Sample Unit:	µg/L		µg/L		µg/L		µg/L	µg/L
Sample Date:	07/09/91	09/11/91	07/09/91	09/11/91	07/10/91	09/11/91	07/09/91	09/11/91
Compounds								
<u>BNAs</u>								
Phenol	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(12)J	21
bis(2-Chloroethyl) ether	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
2-Chlorophenol	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(12)J	ND(10)
1,3-Dichlorobenzene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	2J
1,4-Dichlorobenzene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	21J
Benzyl alcohol	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(12)J	ND(10)
1,2-Dichlorobenzene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	280J
2-Methylphenol	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(12)J	7J
2,2'-oxybis(1-Chloropropane)	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
4-Methylphenol	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(12)J	68J
N-Nitroso-di-n-propylamine	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Hexachloroethane	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Nitrobenzene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Isophorone	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
2-Nitrophenol	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(12)J	ND(10)
2,4-Dimethylphenol	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(12)J	12
Benzoic acid	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(12)J	ND(10)
bis(2-Chloroethoxy) methane	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
2,4-Dichlorophenol	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(12)J	ND(10)
1,2,4-Trichlorobenzene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Naphthalene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	8JD
4-Chloroaniline	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Hexachlorobutadiene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
4-Chloro-3-methylphenol	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(12)J	ND(10)
2-Methylnaphthalene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Hexachlorocyclopentadiene	NA	NA	ND(10)	ND(10)R	ND(14)	ND(10)R	ND(10)	ND(10)R
2,4,6-Trichlorophenol	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(12)J	ND(10)
2,4,5-Trichlorophenol	NA	NA	ND(51)	ND(48)	ND(72)	ND(48)	ND(59)J	ND(48)
2-Chloronaphthalene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-9		MW-10		MW-11		MW-10 (Dup.)	MW-6 (Dup.)
Sample Unit:	µg/L		µg/L		µg/L		µg/L	µg/L
Sample Date:	07/09/91	09/11/91	07/09/91	09/11/91	07/10/91	09/11/91	07/09/91	09/11/91
Compounds								
BNAs								
2-Nitroaniline	NA	NA	ND(10)	ND(48)	ND(14)	ND(48)	ND(10)	ND(48)
Dimethylphthalate	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	3J
Acenaphthylene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
3-Nitroaniline	NA	NA	ND(51)	ND(48)	ND(72)	ND(48)	ND(48)	ND(48)
Acenaphthene	NA	NA	ND(51)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
2,4-Dinitrophenol	NA	NA	ND(51)	ND(48)	ND(72)	ND(48)	ND(59)J	ND(48)
4-Nitrophenol	NA	NA	ND(10)	ND(48)	ND(72)	ND(48)	ND(59)J	ND(48)
Dibenzofuran	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
2,4-Dinitrotoluene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
2,6-Dinitrotoluene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Diethylphthalate	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	43J
4-Chlorophenyl-phenylether	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Fluorene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
4-Nitroaniline	NA	NA	ND(51)	ND(48)	ND(72)	ND(48)	ND(48)	ND(48)
4,6-Dinitro-2-methylphenol	NA	NA	ND(51)	ND(48)	ND(72)	ND(48)	ND(59)J	ND(48)
N-Nitrosodiphenylamine	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
4-Bromophenyl-phenylether	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Hexachlorobenzene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Pentachlorophenol	NA	NA	ND(51)	ND(48)	ND(72)	ND(48)	ND(59)J	ND(48)
Phenanthrene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Anthracene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Di-n-butylphthalate	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Fluoranthene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Pyrene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Butylbenzylphthalate	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
3,3'-Dichlorobenzidine	NA	NA	ND(20)	ND(19)	ND(29)	ND(19)	ND(19)	ND(19)
Benzo(a) anthracene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
bis(2-Ethylhexyl) phthalate	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Chrysene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-9		MW-10		MW-11		MW-10 (Dup.)	MW-6 (Dup.)
Sample Unit:	µg/L		µg/L		µg/L		µg/L	µg/L
Sample Date:	07/09/91	09/11/91	07/09/91	09/11/91	07/10/91	09/11/91	07/09/91	09/11/91
Compounds								
BNAs								
Di-n-octylphthalate	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Benzo(b) fluoranthene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Benzo(k) fluoranthene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Benzo(a) pyrene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Indeno (1,2,3-c)D pyrene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Dibenzo (a,h) anthracene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)
Benzo(g,h,i) perylene	NA	NA	ND(10)	ND(10)	ND(14)	ND(10)	ND(10)	ND(10)

Notes:

ND() Not detected at the practical quantitation limit (PQL) stated in parenthesis.

D Analyzed at a dilution.

J The associated value is estimated.

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-1		MW-2		MW-3		MW-4	
Sample Unit:	µg/L		µg/L		µg/L		µg/L	
Sample Date:	07/11/91	09/10/91	07/09/91	09/10/91	07/10/91	09/10/91	07/09/91	09/10/91
<i>Compounds</i>								
PCBs								
Aroclor 1016	ND(0.24)	NA	ND(0.26)	NA	ND(0.24)	NA	ND(0.24)	ND(0.24)
Aroclor 1221	ND(0.24)	NA	ND(0.26)	NA	ND(0.24)	NA	ND(0.24)	ND(0.24)
Aroclor 1232	ND(0.24)	NA	ND(0.26)	NA	ND(0.24)	NA	ND(0.24)	ND(0.24)
Aroclor 1242	ND(0.24)	NA	ND(0.26)	NA	ND(0.24)	NA	ND(0.24)	ND(0.24)
Aroclor 1248	ND(0.24)	NA	ND(0.26)	NA	ND(0.24)	NA	ND(0.24)	ND(0.24)
Aroclor 1254	ND(0.24)	NA	ND(0.26)	NA	ND(0.24)	NA	ND(0.24)	ND(0.24)
Aroclor 1260	ND(0.24)	NA	ND(0.26)	NA	ND(0.24)	NA	ND(0.24)	ND(0.24)

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-5		MW-6		MW-7		MW-8	
Sample Unit:	µg/L		µg/L		µg/L		µg/L	
Sample Date:	07/09/91	09/10/91	07/09/91	09/12/91	07/09/91	09/13/91	07/09/91	09/10/91
<i>Compounds</i>								
PCBs								
Aroclor 1016	ND(0.25)	NA	ND(1.2)	ND(0.49)	ND(0.24)	ND(0.25)	ND(0.24)	ND(0.24)
Aroclor 1221	ND(0.25)	NA	ND(1.2)	NA	ND(0.24)	ND(0.25)	ND(0.24)	ND(0.24)
Aroclor 1232	ND(0.25)	NA	ND(1.2)	ND(0.49)	ND(0.24)	ND(0.25)	ND(0.24)	ND(0.24)
Aroclor 1242	ND(0.25)	NA	ND(1.2)	ND(0.49)	ND(0.24)	ND(0.25)	ND(0.24)	ND(0.24)
Aroclor 1248	ND(0.25)	NA	ND(1.2)	ND(0.49)	ND(0.24)	ND(0.25)	ND(0.24)	ND(0.24)
Aroclor 1254	ND(0.25)	NA	ND(1.2)	ND(0.49)	ND(0.24)	ND(0.25)	ND(0.24)	ND(0.24)
Aroclor 1260	ND(0.25)	NA	ND(1.2)	ND(0.49)	ND(0.24)	ND(0.25)	ND(0.24)	ND(0.24)

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-9		MW-10		MW-11		MW-10 Dup.	MW-6 (Dup.)
Sample Unit:	µg/L		µg/L		µg/L		µg/L	
Sample Date:	07/09/91	09/10/91	07/09/91	09/10/91	07/09/91	09/11/91	07/09/91	09/10/91
Compounds								
PCBs								
Aroclor 1016	NA	NA	ND(0.26)	ND(0.25)	NA	ND(0.26)J	ND(0.26)	NA
Aroclor 1221	NA	NA	ND(0.26)	ND(0.25)	NA	ND(0.26)J	ND(0.26)	NA
Aroclor 1232	NA	NA	ND(0.26)	ND(0.25)	NA	ND(0.26)J	ND(0.26)	NA
Aroclor 1242	NA	NA	ND(0.26)	ND(0.25)	NA	ND(0.26)J	ND(0.26)	NA
Aroclor 1248	NA	NA	ND(0.26)	ND(0.25)	NA	ND(0.26)J	ND(0.26)	NA
Aroclor 1254	NA	NA	ND(0.26)	ND(0.25)	NA	ND(0.26)J	ND(0.26)	NA
Aroclor 1260	NA	NA	ND(0.26)	ND(0.25)	NA	ND(0.26)J	ND(0.26)	NA

Notes:

NA Not analyzed due to poor well recovery.

ND() Not detected at the practical quantitation limit (PQL) stated within parenthesis.

I Indicates interference present in the matrix which affected the result.

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-1		MW-2		MW-3		MW-4	
Sample Unit:	µg/L		µg/L		µg/L		µg/L	
Sample Date:	07/11/91	09/10/91	07/10/91	09/10/91	07/10/91	09/10/91	07/09/91	09/10/91
<i>Compounds</i>								
METALS								
Arsenic	4.0	NA	3.5	NA	6.5	NA	2.0	3.1
Cadmium	ND(3.0)	NA	ND(3.0)	NA	ND(3.0)	NA	ND(3.0)	ND(3.0)
Chromium	15.0	NA	11.0	NA	19.0	NA	7.0	17.0J
Copper	18.0	NA	8.0	NA	53.0	NA	17.0	14.0
Lead	3.9	NA	3.5	NA	8.9	NA	3.9	5.0
Nickel	13.0	NA	9.0	NA	24.0	NA	10.0	17.0
Silver	ND(6.0)	NA	ND(6.0)	NA	ND(6.0)	NA	ND(6.0)	ND(6.0)J
Zinc	58.0	NA	41.0	NA	71.0J	NA	49.0J	79.0
Cyanide	ND(10.0)	NA	ND(10.0)	NA	ND(10.0)	NA	ND(10.0)	ND(10.0)

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-5		MW-6		MW-7		MW-8	
Sample Unit:	µg/L		µg/L		µg/L		µg/L	
Sample Date:	07/09/91	09/10/91	07/09/91	09/10/91	07/09/91	09/10/91	07/09/91	32029.0

Compounds

METALS

Arsenic	1.3	NA	36.8	NA	2.0J	NA	ND(1.0J)	1.8
Cadmium	ND(3.0)	NA	ND(3.0)	NA	ND(3.0)	NA	ND(3.0)	ND(3.0)
Chromium	ND(5.0)	NA	62.0	NA	9.0	NA	ND(5.0)	9.0
Copper	ND(6.0)	NA	112.0	NA	7.0	NA	ND(6.0)	10.0
Lead	ND(1.0J)	NA	31.1J	NA	ND(1.0J)	NA	ND(1.0J)	1.4
Nickel	ND(9.0)	NA	80.0	NA	11.0	NA	ND(9.0)	ND(9.0)
Silver	ND(6.0)	NA	ND(6.0)	NA	ND(6.0)	NA	ND(6.0)	ND(6.0)
Zinc	ND(4.0)	NA	154.0	NA	ND(4.0)	NA	ND(4.0)	42.0
Cyanide	ND(10.0)	NA	ND(10.0)	NA	ND(10.0)	NA	ND(10.0)	ND(10.0)

TABLE 6.9
GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.:	MW-9		MW-10		MW-11		MW-10 Dup.	MW-6 (Dup.)
Sample Unit:	µg/L		µg/L		µg/L		µg/L	
Sample Date:	07/09/91	09/10/91	07/09/91	09/10/91	07/09/91	09/10/91	07/09/91	09/10/91

Compounds

METALS

Arsenic	NA	NA	1.5	NA	NA	NA	ND(1.0)	NA
Cadmium	NA	NA	ND(3.0)	NA	NA	NA	ND(3.0)	NA
Chromium	NA	NA	9.0	NA	NA	NA	ND(5.0)	NA
Copper	NA	NA	11.0	NA	NA	NA	ND(6.0)	NA
Lead	NA	NA	1.4	NA	NA	NA	ND(1.0)	NA
Nickel	NA	NA	ND(9.0)	NA	NA	NA	ND(9.0)	NA
Silver	NA	NA	ND(6.0)	NA	NA	NA	ND(6.0)	NA
Zinc	NA	NA	11.0	NA	NA	NA	ND(4.0)	NA
Cyanide	NA	NA	ND(10.0)	NA	NA	NA	ND(10.0)	NA

Notes:

NA Not analyzed due to poor well recovery.

ND() Not detected at the practical quantitation limit (PQL) stated within parenthesis.

B Value is less than contract detection limit but greater than or equal to instrument detection limit.

J The associated value is an estimate.

M Duplicate injection precision not met.

N Spike sample recovery not within control limits.

TABLE 6.10
OFF-SITE GROUNDWATER SAMPLE DATA - PLATINUM DRIVE WELLS
DUVA PROPERTY RI/FS

Sample Location:	MW-12		MW-13		MW-15
Units:	(µg/L)		(µg/L)		(Dup of MW-13)
Sample Date:	10/10/91	12/12/91	10/10/91	12/12/91	10/01/91
Compound					
VOCs					
Chloromethane	ND(10)	ND(10)	ND(50)	ND(10)	ND(25)
Bromomethane	ND(10)	ND(10)	ND(50)	ND(10)	ND(25)
Vinyl chloride	ND(10)	ND(10)	ND(50)	ND(10)	ND(25)
Chloroethane	ND(10)	ND(10)	ND(50)	ND(10)	ND(25)
Methylene chloride	2J	ND(5)	10J	ND(5)	ND(13)
Acetone	ND(10)	ND(10)	ND(64)	ND(10)	ND(25)
Carbon disulfide	ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
1,1-Dichloroethene	ND(5)J	ND(5)	ND(25)J	ND(5)	ND(13)J
1,1-Dichloroethane	ND(5)	ND(5)	18J	ND(5)	10J
1,2-Dichloroethene (total)	ND(5)	ND(5)	660J	29	380J
Chloroform	ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
1,2-Dichloroethane	ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
2-Butanone	ND(10)	ND(10)	ND(50)	ND(10)	ND(25)
Methyl tertiary butyl ether	ND(5)	NA	ND(25)	NA	ND(13)
1,1,1-Trichloroethane	ND(5)	ND(5)	4J	ND(5)	2J
Carbon tetrachloride	ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
Vinyl acetate	ND(10)	ND(10)	ND(50)	ND(10)	ND(25)
Bromodichloromethane	ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
1,2-Dichloropropane	ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
cis-1,3-Dichloropropene	ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
Trichloroethene	ND(5)	ND(5)	520J	38	290J
Dibromochloromethane	ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
1,1,2-Trichloroethane	ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
Benzene	ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
trans-1,3-Dichloropropene	ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
Bromoform	ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
4-Methyl-2-pentanone	ND(10)	ND(10)	ND(50)	ND(10)	ND(25)
2-Hexanone	ND(10)	ND(10)	ND(50)	ND(10)	ND(25)

TABLE 6.10
OFF-SITE GROUNDWATER SAMPLE DATA - PLATINUM DRIVE WELLS
DUVA PROPERTY RI/FS

<i>Sample Location:</i>						
		<i>MW-12</i>		<i>MW-13</i>		<i>MW-15</i>
<i>Units:</i>		<i>(µg/L)</i>		<i>(µg/L)</i>		<i>(Dup of MW-13)</i>
<i>Sample Date:</i>		<i>0/10/91</i>	<i>12/12/91</i>	<i>10/10/91</i>	<i>12/12/91</i>	<i>10/01/91</i>
<i>Compound</i>						
<u>VOCs</u>						
Tetrachloroethene		ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
1,1,2,2-Tetrachloroethane		ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
Toluene		ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
Chlorobenzene		ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
Ethylbenzene		ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
Styrene		ND(5)	ND(5)	ND(25)	ND(5)	ND(13)
Xylene (total)		ND(5)	ND(5)	ND(25)	ND(5)	ND(13)

Notes:

ND Non-detected at the stated detection limit.

J Associated value is below the practical quantitation limit, and was qualified as estimated by the laboratory.

B Concentration is below the practical quantitation limit, but above the instrument detection limit.

TABLE 6.10
OFF-SITE GROUNDWATER SAMPLE DATA - PLATINUM DRIVE WELLS
DUVA PROPERTY RI/FS

Sample Location:		MW-12		MW-13		MW-15
		(µg/L)		(µg/L)		(Dup of MW-13)
Units:						
Sample Date:		10/10/91	12/12/91	10/10/91	12/12/91	10/01/91
Compound						
GC VOCs						
1,2,4-Trimethylbenzene		ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
1,3,5-Trimethylbenzene		ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Methyl tertiary butyl ether		ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

Notes:

ND Non-detected at the stated detection limit.

J Associated value is below the practical quantitation limit, and was qualified as estimated by the laboratory.

B Concentration is below the practical quantitation limit, but above the instrument detection limit.

TABLE 6.10
OFF-SITE GROUNDWATER SAMPLE DATA - PLATINUM DRIVE WELLS
DUVA PROPERTY RI/FS

Sample Location:		MW-12		MW-13		MW-15
Units:		(µg/L)		(µg/L)		(Dup of MW-13)
Sample Date:		10/10/91	12/12/91	10/10/91	12/12/91	10/01/91
Compound						
BNAs						
Phenol		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
bis(2-Chloroethyl) ether		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
2-Chlorophenol		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
1,3-Dichlorobenzene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
1,4-Dichlorobenzene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Benzyl alcohol		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
1,2-Dichlorobenzene		ND(12)	ND(10)	3J	ND(10)	6J
2-Methylphenol		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
bis(2-Chloroisopropyl) ether		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
4-Methylphenol		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
n-Nitroso-di-n-propylamine		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Hexachloroethane		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Nitrobenzene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Isophorone		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
2-Nitrophenol		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
2,4-Dimethylphenol		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Benzoic acid		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
bis(2-Chloroethoxy) methane		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
2,4-Dichlorophenol		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
1,2,4-Trichlorobenzene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Naphthalene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
4-Chloroaniline		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Hexachlorobutadiene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
4-Chloro-3-methylphenol		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
2-Methylnaphthalene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Hexachlorocyclopentadiene		ND(12)R	ND(10)	ND(12)R	ND(10)	ND(10)R
2,4,6-Trichlorophenol		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
2,4,5-Trichlorophenol		ND(59)	ND(50)	ND(61)	ND(51)	ND(51)
2-Chloronaphthalene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
2-Nitroaniline		ND(59)	ND(50)	ND(61)	ND(51)	ND(51)

TABLE 6.10
OFF-SITE GROUNDWATER SAMPLE DATA - PLATINUM DRIVE WELLS
DUVA PROPERTY RI/FS

Sample Location:		MW-12		MW-13		MW-15
Units:		(µg/L)		(µg/L)		(Dup of MW-13)
Sample Date:		0/10/91	12/12/91	10/10/91	12/12/91	10/01/91
Compound						
BNAs						
Dimethylphthalate		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Acenaphthylene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
3-Nitroaniline		ND(59)	ND(50)	ND(61)	ND(51)	ND(51)
Acenaphthene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
2,4-Dinitrophenol		ND(59)	ND(50)	ND(61)	ND(51)	ND(51)
4-Nitrophenol		ND(59)	ND(50)	ND(61)	ND(51)	ND(51)
Dibenzofuran		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
2,4-Dinitrotoluene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
2,6-Dinitrotoluene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Diethylphthalate		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
4-Chlorophenyl-phenylether		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Fluorene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
4-Nitroaniline		ND(59)	ND(50)	ND(61)	ND(51)	ND(51)
4,6-Dintro-2-methylphenol		ND(59)	ND(50)	ND(61)	ND(51)	ND(51)
N-nitrosodiphenylamine		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
4-Bromophenyl-phenylether		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Hexachlorobenzene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Pentachlorophenol		ND(59)	ND(50)	ND(61)	ND(51)	ND(51)
Phenanthrene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Anthracene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Di-n-butylphthalate		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Fluoranthene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Pyrene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Butylbenzylphthalate		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
3,3'-Dichlorobenzidine		ND(24)	ND(20)	ND(24)	ND(20)	ND(20)
Benzo(a) anthracene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Bis(2-ethylhexyl) phthalate		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Chrysene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Di-n-octylphthalate		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Benzo(b) fluoranthene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)

TABLE 6.10
OFF-SITE GROUNDWATER SAMPLE DATA - PLATINUM DRIVE WELLS
DUVA PROPERTY RI/FS

<i>Sample Location:</i>		<i>MW-12</i>		<i>MW-13</i>		<i>MW-15</i>
<i>Units:</i>		<i>(µg/L)</i>		<i>(µg/L)</i>		<i>(Dup of MW-13)</i>
<i>Sample Date:</i>		<i>0/10/91</i>	<i>12/12/91</i>	<i>10/10/91</i>	<i>12/12/91</i>	<i>10/01/91</i>
<i>Compound</i>						
<u>BNAs</u>						
Benzo(k) fluoranthene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Benzo(a) pyrene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Indeno (1,2,3-cd) pyrene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Dibenzo (a,h) anthracene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)
Benzo (g,h,i) perylene		ND(12)	ND(10)	ND(12)	ND(10)	ND(10)

Notes:

ND Non-detected at the stated detection limit.

J Associated value is below the practical quantitation limit, and was qualified as estimated by the laboratory.

B Concentration is below the practical quantitation limit, but above the instrument detection limit.

TABLE 6.10
OFF-SITE GROUNDWATER SAMPLE DATA - PLATINUM DRIVE WELLS
DUVA PROPERTY RI/FS

Sample Location:		MW-12		MW-13		MW-15
Units:		(µg/L)		(µg/L)		(Dup of MW-13)
Sample Date:		0/10/91	12/12/91	10/10/91	12/12/91	10/01/91
Compound						
PCBs						
Aroclor 1016		ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)
Aroclor 1221		ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)
Aroclor 1232		ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)
Aroclor 1242		ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)
Aroclor 1248		ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)
Aroclor 1254		ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)
Aroclor 1260		ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)

Notes:

ND Non-detected at the stated detection limit.

J Associated value is below the practical quantitation limit, and was qualified as estimated by the laboratory.

B Concentration is below the practical quantitation limit, but above the instrument detection limit.

TABLE 6.10
OFF-SITE GROUNDWATER SAMPLE DATA - PLATINUM DRIVE WELLS
DUVA PROPERTY RI/FS

Sample Location:		MW-12		MW-13		MW-15
Units:		(µg/L)		(µg/L)		(Dup of MW-13)
Sample Date:		0/10/91	12/12/91	10/10/91	12/12/91	10/01/91
Compound						
<u>METALS</u>						
Arsenic		62.1	2.7BJ	77.5J	2.6B	102J
Cadmium		4.0B	ND(5.0)	ND(3)	ND(5.0)	ND(3)
Chromium		140	ND(10.0)	163	ND(10.0)	175
Copper		487	42	409	25	455
Lead		95.5	5.7	122	6.5	131
Nickel		212	24B	235	19.0B	260
Silver		ND(4)	ND(4)	ND(4)	ND(4)	20.0
Zinc		540	58	546	44	601
Cyanide		ND(10)	ND(10)	ND(10)	ND(10)	ND(10)

Notes:

ND Non-detected at the stated detection limit.

J Associated value is below the practical quantitation limit, and was qualified as estimated by the laboratory.

B Concentration is below the practical quantitation limit, but above the instrument detection limit.

TABLE 6.11
OFF-SITE GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.	GW-A	GW-B	GW-C	GW-D
Units:	µg/L	µg/L	µg/L	µg/L
Sample Date:	12/19/91	12/19/91	12/19/91	12/18/91
Compound				
VOCs				
Chloromethane	ND(25)	ND(10)	ND(10)	ND(25)
Bromomethane	ND(25)	ND(10)	ND(10)	ND(25)
Vinyl chloride	54D	ND(10)	ND(10)	ND(25)
Chloroethane	ND(25)	ND(10)	ND(10)	ND(25)
Methylene chloride	ND(13)	ND(5)	ND(5)	ND(13)
Acetone	ND(25)	ND(10)	ND(10)	ND(25)
Carbon disulfide	ND(13)	ND(5)	ND(5)	ND(13)
1,1-Dichloroethene	ND(13)	ND(5)	ND(5)	ND(13)
1,1-Dichloroethane	ND(13)	2J	1J	6JD
1,2-Dichloroethene (total)	360D	75	54	320D
Chloroform	ND(13)	ND(5)	ND(5)	ND(13)
1,2-Dichloroethane	ND(13)	ND(5)	ND(5)	ND(13)
2-Butanone	ND(25)	ND(10)	ND(10)	ND(25)
1,1,1-Trichloroethane	35D	7	9	17D
Carbon tetrachloride	ND(13)	ND(5)	ND(5)	ND(13)
Vinyl acetate	ND(25)	ND(10)	ND(10)	ND(25)
Bromodichloromethane	ND(13)	ND(5)	ND(5)	ND(13)
1,2-Dichloropropane	ND(13)	ND(5)	ND(5)	ND(13)
cis-1,3-Dichloropropene	ND(13)	ND(5)	ND(5)	ND(13)
Trichloroethene	4JD	89	110	130 D
Dibromochloromethane	ND(13)	ND(5)	ND(5)	ND(13)
1,1,2-Trichloroethane	ND(13)	ND(5)	ND(5)	ND(13)
Benzene	ND(13)	ND(5)	ND(5)	ND(13)
Trans-1,3-dichloropropene	ND(13)	ND(5)	ND(5)	ND(13)
Bromoform	ND(13)	ND(5)	ND(5)	ND(13)
4-Methyl-2-pentanone	ND(25)	ND(10)	ND(10)	ND(25)
2-Hexanone	ND(25)	ND(10)	ND(10)	ND(25)

TABLE 6.11
OFF-SITE GROUNDWATER SAMPLE DATA
DUVA PROPERTY RI/FS

Sample I.D.	GW-A	GW-B	GW-C	GW-D
Units:	µg/L	µg/L	µg/L	µg/L
Sample Date:	12/19/91	12/19/91	12/19/91	12/18/91
Compound				
VOCs				
Tetrachloroethene	ND(13)	2J	3J	7JD
1,1,2,2-Tetrachloroethane	ND(13)	ND(5)	ND(5)	ND(13)
Toluene	17D	ND(5)	ND(5)	ND(13)
Chlorobenzene	ND(13)	ND(5)	ND(5)	ND(13)
Ethylbenzene	12JD	ND(5)	ND(5)	ND(13)
Styrene	ND(13)	ND(5)	ND(5)	ND(13)
Xylene (total)	54D	ND(5)	ND(5)	ND(13)
1,2,4-Trimethylbenzene	5.3	ND(0.5)	ND(0.5)	ND(0.5)
1,3,5-Trimethylbenzene	1.7	ND(0.5)	ND(0.5)	ND(0.5)
Methyltertiarybutylether	ND	ND(0.5)	ND(0.5)	ND(0.5)
Benzene,1,2-dichloro-	31J	ND(0.5)	ND(0.5)	6J
Unknown				

Notes:

ND Non-detected at the stated detection limit.

J Associated value is below the practical quantitation limits, and was qualified as estimated by the laboratory.

D Analyzed at a dilution.

TABLE 6.12
RI SURFACE WATER DATA
DUVA PROPERTY RI/FS

Sample Location:	SW-3	SW-4	SW-10 (Dup. of SW-4)	SW-5	SW-6	SW-7	SW-9 (Blank)
Units:	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
Sample Date:	04/30/91	04/30/91	04/30/91	05/01/91	05/01/91	05/01/91	05/02/91
Compound							
YOCs							
Chloromethane	ND (10)	ND (10)	ND (63)	ND (10)	ND (10)	ND (10)	ND (10)
Bromomethane	ND (10)	ND (10)	ND (63)	ND (10)	ND (10)	ND (10)	ND (10)
Vinyl chloride	ND (10)	ND (10)	ND (63)	ND (10)	ND (10)	ND (10)	ND (10)
Chloroethane	ND (10)	ND (10)	ND (63)	ND (10)	ND (10)	ND (10)	ND (10)
Methylene chloride	ND (5)	ND (5)	ND (38)	ND (5)	ND (5)	ND (5)	ND (5)
Acetone	ND (10)	ND (10)	ND (63)	ND (10)	ND (10)	ND (10)	54
Carbon disulfide	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
1,1-Dichloroethene	ND (5)	2 J	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
1,1-Dichloroethane	ND (5)	4 J	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
1,2-Dichloroethene (total)	7	810	940	ND (5)	ND (5)	ND (5)	ND (5)
Chloroform	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
1,2-Dichloroethane	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
2-Butanone	ND (10)	ND (10)	ND (63)	ND (10)	ND (10)	ND (10)	ND (10)
Methyl tertiary butyl ether	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
1,1,1-Trichloroethane	ND (5)	170	180	ND (5)	ND (5)	ND (5)	ND (5)
Carbon tetrachloride	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
Vinyl acetate	ND (10)	ND (10)	ND (63)	ND (10)	ND (10)	ND (10)	ND (10)
Bromodichloromethane	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
1,2-Dichloropropane	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	3 J
cis-1,3-Dichloropropene	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
Trichloroethene	4 J	180	170	ND (5)	ND (5)	ND (5)	ND (5)
Dibromochloromethane	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
1,1,2-Trichloroethane	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)

TABLE 6.12
RI SURFACE WATER DATA
DUVA PROPERTY RI/FS

Sample Location:	SW-3	SW-4	SW-10	SW-5	SW-6	SW-7	SW-9
			(Dup. of SW-4)				(Blank)
Units:	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
Sample Date:	04/30/91	04/30/91	04/30/91	05/01/91	05/01/91	05/01/91	05/02/91
Compound							
<u>VOCs</u>							
Benzene	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
trans-1,3-Dichloropropene	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
Bromoform	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
4-Methyl-2-pentanone	ND (10)	ND (10)	ND (63)	ND (10)	ND (10)	ND (10)	ND (10)
2-Hexanone	ND (10)	ND (10)	ND (63)	ND (10)	ND (10)	ND (10)	ND (10)
Tetrachloroethene	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
1,1,2,2-Tetrachloroethane	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
Toluene	2 J	1 J	ND (31)	ND (5)	ND (5)	ND (5)	1 J
Chlorobenzene	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
Ethyl benzene	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
Styrene	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)
Xylene (total)	ND (5)	ND (5)	ND (31)	ND (5)	ND (5)	ND (5)	ND (5)

TABLE 6.12
RI SURFACE WATER DATA
DUVA PROPERTY RI/FS

Sample Location:	SW-3	SW-4	SW-10	SW-5	SW-6	SW-7	SW-9
			<i>(Dup. of SW-4)</i>				<i>(Blank)</i>
Units:	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
Sample Date:	04/30/91	04/30/91	04/30/91	05/01/91	05/01/91	05/01/91	05/02/91
Compound							
<u>GC-VOCs</u>							
1,2,4-Trimethylbenzene	NA	ND (0.5)	NA	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3,5-Trimethylbenzene	NA	ND (0.5)	NA	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Methyl tertiary butyl ether	NA	ND (0.5)	NA	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

TABLE 6.12
RI SURFACE WATER DATA
DUVA PROPERTY RI/FS

Sample Location:	SW-3	SW-4	SW-10 (Dup. of SW-4)	SW-5	SW-6	SW-7	SW-9 (Blank)
Units:	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
Sample Date:	04/30/91	04/30/91	04/30/91	05/01/91	05/01/91	05/01/91	05/02/91
Compound							
BNAs							
Phenol	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
bis(2-Chloroethyl)ether	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
2-Chlorophenol	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
1,3-Dichlorobenzene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
1,4-Dichlorobenzene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Benzyl alcohol	ND (11)	ND (10)	ND (11)	2 J	1 J	ND (11)	ND (10)
1,2-Dichlorobenzene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
2-Methylphenol	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
2,2'-Oxybis(1-chloropropane)	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
4-Methylphenol	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
N-nitroso-di-n-propylamine	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Hexachloroethane	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Nitrobenzene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Isophorone	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
2-Nitrophenol	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
2,4-Dimethylphenol	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Benzoic acid	ND (11)	ND (10)	ND (11)	7 J	ND (10)	ND (11)	ND (10)
bis(2-Chloroethoxy)methane	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
2,4-Dichlorophenol	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
1,2,4-Trichlorobenzene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Naphthalene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
4-Chloroaniline	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Hexachlorobutadiene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
4-Chloro-3-methylphenol	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
2-Methlynaphthalene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)

TABLE 6.12
RI SURFACE WATER DATA
DUVA PROPERTY RI/FS

<i>Sample Location:</i>	SW-3	SW-4	SW-10 (Dup. of SW-4)	SW-5	SW-6	SW-7	SW-9 (Blank)
<i>Units:</i>	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
<i>Sample Date:</i>	04/30/91	04/30/91	04/30/91	05/01/91	05/01/91	05/01/91	05/02/91
<i>Compound</i>							
<u>BNAs</u>							
Hexachlorocyclopentadiene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
2,4,6-Trichlorophenol	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
2,4,5-Trichlorophenol	ND (54)	ND (50)	ND (57)	ND (54)	ND (49)	ND (53)	ND (48)
2-Chloronaphthalene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
2-Nitroaniline	ND (54)	ND (50)	ND (57)	ND (54)	ND (49)	ND (53)	ND (48)
Dimethylphthalate	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Acenaphthylene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
3-Nitroaniline	ND (54)	ND (50)	ND (57)	ND (54)	ND (49)	ND (53)	ND (48)
Acenaphthene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
2,4-Dinitrophenol	ND (54)	ND (50)	ND (57)	ND (54)	ND (49)	ND (53)	ND (48)
4-Nitrophenol	ND (54)	ND (50)	ND (57)	ND (54)	ND (49)	ND (53)	ND (48)
Dibenzofuran	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
2,4-Dinitrotoluene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
2,6-Dinitrotoluene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Diethylphthalate	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
4-Chlorophenyl-phenylether	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Fluorene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
4-Nitroaniline	ND (54)	ND (50)	ND (57)	ND (54)	ND (49)	ND (53)	ND (48)
4,6-Dinitro-2-methylphenol	ND (54)	ND (50)	ND (57)	ND (54)	ND (49)	ND (53)	ND (48)
N-Nitrosodiphenylamine	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
4-Bromophenyl-phenylether	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Hexachlorobenzene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Pentachlorophenol	ND (54)	ND (50)	ND (57)	ND (54)	ND (49)	ND (53)	ND (48)
Phenanthrene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Anthracene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)

TABLE 6.12
RI SURFACE WATER DATA
DUVA PROPERTY RI/FS

<i>Sample Location:</i>	<i>SW-3</i>	<i>SW-4</i>	<i>SW-10</i>	<i>SW-5</i>	<i>SW-6</i>	<i>SW-7</i>	<i>SW-9</i>
<i>Units:</i>	<i>(µg/l)</i>	<i>(µg/l)</i>	<i>(Dup. of SW-4)</i> <i>(µg/l)</i>	<i>(µg/l)</i>	<i>(µg/l)</i>	<i>(µg/l)</i>	<i>(Blank)</i> <i>(µg/l)</i>
<i>Sample Date:</i>	<i>04/30/91</i>	<i>04/30/91</i>	<i>04/30/91</i>	<i>05/01/91</i>	<i>05/01/91</i>	<i>05/01/91</i>	<i>05/02/91</i>
<i>Compound</i>							
<u>BNAs</u>							
Di-n-butylphthalate	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Fluoranthene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Pyrene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Butylbenzylphthalate	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
3,3'-Dichlorobenzidine	ND (22)	ND (20)	ND (23)	ND (22)	ND (19)	ND (21)	ND (19)
Benzo(a)anthracene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Bis(2-Ethylhexyl)phthalate	ND (11)	ND (10)	ND (11)	16	ND (10)	ND (11)	ND (10)
Chrysene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Di-n-octylphthalate	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Benzo(b)fluoranthene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Benzo(k)fluoranthene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Benzo(a)pyrene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Indeno (1,2,3-cd)pyrene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Dibenzo(a,h)anthracene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)
Benzo(g,h,i)perylene	ND (11)	ND (10)	ND (11)	ND (11)	ND (10)	ND (11)	ND (10)

TABLE 6.12
RI SURFACE WATER DATA
DUVA PROPERTY RI/FS

Sample Location:	SW-3	SW-4	SW-10	SW-5	SW-6	SW-7	SW-9
			<i>(Dup. of SW-4)</i>				<i>(Blank)</i>
Units:	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
Sample Date:	04/30/91	04/30/91	04/30/91	05/01/91	05/01/91	05/01/91	05/02/91
Compound							
PCBs							
Aroclor - 1016	ND (0.24)	ND (0.26)	ND (0.5)	ND (0.24)	ND (0.28)	ND (0.24)	ND (0.24)
Aroclor - 1221	ND (0.24)	ND (0.26)	ND (0.5)	ND (0.24)	ND (0.28)	ND (0.24)	ND (0.24)
Aroclor - 1232	ND (0.24)	ND (0.26)	ND (0.5)	ND (0.24)	ND (0.28)	ND (0.24)	ND (0.24)
Aroclor - 1242	ND (0.24)	ND (0.26)	ND (0.5)	ND (0.24)	ND (0.28)	ND (0.24)	ND (0.24)
Aroclor - 1248	ND (0.24)	ND (0.26)	ND (0.5)	ND (0.24)	ND (0.28)	ND (0.24)	ND (0.24)
Aroclor - 1254	ND (0.24)	ND (0.26)	ND (0.5)	ND (0.24)	ND (0.28)	ND (0.24)	ND (0.24)
Aroclor - 1260	ND (0.24)	ND (0.26)	ND (0.5)	ND (0.24)	ND (0.28)	ND (0.24)	ND (0.24)

TABLE 6.12
RI SURFACE WATER DATA
DUVA PROPERTY RI/FS

Sample Location:	SW-3	SW-4	SW-10	SW-5	SW-6	SW-7	SW-9
			<i>(Dup. of SW-4)</i>				<i>(Blank)</i>
Units:	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
Sample Date:	04/30/91	04/30/91	04/30/91	05/01/91	05/01/91	05/01/91	05/02/91
Compound							
METALS							
Arsenic	ND (1.0)	3.5	3.7	6.6	6.5	4.6	ND (1.0)
Cadmium	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)
Chromium	ND (6.0)	ND (6.0)	ND (6.0)	14.0	10.0	ND (6.0)	ND (6.0)
Copper	23.0	24.0	20.0	55.0	31.0	8.0	ND (5.0)
Lead	9.4 J	23.7 J	18.8 J	68.0 J	33.8 J	9.2 J	2.6 J
Nickel	14.0	13.0	13.0	22.0	20.0	7.0	ND (7.0)
Silver	ND (8.0)	ND (8.0)	ND (8.0)	ND (8.0)	ND (8.0)	ND (8.0)	ND (8.0)
Zinc	52.0	44.0	64.0	137	126	61.0	22.0
Cyanide	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)

Notes:

ND() Not detected at the practical quantitative limit (PQL) stated within parenthesis.

J The associated value is estimated.

TABLE 6.13
RI SEDIMENT SAMPLE DATA
DUVA PROPERTY RI/FS

Sample Location:	SED-3	SED-4	SED-10 (Dup. of SED-4)	SED-5	SED-6	SED-7
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Sample Date:	04/30/91	04/30/91	04/30/91	05/01/91	05/01/91	05/01/91
Compound						
VOCs						
Chloromethane	ND (15)	ND (13)	ND (13)	ND (32)	ND (19)	ND (16)
Bromomethane	ND (15)	ND (13)	ND (13)	ND (32)	ND (19)	ND (16)
Vinyl chloride	ND (15)	ND (13)	ND (13)	ND (32)	ND (19)	ND (16)
Chloroethane	ND (15)	ND (13)	ND (13)	ND (32)	ND (19)	ND (16)
Methylene chloride	79	18 J	59 J	70	13	14
Acetone	25	49	71	190	240	150
Carbon disulfide	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
1,1-Dichloroethene	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
1,1-Dichloroethane	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
1,2-Dichloroethene (total)	ND (7)	46 J	72 J	ND (16)	ND (9)	ND (8)
Chloroform	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
1,2-Dichloroethane	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
2-Butanone	ND (15)	ND (13)	ND (13)	ND (32)	ND (19)	ND (16)
Methyl tertiary butyl ether	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
1,1,1-Trichloroethane	ND (7)	8 J	5 J	ND (16)	ND (9)	ND (8)
Carbon tetrachloride	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
Vinyl acetate	ND (15)	ND (13)	ND (13)	ND (32)	ND (19)	ND (16)
Bromodichloromethane	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
1,2-Dichloropropane	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
cis-1,3-Dichloropropene	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
Trichloroethene	5 J	47 J	13 J	ND (16)	ND (9)	ND (8)
Dibromochloromethane	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
1,1,2-Trichloroethane	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)

TABLE 6.13
RI SEDIMENT SAMPLE DATA
DUVA PROPERTY RI/FS

Sample Location:	SED-3	SED-4	SED-10 (Dup. of SED-4)	SED-5	SED-6	SED-7
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Sample Date:	04/30/91	04/30/91	04/30/91	05/01/91	05/01/91	05/01/91

Compound

VOCs

Benzene	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
trans-1,3-Dichloropropene	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
Bromoform	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
4-Methyl-2-pentanone	ND (15)	ND (13)	ND (13)	ND (32)	ND (19)	ND (16)
2-Hexanone	ND (15)	ND (13)	ND (13)	ND (32)	ND (19)	ND (16)
Tetrachloroethene	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
1,1,2,2-Tetrachloroethane	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
Toluene	ND (7)	ND (7)	ND (7)	ND (16)	6 J	ND (8)
Chlorobenzene	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
Ethyl benzene	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
Styrene	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)
Xylene (total)	ND (7)	ND (7)	ND (7)	ND (16)	ND (9)	ND (8)

TABLE 6.13
RI SEDIMENT SAMPLE DATA
DUVA PROPERTY RI/FS

<i>Sample Location:</i>	SED-3	SED-4	SED-10 (Dup. of SED-4)	SED-5	SED-6	SED-7
<i>Units:</i>	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
<i>Sample Date:</i>	04/30/91	04/30/91	04/30/91	05/01/91	05/01/91	05/01/91
<i>Compound</i>						
<u>GC VOCs</u>						
1,2,4-Trimethylbenzene	ND (0.8)	ND (0.7)	ND (0.7)	ND (0.7)	ND (1)	ND (0.7)
1,3,5-Trimethylbenzene	ND (0.8)	ND (0.7)	ND (0.7)	ND (0.7)	ND (1)	ND (0.7)
Methyl tertiary butyl ether	ND (0.8)	ND (0.7)	ND (0.7)	ND (0.7)	ND (1)	ND (0.7)

TABLE 6.13
RI SEDIMENT SAMPLE DATA
DUVA PROPERTY RI/FS

Sample Location:	SED-3	SED-4	SED-10 (Dup. of SED-4)	SED-5	SED-6	SED-7
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Sample Date:	04/30/91	04/30/91	04/30/91	05/01/91	05/01/91	05/01/91
Compound						
BNAs						
Phenol	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
bis(2-Chloroethyl)ether	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
2-Chlorophenol	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
1,3-Dichlorobenzene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
1,4-Dichlorobenzene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Benzyl alcohol	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
1,2-Dichlorobenzene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
2-Methylphenol	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
2,2'-Oxybis(1-chloropropane)	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
4-Methylphenol	ND (550)	150 J	89 J	ND (920)	160 J	74 J
N-nitroso-di-n-propylamine	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Hexachloroethane	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Nitrobenzene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Isophorone	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
2-Nitrophenol	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
2,4-Dimethylphenol	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Benzoic acid	ND (550)	ND (450)	ND (450)	ND (920)	49 J	ND (420)
bis(2-Chloroethoxy)methane	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
2,4-Dichlorophenol	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
1,2,4-Trichlorobenzene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Naphthalene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
4-Chloroaniline	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Hexachlorobutadiene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)

TABLE 6.13
RI SEDIMENT SAMPLE DATA
DUVA PROPERTY RI/FS

Sample Location:	SED-3	SED-4	SED-10 (Dup. of SED-4)	SED-5	SED-6	SED-7
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Sample Date:	04/30/91	04/30/91	04/30/91	05/01/91	05/01/91	05/01/91
Compound						
BNAs						
4-Chloro-3-methylphenol	68 J	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
2-Methylnaphthalene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Hexachlorocyclopentadiene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
2,4,6-Trichlorophenol	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
2,4,5-Trichlorophenol	ND (2800)	ND (2200)	ND (2200)	ND (4600)	ND (2800)	ND (2100)
2-Chloronaphthalene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
2-Nitroaniline	ND (2800)	ND (2200)	ND (2200)	ND (4600)	ND (2800)	ND (2100)
Dimethylphthalate	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Acenaphthylene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
3-Nitroaniline	ND (2800)	ND (2200)	ND (2200)	ND (4600)	ND (2800)	ND (2100)
Acenaphthene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
2,4-Dinitrophenol	ND (2800)	ND (2200)	ND (2200)	ND (4600)	ND (2800)	ND (2100)
4-Nitrophenol	ND (2800)	ND (2200)	ND (2200)	ND (4600)	ND (2800)	ND (2100)
Dibenzofuran	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
2,4-Dinitrotoluene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
2,6-Dinitrotoluene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Diethylphthalate	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
4-Chlorophenyl-phenylether	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Fluorene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
4-Nitroaniline	ND (2800)	ND (2200)	ND (2200)	ND (4600)	ND (2800)	ND (2100)
4,6-Dinitro-2-methylphenol	ND (2800)	ND (2200)	ND (2200)	ND (4600)	ND (2800)	ND (2100)
N-Nitrosodiphenylamine	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
4-Bromophenyl-phenylether	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)

TABLE 6.13
RI SEDIMENT SAMPLE DATA
DUVA PROPERTY RI/FS

Sample Location:	SED-3	SED-4	SED-10 (Dup. of SED-4)	SED-5	SED-6	SED-7
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Sample Date:	04/30/91	04/30/91	04/30/91	05/01/91	05/01/91	05/01/91

Compound

BNAs

Hexachlorobenzene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Pentachlorophenol	ND (2800)	ND (2200)	ND (2200)	ND (4600)	ND (2800)	ND (2100)
Phenanthrene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Anthracene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Di-n-butylphthalate	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Fluoranthene	26 J	ND (450)	ND (450)	150 J	ND (560)	ND (420)
Pyrene	ND (550)	ND (450)	ND (450)	210 J	ND (560)	ND (420)
Butylbenzylphthalate	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
3,3'-Dichlorobenzidine	ND (1100)	ND (890)	ND (890)	ND (1800)	ND (1100)	ND (850)
Benzo(a)anthracene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Bis(2-Ethylhexyl)phthalate	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Chrysene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Di-n-octylphthalate	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Benzo(b)fluoranthene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Benzo(k)fluoranthene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Benzo(a)pyrene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Indeno (1,2,3-cd)pyrene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Dibenzo(a,h)anthracene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)
Benzo(g,h,i)perylene	ND (550)	ND (450)	ND (450)	ND (920)	ND (560)	ND (420)

TABLE 6.13
RI SEDIMENT SAMPLE DATA
DUVA PROPERTY RI/FS

Sample Location:	SED-3	SED-4	SED-10	SED-5	SED-6	SED-7
			(Dup. of SED-4)			
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Sample Date:	04/30/91	04/30/91	04/30/91	05/01/91	05/01/91	05/01/91

Compound

PCBs

Aroclor - 1016	ND (66)	ND (54)	ND (53)	ND (110)	ND (67)	ND (51)
Aroclor - 1221	ND (66)	ND (54)	ND (53)	ND (110)	ND (67)	ND (51)
Aroclor - 1232	ND (66)	ND (54)	ND (53)	ND (110)	ND (67)	ND (51)
Aroclor - 1242	ND (66)	ND (54)	ND (53)	ND (110)	ND (67)	ND (51)
Aroclor - 1248	ND (66)	ND (54)	ND (53)	ND (110)	ND (67)	ND (51)
Aroclor - 1254	ND (130)	ND (110)	ND (110)	ND (220)	ND (130)	ND (100)
Aroclor - 1260	ND (130)	ND (110)	ND (110)	ND (220)	ND (130)	ND (100)

TABLE 6.13
RI SEDIMENT SAMPLE DATA
DUVA PROPERTY RI/FS

Sample Location:	SED-3	SED-4	SED-10 (Dup. of SED-4)	SED-5	SED-6	SED-7
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Sample Date:	04/30/91	04/30/91	04/30/91	05/01/91	05/01/91	05/01/91

Compound

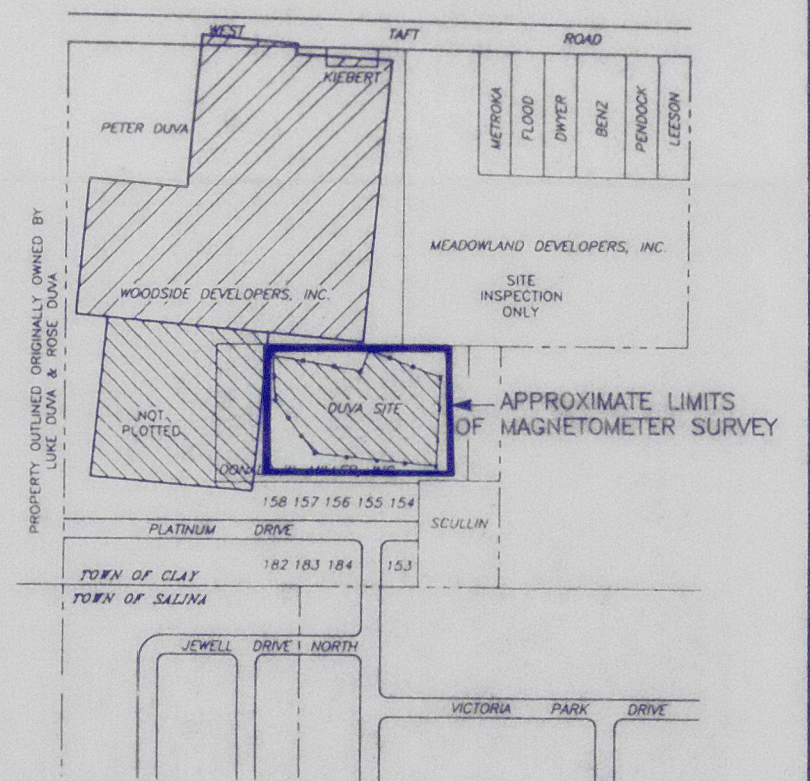
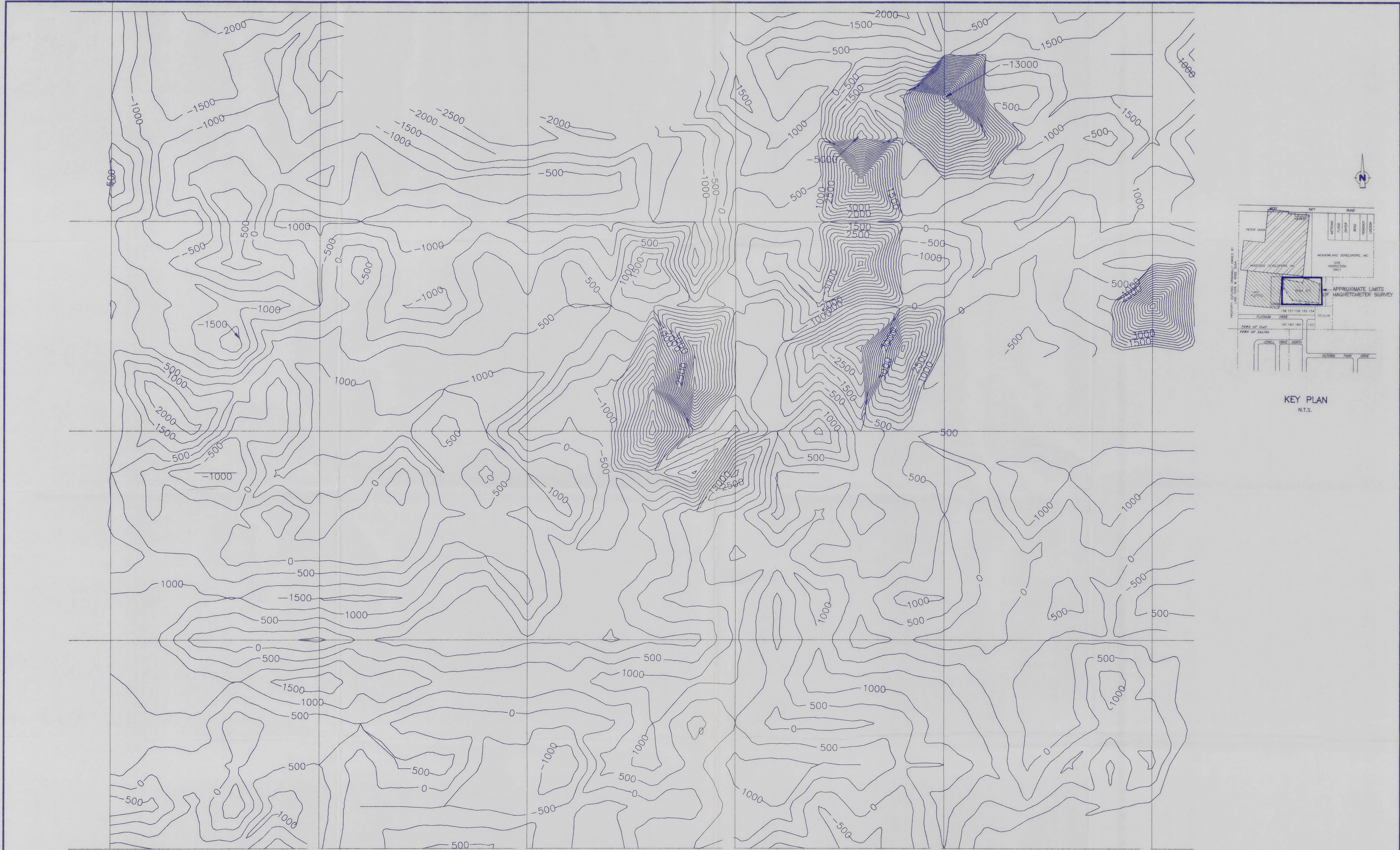
METALS

Arsenic	3.4 J	2.7	2.3	6.6	1.8	1.5
Cadmium	ND (0.81)	0.95	ND (0.54)	ND (1.5)	ND (0.65)	ND (0.55)
Chromium	8.1	5.5	5.0	23.5	3.4	3.8
Copper	30.9 J	8.3	7.7	48.5	6.0	6.2
Lead	23.4	8.6	9.3	57.3	6.5	2.8
Nickel	13.3	8.8	5.8	20.4	4.5	7.3
Silver	ND (2.2)	ND (1.9)	ND (1.4)	ND (4.1)	ND (1.7)	ND (1.5)
Zinc	63.7 J	25.4	23.0	101	21.5	16.1
Cyanide	ND (1.8)	ND (1.3)	ND (1.3)	ND (3.0)	ND (1.5)	ND (1.3)

Notes:

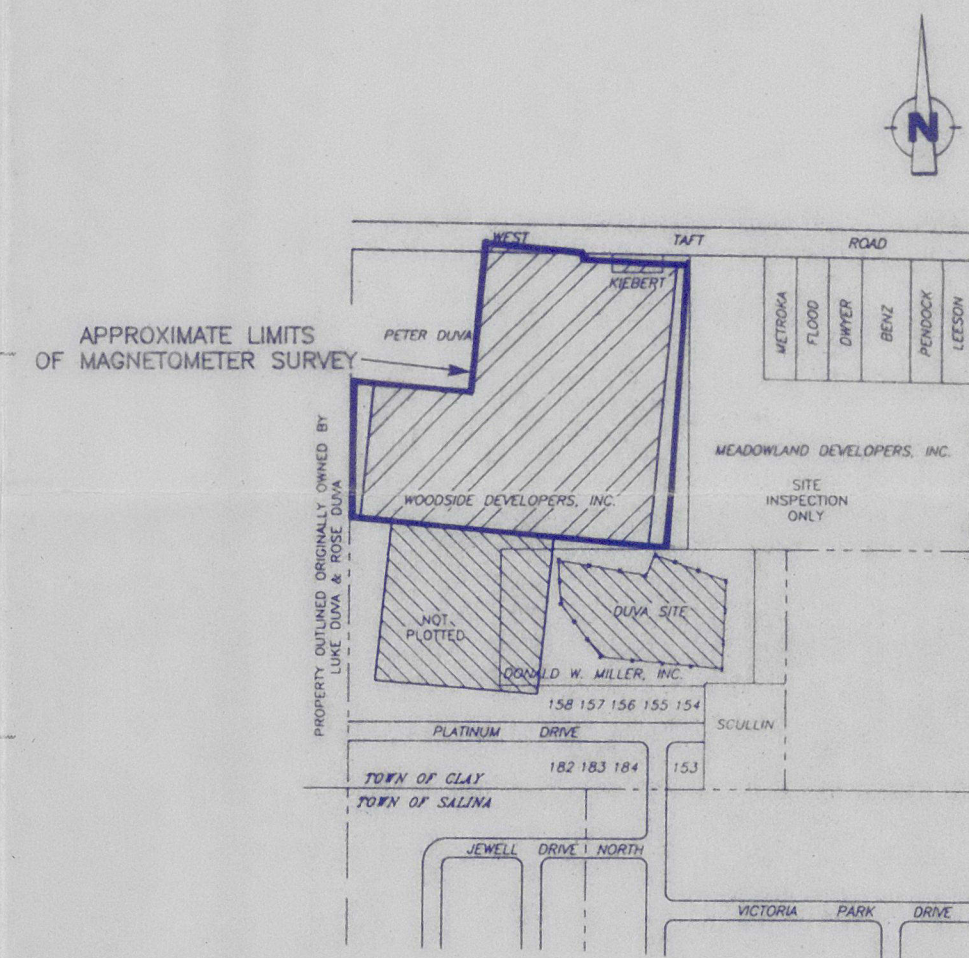
ND() Not detected at the practical quantitation limit (PQL) stated within parenthesis.

J The associated value is estimated.



KEY PLAN
N.T.S.

				Approved		DUVA PROPERTY TOWN OF CLAY, NEW YORK		CRA CONESTOGA-ROVERS & ASSOCIATES				
						DUVA PROPERTY SURFACE SOIL INVEST.		Drawn by: R.F.M.	Scale: 1"=20'	Date: JULY 1991	File No: NF-18 (P-25)	Rev. No: 0
						MAGNETOMETER SURVEY		Designed by: W.C.L.	Field book:	Project No: 3442	Drawing No: 2	
								Checked by: W.C.L.				
Revision				Date		Initial						



KEY PLAN
N.T.S.

				Approved		TOWN OF CLAY, NEW YORK		CRA CONESTOGA-ROVERS & ASSOCIATES							
Revision				Date		Initial		DUVA PROPERTY SURFACE SOIL INVEST.		Drawn by: R.F.M.	Scale: 1"=50'	Date: FEBRUARY 1992	File No: NF-18	Rev. No: 0	
								MAGNETOMETER SURVEY		Designed by: W.C.L.	Field book:	Project No: 3442	Drawing No: 3		
										Checked by: W.C.L.					