FINAL

CORRECTIVE ACTION PLAN – PART B
UNDERGROUND STORAGE TANK 100B
FACILITY ID # 9-089081
BUILDING 1350
FORT STEWART, GEORGIA

Prepared for:
U.S. Army Corps of Engineers
Savannah District
Under Contract Number DACA21-95-D-022
Delivery Order No. 0055

Prepared by:
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September 2000

List of Appendices

List of Abbreviations and Acronyms

ACE	Anderson Columbia Environmental, Inc.
ACL	alternate concentration limit
AMSL	above mean sea level
ARAR	applicable or relevant and appropriate requirement
ATL	alternate threshold level
BGS	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CAP	Corrective Action Plan
COPC	contaminant of potential concern
DAF	dilution attenuation factor
DPW	Directorate of Public Works
EPA	U.S. Environmental Protection Agency
FSMR	Fort Stewart Military Reservation
GA EPD	Georgia Environmental Protection Division
GUST	Georgia Underground Storage Tank
ISC	Initial Site Characterization
IWQS	In-Stream Water Quality Standard
MCL	maximum contaminant level
PAH	polynuclear aromatic hydrocarbon
PVC	polyvinyl chloride
SAIC	Science Applications International Corporation
SESOIL	Seasonal Soil Compartment
SI	Site Investigation
STL	soil threshold level
TPH	total petroleum hydrocarbons
USACE	U.S. Army Corps of Engineers
UST	underground storage tank
USTMP	Underground Storage Tank Management Program
VOC	volatile organic compound

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I. CORRECTIVE ACTION PLAN CERTIFICATION - PART B

(Form and certification follow this page)

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Georgia Department of Natural Resources
Environmental Protection Division
Land Protection Branch
Underground Storage Tank Management Program
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CORRECTIVE ACTION PLAN
PART B

Facility Name: Building 1350, UST 100B Site

Street Address: Divarty Road and McFarland Avenue

City: Fort Stewart **County:** Liberty

Facility ID #: 9-089081

Submitted by UST Owner/Operator:
Name: Thomas C. Fry/Environmental Branch
Company: US Army/HQ 3d Inf. Div (Mech)
Address: Directorate of Public Works, Bldg. 1137
1550 Frank Cochran
City: Fort Stewart State: GA
Zip Code: 31314-4927

Prepared by:
Name: Patricia Stoll
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Address: P.O. Box 2502
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I. PLAN CERTIFICATION

A. UST Owner/Operator

I hereby certify that the information contained in this plan and in all the attachments is true, accurate, and complete, and the plan satisfies all criteria and requirements of Rule 391-3-15-.09 of the Georgia Rules for Underground Storage Tank Management.

Name: Thomas C. Fry
Signature: Thomas C. Fry Date: 09/28/00

B. Professional Engineer or Professional Geologist

Name: Patricia Stoll
Signature: Patricia A Stoll
Date: 9/20/00

Check all boxes below that apply. Attach supporting documentation, i.e., narrative, figures, tables, maps, boring/well logs, etc., for all items checked. Supporting documentation should be three-hole punched and prepared in conformity with the guidance document "Underground Storage Tank (UST) Release: Corrective Action Plan – Part B (CAP-B) Content", GUST-7B.

II. SITE INVESTIGATION REPORT

A. Horizontal and Vertical Extent of Contamination:

☒ Soil (Section II.A.1)
☒ Groundwater (Section II.A.2)
☒ Free Product (Section II.A.3)
☒ Surface Water (Section II.A.4)

B. Local and Site Hydrogeology

☒ Documentation of Local Groundwater Conditions (Section II.B.1)
☒ Stratigraphic Boring Logs (Section II.B.2)
☒ Stratigraphic Cross Sections (Section II.B.3)
☒ Referenced or Documented Calculations of Relevant Aquifer Parameters (Section II.B.4)
☒ Direction of Groundwater Flow (Section II.B.5)
  ☒ Table of Monitoring Well Data (Table 6)
  ☒ Potentiometric Map (Figures 19 and 20)
  ☒ Flow Net Superimposed on a Base Map (Figure 21)

III. REMEDIAL ACTION PLAN:

A. Corrective Action Completed or In-Progress:

☒ Recovery/Removal of Free-Product (Non-aqueous Phase Hydrocarbons)
☐ Remediation/Treatment of Contaminated Backfill Material & Native Soils
☐ Other (specify)_____

B. Objective of Corrective Action:

☒ Remove Free Product That Exceeds One-Eighth Inch
☐ Remediate Groundwater Contamination That Exceeds:
  ☐ Maximum Contaminant Levels (MCLs)

  OR

  ☐ In-stream Water Quality Standards

B. Objective of Corrective Action (continued):

☐ Remediate Soil Contamination That Exceeds:

☐ Threshold Values Listed in Table A

OR

☐ Threshold Values Listed in Table B

OR

☐ Alternate Threshold Levels (ATLs)

☒ Provide Risk Based Corrective Action (Reference CAP B App. VI) (Section III.B.4)

☐ Remediate Soil and/or Groundwater Contamination That Exceeds Alternate Concentration Limits (ACLs) and Monitor Residual Contaminants

OR

☒ Monitor Soil and/or Groundwater Contamination That Exceeds Levels in Rule -.09 (3) But Is Less Than ACLs

OR

☐ No Further Action Required - Soil and/or Groundwater Contamination is Below Levels in Rule -.09 (3)

C. Design Operation of Corrective Action Systems

☐ Soil ☒ Groundwater ☒ Free Product ☐ Surface Water ☐ Not Applicable

D. Implementation (Section III.D)

Includes, as a minimum, the following:

- Milestone schedule for site remediation
- Inspection and preventive maintenance schedule for all specialized remediation equipment
- Monitoring/sampling and reporting plan for measuring interim progress and project completion
- Plan to decommission equipment/wells and close site

IV. PUBLIC NOTICE

☐ Certified Letters to Adjacent, and Potentially Affected Property Owners and Local Officials

☒ Legal Notice in Newspaper, as approved by EPD (Section III.E)

☐ Other EPD-approved Method (specify)_____

V. **CLAIM FOR REIMBURSEMENT:** (For GUST Trust Fund sites only)

- ☐ GUST Trust Fund Application (GUST-36), must be attached if applicable
- ☐ Cost Proposal
  - ☐ Non-Reimbursable Costs

    OR
  - ☐ Reimbursable Costs
    - ☐ Total Project Costs
      - ☐ Costs incurred to date, per GUST-92
      - ☐ Estimated costs to complete corrective action, per GUST-92
    - ☐ Invoices and Proofs-of-Payment for Costs Incurred to Date
- ☐ Proposed Schedule For Reimbursement
  - ☐ Lump Sum Payment Upon Completion Of Corrective Action

    OR
  - ☐ Interim Payments With Final Payment Upon Completion
- ☒ Not Applicable

II. SITE INVESTIGATION REPORT

This document represents the Site Investigation (SI) Report for the former Underground Storage Tank (UST) 100B, Facility ID# 9-089081, located near Building 1350 at Fort Stewart, Georgia. This Corrective Action Plan (CAP)-Part B Report follows the guidance published by the Georgia Environmental Protection Division (GA EPD) in February 1995; however, the organization of the appendices for this report mirrors the appendices listed in the CAP-Part A template issued by GA EPD in May 1998. Report figures and tables are located in Appendices I and II, respectively.

The UST 100B site is located at the 10th Engineering Brigade motorpool, as illustrated in Figure 1. The UST 100B site is located within an average or higher groundwater pollution susceptibility area and is more than 500 feet from a withdrawal point and more than 500 feet from a surface water body. Since public water supply wells exist within 2 miles of the site as defined in Georgia Underground Storage Tank (GUST) Management Rule 391-5-15-.09, the appropriate soil threshold levels (STLs) are those presented in Table A, Column 2 of GUST Rules 391-5-15. According to operational information maintained by the Fort Stewart Directorate of Public Works (DPW), UST 100B had a capacity of 1,000 gallons and was used for storing used oil. The tank was constructed of fiberglass-reinforced plastic, and the associated piping was galvanized steel. The tank and piping were installed on or about January 1, 1988. The tank was excavated and removed on July 30, 1996. The piping was closed in place due to the overlying 10 to 12 inches of high-strength concrete.

Anderson Columbia Environmental, Inc. (ACE) performed the Initial Site Characterization (ISC) in July 1996 (ACE 1996). The ISC consisted of the removal of the tank and the collection of one soil sample from the tank pit. The soil sample was analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), polynuclear aromatic hydrocarbons (PAHs), and total petroleum hydrocarbons (TPH). During the UST removal and excavation activities in 1996, benzene was not detected in the sample (TK100B-S1). Toluene, ethylbenzene, xylenes, and several PAH constituents were present in the soil sample, but at concentrations below their respective STLs. TPH was present at a concentration of 139,140 mg/kg.

Following the ISC, the CAP-Part A SI was conducted in 1998 and 1999 by Science Applications International Corporation (SAIC). The CAP-Part A SI consisted of drilling nine soil borings and one vertical-profile boring; collecting soil samples for BTEX, PAHs, TPH, and volatile organic compound (VOC) headspace analyses; installing piezometers for groundwater sampling, water level measurements, and detection of free product; collecting groundwater samples for BTEX and PAH analyses; and conducting a survey of public and nonpublic drinking water supplies within a 2.0- and 0.5-mile radius of the site. The CAP-Part A Report describing the results of the ISC and the CAP-Part A investigation activities (SAIC 1999) was submitted to the GA EPD Underground Storage Tank Management Program (USTMP) in October 1999. GA EPD USTMP conducted a technical review of the CAP-Part A Report (SAIC 1999). In correspondence dated January 25, 2000 (Logan 2000), GA EPD approved the technical proposal contained in the CAP-Part A Report for further investigation.

The CAP-Part B SI was conducted in January 2000 by SAIC. The CAP-Part B SI was performed in accordance with the technical approach described in the SI Plan and the requirements of the *Work Plan for Preliminary Groundwater and Corrective Action Plan – Part A/Part B Investigations at Former Underground Storage Tank Sites, Fort Stewart, Georgia* (SAIC 1996). The CAP-Part B SI field activities included drilling six monitoring well borings for groundwater sampling and water level measurements, collecting groundwater samples for BTEX and PAH analyses; and collecting a comprehensive round of site water level measurements. The CAP-Part B SI groundwater analytical laboratory results are included in Appendix VIII of this document. This SI Report presents the findings of the CAP-Part B investigation.

The CAP-Part B for UST 100B was performed by SAIC in January 2000 for the Fort Stewart DPW, Environmental Branch through the U.S. Army Corps of Engineers (USACE), Savannah District under contract DACA21-95-D-022, delivery order 0055.

II.A. HORIZONTAL AND VERTICAL EXTENT OF CONTAMINATION

The horizontal and vertical extent of petroleum contamination in soil and groundwater has been delineated by activities performed during the ISC, CAP-Part A SI, and CAP-Part B SI.

II.A.1. Delineation of Soil Contamination

Petroleum-related contaminants detected in soil at the UST 100B site during the ISC, CAP-Part A SI, and CAP-Part B SI included benzene, toluene, ethylbenzene, xylenes, 2-methylnaphthalene, fluoranthene, naphthalene, phenantrhene, pyrene, and TPH. These constituents were present in 19 of the 22 soil samples collected during the CAP-Part A and CAP-Part B investigations. The constituents were present in low concentrations in the boreholes surrounding the tank pit. However, only four soil samples collected during the CAP-Part A SI contained benzene concentrations in excess of the applicable GUST STL (i.e., Table A, Column 2). These soil samples were collected from above the water table.

II.A.1.a. Contaminant concentrations

II.A.1.a.1. Initial site characterization

During the ISC, one soil sample was collected from the tank pit. The sample contained concentrations of benzene, toluene, ethylbenzene, xylenes, 2-methylnaphthalene, fluoranthene, phenanthrene, pyrene, and TPH (Tables 1a and 1b). None of the constituents detected exceeded their respective GUST STL; however, the TPH concentration was 139,140 mg/kg.

II.A.1.a.2. CAP-Part A site investigation

During the CAP-Part A SI, 17 soil samples were collected for geochemical analysis from nine shallow soil borings, as presented in Figure 2. Sample locations are presented in the cross sections in Figure 3. In May 1998, two shallow soil borings were drilled at each end of the former tank pit, each to a depth of 12.0 feet below ground surface (BGS). In September 1998, four additional shallow soil borings were installed around the perimeter of the former tank pit to depths ranging from 10.0 to 14.0 feet BGS. In Feburary 1999, three more shallow soil borings were installed downgradient of the former tank pit to depths ranging from 10.5 to 15.4 feet BGS. Field screening methods were used during drilling to select soil samples for geochemical analysis.

Analytical results for soil sampling are summarized in Tables 2a and 2b and presented in the plan view in Figure 4a. The results exceeding applicable GUST STLs are presented in the cross sections in Figure 4b. The results of soil samples collected during the CAP-Part A investigations are summarized below.

- Benzene was detected in five of the 17 soil samples at concentrations ranging from 0.0034 mg/kg to 0.0593 mg/kg. The concentrations in four of the samples exceeded the benzene STL of 0.008 mg/kg. The four samples were collected from above the water table. In addition, the detection limit for one sample was above the STL.

- Toluene was detected in 11 of the 17 soil samples at concentrations ranging from 0.0008J mg/kg to 1.77J mg/kg. The concentrations did not exceed the toluene STL of 6.0 mg/kg.

- Ethylbenzene was detected in five of the 17 soil samples at concentrations ranging from 0.007 mg/kg to 0.211J mg/kg. The concentrations did not exceed the ethylbenzene STL of 10 mg/kg.

- Xylenes were detected in eight of the 17 soil samples at concentrations ranging from 0.00072J mg/kg to 0.95J mg/kg. The concentrations did not exceed the xylenes STL of 700 mg/kg.

- Three PAH constituents were detected in three of the 17 soil samples at concentrations ranging from 0.061J mg/kg and 1.97J mg/kg. The constituents were fluoranthene, naphthalene, and phenanthrene. There are no STLs for these constituents.

- TPH was detected in ten of the 17 soil samples at concentrations ranging from 11.5J mg/kg to 7,860 mg/kg.

Benzene was the only compound of the detected concentrations of BTEX or PAH constituents to exceed its applicable GUST STLs (i.e., Table A, Column 2) during the CAP-Part A SI.

The detection limits for soil sample analyses during the CAP-Part A SI were 0.0018 to 0.0024 mg/kg for BTEX constituents, except for the detection limits of 0.0222 mg/kg in sample 620211 and 0.358 to 1.5 mg/kg for PAH constituents.

II.A.1.a.3. CAP-Part B site investigation

During the CAP-Part B SI, five soil samples were collected for geochemical analysis from five shallow soil borings, as presented in Figure 2. Sample locations are presented in the cross sections in Figure 3. In January 2000, five shallow soil borings were installed farther downgradient of the CAP-Part A soil borings and in the area of highest CAP-Part A contamination at depths ranging from 8.0 to 16.0 feet BGS. Field screening methods were used during drilling to select soil samples for geochemical analysis.

Analytical results for soil sampling are summarized in Tables 2a and 2b and presented in the plan view in Figure 4a. The results exceeding applicable GUST STLs are presented in the cross sections in Figure 4b. The results of soil samples collected during the CAP-Part B investigation are summarized below.

- Benzene was detected in one of the five soil samples at a concentration of 0.0012 mg/kg. The concentration did not exceed the benzene STL of 0.008 mg/kg.

- Toluene was detected in three of the five soil samples at concentrations ranging from 0.00046J mg/kg to 0.0034 mg/kg. The concentrations did not exceed the toluene STL of 6.0 mg/kg.

- Ethylbenzene was detected in five of the five soil samples at concentrations ranging from 0.0022 mg/kg to 0.0047 mg/kg. The concentrations did not exceed the ethylbenzene STL of 10 mg/kg.

- Xylenes were detected in five of the five soil samples at concentrations ranging from 0.005 mg/kg to 0.0155 mg/kg. The concentrations did not exceed the xylenes STL of 700 mg/kg.

- Two PAH constituents were detected in one of the five soil samples at concentrations 0.041J mg/kg and 0.0769J mg/kg. The constituents were naphthalene and phenanthrene. There are no STLs for these constituents.

TPH was detected in one of the five soil samples at a concentration of 4,140 mg/kg.

The BTEX and PAH constituents detected did not exceed their applicable GUST STLs (i.e., Table A, Column 2) during the CAP-Part B SI.

The detection limits for soil sample analyses during the CAP-Part B SI were 0.00091 to 0.0010 mg/kg for BTEX constituents and 0.347 to 0.0415 mg/kg for PAH constituents.

II.A.1.b. Field screening results

Field screening through VOC headspace was performed during drilling for soil collected during the CAP-Part A and CAP-Part B investigations. For each 4-foot interval drilled, two 2.0-foot soil grab samples were collected in glass jars and covered with aluminum foil. This sample corresponded to potential analytical sample aliquots collected from the same interval. After allowing at least 15 minutes for volatilization and temperature equilibration, the headspace VOC concentration was measured with a photoionization detector to quantify the VOCs present. The field screening results for each boring are indicated on each boring log.

For boreholes where two soil samples were sent to the analytical laboratory for analysis, sample selection was based on field headspace readings and was as follows:

- In cases where no contamination was detected by field headspace gas analysis in any of the borehole intervals, two soil samples were sent for chemical analyses: one from the interval nearest to the midpoint between the ground surface and the water table and one from the interval above the water table.

- In cases where contamination was detected by field headspace gas analysis in one or more of the borehole intervals, two soil samples were sent for chemical analyses: one from the interval with the highest detected organic vapor concentration and one from the interval with the lowest detected organic vapor concentration.

Field headspace readings were also used to select soil samples where only one sample was sent to the analytical laboratory and were as follows:

- In cases where no contamination was detected by field headspace gas analysis in any of the borehole intervals, the sample above the water table was selected.

- In cases where contamination was detected by field headspace gas analysis in one or more of the borehole intervals, the interval with the highest detected organic vapor concentration was selected.

II.A.2. Delineation of Groundwater Contamination

Petroleum-related contaminants detected in groundwater at the UST 100B site during the CAP-Part A SI and CAP-Part B SI included benzene, ethylbenzene, toluene, total xylenes, ancenaphthene, ancenaphthylene, anthracene, benzo(*a*)anthracene, chrysene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene. These constituents were present in 16 of the 19 groundwater samples collected during the CAP-Part A and CAP-Part B investigations. One of the samples collected during the CAP-Part A and CAP-Part B investigations exceeded the Georgia In-Stream Water Quality Standard (IWQS) of 71.28 µg/L for benzene. The other constituents detected were all below applicable regulatory threshold values.

II.A.2.a. Horizontal extent of groundwater contamination

II.A.2.a.1. Initial site characterization

No groundwater samples were collected during the ISC, as indicated in Tables 1c and 1d.

II.A.2.a.2. CAP-Part A site investigation

During the CAP-Part A SI, 13 groundwater samples were collected for geochemical analysis from nine shallow temporary piezometers and one vertical-profile boring as presented in Tables 3a and 3b. The temporary piezometers (62-01 through 62-10; 62-07 was a vertical-profile boring for groundwater sampling) were located in and around the perimeter of the former tank pit and were screened across the water table.

Benzene was identified in eight groundwater samples during the CAP-Part A SI at concentrations ranging from 2.7 µg/L to 82.1 µg/L, as illustrated in the plan view and cross section on Figure 5. The benzene concentration in sample 620612 was above the Georgia IWQS of 71.28 µg/L, the federal maximum contaminant level (MCL) of 5 µg/L, and the benzene alternate concentration limit (ACL) of 71.28 µg/L (see Appendix VI). The eight benzene concentrations exceeded the risk-based concentration of 0.36 µg/L. The analytical detection limit for benzene was less than 2 µg/L in all samples.

Toluene was identified in nine groundwater samples during the CAP-Part A SI at concentrations ranging from 5.8 µg/L to 197 µg/L, as illustrated in the plan view and cross section on Figure 6. The concentrations did not exceed the Georgia IWQS of 200,000 µg/L, the federal MCL of 1,000 µg/L, or the risk-based screening level of 750 µg/L. The analytical detection limit for toluene was less than 2 µg/L in all samples.

Ethylbenzene was identified in eight groundwater samples during the CAP-Part A SI at concentrations ranging from 2.9 µg/L to 52.1 µg/L, as illustrated in the plan view and cross section on Figure 7. The concentrations did not exceed the Georgia IWQS of 28,718 µg/L, the federal MCL of 700 µg/L, or the risk-based screening level of 1,300 µg/L. The analytical detection limit for ethylbenzene was less than 2 µg/L in all samples.

Total xylenes were identified in ten groundwater samples during the CAP-Part A SI at concentrations ranging from 1.1J µg/L to 229 µg/L, as illustrated in the plan view and cross section on Figure 8. There is no Georgia IWQS for xylenes. The concentrations did not exceed the federal MCL of 10,000 µg/L or the risk-based screening level of 12,000 µg/L. The analytical detection limit for total xylenes was less than 6 µg/L in all samples.

Two PAH compounds were estimated at concentrations below the analytical reporting limit of 10 µg/L. The compounds were fluorene and pyrene, which were detected at concentrations of 7.9J µg/L and 9J µg/L, respectively, in one sample. The concentrations did not exceed their respective Georgia IWQS or risk-based screening criteria. The analytical detection limit for PAH compounds ranged from 10 µg/L to 9,900 µg/L, depending on the concentration of naphthalene and phenanthrene in the sample.

Naphthalene was identified in seven groundwater samples during the CAP-Part A SI at concentrations ranging from 8.8J µg/L to 7,860J µg/L, as illustrated in the plan view and cross section on Figure 9. This compound does not have a federal MCL or Georgia IWQS. The concentrations in seven samples were above the risk-based screening level of 6.5 µg/L. The concentrations in two samples were above the naphthalene ACL of 312 µg/L (see Appendix VI).

Phenanthrene was identified in five groundwater samples during the CAP-Part A SI at concentrations ranging from 3.3J µg/L to 7,450J µg/L, as illustrated in the plan view and cross section on Figure 10. This compound does not have a federal MCL or Georgia IWQS. The concentrations in two samples were above the risk-based screening level of 182.5 µg/L; however, none of the concentrations exceeded the phenanthrene ACL of 8,760 µg/L (Appendix VI).

II.A.2.a.3. CAP-Part B site investigation

During the CAP-Part B SI, six groundwater samples were collected for geochemical analysis from six groundwater monitoring wells as presented in Tables 3a and 3b. The groundwater monitoring wells (62-11 through 62-15) were installed in January 2000 and drilled to between 8.0 and 16.0 feet BGS. Monitoring well 62-16 was installed under the Resource Conservation and Recovery Act Facility Investigation of Solid Waste Management Unit 27F and was utilized as the upgradient groundwater monitoring well. Monitoring well locations are presented in Figure 2.

Benzene was identified in four groundwater samples during the CAP-Part B SI at concentrations ranging from 0.22J µg/L to 23.1 µg/L, as illustrated in the plan view and cross section on Figure 11. The benzene concentrations were below the Georgia IWQS of 71.28 µg/L. Two of the concentrations exceeded the federal MCL of 5 µg/L, and three of the concentrations exceeded the risk-based screening level of 0.36 µg/L. However, none of the concentrations exceeded the benzene ACL of 71.28 µg/L. The analytical detection limit for benzene was 1 µg/L in all samples.

Toluene was identified in four groundwater samples during the CAP-Part B SI at concentrations ranging from 0.28J µg/L to 110 µg/L, as illustrated in the plan view and cross section on Figure 12. The concentrations do not exceed the Georgia IWQS of 200,000 µg/L, the federal MCL of 1,000 µg/L, or the risk-based screening level of 750 µg/L. The analytical detection limit for toluene was 1 µg/L.

Ethylbenzene was identified in five groundwater samples during the CAP-Part B SI at concentrations ranging from 2.2 µg/L to 27.7 µg/L, as illustrated in the plan view and cross section on Figure 13. The concentrations do not exceed the Georgia IWQS of 28,718 µg/L, the federal MCL of 700 µg/L, or the risk-based screening level of 1,300 µg/L. The analytical detection limit for ethylbenzene was 1 µg/L.

Total xylenes were identified in five groundwater samples during the CAP-Part B SI at concentrations ranging from 5.4 µg/L to 133 µg/L, as illustrated in the plan view and cross section on Figure 14. This compound does not have a Georgia IWQS. The concentrations were below the federal MCL of 10,000 µg/L and the risk-based screening level of 12,000 µg/L. The analytical detection limit for total xylenes was below 3 µg/L.

Several PAH compounds were present in sample 621112 that were not observed in any other sample. The compounds included ancenaphthene, anthracene, benzo(*a*)anthracene, chrysene, fluoranthene, fluorene, and pyrene. However, only the concentrations of benzo(*a*)anthracene and chrysene exceeded their respective Georgia IWQSs. ACLs were calculated for these two constituents (see Appendix VI). Fluorene was also detected in sample 621312, but the concentration did not exceed its IWQS.

Naphthalene was identified in four groundwater samples during the CAP-Part B SI at concentrations ranging from 3.2 µg/L to 47.9 µg/L, as illustrated in the plan view and cross section on Figure 15. This compound does not have a federal MCL or Georgia IWQS. The concentrations in three samples were above the risk-based screening level of 6.5 µg/L; however, none of the concentrations exceeded the naphthalene ACL of 312 µg/L.

Phenanthrene was identified in one groundwater sample during the CAP-Part B SI at a concentration of 117 µg/L, as illustrated in the plan view and cross section on Figure 16. This compound does not have a federal MCL or Georgia IWQS. The concentration was below the risk-based screening level of 182.5 µg/L and below the phenanthrene ACL of 8,760 µg/L.

II.A.2.a.4. Conclusions of the horizontal extent of site groundwater contamination

Figures 5 through 16 demonstrate that the horizontal extent of contamination has been delineated. Petroleum contaminants identified in groundwater at the UST 100B site include BTEX constituents normally associated with used oil releases as well as PAH constituents, which likely represent less soluble biodegradation products of the release. The UST 100B site is a candidate for natural attenuation because the source of the contamination has been removed and the concentrations within the former tank pit decreased between September 1998 and January 2000. The highest benzene concentration at the site in January 2000 was 23.1 µg/L, which is below the Georgia IWQS. Site groundwater flow and the geology are conducive to aerobic biodegradation, which is known to produce the most rapid biodegradation rates for hydrocarbons.

II.A.2.b. Vertical extent of groundwater contamination

The vertical extent of groundwater contamination was not investigated during the ISC. During the CAP-Part A SI, the vertical extent of groundwater was delineated through groundwater sampling below the water table. Vertical-profile boring 62-07 was advanced below the water table, and groundwater samples were collected at 5-foot intervals. Drilling was stopped after several 5-foot sample intervals contained headspace readings of zero. The Hawthorn Formation is estimated to be located at 50 feet BGS and was not encountered during drilling of this vertical-profile boring. It is estimated that the Hawthorn Formation is located within 25 feet of the bottom of this boring. No contamination was observed in boring 62-07 below 20 feet BGS.

II.A.3. Delineation of Free Product Plume

Free product was not identified at the UST 100B site during the ISC or the CAP-Part A SI. However, during the CAP-Part B SI, 0.03 foot of free product was identified in well 62-11 on February 21, 2000, which is located at the edge of the former tank pit. Free product was not observed in any of the wells surrounding well 62-11.

II.A.4. Delineation of Surface Water and Sediment Contamination

II.A.4.a. CAP-Part A Investigation (September 1998)

A drainage swale is located 90 feet northeast (upgradient) of the site and contains water only during and shortly after storm events. Surface water and sediment samples were collected during the CAP-Part A investigation in case groundwater flow was towards the drainage swale.

Surface water was present at only sampling location 62-S2 and did not contain any BTEX or PAH constituents as shown in Figure 17 and Table 4. Two sediment samples were collected from the drainage swale and did not contain any BTEX or PAH constituents as shown in Figure 17 and Table 5. However, TPH was detected in both sediment samples at concentrations of 20.2J mg/kg and 30 mg/kg.

II.A.4.b. CAP-Part B Investigation (January 2000)

Surface water and sediment samples were not collected as part of the CAP-Part B investigation.

II.B. LOCAL AND SITE HYDROGEOLOGY

This discussion of the local and site hydrogeology is based on field observations and investigative activities performed during the ISC, CAP-Part A SI, and CAP-Part B SI of the UST 100B site.

II.B.1. Documentation of Local Groundwater Conditions

II.B.1.a. Groundwater usage

According to the Groundwater Pollution Susceptibility Map of Georgia (GA EPD 1992), UST 100B, Facility ID #9-089081 is located within an average or higher groundwater pollution susceptibility area. A total of seven groundwater supply wells are located within a 2-mile radius of the Fort Stewart garrison area. Six of these wells are located within the confines of the garrison area. The other well is located at Wright Army Airfield, approximately 1.2 miles northeast of the garrison area. All of the groundwater supply wells are classified as public wells that supply water to Fort Stewart for drinking and nondrinking purposes. These wells are approximately 450 feet deep and draw groundwater from the Principal Artesian (also known as the Floridan) aquifer. According to Fort Stewart DPW personnel, chlorine and fluoride are added to the groundwater at the well heads prior to its being pumped into storage tanks and/or water towers. The locations of the wells within the 2-mile radius, along with a 500-foot radius drawn around each well, are shown in Figure 18. Based on the location of Facility ID #9-089081 relative to the identified groundwater supply wells, this site is classified as being located more than 500 feet from a withdrawal point.

II.B.1.b. Aquifer description

The hydrogeology in the vicinity of Fort Stewart is dominated by two aquifers referred to as the Principal Artesian and the surficial aquifers. The Principal Artesian aquifer is the lowermost hydrologic unit and is regionally extensive from South Carolina through Georgia, Alabama, and most of Florida. Known elsewhere as the Floridan, this aquifer is composed primarily of Tertiary-age limestone, including the Bug Island Formation, the Ocala Group, and the Suwannee Limestone. These formations are approximately 800 feet thick, and groundwater from this aquifer is used primarily for drinking water (Arora 1984).

The uppermost hydrologic unit is the surficial aquifer, which consists of widely varying amounts of sand and clay ranging from 55 to 150 feet in thickness. This aquifer is primarily used for domestic lawn and agricultural irrigation. The top of the water table ranges from approximately 2 to 10 feet BGS. The base of the aquifer corresponds to the top of the underlying dense clay of the Hawthorn Group. The Hawthorn Group was not encountered during drilling at this site but is believed to be located at approximately 50 feet BGS; thus, the effective aquifer thickness would be approximately 45 feet. Soil surveys for Liberty and Long counties describe the occurrence of a perched water table within the Stilson loamy sands present within Fort Stewart (Looper 1980).

The confining layer for the Principal Artesian aquifer is the phosphatic clay of the Hawthorn Group and ranges in thickness from 15 to 90 feet. The vertical hydraulic conductivity of this confining unit is on the order of 10^{-8} cm/sec. There are minor occurrences of aquifer material within the Hawthorn Group; however, they have limited utilization (Miller 1990). The Hawthorn Group has been divided into three formations: Coosawhatchie Formation, Markshead Formation, and the Parachula Formation, which are listed from youngest to oldest.

The Coosawhatchie Formation is composed predominantly of clay but also has sandy clay, argillaceous sand, and phosphorite units. The formation is approximately 170 feet thick in the Savannah, Georgia, area. This unit disconformabily overlies the Markshead Formation and is distinguished from the underlying unit by dark phosphatic clays or phosphorite in the lower part and fine-grained sand in the upper part.

The Markshead Formation is approximately 70 feet thick in the Savannah, Georgia, area and consists of light-colored phosphatic, slightly dolomitic, argillacerous sand to fine-grained sandy clay with scattered beds of dolostone and limestone.

The Parachula Formation consists of sand, clay, limestone, and dolomite and is approximately 10 feet thick in the Savannah, Georgia, area. The Parachula Formation generally overlies the Suwannee Limestone in Georgia.

II.B.1.c. Surface water

The water resources survey conducted during the CAP-Part A SI is presented in Appendix III. Several surface water bodies are located within a 1-mile radius of the Fort Stewart garrison area and are shown in Figure 18. At the closest point to the site, a tributary to Mill Creek is located approximately 250 feet north (side gradient) of the site; however, this tributary is piped through the northern portion of the garrison area motorpools and is not considered a surface water body. A drainage swale is located 90 feet northeast (upgradient) of the site and contains water only during and shortly after storm events. In the direction of groundwater flow, a drainage ditch is located approximately 900 feet southwest of the former tank pit, and Mill Creek is located approximately 2,500 feet southwest of the site. Based on the surface water features discussed in Appendix III, the UST 100B site, Facility ID #9-089081 is classified as being located more than 500 feet from a surface water body.

Runoff from the UST 100B site moves over the existing concrete to the Fort Stewart storm drainage system. Since petroleum contamination at the site primarily impacts groundwater, the surface water runoff pathway is not a viable contaminant transport mechanism.

There are underground utilities at the site that could act as potential preferential pathways for contaminant migration. An industrial wastewater line is located within the area of groundwater contamination. The invert elevation of manhole #26, located 80 feet southwest of boring 62-08, is 62.60 feet above mean sea level (AMSL) or 5.4 feet BGS, which is near the water table; thus, the industrial wastewater line is considered a preferential pathway. A catch basin for a storm drain is located about 100 feet south of boring 62-08. The invert elevation of the catch basin is estimated to be approximately 64.42 feet AMSL or 3.4 feet BGS, which is above the water table; thus, the catch basin is not considered a preferential pathway.

II.B.2. Stratigraphic Boring Logs

The local stratigraphy of Fort Stewart and vicinity is presented in Section II.B.2.a, and the site stratigraphy from the CAP-Part A and CAP-Part B investigations is presented in Section II.B.2.b.

II.B.2.a. Local stratigraphy

Fort Stewart is located within the coastal plain physiographic province. This province is typified by nine southeastward-dipping strata that increase in thickness from 0 feet at the fall line, located approximately 150 miles inland from the Atlantic coast, to approximately 4,200 feet at the coast. State geologic records describe a probable petroleum exploration well (the No. 1 Jelks-Rogers) located in the region as encountering crystalline basement rocks at a depth of 4,254 feet BGS. This well provides the most complete record for Cretaceous, Tertiary, and Quaternary sedimentary strata in the region.

The Cretaceous section was found to be approximately 1,970 feet thick and dominated by clastics. The Tertiary section was found to be approximately 2,170 feet thick and dominated by limestone with a 175-foot-thick cap of dark green phosphatic clay. This clay is regionally extensive and is known as the Hawthorn Group. The

interval from approximately 110 feet to the surface is Quaternary in age and composed primarily of sand with interbeds of clay or silt. This section is undifferentiated into separate formations (Herrick and Vochis 1963).

State geologic records contain information regarding a well drilled in October 1942, 1.8 miles north of Flemington at Liberty Field of Camp Stewart (now known as Fort Stewart). This well is believed to be an artesian well located approximately one-quarter mile north of the runway at Wright Army Airfield within the Fort Stewart Military Reservation (FSMR). The log for this well describes a 410-foot section, the lowermost 110 feet of which consisted predominantly of limestone sediments, above which 245 feet of dark green phosphatic clay typical of the Hawthorn Group were encountered. The uppermost portion of the section was found to be Quaternary-age interbedded sands and clays. The top 15 feet of these sediments were described as sandy clay (Herrick and Vochis 1963).

The surface soil located throughout the Fort Stewart garrison area consists of Stilson loamy sand. The surface layer of this soil is typically dark grayish-brown loamy sand measuring approximately 6 inches in depth. The surface layer is underlain by material consisting of pale yellow loamy sand and extends to a depth of approximately 29 inches. The subsoil is dominantly sandy clay loam and extends to a depth of 72 inches or more (Herrick and Vochis 1963).

II.B.2.b. Site stratigraphy

As determined from soil borings drilled during the CAP-Part A SI and CAP-Part B SI, the lithologies present within 15 feet of the surface at the UST 100B site appear to correlate with the regional stratigraphic section. CAP-Part B SI soil boring logs are located in Appendix IV. The lithology underlying the study area consists of interbedded layers of sand with varying amounts of silt and clay.

II.B.3. Stratigraphic Cross Sections

Stratigraphic cross sections have been developed based on the CAP-Part A SI and CAP-Part B SI soil boring logs. Figure 3 presents four cross sections that illustrate the geology described in Section II.B.2.b.

II.B.4. Referenced or Documented Calculations

Referenced or documented calculations performed to support the CAP-Part B SI include those used in developing and interpreting the results of geotechnical analysis and groundwater slug testing.

II.B.4.a. Geotechnical analysis

Soil samples for geotechnical analysis were not collected as part of the CAP-Part A or CAP-Part B investigations.

II.B.4.b. Slug testing

Slug testing was not performed as part of the CAP-Part A or CAP-Part B investigations.

II.B.5. Direction of Groundwater Flow

II.B.5.a. Well construction details

Following contact with fully saturated material in a soil boring, a water level measurement was taken to determine the remaining depth to be drilled. This measurement was necessary to ensure the placement of at least 5 feet of well screen below the water table, in accordance with the Work Plan (SAIC 1996).

The monitoring well casing consisted of a 2- or 3/4-inch inside diameter, Schedule 40, flush-thread, polyvinyl chloride (PVC) riser pipe and screen in 10-foot sections. The well screen slot size was 0.010 inches. Table 6 summarizes construction details for CAP-Part A SI temporary piezometers and CAP-Part B SI monitoring wells. Well construction diagrams are presented in Appendix VII. Following installation of the well casing, filter pack sand was poured while the augers were gradually removed to ensure a complete and even distribution of the filter pack. The filter pack extended to a measured level at least 0.5 foot above the top of the well screen.

Well seals were composed of 3/8-inch bentonite pellets and allowed to hydrate before filling of the annular space above the seal. The total volume of potable water used to hydrate the pellets averaged 2 gallons per well. The well seal extended to a measured level of at least 0.5 foot above the top of the filter pack.

Above the well seal, the remaining annular space was completed with a 1-foot-long, flush-mount, sheet steel protective casing that was grouted in place with a 14-inch-diameter × 4-inch-thick, high-strength concrete pad. Well casings were capped with expandable locking caps. Protective casings were covered with bolted cast-iron manhole covers. Inscribed monitoring well identification plates were permanently affixed to the inside of each manhole cover.

II.B.5.b. Potentiometric mapping

Water level measurements were collected during the CAP-Part A SI 24 hours after piezometer installation in May and September 1998 and during CAP-Part B SI groundwater sampling activities in February and April 2000. Data obtained from these measurements are presented in Table 7. During the CAP-Part A SI in September 1998, groundwater flowed to the southwest with a gradient of 0.019 foot/foot (Figure 19). During the CAP-Part B SI in April 2000, groundwater flowed to the southwest with a gradient of 0.023 foot/foot (Figure 20).

II.B.5.c. Equipotential flow net

An equipotential flow net based on the April 2000 water level measurements and the contoured potentiometric surface are presented in Figure 21.

III. REMEDIAL ACTION PLAN

III.A. CORRECTIVE ACTION COMPLETED OR IN PROGRESS

III.A.1. Recovery/Removal of Free Product

No evidence of free product was observed at the UST 100B site during the ISC or the CAP-Part A SI. However, on February 21, 2000, the Installation's contractor identified 0.03 foot of free product at monitoring well 62-11, installed during the CAP-Part B investigation at former UST 100B, Building 1350, Facility ID #9-089081, Fort Stewart, Georgia. The well was measured again on April 5, 2000, for product, and 0.3 foot was detected. The well was pumped dry a couple of times on April 5, and on April 6, 2000, only a sheen was detected in well 62-11. Fort Stewart notified the GA EPD, USTMP in correspondence dated May 22, 2000, concerning free product at this site. On May 25, 2000, a sheen was detected in well 62-11, and absorbent strips were installed in the well. The absorbent strips were removed and replaced again on June 29, 2000.

III.A.2. Remediation/Treatment of Contaminated Backfill Material and Native Soils

During UST removal and excavation activities in 1996, all contaminated soil removed during the entire project (i.e., all USTs removed under contract with ACE, to include clean and nonclean closures) was tested in accordance with disposal facility requirements and transported to Kedesh, Inc., Highway 84, Ludowici, GA 31316.

The Closure Report for UST 100B was not submitted to GA EPD in 1996 because review of the closure analytical data indicated that a CAP-Part A would be required (i.e., per requirements of GUST-9, Item 15, page 12, dated August 1995). However, the analytical data presented in the closure report are summarized in Table 1 of this CAP-Part B Report. Approximately 39.28 tons of contaminated soil were excavated from the site.

No further excavation of potentially contaminated backfill or native soils has occurred at the UST 100B site.

III.B. OBJECTIVES OF CORRECTIVE ACTION

III.B.1. Remove Free Product That Exceeds One-Eighth Inch

The ISC and CAP-Part A SI revealed no evidence of free product at the UST 100B site. However, during the CAP-Part B SI, free product was observed in well 62-11 at a thickness of 0.03 foot in February 2000 and 0.3 foot in April 2000. The well was pumped dry several times on April 5, 2000, in an effort to remove the free product. Absorbent strips were installed in the well in May 2000 and removed and replaced in June 2000. The absorbent strips will be replaced quarterly in an effort to remove the small amount of free product.

III.B.2. Remediate Groundwater Contamination

The CAP-Part A SI documented groundwater contamination that exceeded IWQSs in one CAP-Part A SI boring. Further investigation during the CAP-Part B SI provided more groundwater contaminant data, which indicated that the benzene concentrations decreased between September 1996 and January 2000. During the CAP-Part B SI, the highest benzene concentration was 23.1 µg/L, which is below the IWQS and ACL of 71.28 µg/L. Several PAH constituents were detected in the vicinity of the former tank pit area; therefore, remediation of groundwater is not recommended, but monitored natural attenuation may be warranted.

III.B.3. Remediate Soil Contamination

Soil samples were collected from the tank pit during the ISC, and no constituent exceeded its respective its STL. Further investigation during the CAP-Part A SI provided soil contaminant data that indicated that benzene concentrations exceeded the STL in soil samples located in the vadose zone but outside the area of tank operations. An ATL of 0.234 mg/kg for benzene was calculated (see Appendix VI), and none of the benzene concentrations exceeded the ATL. Benzene was detected in only one soil sample during the CAP-Part B SI, and the concentrations were below the benzene STL and ATL. Therefore, remediation of soil is not recommended.

III.B.4. Provide Risk-based Corrective Action

As part of the CAP-Part A Report (SAIC 1999), a risk-based screening was performed. The results of that screening are summarized in the following sections.

III.B.4.a. Risk-based screening results

The risk-screening process is a systematic screening of sample results to determine site-related contaminants of potential concern (COPCs). Constituent concentrations below risk- or applicable or relevant and appropriate requirement (ARAR)–based screening levels are not considered COPCs and are not evaluated further. Table 8 presents the results of the risk-based screening for the CAP-Part A and CAP-Part B SI soil and sediment data. Table 9 presents the results of the risk-based screening for the CAP-Part A SI and CAP-Part B SI groundwater and surface water data. The risk-based screening for soil and groundwater has been revised to include the CAP-Part B sampling results.

Seventeen soil and two sediment samples were collected during the CAP-Part A SI. Benzene exceeded the GUST STL of 0.008 mg/kg in five soil samples and exceeded the leaching-to-groundwater screening criterion of 0.030 mg/kg in one sample. Benzene, ethylbenzene, toluene, xylenes, fluorene, naphthalene, and phenanthrene were also detected in soil but at concentrations below risk-based and leaching-to-groundwater screening levels. TPH was detected in soil and sediment samples, but there is no screening criterion for TPH. Five soil samples were collected during the CAP-Part B SI. Benzene, ethylbenzene, toluene, xylenes, naphthalene, and phenanthrene were detected in soil but at concentrations below the various screening levels. TPH was detected in one soil sample, but there is no screening criterion for TPH. No COPCs were identified for sediment. Benzene was identified as a COPC for UST 100B site soil.

The detection limits for benzo(*a*)pyrene and dibenzo(*a,h*)anthracene exceeded risk-based screening values. The detection limit for benzo(*a*)anthracene exceeded the leaching-to-groundwater risk-based screening value. The elevated detection limits were the result of analytical dilutions of the samples to account for matrix interference during analysis. Detection limits represent levels of confidence where a reported value above the level is considered an accurate value. But estimated values may be detected and reported below the detection limits within the instrument's range of detection. No COPCs for soil were selected based on a detection-limit screening.

Thirteen groundwater samples were collected during the CAP-Part A SI. Benzene was detected in one groundwater sample at a concentration above the IWQS of 71.28 µg/L and in eight groundwater samples at concentrations above the risk-based screening level of 0.36 µg/L. Naphthalene and phenanthrene were detected in one groundwater sample above their respective risk-based screening levels. Ethylbenzene, toluene, xylenes, acenaphthene, fluorene, and pyrene were detected below screening values for the CAP-Part A SI. No BTEX or PAH constituents were detected in surface water. Six groundwater samples were collected during the CAP-Part B SI. Benzene, benzo(*a*)anthracene, chrysene, and naphthalene were detected in groundwater above risk-

based screening levels. Ethylbenzene, toluene, xylenes, acenaphthene, anthracene, fluoranthene, fluorene, phenanthrene, and pyrene were detected in groundwater at concentrations below their respective screening levels. No COPCs were identified for surface water. Benzene, benzo(*a*)anthracene, chrysene, naphthalene, and phenanthrene were selected as COPCs for the UST 100B site groundwater.

The detection limits for benzene exceeded the risk-based screening level for leaching to groundwater. Detection limits achieved during both the CAP-Part A and CAP-Part B for several PAHs exceeded their respective IWQSs and/or risk-based screening levels for the groundwater data. For these constituents, screening levels represent values below analytically achievable levels. No additional COPCs were selected for groundwater based on the detection-limit screening.

III.B.4.b. Fate and transport model

The fate and transport modeling results were presented in the CAP-Part A Report (SAIC 1999). In summary, benzene was modeled to four potential downgradient locations at which a receptor might encounter migrating groundwater contamination. The locations were an industrial wastewater line located within the groundwater plume, a strom drain located approximately 100 feet south of the former tank pit, a drainage ditch located approximately 900 feet southwest of the former tank pit, and Mill Creek located approximately 2,500 feet southwest of the site. The invert of the industrial wastewater line is located at or near the water table; thus, the industrial wastewater line is considered a potential preferential pathway. These are the nearest possible locations at which a receptor might encounter migrating groundwater contamination due to a possible hydraulic connection between the groundwater and the surface water in the utility line, ditch, or the creek.

The maximum soil concentrations at this site are above the water table (i.e, in the vadose zone). Therefore, leaching to groundwater by the percolating rainwater was modeled using the Seasonal Soil Compartment (SESOIL) Model. SESOIL predicted a maximum benzene concentration of 17.7 µg/L in the leachate at the water table interface. This predicted concentration was less than the maximum observed benzene concentration of 82.1 µg/L in groundwater. Thus, a steady-state model was developed by calibrating the model against the maximum observed concentration (i.e., 82.1 µg/L in boring 62-06 during the CAP-Part A investigation in September 1998) beneath the UST 100B site.

Contaminant fate and transport simulations were performed to predict the maximum concentrations at these receptor locations over a simulation period of 100 years. The modeling results predicated that the benzene concentrations would be 82.3 µg/L at the industrial wastewater line, 1.7 µg/L at the storm drain, 0 µg/L at the drainage ditch, and 0 µg/L at Mill Creek. Therefore, the potential receptors and surface water located outside the plume will not be impacted at concentrations above the IWQSs by the current site conditions at the UST 100B site, Facility ID # 9-089081. However, the industrial wastewater line, which is located within the plume at a depth at or near the water table, may be impacted by current site conditions.

Based on modeling results, the dilution attenuation factor (DAF) is estimated to be 1 at the industrial wastewater line, 48 at the storm drain, infinity at the drainage ditch, and infinity at Mill Creek. Infinite DAFs indicate that the predicted concentrations at these receptors are zero.

III.B.4.c. Site-specific levels

Detections exceeding the conservative generic screening levels are considered COPCs. Alternative threshold levels (ATLs) and ACLs are developed, when appropriate, for the COPCs using site-specific information from the fate and transport modeling and applicable regulatory levels.

III.B.4.c.1. Alternate Threshold Levels

Benzene was identified as a COPC for UST 100B site soil. The ATL calculations for benzene are presented in Appendix VI and are based on the results of the SESOIL and Analytical Transient 1-, 2-, 3-Dimensional modeling for the UST 100B site. The ATL for benzene in soil was calculated to be 0.234 mg/kg.

III.B.4.c.2. Alternative Concentration Limits

Benzene, benzo(*a*)anthrancene, chyrsene, naphthalene, and phenanthrene were identified as COPCs for groundwater at the site. Benzene was considered the most mobile, and thus conservative, constituent. Benzene was modeled to potential downgradient locations at which a receptor may come in contact with migrating site contamination. The modeling results estimated a DAF of 1 for the industrial wastewater line and 48 for the storm drain. PAH constituents are much less mobile in the environment than benzene; thus, the DAF of 48 was used to develop ACLs for the PAH constituents. Compound-specific regulatory levels or risk-based screening criteria were used in conjunction with site-specific DAFs identified for the potential migration of contamination from the site to determine the ACL for each compound. The ACL calculations are presented in Appendix VI and were determined to be as follows:

- 71.28 µg/L for benzene (i.e., 1 × 71.28 µg/L),
- 4.4 µg/L for benzo(*a*)anthracene (i.e., 48 × 0.092 µg/L),
- 442 µg/L for chrysene (i.e., 48 × 9.2 µg/L),
- 312 µg/L for naphthalene (i.e., 48 × 6.5 µg/L), and
- 8760 µg/L for phenanthrene (i.e., 48 × 182.5 µg/L),

During the CAP-Part A investigation in 1998 and 1999, only the concentrations of benzene and naphthalene exceeded their respective ACLs. During the CAP-Part B investigation in 2000, benzo(*a*)anthracene was the only constituent to exceed its ACL.

III.B.4.d. Conclusions and recommendations

The conclusions below are based on a review of the CAP-Part A SI and CAP-Part B SI results using a risk-based approach and the fate and transport modeling, assuming a continuous source of contamination of infinite duration at the site based on the maximum observed benzene concentration (i.e., 82.1 µg/L) in groundwater during the CAP-Part A investigation.

- Free product was not detected during the CAP-Part A SI, but was observed in well 62-11 during the CAP-Part B SI.
- The horizontal and vertical extent of soil and groundwater contamination was determined during the CAP-Part A and CAP-Part B investigations.
- Risk-based screening results show that benzene, benzo(*a*)anthracene, chrysene, naphthalene, and phenanthrene concentrations in groundwater exceeded the initial screening levels.
- Risk-based screening results show that benzene concentrations in soil exceeded the initial screening levels.
- The SESOIL maximum predicted benzene concentration was 17.7 µg/L, which is less than the maximum observed benzene concentration of 82.1 µg/L.

- The modeling of benzene estimated a DAF of 1 for the industrial wastewater line and 48 for the storm drain.

- Benzene and naphthalene concentrations in groundwater exceeded the ACLs of 71.28 µg/L and 312 µg/L, respectively, during the CAP-Part A SI. The benzo(*a*)anthracene concentration in one groundwater sample during the CAP-Part B SI exceeded its ACL of 4.4 µg/L.
- Benzene concentrations in soil did not exceed the ATL of 0.234 mg/kg during the ISC, CAP-Part A SI, or CAP-Part B SI.

- Fate and transport modeling of benzene indicates that contamination does not exceed IWQSs at the conservatively defined downgradient receptors—a storm drain, a drainage ditch, and Mill Creek.

- Based on the CAP-Part B data, the environmental site ranking score is 63,100 (see Appendix X) primarily due to the presence of an industrial wastewater line and a small quantity of nonrecoverable free product.

Considering that the site is located within the garrison area of Fort Stewart, that the benzene concentrations in soil are below the ATL, that the most recent benzene concentrations in groundwater are below the IWQS/ACL, and that a small amount of nonrecoverable free product exists at the site, a monitoring only program is recommended for the site to ensure that the benzene concentrations remain below the IWQS/ACL over the next year.

III.C. DESIGN AND OPERATION OF CORRECTIVE ACTION SYSTEMS

III.C.1. System Effectiveness/Basis for Selection

The selected corrective action approach, natural attenuation of groundwater, was chosen following evaluation of numerous established and innovative active and passive remediation alternatives. A three-step screening process was used to select the preferred remedy for the UST 100B site. This alternative selection process is illustrated in Figure 22.

III.C.1.a. Theory and feasibility

The presumed remedies evaluated for aromatic hydrocarbons in soil and groundwater at this site include monitored natural attenuation, oxygen-injection-enhanced bioremediation, air sparging with soil vapor extraction, and six-phase heating. Based on the hydrocarbon concentrations below the benzene IWQS in all wells, natural attenuation is the preferred alternative. Natural attenuation is based on the premise that fuel-type hydrocarbons are readily biodegraded in most environmental systems. Biodegradation of BTEX has been documented for sites similar to the UST 100B site (e.g., shallow water table, permeable silty sand). In fact, the conditions at the UST 100B site are similar to those of other sites that are ideal for biodegradation (Abou-Rizk, Leavitt, and Graves 1995). Site groundwater flow and the geology are conducive to aerobic biodegradation, which is known to produce the most rapid biodegradation rates for hydrocarbons. Finally, the primary source (i.e., UST) has been removed; therefore, subsurface conditions (dissolved oxygen, oxidation-reduction potential, background nutrient availability) will steadily improve with time.

Other remedial options that were considered introduce more risk of exposure due to contaminant release into other matrices (soil gas, air, treatment canisters) or excavation. In addition, the excessive costs associated with an aggressive remediation system do not result in added protection to the industrial worker receptor.

The ACL and Georgia IWQS for benzene of 71.28 µg/L was not exceeded in the monitoring wells at the site during the CAP-Part B SI. No other compound exceeded its respective IWQS during any of the past sampling rounds.

III.D. IMPLEMENTATION

III.D.1. Milestone Schedule

A milestone schedule for the monitoring only plan has been prepared. A Gantt chart showing milestone activities and anticipated duration is provided in Figure 23. The actual time required to achieve the site remedial levels (i.e., ACLs) may be greater, or less, than that presented in Figure 23. Therefore, Fort Stewart will notify GA EPD USTMP of any significant changes to the proposed treatment time and will provide GA EPD USTMP an updated Gantt chart, as necessary.

III.D.2. Progress Reporting

Annual monitoring reports will be submitted to GA EPD that will summarize all previous annual sampling events.

III.D.3. Certificate of Completion Report

Petition for permanent closure will be submitted with the final monitoring only report. GA EPD will provide final approval for decommissioning of the monitoring wells, which will be requested in the final monitoring only report. Decommissioning of monitoring wells will be completed according to the USACE design manual for monitoring wells. Decommissioning will comply with all applicable state and federal standards.

The following certification will be submitted to GA EPD within 30 days of submittal of the final progress report:

> I hereby certify that the Corrective Action Plan-Part B, dated _____, 20___, for Fort Stewart, UST 100B site, Facility ID #9-089081, including any and all certified amendments thereto, has been implemented in accordance with the schedules, specifications, sampling programs, and conditions contained therein, and that the plan's stated objectives have been met.
>
> _____
> Signature (Owner/Operator)

III.D.4. Inspection Schedule and Preventative Maintenance Program

During each sampling event, wells will be visually inspected for changes or damage. Any notable observations will be recorded in the subsequent progress report. Any required repairs to ensure the monitoring wells remain in conformance with GA EPD and U.S. Environmental Protection Agency (EPA) performance standards will be made as needed.

III.D.5. Periodic Monitoring

Groundwater samples from 62-11, 62-12, 62-13, 62-14, 62-15, and 62-16 will be collected annually and analyzed for BTEX and PAHs. The absorbent strips in well 62-11 will be replaced periodically prior to the

annual sampling event. The absorbent socks will be removed from well 62-11 at least a week prior to the annual sampling event to allow any free product to enter the well.

During each sampling event, water levels will be measured in all monitoring wells. Specific conductivity, pH, and temperature analysis will be completed for each sample from the monitoring wells at which analytical samples were collected. The samples will be shipped to an approved laboratory for BTEX analysis using EPA Method 8021B/8260B.

III.D.6. Effectiveness of Corrective Action

The monitoring only plan will be discontinued once the objectives of the corrective action have been achieved and/or maintained for a period of 12 months, that is, to reduce the concentrations of COPCs in groundwater to below their respective ACLs and to reduce the free product thickness to less than an eighth of an inch.

III.D.7. Confirmatory Soil Sampling Plan

No excavation of soil is planned; therefore, confirmatory sampling will not be completed.

III.D.8. Stockpiled Bulk Soil Sampling

No stockpiled soil will be generated from this corrective action; therefore, no soil sampling will be conducted.

III.D.9. Termination Conditions

Concentrations of benzene, benzo(*a*)anthracene, chyrsene, naphthalene, and phenanthrene in groundwater must be at or below their respective ACLs, and the free product must be less than an eighth of an inch thick prior to terminating the monitoring only plan. Achievement of the ACLs and product thickness goals will take precedence over the site ranking score.

III.D.10. Post-Completion Site Restoration Activities

After termination has been granted, equipment and debris related to the monitoring program will be removed from the site.

III.E. PUBLIC NOTIFICATION

The UST 100B site is located entirely within the confines of FSMR, a federal facility. The U.S. Government owns all of the property contiguous to the site. The Fort Stewart DPW has complied with the public notice requirements defined by GA EPD guidance by publishing an announcement in the *Savannah Morning News* on July 16 and 23, 2000. A copy of the newspaper announcement used for public notification is presented in Appendix XI of this report.

IV. CLAIM FOR REIMBURSEMENT

Fort Stewart is a federally owned facility and has funded the investigation for the UST 100B site, Facility ID# 9-089081 using Department of Defense Environmental Restoration Account Funds. Application for GUST Trust Fund reimbursement is not being pursued at this time.

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APPENDIX I

REPORT FIGURES

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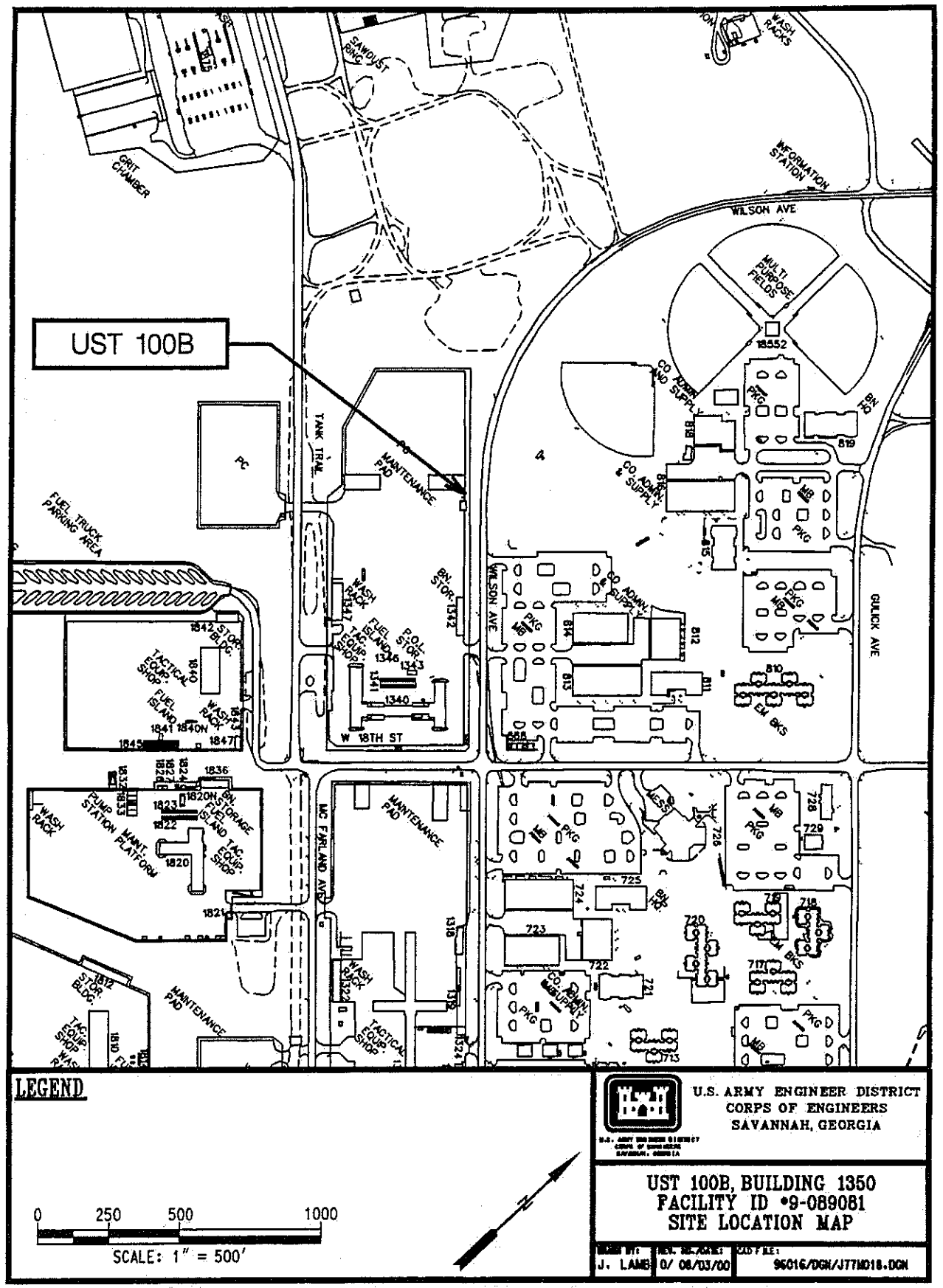

Figure 1. Location Map for the UST 100B Site, Facility ID #9-089081

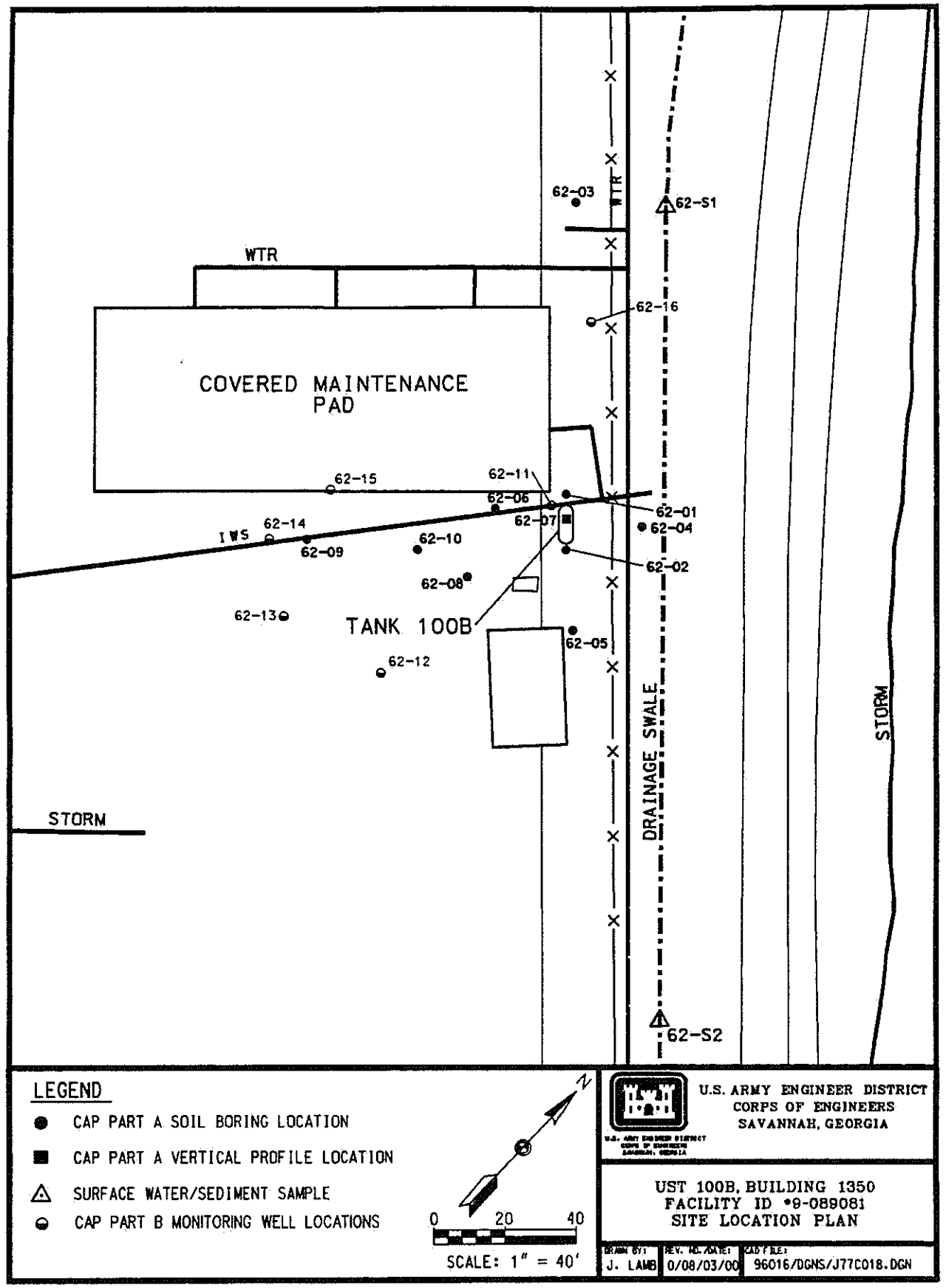

Figure 2. Site Map of the UST 100B Site, Facility ID #9-089081

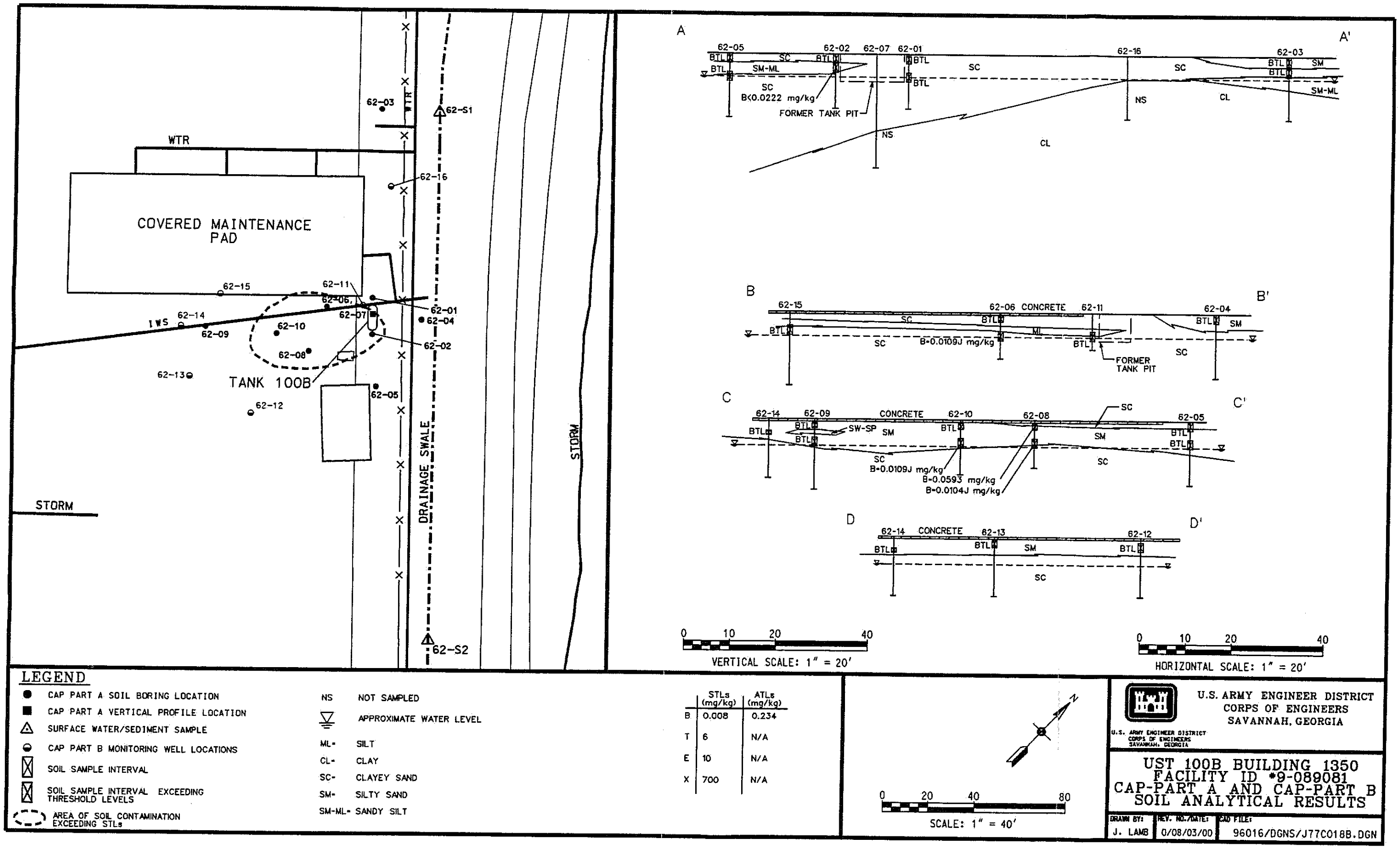

Figure 3. CAP-Part A and B Soil Sampling Locations at the UST 100B Site, Facility ID #9-089081

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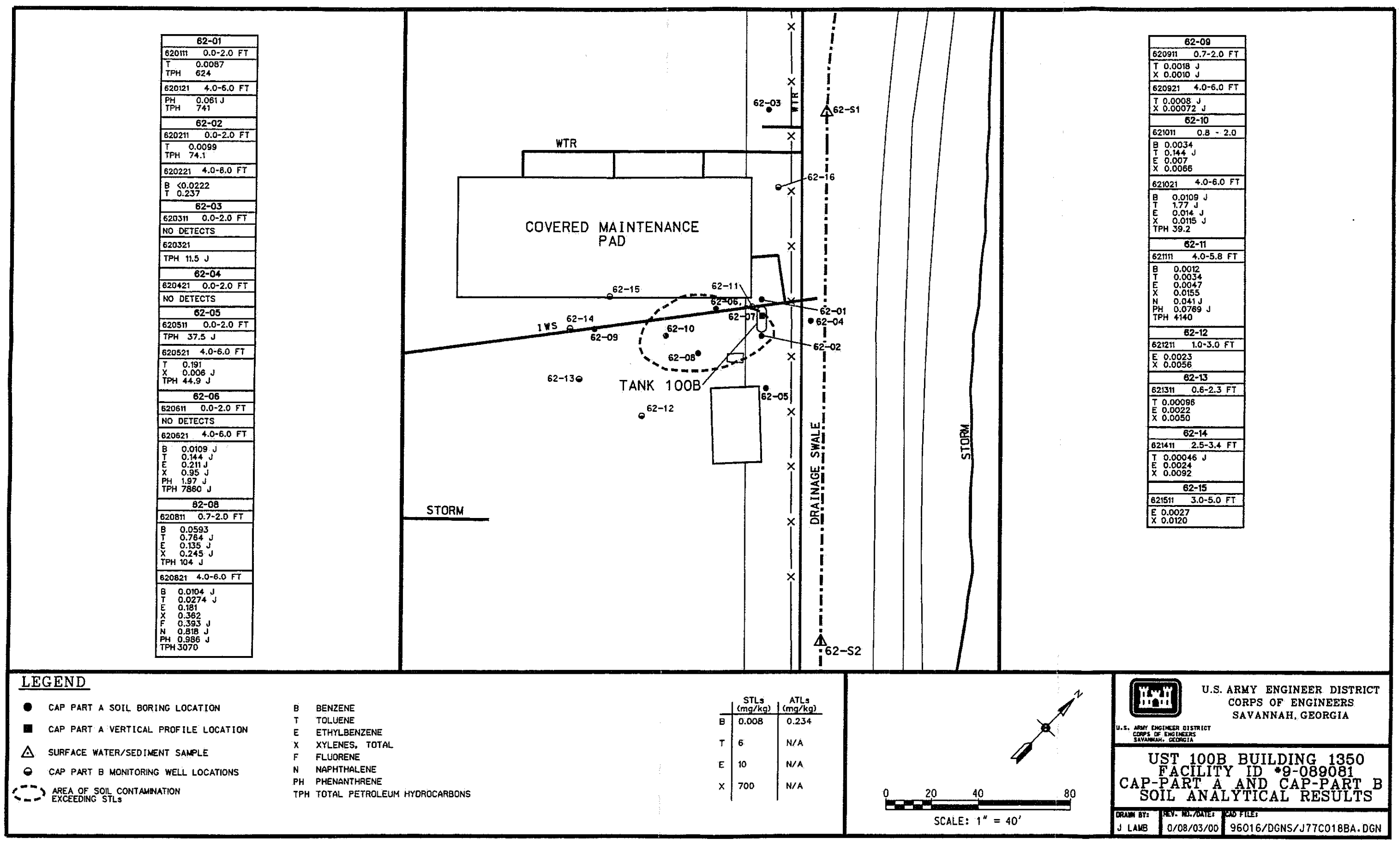

Figure 4a. CAP-Part A and B Soil Sampling Analytical Results at the UST 100B Site, Facility ID #9-089081

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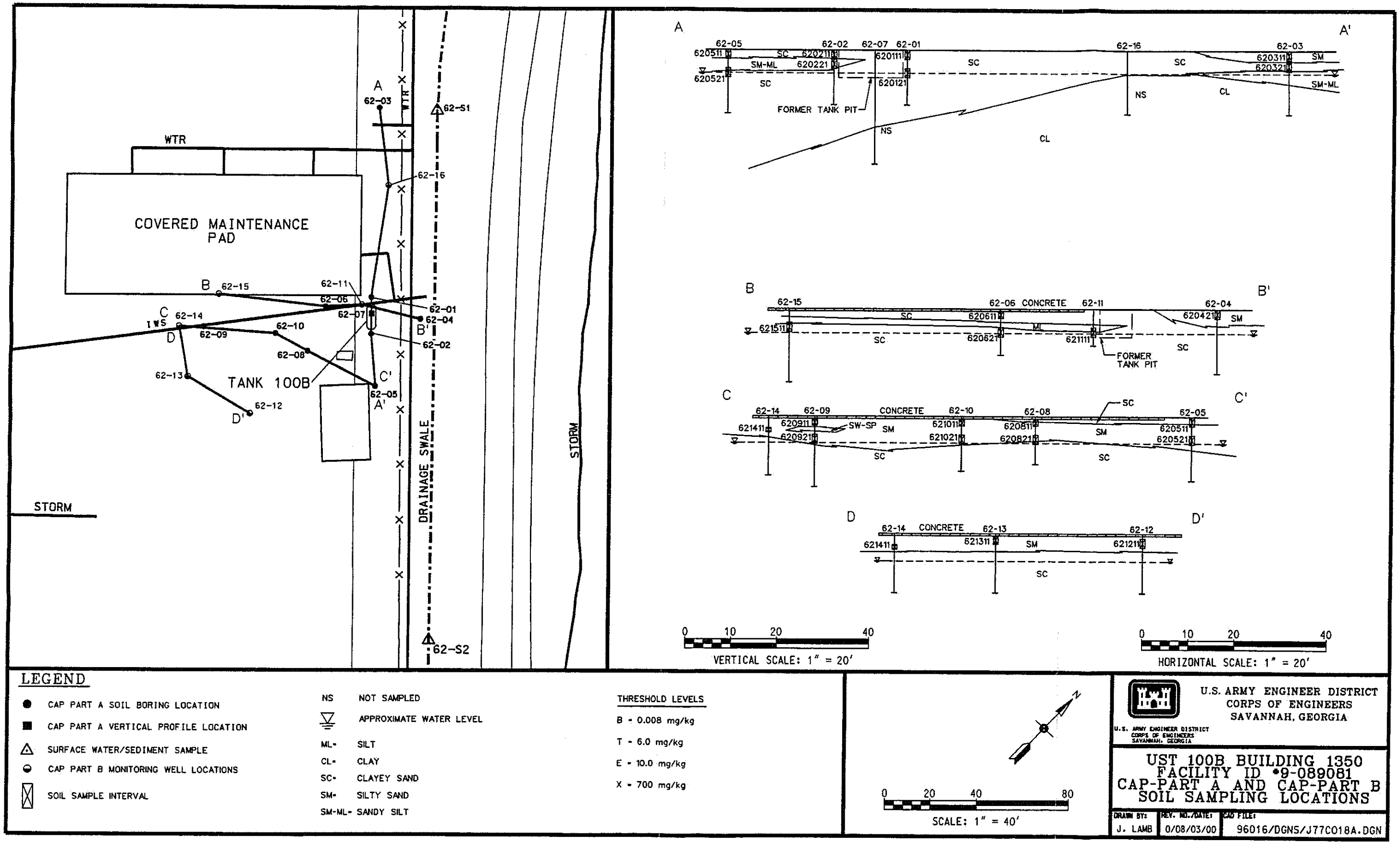

Figure 4b. CAP-Part A and B Soil Sampling Analytical Results at the UST 100B Site, Facility ID #9-089081

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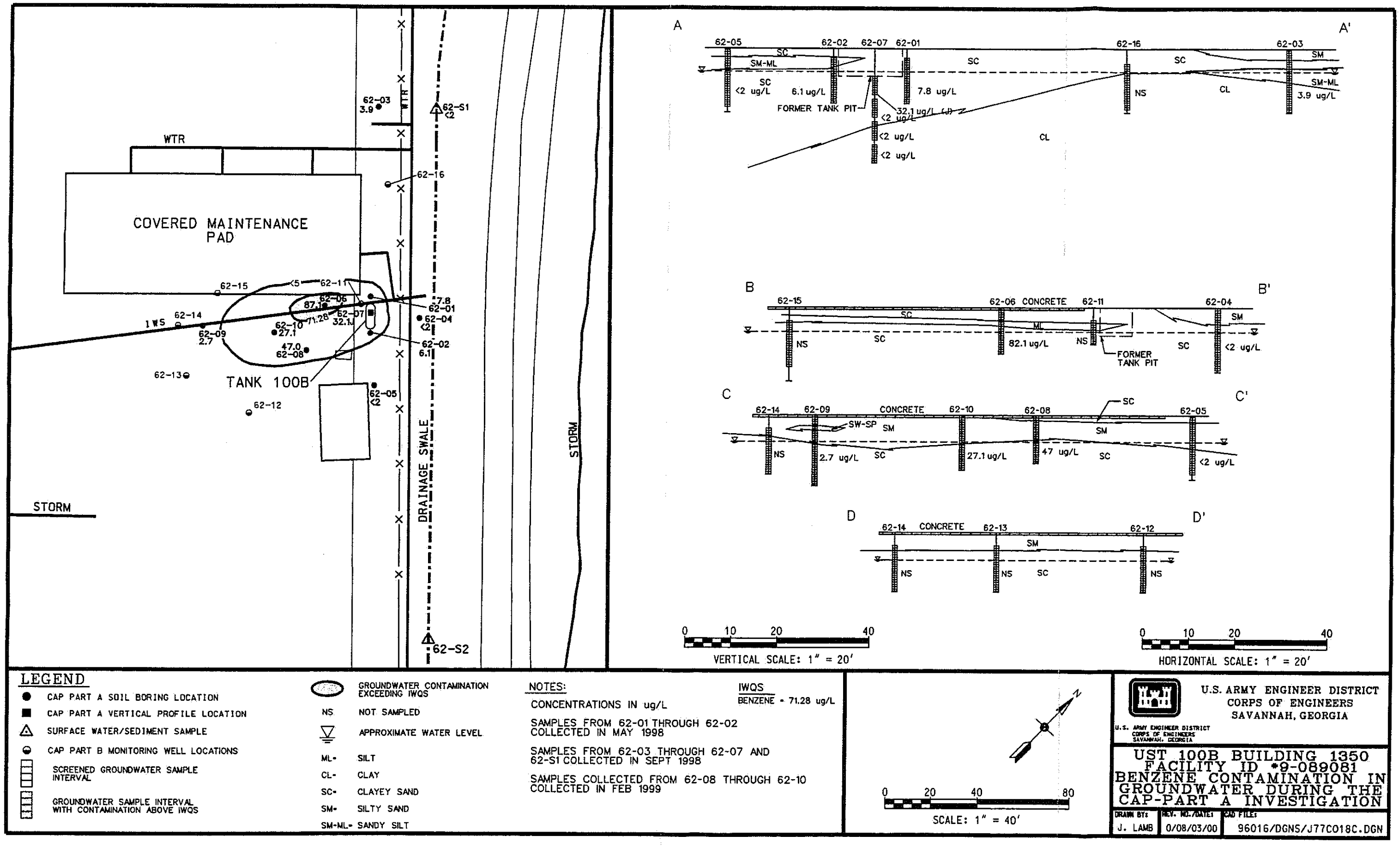

Figure 5. Benzene Contamination in Groundwater Determined During the CAP-Part A Site Investigation at the UST 100B Site, Facility ID #9-089081

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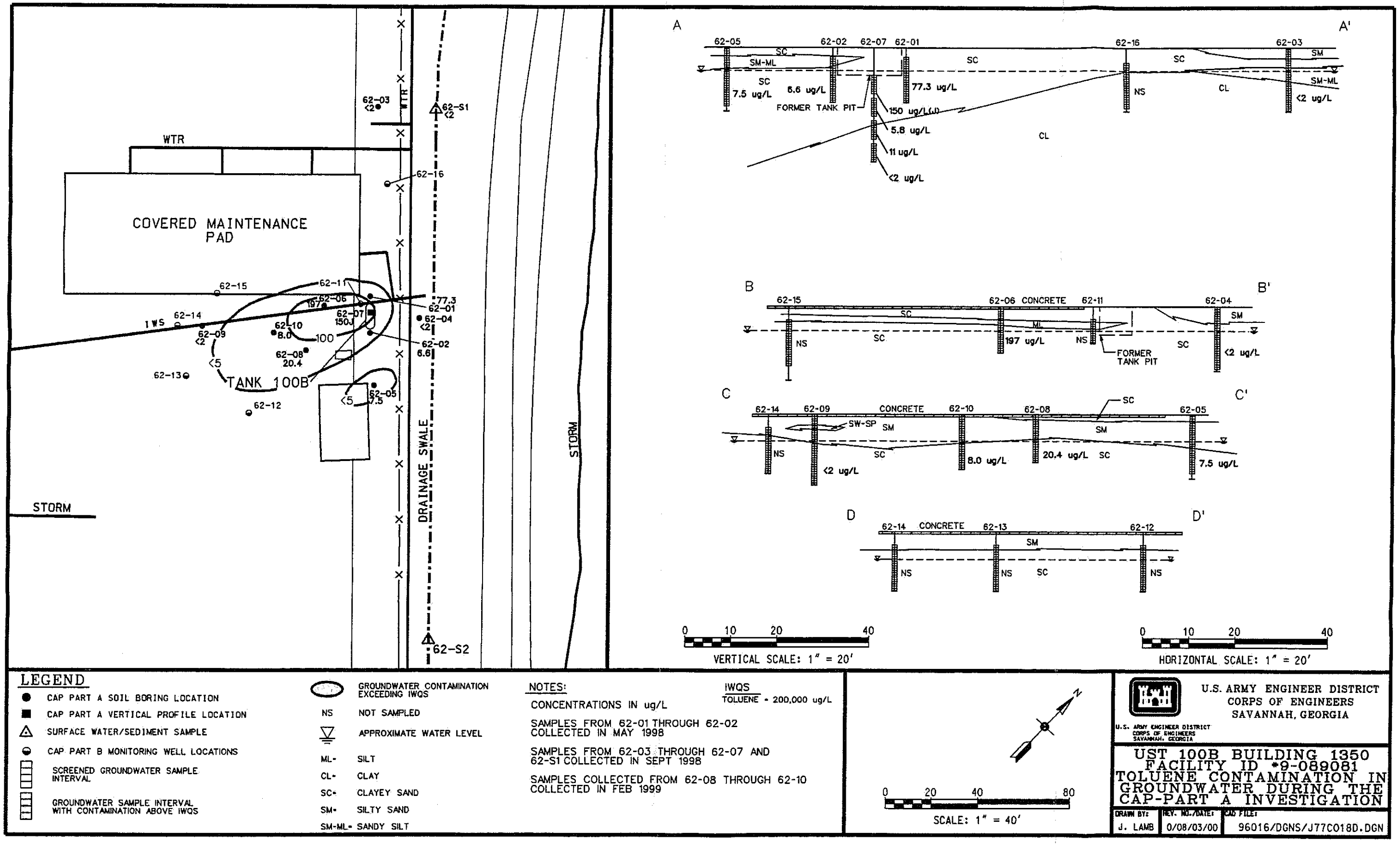

Figure 6. Toluene Contamination in Groundwater Determined During the CAP-Part A Site Investigation at the UST 100B Site, Facility ID #9-089081

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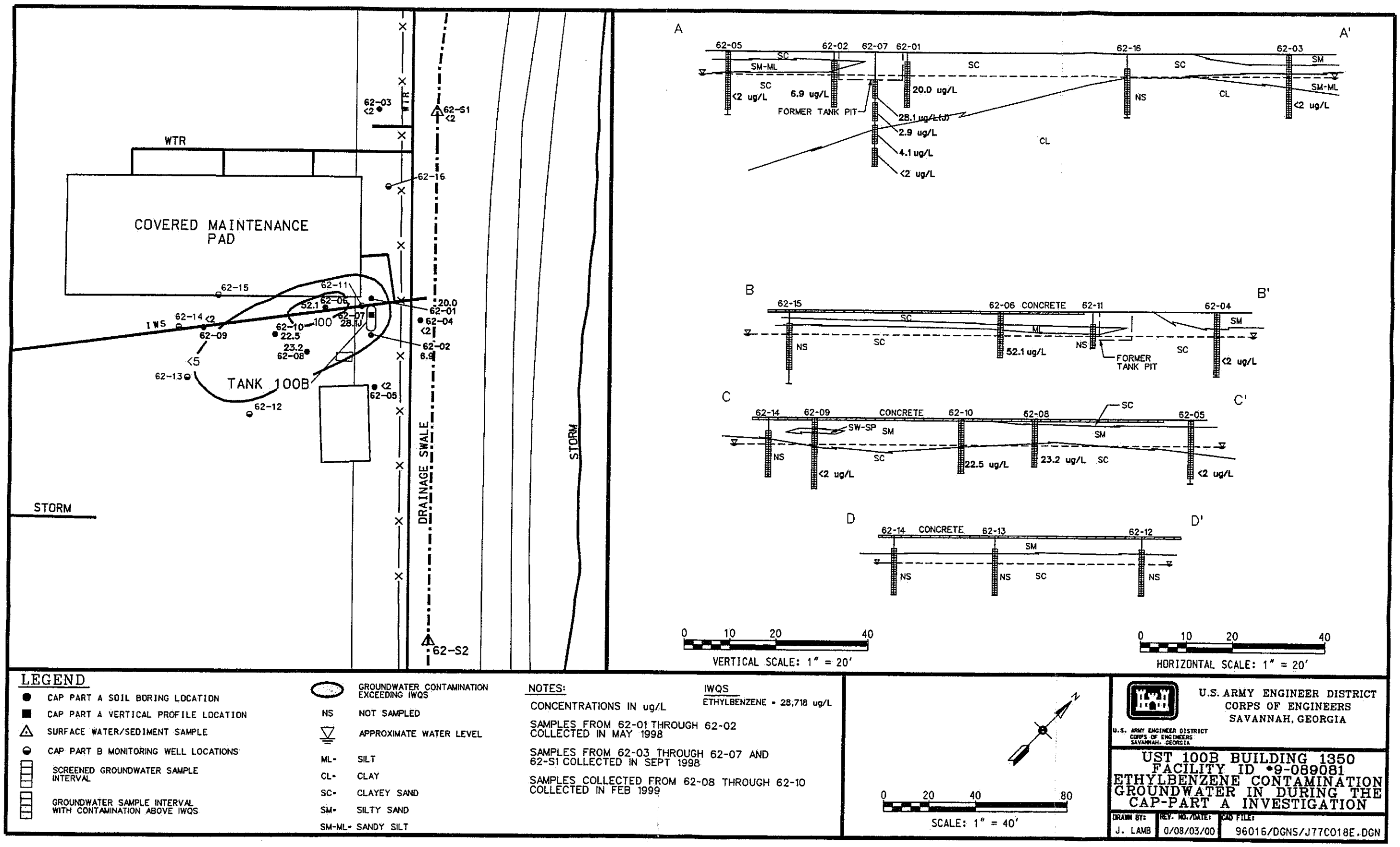

Figure 7. Ethylbenzene Contamination in Groundwater Determined During the CAP-Part A Site Investigation at the UST 100B Site, Facility ID #9-089081

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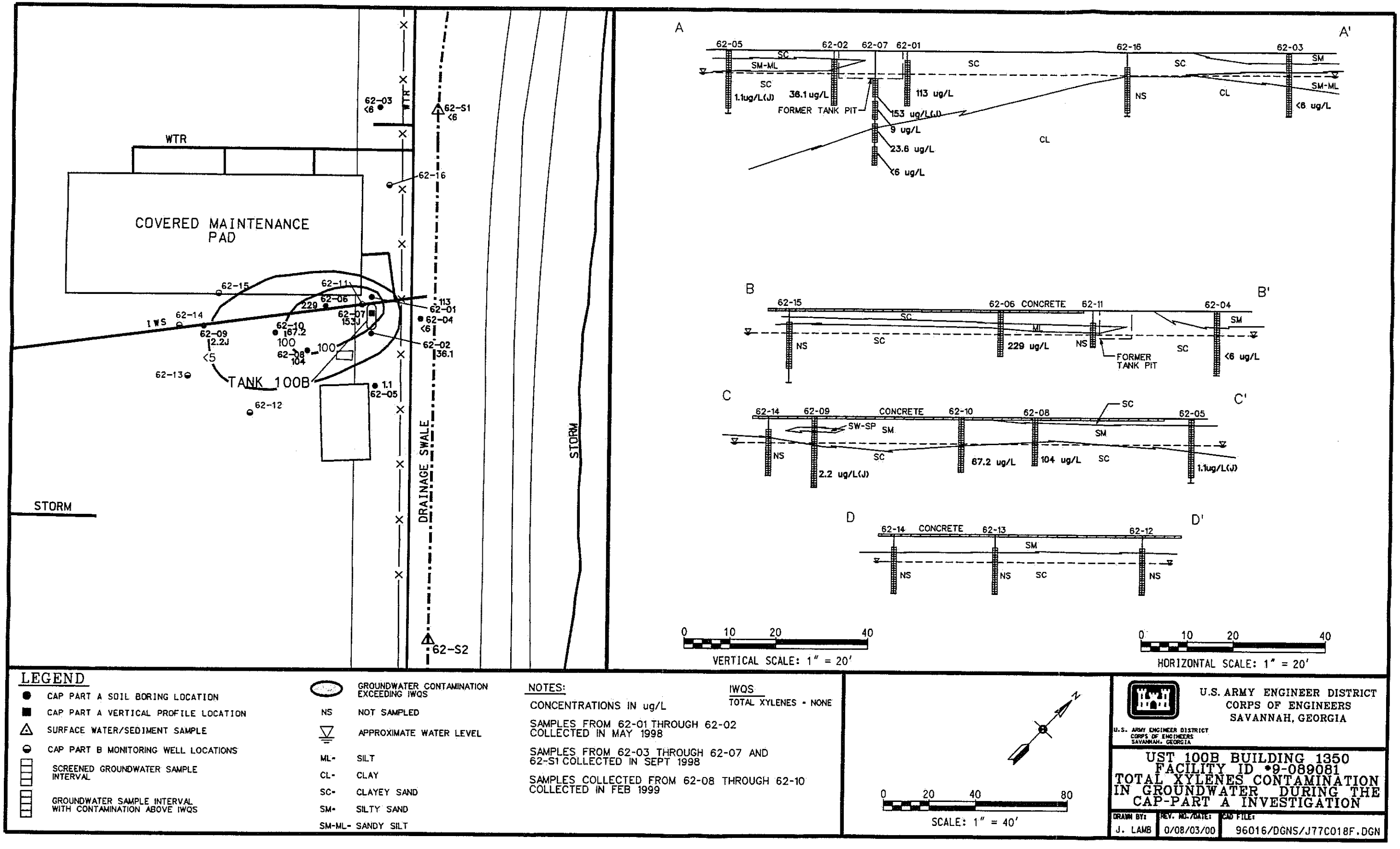

Figure 8. Total Xylenes Contamination in Groundwater Determined During the CAP-Part A Site Investigation at the UST 100B Site, Facility ID #9-089081

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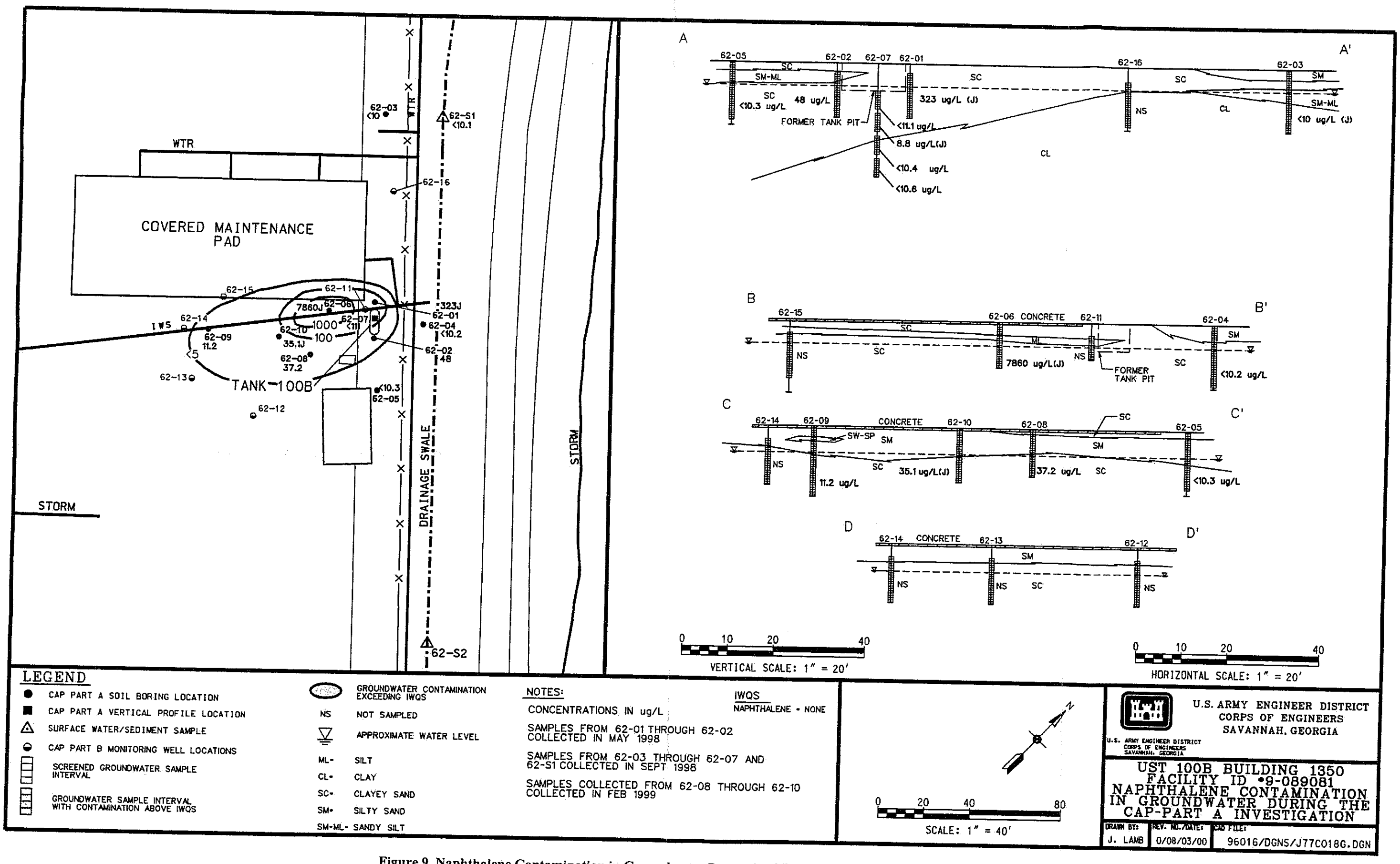

Figure 9. Naphthalene Contamination in Groundwater Determined During the CAP-Part A Site Investigation at the UST 100B Site, Facility ID #9-089081

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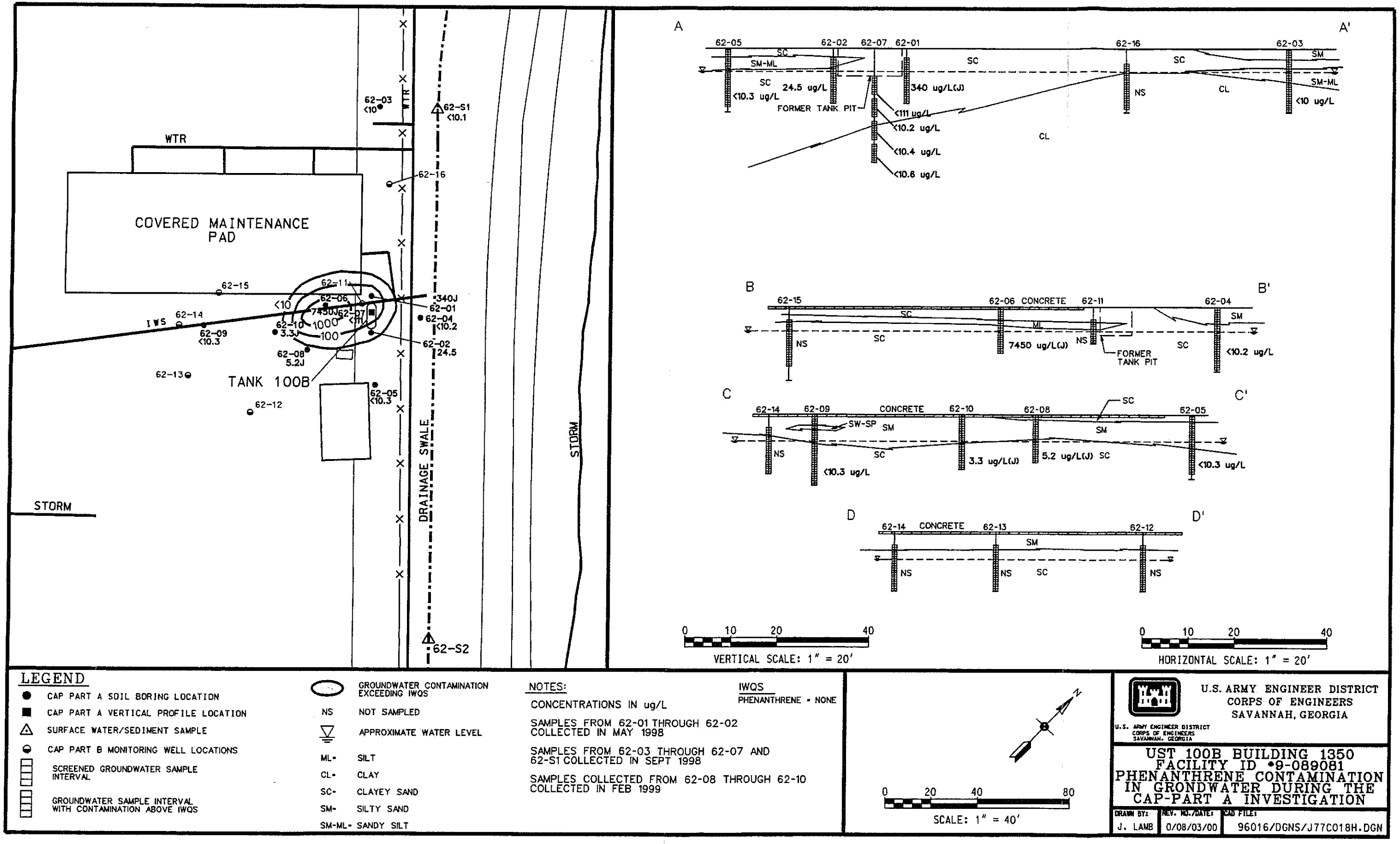

Figure 10. Phenanthrene Contamination in Groundwater Determined During the CAP-Part A Site Investigation at the UST 100B Site, Facility ID #9-089081

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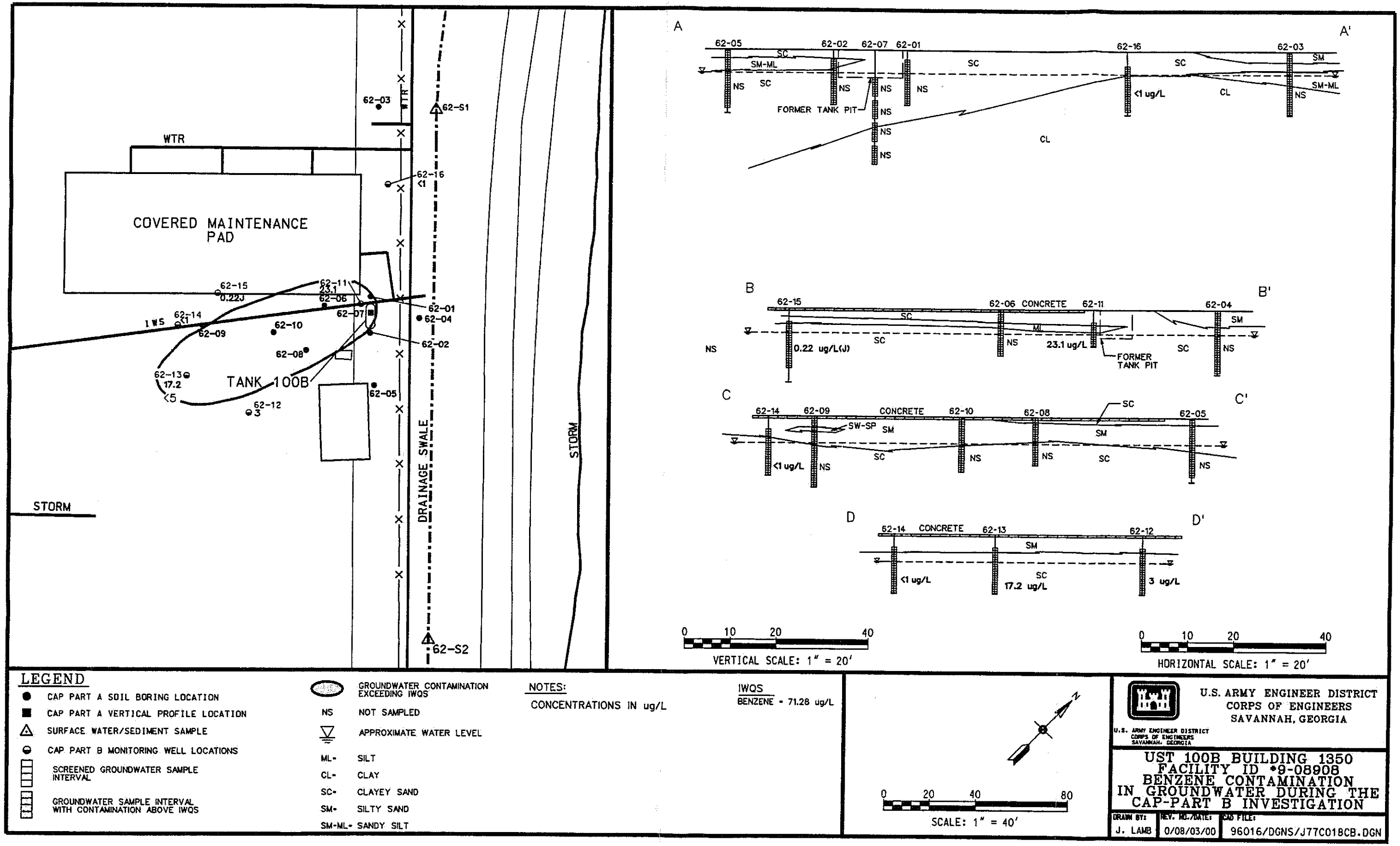

Figure 11. Benzene Contamination in Groundwater Determined During the CAP-Part B Site Investigation at the UST 100B Site, Facility ID #9-089081

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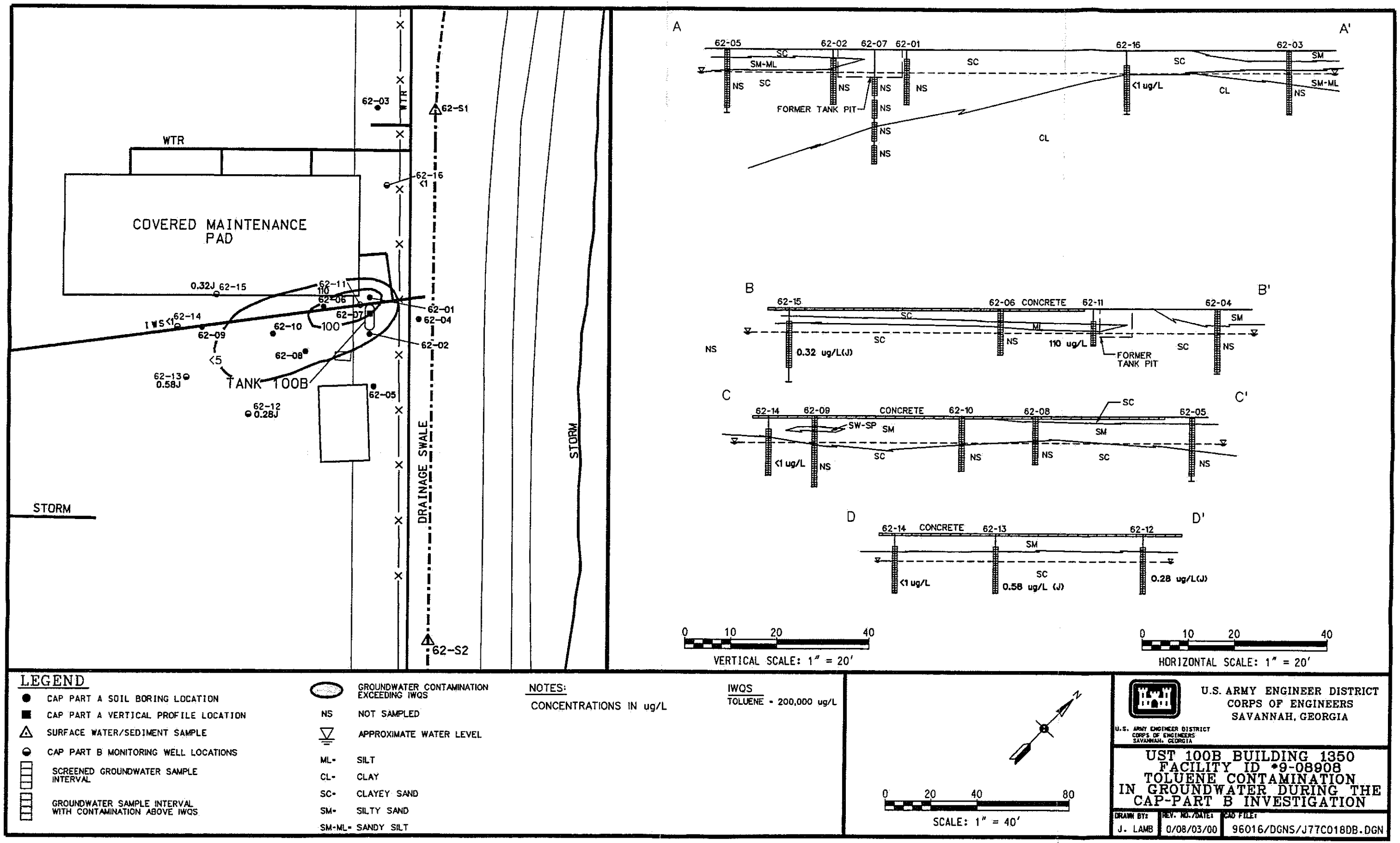

Figure 12. Toluene Contamination in Groundwater Determined During the CAP-Part B Site Investigation at the UST 100B Site, Facility ID #9-089081

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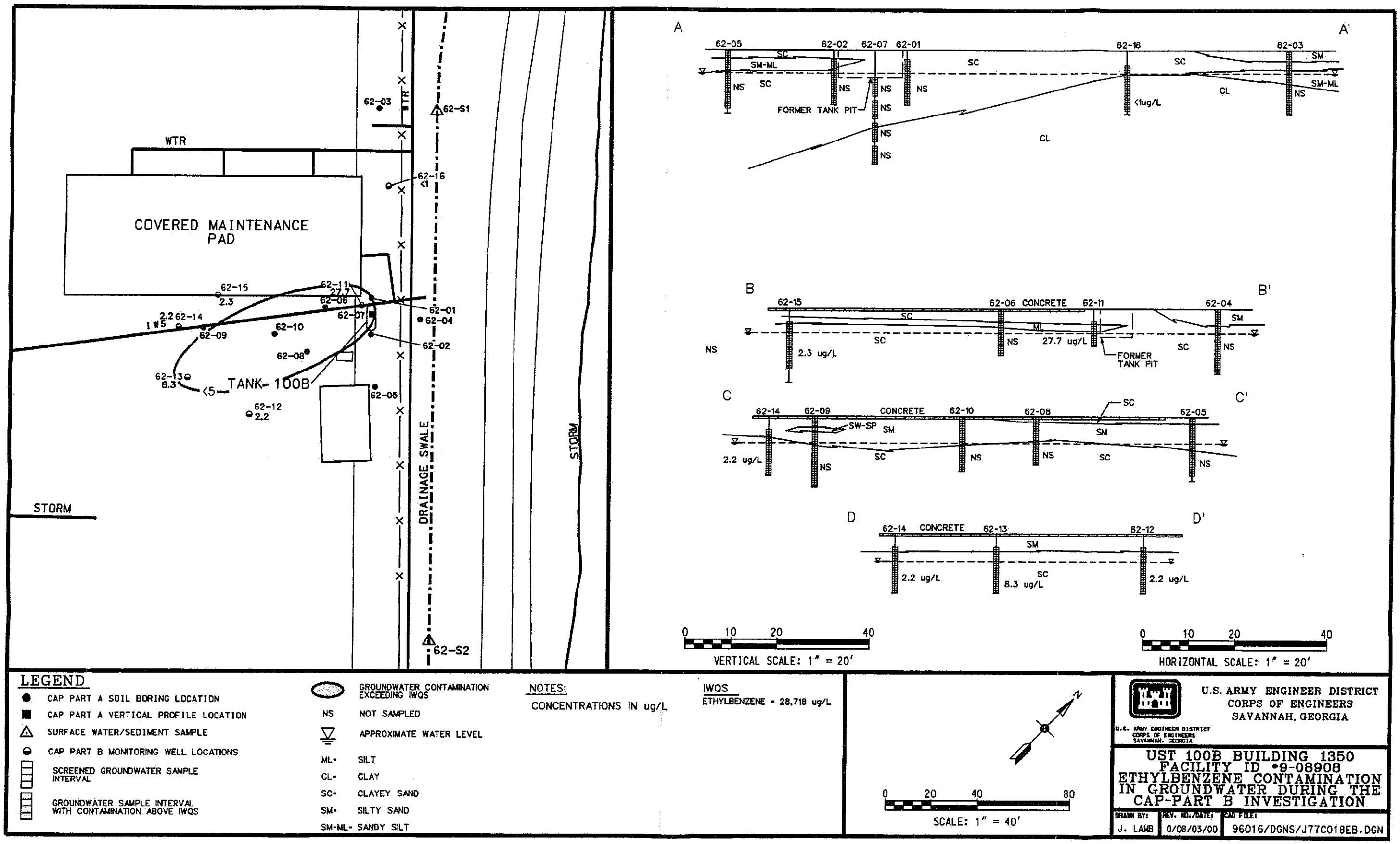

Figure 13. Ethylbenzene Contamination in Groundwater Determined During the CAP-Part B Site Investigation at the UST 100B Site, Facility ID #9-089081

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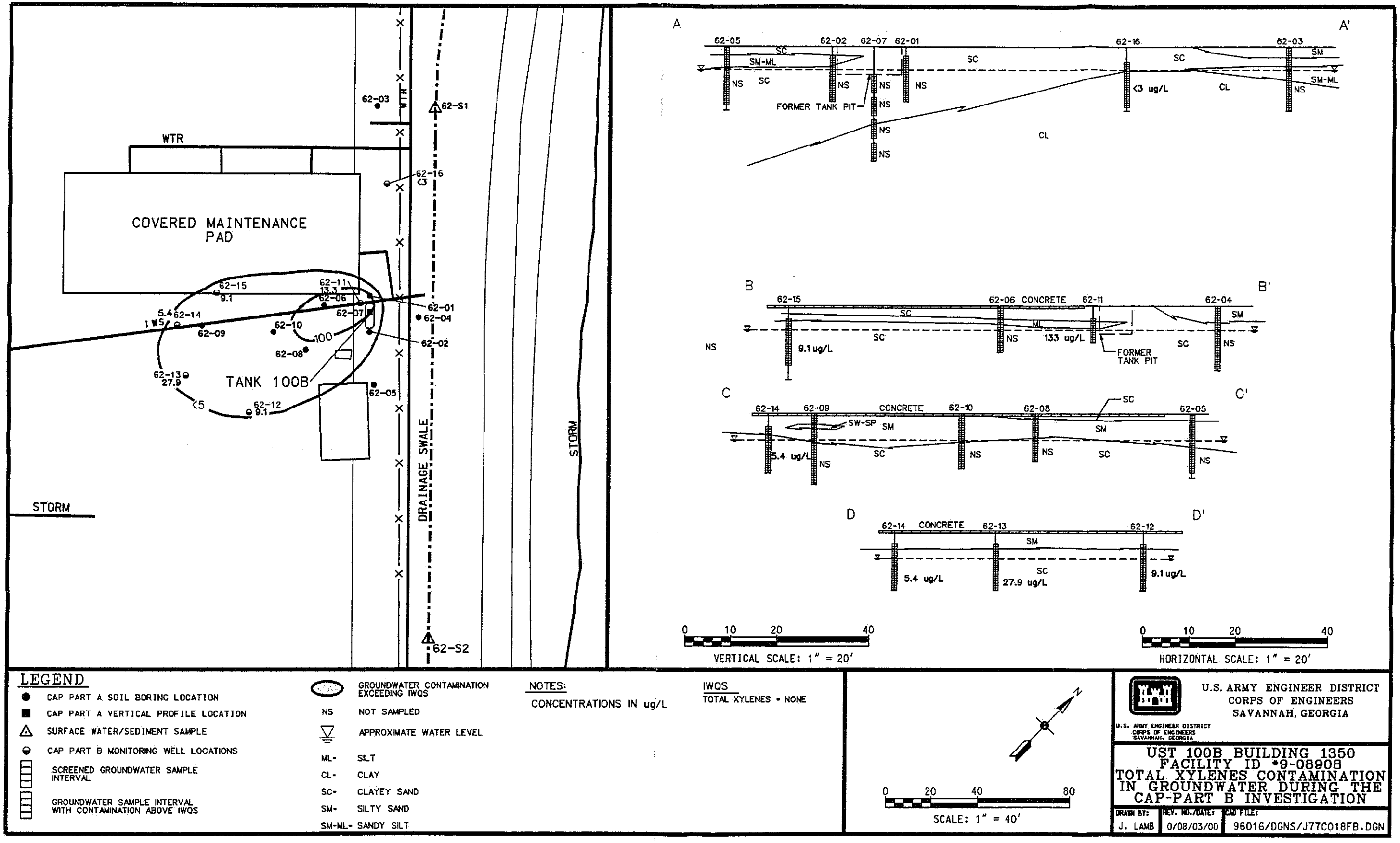

Figure 14. Total Xylenes Contamination in Groundwater Determined During the CAP-Part B Site Investigation at the UST 100B Site, Facility ID #9-089081

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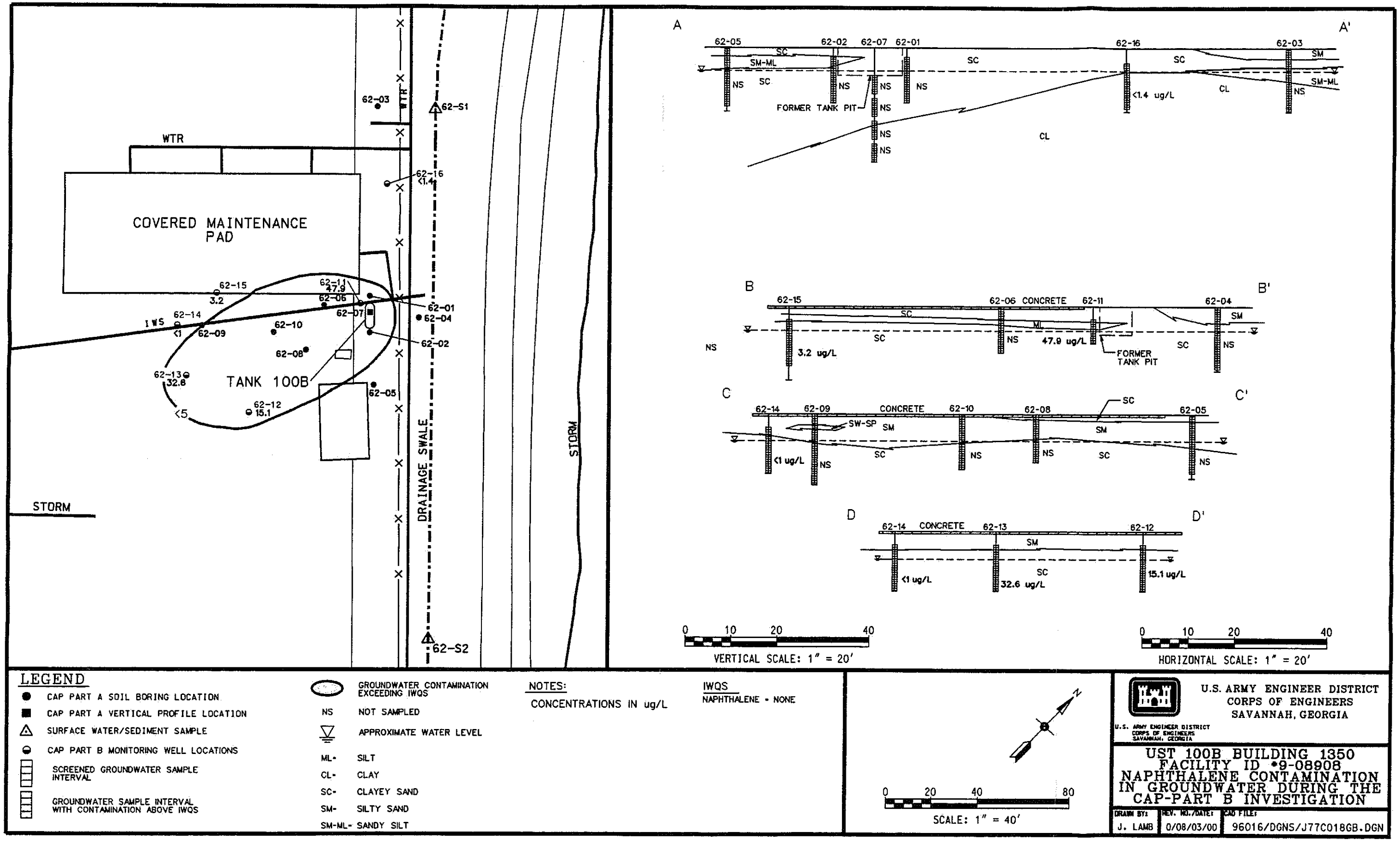

Figure 15. Naphthalene Contamination in Groundwater Determined During the CAP-Part B Site Investigation at the UST 100B Site, Facility ID #9-089081

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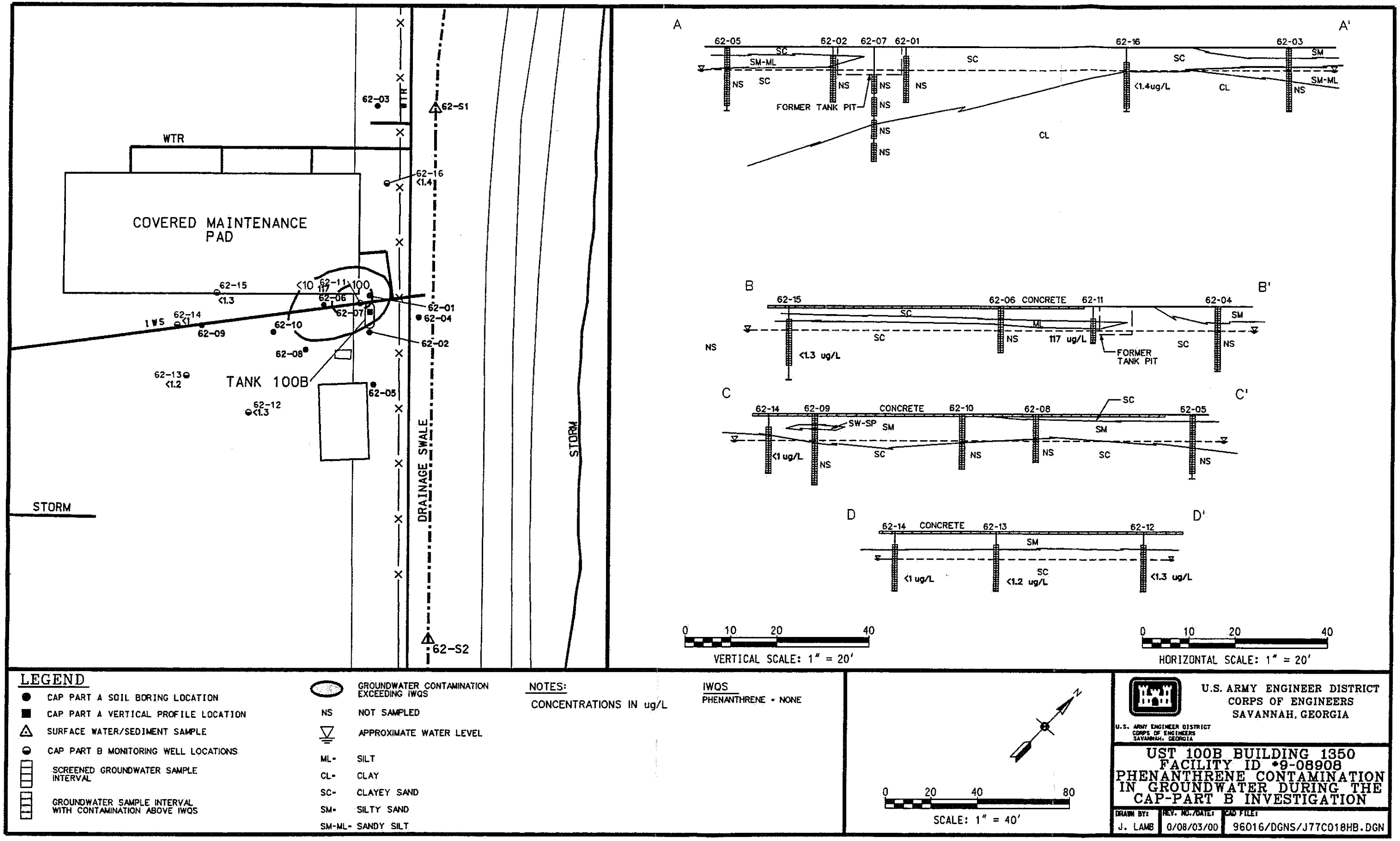

Figure 16. Phenanthrene Contamination in Groundwater Determined During the CAP-Part B Site Investigation at the UST 100B Site, Facility ID #9-089081

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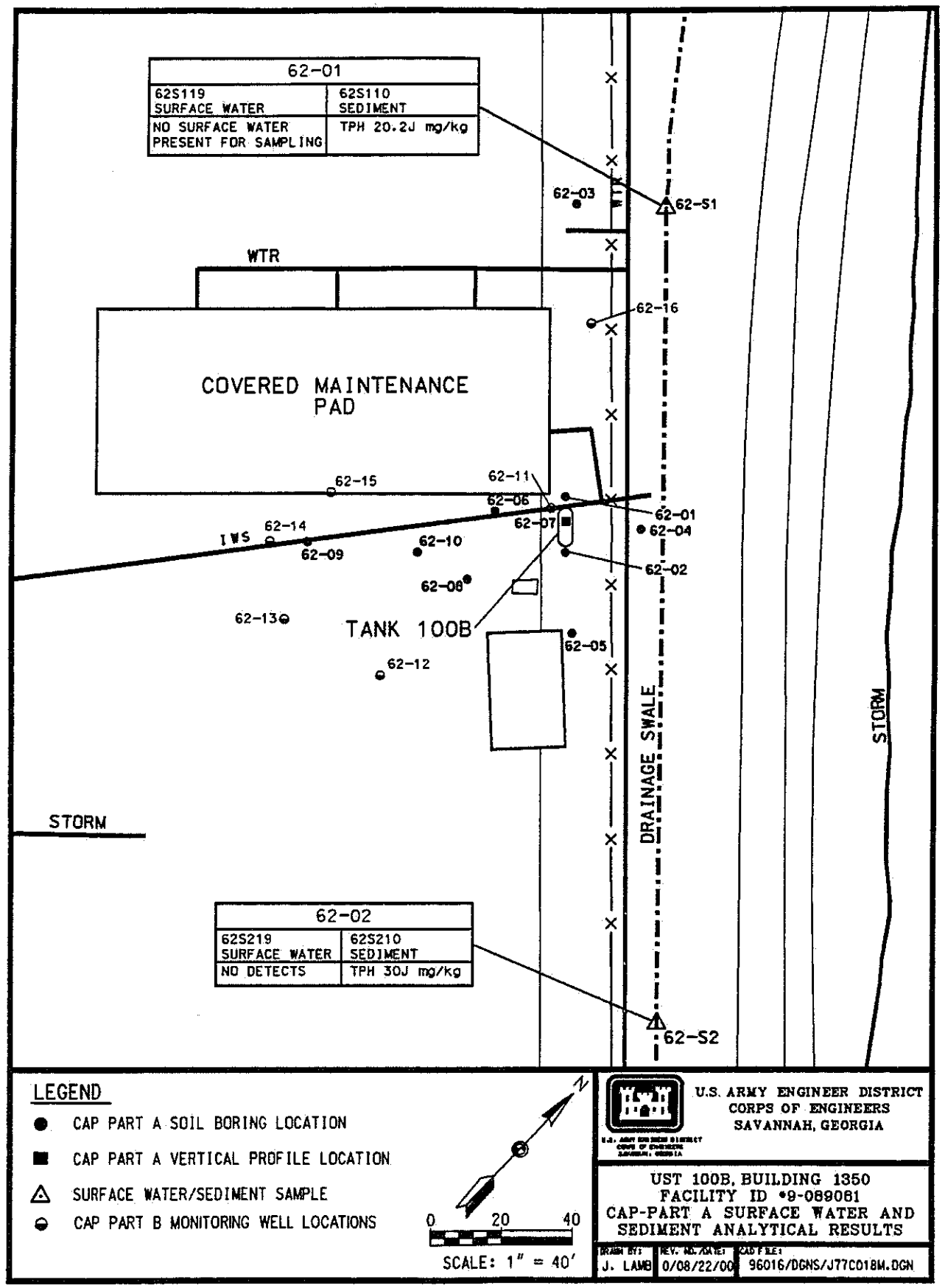

Figure 17. CAP-Part A Surface Water and Sediment Sampling Analytical Results at the UST 100B Site, Facility ID #9-089081

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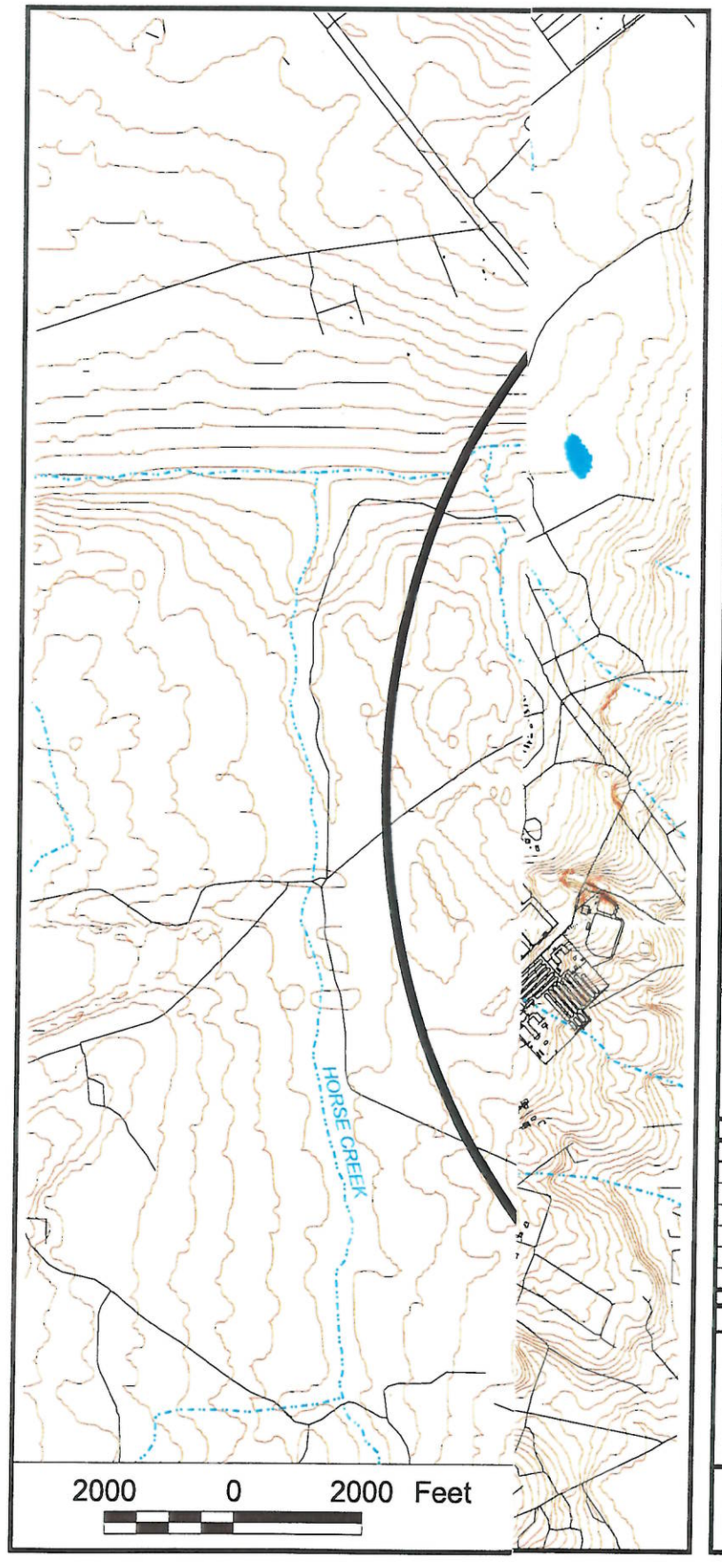

Legend:

- 2 Mile Radius
- Surface Water (stream/river/drain)
- Contour (2 FT intervals)
- Road (primary)
- UST100B
- Water Supply Well with 500 FT Radius
  CD Casing Depth
  TD Total Depth
- Pond/Lake
- Building

NOTE:
Contours were created by Science Applications International Corporation (SAIC) from Digital Elevation Models translated from http://www.usgs.gov/, which were obtained from the following U.S.G.S. 7.5 minute Topographic Quad sheets: Hinesville, Walthourville, Taylors Creek, Trinity. Roads, railroads, surface water, and county boundaries were translated from http://www.esri.com/. Buildings and water-supply wells were translated by SAIC as Microstation files from Fort Stewart.

N

GA State Plane NAD83 (feet)

Science Applications International Corporation

UST100B, Building 1350
Facility ID #9-089081

REVISION	DRAWN BY:	CHKD BY:	DATE:
0	K. CUTSHAW	S. STOLLER	6/30/00
0	K. CUTSHAW	S. STOLLER	8/15/00

FILE REFERENCES

Liberty County Tiger Line Files
_cty _str
_lnb _inh _wat
USGS DEMS
_Hinesville _Taylors Creek
_Trinity _Walthourville

SHT 1 of 1 — DRAWING #

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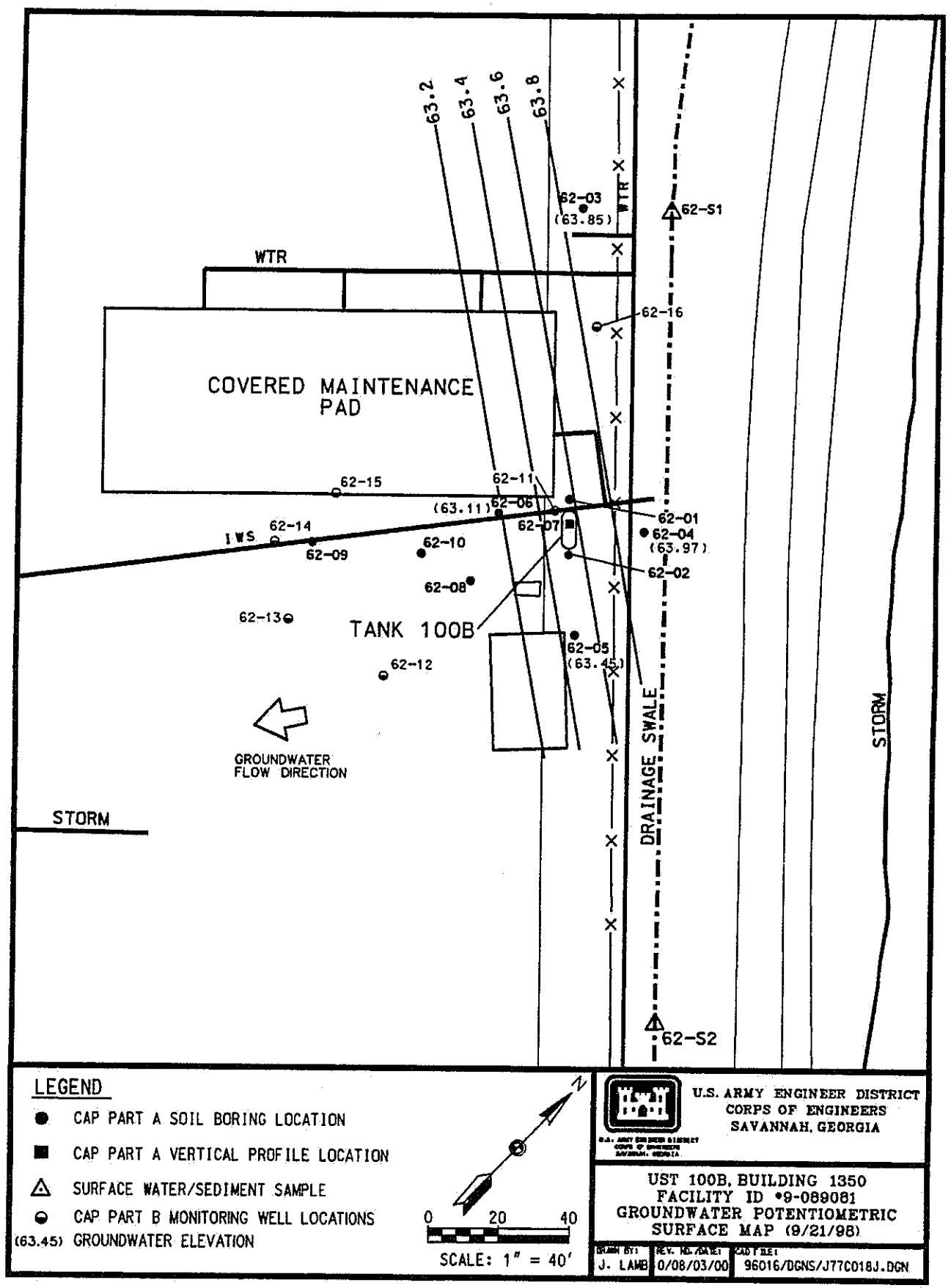

Figure 19. Groundwater Potentiometric Surface Map (September 1998) for the UST 100B Site, Facility ID #9-089081

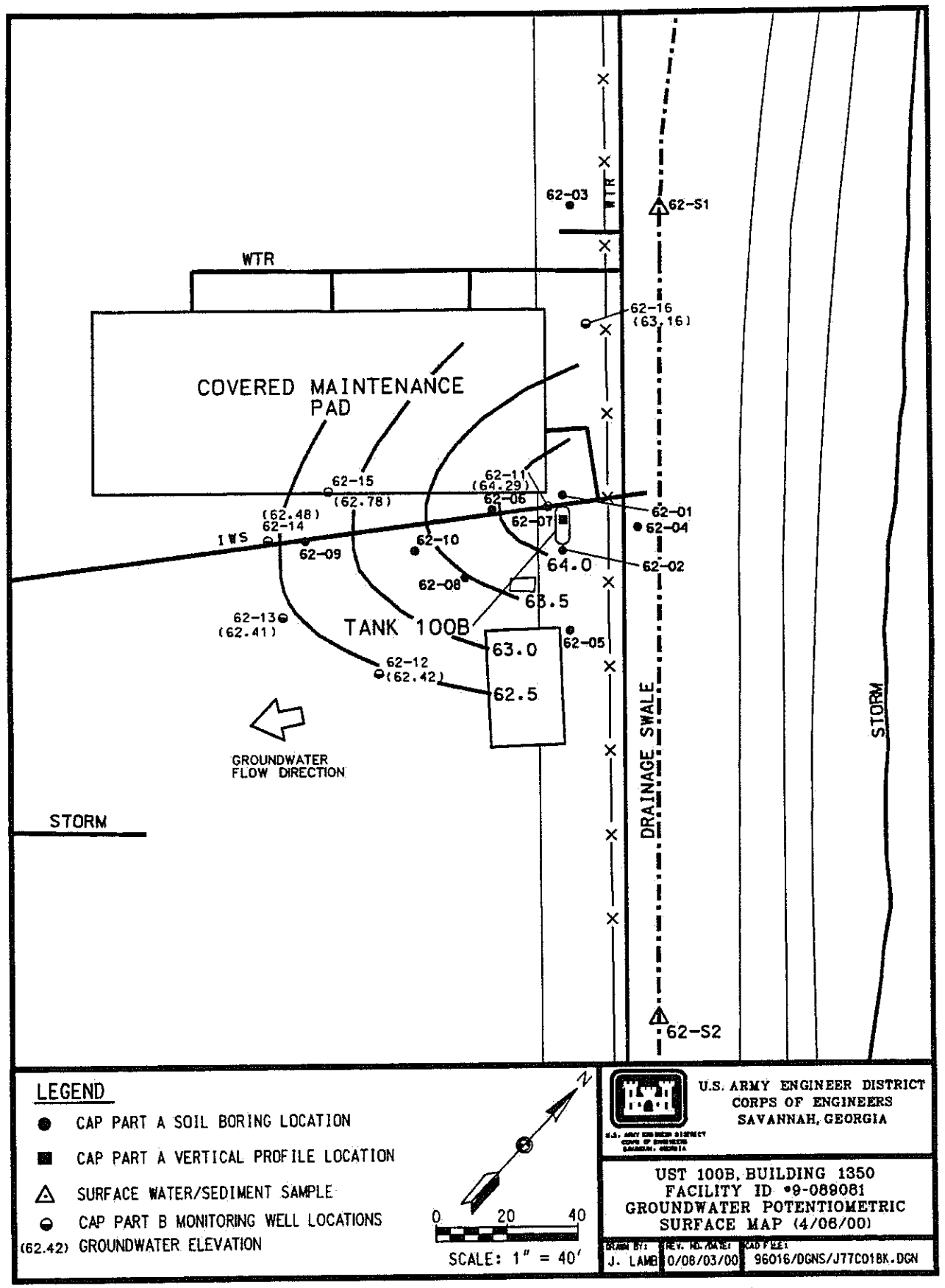

Figure 20. Groundwater Potentiometric Surface Map (April 2000) for the UST 100B Site, Facility ID #9-089081

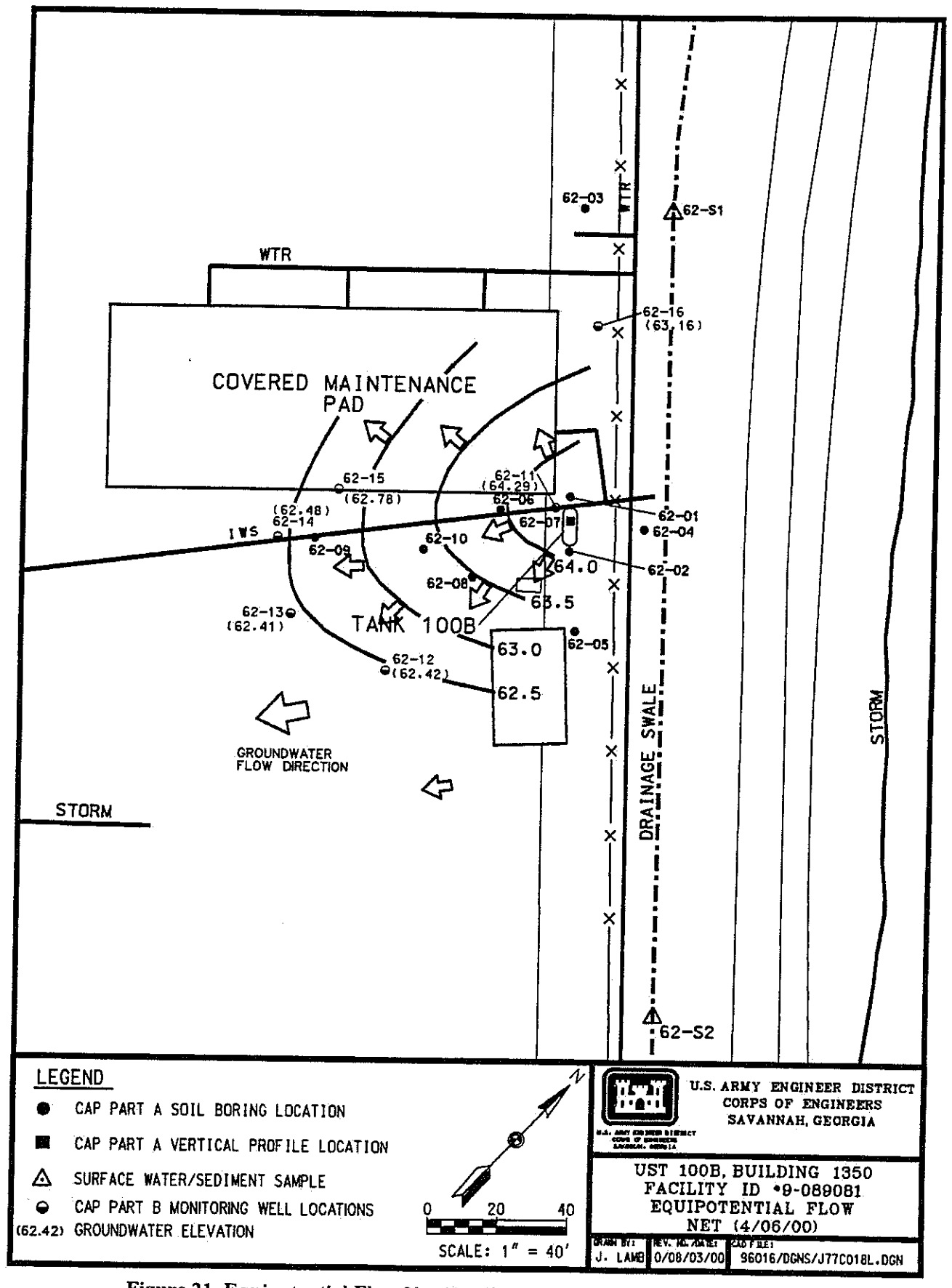

Figure 21. Equipotential Flow Net (April 2000) for the UST 100B Site, Facility ID #9-089081

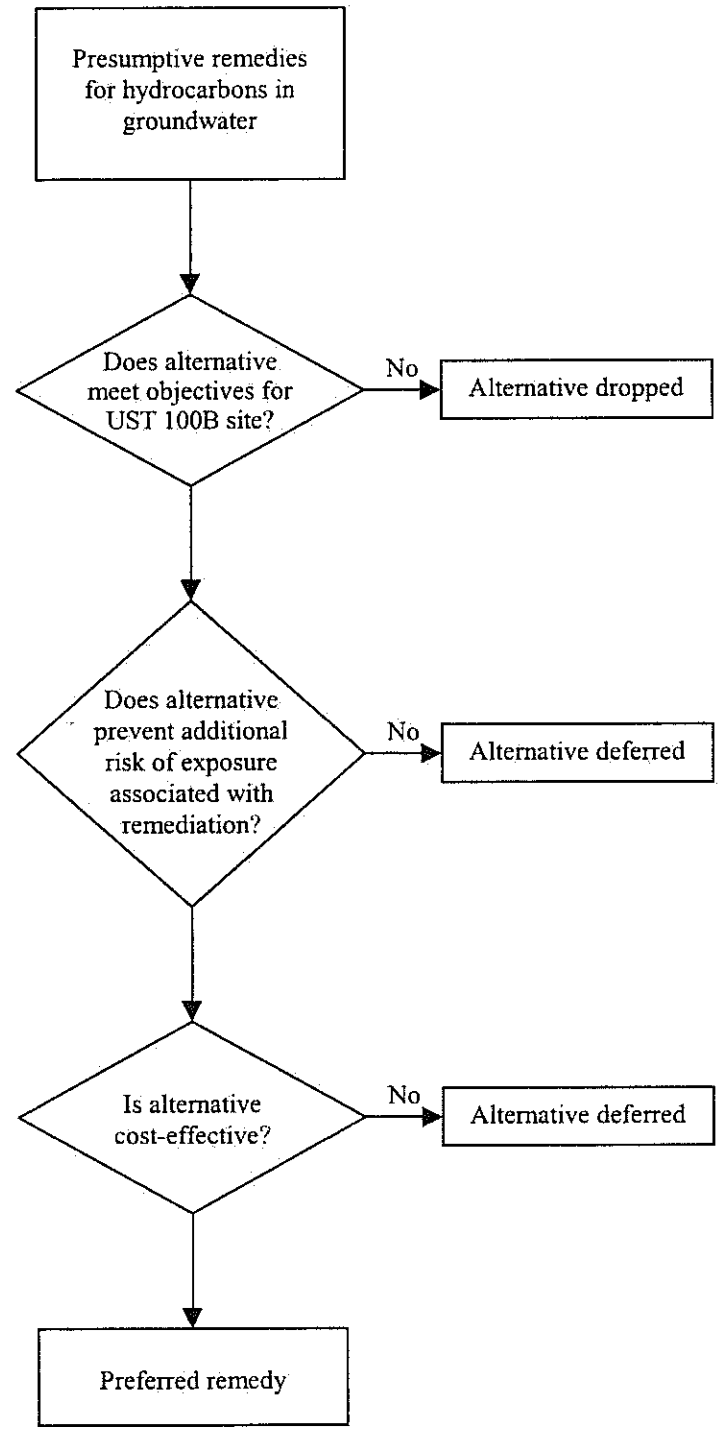

Figure 22. Remedial Alternatives Selection Process for the UST 100B Site, Facility ID #9-089081

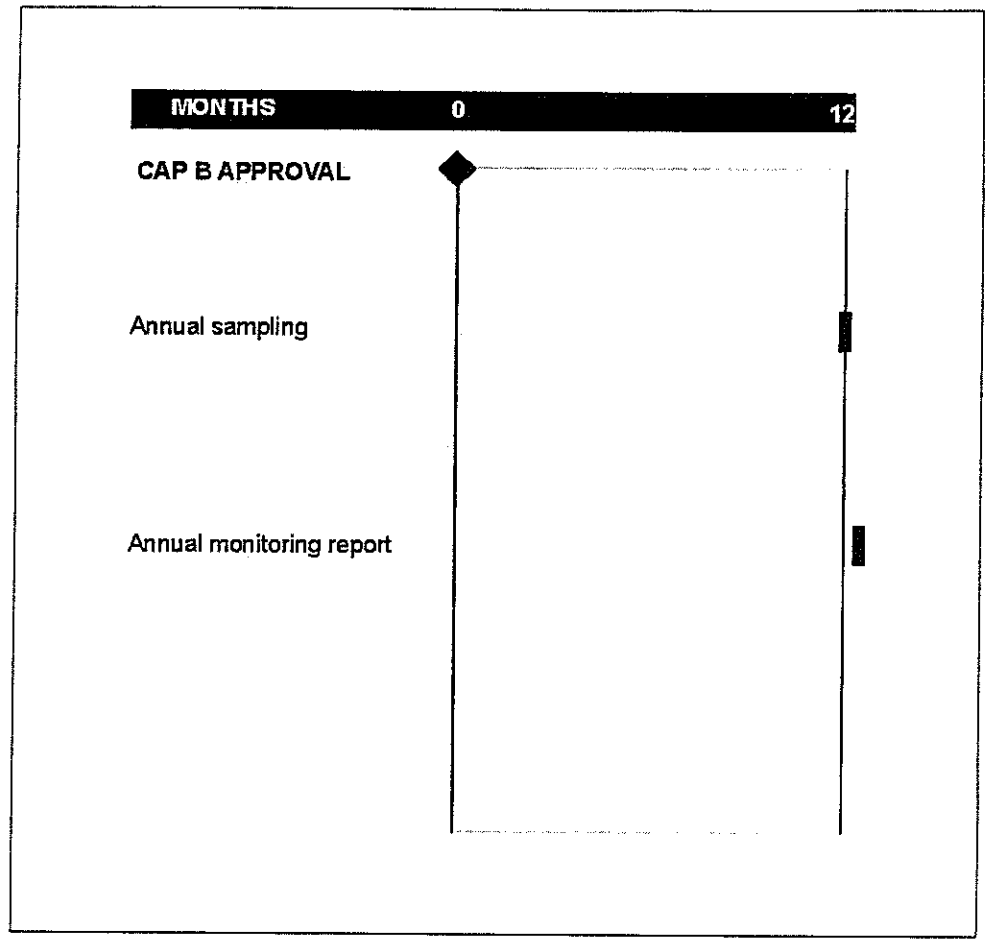

Figure 23. Milestone Schedule for the Remedial Action at the UST 100B Site

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APPENDIX II

REPORT TABLES

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Table 1a. UST System Closure[a] – Soil Analytical Results
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Depth (ft BGS)	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH (mg/kg)
100B-S1	unknown	7/30/96	0.0011 U	0.023 =	0.011 =	0.057 =	0.091	139140 =
GUST Soil Threshold Levels (Table A, Column 2)			0.008	6	10	700	NRC	NRC

Table 1b. UST System Closure[a] – Soil Analytical Results
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Depth (ft BGS)	Date Sampled	Detected PAH Compounds (mg/kg)					Total PAHs (mg/kg)
			Fluoranthene	Phenanthrene	Pyrene	2-Methylnaphthalene		
100B-S1	unknown	7/30/96	4.0 =	4.129 =	4.072 =	4.231 =		16.432
GUST Soil Threshold Levels (Table A, Column 2)			NRC	NRC	NRC	NRC		NRC

NOTES:

[a] Underground storage tank system closure performed by Anderson Columbia Environmental, Inc. (1996)
BGS below ground surface
BTEX benzene, toluene, ethylbenzene, and xylenes
NRC no regulatory criteria
PAH polynuclear aromatic hydrocarbon
TPH total petroleum hydrocarbons

Laboratory Qualifiers

U Indicates that the compound was not detected at the concentration reported.
UJ Indicates that the compound was not detected above an approximated sample quantitation limit.
J Indicates that the value for the compound is an estimated value.
= Indicates that the compound was detected at the concentration reported.

Table 1c. UST System Closure[a] – Groundwater Analytical Results
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Depth (ft BGS)	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX (µg/L)
			No groundwater samples were collected.				
In-Stream Water Quality Standards (Chapter 391-3-6)			71.28	200,000	28,718	NRC	NRC

Table 1d. UST System Closure[a] – Groundwater Analytical Results
(POLYNUCLEAR ANALYTICAL RESULTS)

Sample Location	Depth (ft BGS)	Date Sampled	Detected PAH Compounds (µg/L)				Total PAHs (µg/L)
			No groundwater samples were collected.				
In-Stream Water Quality Standards (Chapter 391-3-6)							NRC

NOTE:
[a] Underground storage tank system closure performed by Anderson Columbia Environmental, Inc. (1996)
BGS below ground surface
BTEX benzene, toluene, ethylbenzene, and xylenes
NRC no regulatory criteria
PAH polynuclear aromatic hydrocarbons

Laboratory Qualifiers:
U Indicates that the compound was not detected at the concentration reported.
UJ Indicates that the compound was not detected above an approximated sample quantitation limit.
J Indicates that the value for the compound is an estimated value.
= Indicates that the compound was detected at the concentration reported.

Table 2a. CAP-Part A/B – Soil Analytical Results
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH (mg/kg)
CAP-Part A Investigation – 1998									
62-01	620111	0.0 - 2.0	5/7/98	0.0024 U	0.0087 =	0.0024 U	0.007 U	0.0087	624 =
62-01	620121	4.0 - 6.0	5/7/98	0.0024 U	0.0024 U	0.0024 U	0.0072 U	ND	741 =
62-02	620211	0.0 - 2.0	5/7/98	0.0022 U	0.0099 =	0.0022 U	0.0067 U	0.0099	74.1 =
62-02	620221	2.0 - 4.0	5/7/98	**0.0222 U**	0.237 =	0.0222 U	0.0667 U	0.237	17.2 U
62-03	620311	0.0 - 2.0	9/20/98	0.0023 U	0.0023 U	0.0023 U	0.0068 U	ND	2.97 UJ
62-03	620321	2.0 - 4.0	9/20/98	0.0023 U	0.0023 U	0.0023 U	0.0069 U	ND	11.5 J
62-04	620421	0.0 - 2.0	9/20/98	0.0022 U	0.0022 U	0.0022 U	0.0066 U	ND	8.92 UJ
62-05	620511	0.0 - 2.0	9/18/98	0.0022 U	0.0022 U	0.0022 U	0.0066 U	ND	37.5 J
62-05	620521	4.0 - 6.0	9/18/98	0.0022 U	0.191 =	0.0022 U	0.006 J	0.197	44.9 J
62-06	620611	0.5 - 2.0	9/20/98	0.0023 U	0.0023 U	0.0023 U	0.007 U	ND	5.2 UJ
62-06	620621	4.0 - 6.0	9/20/98	**0.0109 J**	0.144 J	0.211 J	0.95 J	1.3159	7860 J
CAP-Part A Investigation – 1999									
62-08	620811	0.7 - 2.0	2/17/99	**0.0593 =**	0.764 J	0.135 J	0.245 J	1.2033	104 J
62-08	620821	4.0 - 6.0	2/17/99	**0.0104 J**	0.0274 J	0.181 =	0.362 =	0.5808	3070 =
62-09	620911	0.7 - 2.0	2/17/99	0.0018 U	0.0018 J	0.0018 U	0.001 J	0.0028	8.93 U
62-09	620921	4.0 - 6.0	2/17/99	0.002 U	0.0008 J	0.002 U	0.00072 J	0.00872	12.8 U
62-10	621011	0.8 - 2.0	2/21/99	0.0034 =	0.144 J	0.007 =	0.0066 =	0.161	15.2 U
62-10	621021	4.0 - 6.0	2/21/99	**0.0109 J**	1.77 J	0.014 J	0.0115 J	1.8064	39.2 =
CAP-Part B Investigation – 2000									
62-11	621111	4.0 - 5.8	1/17/00	0.0012 =	0.0034 =	0.0047 =	0.0155 =	0.0248	4140 =
62-12	621211	1.0 - 3.0	1/17/00	0.0010 U	0.0010 U	0.0023 =	0.0056 =	0.0079	4.0 U
62-13	621311	0.6 - 2.3	1/17/00	0.00091 U	0.00096 =	0.0022 =	0.0050 =	0.00816	3.45 U
62-14	621411	2.5 - 3.4	1/17/00	0.0010 U	0.00046 J	0.0024 =	0.0092 =	0.01206	5.73 U
62-15	621511	3.0 - 5.0	1/17/00	0.00098 U	0.00098 U	0.0027 =	0.0120 =	0.0147	2.34 U
GUST Soil Threshold Levels (Table A, Column 2)				0.008	6.0	10	700	NRC	NRC
Alternate Threshold Levels				0.234	—	—	—	—	—

NOTES:

Bold values exceed soil threshold levels.
Italic values exceed alternate threshold levels.

BGS	below ground surface	NRC	no regulatory criteria
BTEX	benzene, toluene, ethylbenzene, and xylenes	TPH	total petroleum hydrocarbon
ND	not detected		

Laboratory Qualifiers

U	Indicates that the compound was not detected above the reported sample quantitation limit.
UJ	Indicates that the compound was not detected above an approximated sample quantitation limit.
J	Indicates that the value for the compound was an estimated value.
=	Indicates that the compound was detected at the concentration reported.

Table 2b. CAP-Part A/B – Soil Analytical Results
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Detected PAH Compounds (mg/kg)					Total PAHs (mg/kg)
				Fluorene	Naphthalene	Phenanthrene			
CAP-Part A Investigation - 1998									
62-01	620111	0.0 - 2.0	5/7/98						ND
62-01	620121	4.0 - 6.0	5/7/98			0.061 J			0.061
62-02	620211	0.0 - 2.0	5/7/98						ND
62-02	620221	2.0 - 4.0	5/7/98						ND
62-03	620311	0.0 - 2.0	9/20/98						ND
62-03	620321	2.0 - 4.0	9/20/98						ND
62-04	620421	0.0 - 2.0	9/20/98						ND
62-05	620511	0.0 - 2.0	9/18/98						ND
62-05	620521	4.0 - 6.0	9/18/98						ND
62-06	620611	0.5 - 2.0	9/20/98						ND
62-06	620621	4.0 - 6.0	9/20/98			1.97 J			1.97
CAP-Part A Investigation - 1999									
62-08	620811	0.7 - 2.0	2/17/99						ND
62-08	620821	4.0 - 6.0	2/17/99	0.393 J	0.818 J	0.986 J			2.197
62-09	620911	0.7 - 2.0	2/17/99						ND
62-09	620921	4.0 - 6.0	2/17/99						ND
62-10	621011	0.8 - 2.0	2/21/99						ND
62-10	621021	4.0 - 6.0	2/21/99						ND
CAP-Part B Investigation - 2000									
62-11	621111	4.0 - 5.8	1/17/00		0.041 J	0.0769 J			0.1179
62-12	621211	1.0 - 3.0	1/17/00						ND
62-13	621311	0.6 - 2.3	1/17/00						ND
62-14	621411	2.5 - 3.4	1/17/00						ND
62-15	621511	3.0 - 5.0	1/17/00						ND
GUST Soil Threshold Levels (Table A, Column 2)				NRC	NRC	NRC	NRC	NRC	NRC
Alternate Threshold Levels				—	—	—	—	—	—

NOTES:

Bold values exceed soil threshold levels.
Italic values exceed alternate threshold levels.
ND not detected; refer to Appendix V, Tables V-A and V-B for complete list of PAH results
BGS below ground surface
NRC no regulatory criteria
PAH polynuclear aromatic hydrocarbon

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.
UJ Indicates that the compound was not detected above an approximated sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
= Indicates that the compound was detected at the concentration reported.

Table 3a. CAP-Part A/B – Groundwater Analytical Results
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Sample ID	Screened Interval (ft BGS)	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX (µg/L)
CAP-Part A Investigation – 1998								
62-01	620112	2.0 - 12.0	5/7/98	7.8 =	77.3 =	20 =	113 =	218.1
62-02	620212	2.0 - 12.0	5/7/98	6.1 =	6.6 =	6.9 =	36.1 =	55.7
62-03	620312	0.0 - 13.7	9/20/98	3.9 =	2 U	2 U	6 U	3.9
62-04	620412	0.0 - 13.5	9/20/98	2 U	2 U	2 U	6 U	ND
62-05	620512	0.0 - 12.5	9/18/98	2 U	7.5 =	2 U	1.1 J	8.6
62-06	620612	0.1 - 10.1	9/20/98	***82.1*** =	197 =	52.1 =	229 =	560.2
62-07	620712	6.0 - 10.0	9/18/98	32.1 J	150 J	28.1 J	153 J	363.2
62-07	620722	11.0 - 15.0	9/18/98	2 U	5.8 =	2.9 =	9 =	17.7
62-07	620732	16.0 - 20.0	9/18/98	2 U	11 =	4.1 J	26.3 =	41.4
62-07	620742	21.0 - 25.0	9/18/98	2 U	2 U	2 U	6 U	ND
CAP-Part A Investigation – 1999								
62-08	620812	0.0 - 10.5	2/17/99	47 =	20.4 =	23.2 =	104 =	194.6
62-09	620912	0.4 - 15.4	2/17/99	2.7 =	2 U	2 U	2.2 J	4.9
62-10	621012	0.0 - 11.4	2/21/99	27.1 =	8 =	22.5 =	67.2 =	124.8
CAP-Part B Investigation – 2000								
62-11	621112	2.7 - 2.7	1/17/00	23.1 =	110 =	27.7 =	133 =	293.8
62-12	621212	2.9 - 12.9	1/17/00	3 =	0.28 J	2.2 =	9.1 =	14.58
62-13	621312	2.9 - 12.9	1/17/00	17.2 =	0.58 J	8.3 =	27.9 =	53.98
62-14	621412	2.9 - 12.9	1/17/00	1 U	1 U	2.2 =	5.4 =	7.60
62-15	621512	2.9 - 12.9	1/17/00	0.22 J	0.32 J	2.3 =	9.1 =	11.94
62-16	621612	3.2 - 13.2	1/17/00	1 U	1 U	1 U	3 U	ND
In-Stream Water Quality Standards (GA Chapter 391-3-6)				71.28	200,000	28,718	NRC	NRC
Alternate Concentration Limits				71.28	—	—	—	—

NOTES:

Bold values exceed IWQS.
Italic values exceed ACLs.
BGS below ground surface
BTEX benzene, toluene, ethylbenzene, and xylenes
ND not detected
NRC no regulatory criteria

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.
UJ Indicates that the compound was not detected above an approximated sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
= Indicates that the compound was detected at the concentration reported.

Table 3b. CAP-Part A/B – Groundwater Analytical Results
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Sample ID	Screened Interval (ft BGS)	Date Sampled	Detected PAH Compounds (µg/L)										Total PAH (µg/L)
				Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Chrysene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene	
CAP-Part A Investigation – 1998														
62-01	620112	2.0 - 12.0	5/7/98								*323 J*	340 J		663
62-02	620212	2.0 - 12.0	5/7/98							7.9 J	48 =	24.5 =	9 J	89.4
62-03	620312	0.0 - 13.7	9/20/98											ND
62-04	620412	0.0 - 13.5	9/20/98											ND
62-05	620512	0.0 - 12.5	9/18/98											ND
62-06	620612	0.1 - 10.1	9/20/98								*7860 J*	7450 J		15,310
62-07	620712	6.0 - 10.0	9/18/98											ND
62-07	620722	11.0 - 15.0	9/18/98								8.8 J			8.8
62-07	620732	16.0 - 20.0	9/18/98											ND
62-07	620742	21.0 - 25.0	9/18/98											ND
CAP-Part A Investigation – 1999														
62-08	620812	0.0 - 10.5	2/17/99		2.4 J					3.3 J	32.7 =	5.2 J	0.95 J	44.55
62-09	620912	0.4 - 15.4	2/17/99								11.2 =			11.2
62-10	621012	0.0 - 11.4	2/21/99		2 J					2.7 J	35.1 J	3.3 J		43.1
CAP-Part B Investigation – 2000														
62-11	621112	2.7 - 2.7	1/17/00	24.2 =		22.3 =	***19.8*** =	**12.5 J**	94.6 =	21.5 =	47.9 =	117 =	67.2 =	414.5
62-12	621212	2.9 - 12.9	1/17/00								15.1 =			15.1
62-13	621312	2.9 - 12.9	1/17/00							1.2 J	32.6 =			32.6
62-14	621412	2.9 - 12.9	1/17/00											ND
62-15	621512	2.9 - 12.9	1/17/00								3.2 =			3.2
62-16	621612	3.2 - 13.2	1/17/00											ND
In-Stream Water Quality Standards (GA Chapter 391-3-6)				NRC	NRC	110,000	0.0311	0.0311	370	14,000	NRC	NRC	11,000	NRC
Alternate Concentration Limits				—	—	—	4.4	442	—	—	312	8760	—	—

NOTES:

Bold values exceed IWQSs.
Italic values exceed alternate concentration limits.
BGS below ground surface
ND not detected
NRC no regulatory criteria
PAH polynuclear aromatic hydrocarbon

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.
UJ Indicates that the compound was not detected above an approximated sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
= Indicates that the compound was detected at the concentration reported.

Table 4. CAP-Part A/B – Surface Water Analytical Results

Sample Location	Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX (µg/L)	Total PAH (µg/L)
CAP-Part A Investigation - 1998								
62-S2	62S219	9/18/98	2 U	2 U	2 U	6 U	ND	ND
CAP-Part B Investigation - 2000								
			No surface water samples were collected as part of the CAP-Part B investigation					
In-Stream Water Quality Standard (GA Chapter 391-3-6)			71.28	200,000	28,718	NRC	NRC	NRC

NOTES:

BTEX benzene, toluene, ethylbenzene, and xylenes
ND not detected
NRC no regulatory criteria
PAH polynuclear aromatic hydrocarbon

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.
UJ Indicates that the compound was not detected above an approximated sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
= Indicates that the compound was detected at the concentration reported.

Table 5. CAP-Part A/B – Sediment Analytical Results

Sample Location	Sample ID	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH (mg/kg)	Total PAH (mg/kg)
CAP-Part A Investigation - 1998									
62-S1	62S110	9/20/98	0.0027 U	0.0027 U	0.0027 U	0.008 U	ND	20.2 J	ND
62-S2	62S210	9/20/98	0.0032 U	0.0032 U	0.0032 U	0.0097 U	ND	30 J	ND
CAP-Part B Investigation - 2000									
			No sediment samples were collected as part of the CAP-Part B investigation.						
GUST Soil Threshold Levels (Table A, Column 2)			0.008	6	10	700	NRC	NRC	NRC

NOTES:

BGS	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
ND	not detected
NRC	no regulatory criteria
PAH	polynuclear aromatic hydrocarbon
TPH	total petroleum aromatic hydrocarbons

Laboratory Qualifiers

U	Indicates that the compound was not detected above the reported sample quantitation limit.
UJ	Indicates that the compound was not detected above an approximated sample quantitation limit.
J	Indicates that the value for the compound was an estimated value.
=	Indicates that the compound was detected at the concentration reported.

Table 6. CAP-Part A/B – Well Construction Details

Boring/Well Number	Date Installed	Boring Depth (ft BGS)	Screened Interval (ft BGS)	Type of Completion	Coordinates (NAD 83)		Elevation (NGVD 88)	
					Northing	Easting	Ground Surface	Top of Casing
CAP-Part A Investigation – 1998								
62-01	5/7/98	12.0	2.0 - 12.0	Temporary piezometer	684655.41	821858.23	68.72	[a]
62-02	5/7/98	12.0	2.0 - 12.0	Temporary piezometer	684643.97	821869.02	69.15	[a]
62-03	9/20/98	14.0	0.0 - 13.7	Temporary piezometer	684720.44	821805.42	68.39	[a]
62-04	9/20/98	14.0	0.0 - 13.5	Temporary piezometer	684666.19	821879.34	67.83	[a]
62-05	9/18/98	14.0	0.0 - 12.5	Temporary piezometer	684632.44	821885.58	68.84	[a]
62-06	9/20/98	10.0	0.1 - 10.1	Temporary piezometer	684638.86	821846.52	69.08	[a]
62-07	9/18/98	25.0	—	Vertical profile	684655.42	821858.82	68.66	[a]
CAP-Part A Investigation – 1999								
62-08	2/17/99	10.5	0.0 - 10.5	Temporary piezometer	684619.48	821854.14	68.68	[a]
62-09	2/17/99	15.4	0.4 - 15.4	Temporary piezometer	684596.21	821814.23	68.85	[a]
62-10	2/21/99	12.0	0.0 - 11.4	Temporary piezometer	684615.35	821838.66	68.93	[a]
CAP-Part B Investigation – 2000								
62-11	1/17/00	8.0	2.7 - 2.7	3/4" PVC	684650.25	821857.41	68.91	68.57
62-12	1/17/00	13.0	2.9 - 12.9	3/4" PVC	684582.96	821855.01	68.50	68.24
62-13	1/17/00	13.0	2.9 - 12.9	3/4" PVC	684575.94	821824.34	68.66	68.42
62-14	1/17/00	13.0	2.9 - 12.9	3/4" PVC	684589.07	821806.33	68.86	68.52
62-15	1/17/00	16.0	2.9 - 12.9	3/4" PVC	684610.91	821809.34	69.12	68.76
62-16	11/19/99	14.0	3.2 - 13.2	2" PVC	684695.62	821829.93	[b]	68.33

NOTES:

[a] Top of casing elevations for temporary piezometers were not surveyed.
[b] Ground surface elevation was not surveyed.

BGS below ground surface
NAD North American Datum
NGVD National Geodetic Vertical Datum
PVC polyvinyl chloride

Table 7. CAP-Part A/B – Groundwater Elevations

Well Number	Date Measured	Ground Surface Elev. (ft MSL)	Top of Casing Elev. (ft MSL)	Depth of Screened Interval (ft BGS)	Depth of Free Product (ft BTOC)	Water Depth (ft BTOC)	Product Thickness (ft)	Specific Gravity Adjustment	Corrected Groundwater Elev. (ft MSL)
CAP-Part A Investigation – 1998									
62-01	05/08/98	68.72	69.41	2.0 - 12.0	N/A	3.94	0	—	65.47
62-02	05/08/98	69.15	71.38	2.0 - 12.0	N/A	7.43	0	—	63.95
62-03	09/21/98	68.39	69.53	0.0 - 13.7	N/A	5.68	0	—	63.85
62-04	09/21/98	67.83	68.82	0.0 - 13.5	N/A	4.85	0	—	63.97
62-05	09/21/98	68.84	69.65	0.0 - 12.5	N/A	6.20	0	—	63.45
62-06	09/21/98	69.08	68.66	0.1 - 10.1	N/A	5.55	0	—	63.11
CAP-Part B Investigation – 2000									
62-11	02/21/00	68.91	68.57	2.7 - 2.7	3.85	3.88	0.03	—	64.69
62-12	02/21/00	68.50	68.24	2.9 - 12.9	N/A	6.29	0	—	61.95
62-13	02/21/00	68.66	68.42	2.9 - 12.9	N/A	6.47	0	—	61.95
62-14	02/21/00	68.86	68.52	2.9 - 12.9	N/A	6.49	0	—	62.03
62-15	02/21/00	69.12	68.76	2.9 - 12.9	N/A	6.62	0	—	62.14
62-16	02/21/00	—	68.33	3.2 - 13.2	N/A	5.62	0	—	62.71
62-11	04/06/00	68.91	68.57	2.7 - 2.7	Sheen	4.28	Sheen	—	64.29
62-12	04/06/00	68.50	68.24	2.9 - 12.9	N/A	5.82	0	—	62.42
62-13	04/06/00	68.66	68.42	2.9 - 12.9	N/A	6.01	0	—	62.41
62-14	04/06/00	68.86	68.52	2.9 - 12.9	N/A	6.04	0	—	62.48
62-15	04/06/00	69.12	68.76	2.9 - 12.9	N/A	5.98	0	—	62.78
62-16	04/06/00	—	68.33	3.2 - 13.2	N/A	5.17	0	—	63.16

NOTES:

0.3 feet of product was observed in well 62-11 on 4/6/00 prior to pumping the well dry several times.

MSL mean sea level
BGS below ground surface
BTOC below top of casing
N/A not applicable

Table 8. Soil and Sediment Data Risk-based Screening Results

Station:	Screening Levels			62-01	62-01	62-02	62-02	62-03	62-03	62-04
Sample ID:	GUST	Risk-based		620111	620121	620211	620221	620311	620321	620421
Sample Interval:	Soil Threshold	Screening	Leaching to	0.0 - 2.0	4.0 - 6.0	0.0 - 2.0	2.0 - 4.0	0.0 - 2.0	2.0 - 4.0	0.0 - 2.0
Collection Date:	Level[a]	Level[b]	Groundwater[c]	07-May-98	07-May-98	07-May-98	07-May-98	20-Sep-98	20-Sep-98	20-Sep-98
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
VOLATILE ORGANIC COMPOUNDS										
Benzene	8	197,400	30	2.4 U	2.4 U	2.2 U	**22.2 U**	2.3 U	2.3 U	2.2 U
Toluene	6000	408,800,000	12,000	8.7 =	2.4 U	9.9 =	237 =	2.3 U	2.3 U	2.2 U
Ethylbenzene	10,000	204,400,000	13,000	2.4 U	2.4 U	2.2 U	22.2 U	2.3 U	2.3 U	2.2 U
Xylenes, Total	700,000	4,088,000,000	190,000	7 U	7.2 U	6.7 U	66.7 U	6.8 U	6.9 U	6.6 U
POLYNUCLEAR AROMATIC HYDROCARBONS										
2-Chloronaphthalene[d]	N/A[e]	40,880,000	84,000	392 U	398 U	373 U	370 U	374 U	382 U	361 U
Acenaphthene	N/A[e]	122,640,000	570,000	392 U	398 U	373 U	370 U	374 U	382 U	361 U
Acenaphthylene[f]	N/A[e]	61,320,000	4200000	392 U	398 U	373 U	370 U	374 U	382 U	361 U
Anthracene	N/A[e]	613,200,200	12,000,000	392 U	398 U	373 U	370 U	374 U	382 U	361 U
Benzo(*a*)anthracene	N/A[e]	7840	2000	392 U	398 U	373 U	370 U	374 U	382 U	361 U
Benzo(*a*)pyrene	N/A[e]	784	8000	392 U	398 U	373 U	370 U	374 U	382 U	361 U
Benzo(*b*)fluoranthene	N/A[e]	7840	5000	392 U	398 U	373 U	370 U	374 U	382 U	361 U
Benzo(*g,h,i*)perylene	N/A[e]	--	--	392 U	398 U	373 U	370 U	374 U	382 U	361 U
Benzo(*k*)fluoranthene	N/A[e]	78,400	49,000	392 U	398 U	373 U	370 U	374 U	382 U	361 U
Chrysene	N/A[e]	784,000	160,000	392 U	398 U	373 U	370 U	374 U	382 U	361 U
Dibenzo(*a,h*)anthracene	N/A[e]	784	2000	392 U	398 U	373 U	370 U	374 U	382 U	361 U
Fluoranthene	N/A[e]	81,760,000	4,300,000	392 U	398 U	373 U	370 U	374 U	382 U	361 U
Fluorene	N/A[e]	81,760,000	560,000	392 U	398 U	373 U	370 U	374 U	382 U	361 U
Indeno(*1,2,3-cd*)pyrene	N/A[e]	7840	14,000	392 U	398 U	373 U	370 U	374 U	382 U	361 U
Naphthalene	N/A[e]	40,880,000	84,000	392 U	398 U	373 U	370 U	374 U	382 U	361 U
Phenanthrene[f]	N/A[e]	61,320,000	4,200,000	392 U	398 U	373 U	370 U	374 U	382 U	361 U
Pyrene	N/A[e]	61,320,000	4,200,000	392 U	61 J	373 U	370 U	374 U	382 U	361 U
OTHER ANALYTES										
Total Petroleum Hydrocarbons	--	--	--	624,000 =	741,000 =	74,100 =	17,200 U	2970 UJ	11,500 J	8920 UJ

[a] Average or higher groundwater pollution susceptibility area (where public water supply is within 2.0 miles).
[b] Protective of soil exposure during industrial land use.
[c] Protective of groundwater ingestion. Used a dilution attenuation factor of 20.
[d] Values based on naphthalene as a surrogate chemical.
[e] Not applicable. The screening level exceeds the expected soil concentration under free product condition.
[f] Values based on pyrene as a surrogate chemical.

Bold values indicate results exceeding GUST action levels.

Italicized values indicate results exceeding risk-based screening levels.
Underlined values indicate results exceeding leaching to groundwater screening levels.

U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
UJ Indicates that the sample was not detected above an approximate sample quantitation limit.
= Indicates that the compound was detected at the concentration reported.

Table 8. Soil and Sediment Data Risk-based Screening Results (continued)

Station:	Screening Levels			62-05	62-05	62-06	62-06	62-08	62-08
Sample ID:	GUST	Risk-based		620511	620521	620611	620621	620811	620821
Sample Interval:	Soil Threshold	Screening	Leaching to	0.0 - 2.0	4.0 - 6.0	0.5 - 2.0	4.0 - 6.0	0.7 - 2.0	4.0 -6.0
Collection Date:	Level[a]	Level[b]	Groundwater[c]	18-Sep-98	18-Sep-98	20-Sep-98	20-Sep-98	17-Feb-99	17-Feb-99
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
VOLATILE ORGANIC COMPOUNDS									
Benzene	8	197,400	30	2.2 U	2.2 U	2.3 U	**10.9 J**	<u>**59.3**</u> =	**10.4 J**
Toluene	6000	408,800,000	12,000	2.2 U	191 =	2.3 U	144 J	764 J	27.4 J
Ethylbenzene	10,000	204,400,000	13,000	2.2 U	2.2 U	2.3 U	211 J	135 J	181 =
Xylenes, Total	700,000	4,088,000,000	190,000	6.6 U	6 J	7 U	950 J	245 J	362 =
POLYNUCLEAR AROMATIC HYDROCARBONS									
2-Chloronaphthalene[d]	N/A[e]	40,880,000	84,000	361 U	358 U	382 U	3740 U	758 U	1460 U
Acenaphthene	N/A[e]	122,640,000	570,000	361 U	358 U	382 U	3740 U	758 U	1460 U
Acenaphthylene[f]	N/A[e]	61,320,000	4,200,000	361 U	358 U	382 U	3740 U	758 U	1460 U
Anthracene	N/A[e]	613,200,200	12,000,000	361 U	358 U	382 U	3740 U	758 U	1460 U
Benzo(*a*)anthracene	N/A[e]	7840	2000	361 U	358 U	382 U	<u>3740</u> <u>U</u>	758 U	1460 U
Benzo(*a*)pyrene	N/A[e]	784	8000	361 U	358 U	382 U	*3740 U*	758 U	*1460 U*
Benzo(*b*)fluoranthene	N/A[e]	7840	5000	361 U	358 U	382 U	3740 U	758 U	1460 U
Benzo(*g,h,i*)perylene	N/A[e]	--	--	361 U	358 U	382 U	3740 U	758 U	1460 U
Benzo(*k*)fluoranthene	N/A[e]	78,400	49,000	361 U	358 U	382 U	3740 U	758 U	1460 U
Chrysene	N/A[e]	784,000	160,000	361 U	358 U	382 U	3740 U	758 U	1460 U
Dibenzo(*a,h*)anthracene	N/A[e]	784	2000	361 U	358 U	382 U	<u>*3740*</u> <u>*U*</u>	758 U	*1460 U*
Fluoranthene	N/A[e]	81,760,000	4,300,000	361 U	358 U	382 U	3740 U	758 U	1460 U
Fluorene	N/A[e]	81,760,000	560,000	361 U	358 U	382 U	3740 U	758 U	393 J
Indeno(*1,2,3-cd*)pyrene	N/A[e]	7840	14,000	361 U	358 U	382 U	3740 U	758 U	1460 U
Naphthalene	N/A[e]	40,880,000	84,000	361 U	358 U	382 U	3740 U	758 U	818 J
Phenanthrene[f]	N/A[e]	61,320,000	4,200,000	361 U	358 U	382 U	1970 J	758 U	986 J
Pyrene	N/A[e]	61,320,000	4,200,000	361 U	358 U	382 U	3740 U	758 U	1460 U
OTHER ANALYTES									
Total Petroleum Hydrocarbons	--	--	--	37,500 J	44,900 J	5200 UJ	7,860,000 J	104000 J	3,070,000 =

[a] Average or higher groundwater pollution susceptibility area (where public water supply is within 2.0 miles).
[b] Protective of soil exposure during industrial land use.
[c] Protective of groundwater ingestion. Used a dilution attenuation factor of 20.
[d] Values based on naphthalene as a surrogate chemical.
[e] Not applicable. The screening level exceeds the expected soil concentration under free product condition.
[f] Values based on pyrene as a surrogate chemical.

Bold values indicate results exceeding GUST action levels.

Italicized values indicate results exceeding risk-based screening levels.
<u>Underlined</u> values indicate results exceeding leaching to groundwater screening levels.

U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
UJ Indicates that the sample was not detected above an approximate sample quantitation limit.
= Indicates that the compound was detected at the concentration reported.

Table 8. Soil and Sediment Data Risk-based Screening Results (continued)

Station:	Screening Levels			62-09	62-09	62-10	62-10	62-S1	62-S2
Sample ID:	GUST	Risk-based		620911	620921	621011	621021	62S110	62S210
Sample Interval:	Soil Threshold	Screening	Leaching to	0.7 - 2.0	4.0 -6.0	0.8 - 2.0	4.0 -6.0	Sediment	Sediment
Collection Date:	Level[a]	Level[b]	Groundwater[c]	17-Feb-99	17-Feb-99	21-Feb-99	21-Feb-99	20-Sep-98	20-Sep-98
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
VOLATILE ORGANIC COMPOUNDS									
Benzene	8	197,400	30	1.8 U	2 U	3.4 =	**10.9 J**	2.7 U	3.2 U
Toluene	6000	408,800,000	12,000	1.8 J	0.8 J	144 J	1770 J	2.7 U	3.2 U
Ethylbenzene	10,000	204,400,000	13,000	1.8 U	2 U	7 =	14 J	2.7 U	3.2 U
Xylenes, Total	700,000	4,088,000,000	190,000	1 J	0.72 J	6.6 =	11.5 J	8 U	9.7 U
POLYNUCLEAR AROMATIC HYDROCARBONS									
2-Chloronaphthalene[d]	N/A[e]	40,880,000	84,000	366 U	1430 U	351 U	1500 U	438 U	530 U
Acenaphthene	N/A[e]	122,640,000	570,000	366 U	1430 U	351 U	1500 U	438 U	530 U
Acenaphthylene[f]	N/A[e]	61,320,000	4,200,000	366 U	1430 U	351 U	1500 U	438 U	530 U
Anthracene	N/A[e]	613,200,200	12,000,000	366 U	1430 U	351 U	1500 U	438 U	530 U
Benzo(*a*)anthracene	N/A[e]	7840	2000	366 U	1430 U	351 U	1500 U	438 U	530 U
Benzo(*a*)pyrene	N/A[e]	784	8000	366 U	*1430 U*	351 U	*1500 U*	438 U	530 U
Benzo(*b*)fluoranthene	N/A[e]	7840	5000	366 U	1430 U	351 U	1500 U	438 U	530 U
Benzo(*g,h,i*)perylene	N/A[e]	--	--	366 U	1430 U	351 U	1500 U	438 U	530 U
Benzo(*k*)fluoranthene	N/A[e]	78,400	49,000	366 U	1430 U	351 U	1500 U	438 U	530 U
Chrysene	N/A[e]	784,000	160,000	366 U	1430 U	351 U	1500 U	438 U	530 U
Dibenzo(*a,h*)anthracene	N/A[e]	784	2000	366 U	*1430 U*	351 U	*1500 U*	438 U	530 U
Fluoranthene	N/A[e]	81,760,000	4,300,000	366 U	1430 U	351 U	1500 U	438 U	530 U
Fluorene	N/A[e]	81,760,000	560,000	366 U	1430 U	351 U	1500 U	438 U	530 U
Indeno(*1,2,3-cd*)pyrene	N/A[e]	7840	14,000	366 U	1430 U	351 U	1500 U	438 U	530 U
Naphthalene	N/A[e]	40,880,000	84,000	366 U	1430 U	351 U	1500 U	438 U	530 U
Phenanthrene[f]	N/A[e]	61,320,000	4,200,000	366 U	1430 U	351 U	1500 U	438 U	530 U
Pyrene	N/A[e]	61,320,000	4,200,000	366 U	1430 U	351 U	1500 U	438 U	530 U
OTHER ANALYTES									
Total Petroleum Hydrocarbons	--	--	--	8930 U	12,800 U	15,200 U	39,200 =	20,200 J	30,000 J

[a] Average or higher groundwater pollution susceptibility area (where public water supply is within 2.0 miles).
[b] Protective of soil exposure during industrial land use.
[c] Protective of groundwater ingestion. Used a dilution attenuation factor of 20.
[d] Values based on naphthalene as a surrogate chemical.
[e] Not applicable. The screening level exceeds the expected soil concentration under free product condition.
[f] Values based on pyrene as a surrogate chemical.

Bold values indicate results exceeding GUST action levels.

Italicized values indicate results exceeding risk-based screening levels.

Underlined values indicate results exceeding leaching to groundwater screening levels.

U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
UJ Indicates that the sample was not detected above an approximate sample quantitation limit.
= Indicates that the compound was detected at the concentration reported.

Table 8. Soil and Sediment Data Risk-based Screening Results (continued)

Station:	Screening Levels			62-11	62-12	62-13	62-14	62-15
Sample ID:	GUST	Risk-based		621111	621211	621311	621411	621511
Sample Interval:	Soil Threshold	Screening	Leaching to	4.0 - 5.8	1.0 - 3.0	0.6 - 2.3	2.5 - 3.4	3.0 - 5.0
Collection Date:	Level[a]	Level[b]	Groundwater[c]	17-Jan-00	17-Jan-00	17-Jan-00	17-Jan-00	17-Jan-00
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
VOLATILE ORGANIC COMPOUNDS								
Benzene	8	200,000	30	1.2 =	1 U	0.91 U	1 U	0.98 U
Toluene	6000	410,000,000	12,000	3.4 =	1 U	0.96 =	0.46 J	0.98 U
Ethylbenzene	10,000	200,000,000	13,000	4.7 =	2.3 =	2.2 =	2.4 =	2.7 =
Xylenes, Total	700,000	1,000,000,000	190,000	15.5 =	5.6 =	5 =	9.2 =	12 =
POLYNUCLEAR AROMATIC HYDROCARBONS								
2-Chloronaphthalene[d]	N/A[e]	82,000,000	84,000	41.5 U	36.7 U	34.7 U	36.7 U	35.8 U
Acenaphthene	N/A[e]	120,000,000	570,000	41.5 U	36.7 U	34.7 U	36.7 U	35.8 U
Acenaphthylene[f]	N/A[e]	61,000,000	4,200,000	41.5 U	36.7 U	34.7 U	36.7 U	35.8 U
Anthracene	N/A[e]	610,000,000	12,000,000	41.5 U	36.7 U	34.7 U	36.7 U	35.8 U
Benzo(a)anthracene	N/A[e]	7800	2000	41.5 U	36.7 U	34.7 U	36.7 U	35.8 U
Benzo(a)pyrene	N/A[e]	780	8000	41.5 U	36.7 U	34.7 U	36.7 U	35.8 U
Benzo(b)fluoranthene	N/A[e]	7800	5000	41.5 U	36.7 U	34.7 U	36.7 U	35.8 U
Benzo(g,h,i)perylene	N/A[e]	--	--	41.5 U	36.7 U	34.7 U	36.7 U	35.8 U
Benzo(k)fluoranthene	N/A[e]	78,000	49,000	41.5 U	36.7 U	34.7 U	36.7 U	35.8 U
Chrysene	N/A[e]	780,000	160,000	41.5 U	36.7 U	34.7 U	36.7 U	35.8 U
Dibenzo(a,h)anthracene	N/A[e]	780	2000	41.5 U	36.7 U	34.7 U	36.7 U	35.8 U
Fluoranthene	N/A[e]	82,000,000	4,300,000	41.5 U	36.7 U	34.7 U	36.7 U	35.8 U
Fluorene	N/A[e]	82,000,000	560,000	41.5 U	36.7 U	34.7 U	36.7 U	35.8 U
Indeno(1,2,3-cd)pyrene	N/A[e]	7800	14,000	41.5 U	36.7 U	34.7 U	36.7 U	35.8 U
Naphthalene	N/A[e]	61,000,000	4,200,000	41 J	36.7 U	34.7 U	36.7 U	35.8 U
Phenanthrene[f]	N/A[e]	61,000,000	4,200,000	76.9 J	36.7 U	34.7 U	36.7 U	35.8 U
Pyrene	N/A[e]	82,000,000	84,000	41.5 U	36.7 U	34.7 U	36.7 U	35.8 U
OTHER ANALYTES								
Total Petroleum Hydrocarbons	--	--	--	4,140,000 =	4040 U	3450 U	5730 U	2340 U

[a] Average or higher groundwater pollution susceptibility area (where public water supply is within 2.0 miles).
[b] Protective of soil exposure during industrial land use.
[c] Protective of groundwater ingestion. Used a dilution attenuation factor of 20.
[d] Values based on naphthalene as a surrogate chemical.
[e] Not applicable. The screening level exceeds the expected soil concentration under free product condition.
[f] Values based on pyrene as a surrogate chemical.

Bold values indicate results exceeding GUST action levels.

Italicized values indicate results exceeding risk-based screening levels.
Underlined values indicate results exceeding leaching to groundwater screening levels.

U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
UJ Indicates that the sample was not detected above an approximate sample quantitation limit.
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Table 9. Groundwater and Surface Water Data Risk-based Screening Results

Station:	Screening Levels		62-01	62-02	62-03	62-04	62-05	62-06	62-07
Sample ID:			620112	620212	620312	620412	620512	620612	620712
Screened Interval (ft BGS):			2.0 - 12.0	2.0 - 12.0	0.0 - 13.7	0.0 - 13.5	0.0 - 12.5	0.1 - 10.1	6.0 - 10.0
Collection Date:	Georgia IWQS	Risk-based[a]	07-May-98	07-May-98	20-Sep-98	20-Sep-98	18-Sep-98	20-Sep-98	18-Sep-98
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
VOLATILE ORGANIC COMPOUNDS									
Benzene	71.28	0.36	7.8 =	6.1 =	3.9 =	2 U	2 U	82.1 =	32.1 J
Toluene	200,000	750	77.3 =	6.6 =	2 U	2 U	7.5 =	197 =	150 J
Ethylbenzene	28,718	1300	20 =	6.9 =	2 U	2 U	2 U	52.1 =	28.1 J
Xylenes, Total	-	12,000	113 =	36.1 =	6 U	6 U	1.1 J	229 =	153 J
POLYNUCLEAR AROMATIC HYDROCARBONS									
2-Chloronaphthalene[b]	-	6.5	404 U	10.6 U	10 U	10.2 U	10.3 U	9900 U	111 U
Acenaphthene	-	365	404 U	10.6 U	10 U	10.2 U	10.3 U	9900 U	111 U
Acenaphthylene[c]	-	182.5	404 U	10.6 U	10 U	10.2 U	10.3 U	9900 U	111 U
Anthracene	110,000	182.5	404 U	10.6 U	10 U	10.2 U	10.3 U	9900 U	111 U
Benzo(*a*)anthracene	0.0311	0.092	**404 U**	**10.6 U**	**10 U**	**10.2 U**	**10.3 U**	**9900 U**	**111 U**
Benzo(*a*)pyrene	0.0311	0.0092	**404 U**	**10.6 U**	**10 U**	**10.2 U**	**10.3 U**	**9900 U**	**111 U**
Benzo(*b*)fluoranthene	-	0.092	404 U	10.6 U	10 U	10.2 U	10.3 U	9900 U	111 U
Benzo(*g,h,i*)perylene	-	-	404 U	10.6 U	10 U	10.2 U	10.3 U	9900 U	111 U
Benzo(*k*)fluoranthene	0.0311	0.92	**404 U**	**10.6 U**	**10 U**	**10.2 U**	**10.3 U**	**9900 U**	**111 U**
Chrysene	0.0311	9.2	**404 U**	**10.6 U**	**10 U**	**10.2 U**	**10.3 U**	**9900 U**	**111 U**
Dibenzo(*a,h*)anthracene	0.0311	0.0092	**404 U**	**10.6 U**	**10 U**	**10.2 U**	**10.3 U**	**9900 U**	**111 U**
Fluoranthene	370	1460	**404 U**	**10.6 U**	**10 U**	**10.2 U**	**10.3 U**	**9900 U**	**111 U**
Fluorene	14,000	243	404 U	7.9 J	10 U	10.2 U	10.3 U	9900 U	111 U
Indeno(*1,2,3-cd*)pyrene	0.0311	0.092	**404 U**	**10.6 U**	**10 U**	**10.2 U**	**10.3 U**	**9900 U**	**111 U**
Naphthalene	-	6.5	323 J	48 =	10 U	10.2 U	10.3 U	7860 J	111 U
Phenanthrene[c]	-	182.5	340 J	24.5 =	10 U	10.2 U	10.3 U	7450 J	111 U
Pyrene	11,000	182.5	404 U	9 J	10 U	10.2 U	10.3 U	9900 U	111 U

[a] Protective of tap water ingestion by a resident.
[b] Values based on naphthalene as a surrogate chemical.
[c] Values based on pyrene as a surrogate chemical.

Bold values indicate results exceeding Georgia IWQSs.

Underlined values indicate results exceeding risk-based screening levels.
U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
UJ Indicates that the sample was not detected above an approximate sample quantitation limit.
= Indicates that the compound was detected at the concentration reported.

Table 9. Groundwater and Surface Water Data Risk-based Screening Results (continued)

Station:	Screening Levels		62-07	62-07	62-07	62-08	62-09	62-10	62-S2
Sample ID:			620722	620732	620742	620812	620912	621012	62S219
Screened Interval (ft BGS):	Georgia		11.0 - 15.0	16.0 - 20.0	21.0 - 25.0	0.0 - 10.5	0.4 - 15.4	0.0 - 11.4	Surface Water
Collection Date:	IWQS	Risk-based[a]	18-Sep-98	18-Sep-98	18-Sep-98	17-Feb-99	17-Feb-99	21-Feb-99	18-Sep-98
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
VOLATILE ORGANIC COMPOUNDS									
Benzene	71.28	0.36	2 U	2 U	2 U	47 =	2.7 =	27.1 =	2 U
Toluene	200,000	750	5.8 =	11 =	2 U	20.4 =	2 U	8 =	2 U
Ethylbenzene	28,718	1300	2.9 =	4.1 J	2 U	23.2 =	2 U	22.5 =	2 U
Xylenes, Total	-	12,000	9 =	26.3 =	6 U	104 =	2.2 J	67.2 =	6 U
POLYNUCLEAR AROMATIC HYDROCARBONS									
2-Chloronaphthalene[b]	-	6.5	10.2 U	10.4 U	10.6 U	14.3 U	10.3 U	13 U	10.1 U
Acenaphthene	-	365	10.2 U	10.4 U	10.6 U	2.4 J	10.3 U	2 J	10.1 U
Acenaphthylene[c]	-	182.5	10.2 U	10.4 U	10.6 U	14.3 U	10.3 U	13 U	10.1 U
Anthracene	110,000	182.5	10.2 U	10.4 U	10.6 U	14.3 U	10.3 U	13 U	10.1 U
Benzo(*a*)anthracene	0.0311	0.092	**10.2 U**	**10.4 U**	**10.6 U**	**14.3 U**	**10.3 U**	**13 U**	**10.1 U**
Benzo(*a*)pyrene	0.0311	0.0092	**10.2 U**	**10.4 U**	**10.6 U**	**14.3 U**	**10.3 U**	**13 U**	**10.1 U**
Benzo(*b*)fluoranthene	-	0.092	10.2 U	10.4 U	10.6 U	14.3 U	10.3 U	13 U	10.1 U
Benzo(*g,h,i*)perylene	-	-	10.2 U	10.4 U	10.6 U	14.3 U	10.3 U	13 U	10.1 U
Benzo(*k*)fluoranthene	0.0311	0.92	**10.2 U**	**10.4 U**	**10.6 U**	**14.3 U**	**10.3 U**	**13 U**	**10.1 U**
Chrysene	0.0311	9.2	**10.2 U**	**10.4 U**	**10.6 U**	**14.3 U**	**10.3 U**	**13 U**	**10.1 U**
Dibenzo(*a,h*)anthracene	0.0311	0.0092	**10.2 U**	**10.4 U**	**10.6 U**	**14.3 U**	**10.3 U**	**13 U**	**10.1 U**
Fluoranthene	370	1460	10.2 U	10.4 U	10.6 U	14.3 U	10.3 U	13 U	10.1 U
Fluorene	14,000	243	10.2 U	10.4 U	10.6 U	3.3 J	10.3 U	2.7 J	10.1 U
Indeno(*1,2,3-cd*)pyrene	0.0311	0.092	**10.2 U**	**10.4 U**	**10.6 U**	**14.3 U**	**10.3 U**	**13 U**	**10.1 U**
Naphthalene	-	6.5	8.8 J	10.4 U	10.6 U	37.2 =	11.2 =	35.1 =	10.1 U
Phenanthrene[c]	-	182.5	10.2 U	10.4 U	10.6 U	5.2 J	10.3 U	3.3 J	10.1 U
Pyrene	11,000	182.5	10.2 U	10.4 U	10.6 U	0.95 J	10.3 U	13 U	10.1 U

[a] Protective of tap water ingestion by a resident.
[b] Values based on naphthalene as a surrogate chemical.
[c] Values based on pyrene as a surrogate chemical.

Bold values indicate results exceeding Georgia IWQSs.

Underlined values indicate results exceeding risk-based screening levels.
U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
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Table 9. Groundwater and Surface Water Data Risk-based Screening Results (continued)

Station:	Screening Levels		62-11	62-12	62-13	62-14	62-15	62-16
Sample ID:			621112	621212	621312	621412	621512	621612
Sample Interval:	Georgia		2.7 - 7.7	2.9 - 12.9	2.9 - 12.9	2.9 - 12.9	2.9 - 12.9	3.2 - 13.2
Collection Date:	IWQS	Risk-based[a]	17-Jan-00	17-Jan-00	17-Jan-00	17-Jan-00	17-Jan-00	17-Jan-00
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
VOLATILE ORGANIC COMPOUNDS								
Benzene	71.28	0.36	23.1 =	3 =	17.2 =	1 U	0.22 J	1 U
Toluene	200,000	750	110 =	0.28 J	0.58 J	1 U	0.32 J	1 U
Ethylbenzene	28,718	1300	27.7 =	2.2 =	8.3 =	2.2 =	2.3 =	1 U
Xylenes, Total	-	12,000	133 =	9.1 =	27.9 =	5.4 =	9.1 =	3 U
POLYNUCLEAR AROMATIC HYDROCARBONS								
2-Chloronaphthalene	-	6.5	18.9 U	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Acenaphthene	-	365	24.2 =	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Acenaphthylene	-	182.5	18.9 U	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Anthracene	110,000	182.5	22.3 =	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Benzo(*a*)anthracene	0.0311	0.092	**19.8 =**	**1.3 U**	**1.2 U**	**1 U**	**1.3 U**	**1.4 UJ**
Benzo(*a*)pyrene	0.0311	0.0092	**18.9 U**	**1.3 U**	**1.2 U**	**1 U**	**1.3 U**	**1.4 UJ**
Benzo(*b*)fluoranthene	-	0.092	18.9 U	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Benzo(*g,h,i*)perylene	-	-	18.9 U	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Benzo(*k*)fluoranthene	0.0311	0.92	**18.9 U**	**1.3 U**	**1.2 U**	**1 U**	**1.3 U**	**1.4 UJ**
Chrysene	0.0311	9.2	**12.5 J**	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Dibenzo(*a,h*)anthracene	0.0311	0.0092	**18.9 U**	**1.3 U**	**1.2 U**	**1 U**	**1.3 U**	**1.4 UJ**
Fluoranthene	370	1460	94.6 =	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Fluorene	14,000	243	21.5 =	1.3 U	1.2 J	1 U	1.3 U	1.4 UJ
Indeno(*1,2,3-cd*)pyrene	0.0311	0.092	**18.9 U**	**1.3 U**	**1.2 U**	**1 U**	**1.3 U**	**1.4 UJ**
Naphthalene	-	6.5	47.9 =	15.1 =	32.6 =	1 U	3.2 =	1.4 UJ
Phenanthrene	-	182.5	117 =	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Pyrene	11,000	182.5	67.2 =	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ

[a] Protective of tap water ingestion by a resident.
[b] Values based on naphthalene as a surrogate chemical.
[c] Values based on pyrene as a surrogate chemical.

Bold values indicate results exceeding Georgia IWQSs.

Underlined values indicate results exceeding risk-based screening levels.
U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
UJ Indicates that the sample was not detected above an approximate sample quantitation limit.
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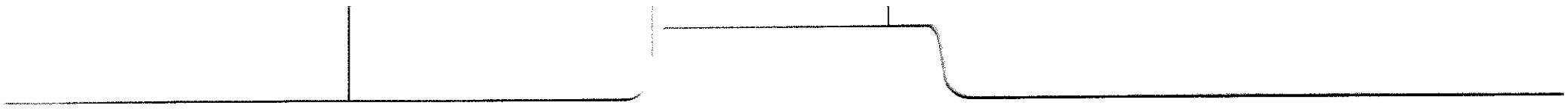
APPENDIX III



APPENDIX III

WATER RESOURCES SURVEY DOCUMENTATION

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WATER RESOURCES SURVEY DOCUMENTATION

1.0 LOCAL WATER RESOURCES

As required by the GA EPD UST CAP-Part A guidance, a water resource survey documenting information for public and nonpublic water supply wells, surface water bodies, underground utilities, and potential receptors was conducted for the Fort Stewart UST investigation sites. The information presented in this appendix provides the supporting documentation for Section II.D.3 of the CAP-Part A Form.

1.1 WATER SUPPLY WELL SURVEY

The water supply well survey was conducted using the following GA EPD guidelines/requirements:

- Determine if Fort Stewart is located in an area of average or higher groundwater pollution susceptibility.
- Locate all public supply wells as defined by GA EPD that exist within 2 miles of the investigation sites.
- Locate all nonpublic supply wells that exist within 0.5 mile of the investigation sites.
- Locate all supply wells nearest the investigation sites.
- Locate all wells downgradient of the investigation sites.

A total of seven groundwater supply wells are located within a 2-mile radius of the Fort Stewart garrison area. Six of these wells are located within the confines of the garrison area. The other well is located at Wright Army Airfield, approximately 1.2 miles northeast of the garrison area. All of the groundwater supply wells are classified as public wells that supply water to Fort Stewart for drinking and nondrinking purposes. These wells are approximately 450 feet deep and draw groundwater from the Principal Artesian (also known as the Floridan) Aquifer. Chlorine and fluoride are added into the groundwater at the well heads prior to its being pumped into storage tanks and/or water towers, according to Fort Stewart DPW personnel. The location of these wells, along with a 500-foot radius drawn around each well, is shown in Figure 18.

1.2 SURFACE WATER BODIES

Surface water(s) in the State of Georgia, as defined by Rules and Regulations for Water Quality Control, Chapter 391-3-6, shall mean any and all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs producing 100,000 gallons per day, and all other bodies of surface water, natural or artificial, lying within or forming part of the boundaries of the state, which are not entirely confined and retained completely upon the property of a single individual, partnership, or corporation. The surface water body survey was conducted using the following GA EPD guidelines/requirements:

- surface water bodies that exist within 1 mile of the investigation sites,
- all surface water bodies nearest the investigation sites if these bodies lie outside the 1-mile radius of concern,
- all surface water bodies downgradient of the investigation sites, and
- the storm and sanitary sewers adjacent to the investigation sites.

Several surface water bodies are located within a 1-mile radius of the Fort Stewart garrison area. These are shown in Figure 18 and include Mill Creek, Taylor's Creek, Peacock Creek, Children's Pond, and two unnamed ponds. Mill Creek extends along the western side of the garrison area and flows into Taylor's Creek, located approximately 0.75 mile northwest of the garrison area. Taylor's Creek then flows northward approximately 3.5 miles to its confluence with Canoochee Creek. Peacock Creek originates near the eastern corner of the garrison area and flows southward from the garrison. Mill Creek, Taylor's Creek, and Peacock Creek all have natural streambeds and exhibit perennial flow.

Children's Pond is located at the northwestern end of the garrison area. The two unnamed ponds are located at the northwestern end of the facility golf course in the vicinity of Children's Pond. All of the ponds are isolated water bodies that are relatively small in size, measuring less than 500 feet in diameter.

Typically, surface water runoff from the UST site moves over the existing concrete and asphalt cover to the Fort Stewart storm water drainage system. Since petroleum contamination at the sites primarily impacts surficial groundwater, the surface water runoff pathway is not a viable contaminant transport mechanism because of the concrete acting as a barrier and the location of the nearest surface water body.

2.0 POTENTIAL RECEPTOR SURVEY SUMMARY OF THE UST 100B SITE

A field potential receptor survey was conducted for the UST 100B site in May 1998. The site and adjacent areas were surveyed for locations of surface water bodies, utility lines, and basements. Basements do not exist in the buildings adjacent to the site. Additional information, provided by Fort Stewart DPW, was used to determine the location of the nearest public and nonpublic water supply wells and downgradient surface water bodies not located during the field survey.

2.1 Water Supply Wells Near the UST 100B Site

The UST 100B site is located approximately 2200 feet northwest (side gradient) of the well #3. Therefore, the UST 100B site is classified as being located more than 500 feet from a withdrawal point. There are no public or nonpublic supply wells located downgradient of the site within a 2-mile radius.

2.2 Surface Water Bodies Near the UST 100B Site

At the closest point to the site, a tributary to Mill Creek is located approximately 250 feet north (side gradient) of the site; however, this tributary is piped through the northern portion of the garrison area motorpools. A drainage swale located 90 feet northeast (upgradient) of the site contains water only during storm events. In the direction of groundwater flow, a drainage ditch is located approximately 900 feet southwest of the site, and Mill Creek is located approximately 2500 feet southwest of the site. Based on the distances between the UST and the nearest surface water body, the site is classified as being located more than 500 feet from a downgradient surface water body.

2.3 Underground Utility Lines Near the UST 100B Site

An industrial wastewater line is located within the area of groundwater contamination. The invert elevation of manhole #26, located 80 feet southwest of boring 62-08, is 62.60 feet AMSL or 5.4 feet BGS, which is near the water table; thus, the industrial wastewater line is considered a preferential pathway. A catch basin for a storm drain is located about 100 feet south of boring 62-08. The invert elevation of the catch basin is estimated to be approximately 64.42 feet AMSL or 3.4 feet BGS, which is above the water table; thus, the catch basin is not considered a preferential pathway.

CONTACT REPORT	
INDIVIDUAL CONTACTED, TITLE: Pam Babbs	ORIGINATOR: Patty Stoll
ORGANIZATION: Fort Stewart DPW – Water Resources	DATE CONTACTED: October 10, 1998
PHONE: (912) 767- 2281	TIME CONTACTED: 11:00 am
ADDRESS:	CONTACT TYPE: telephone
SUBJECT: Update Supply Well Information for Fort Stewart Supply Wells for Water Resources Survey	
DISCUSSION: During a telephone conversation with Pam Babbs on October 10, 1998, the following information on the supply wells at Fort Stewart was provided. Well No.1: 1750 gpm, CD = 451 ft, TD = 816 ft Well No.2: 1400 gpm, CD = 470 ft, TD = 808 ft Well No.3: 1400 gpm, CD = 436 ft, TD = 750 ft Well No.4: 1600 gpm, CD = 464 ft, TD = 802 ft Well No.5: 1100 gpm, CD = 560 ft, TD = 779 ft Well No.6A: 500 gpm, CD = 374 ft, TD = 508 ft Well No.6B: 500 gpm, CD = 393 ft, TD = 600 ft Evans Well: 190 gpm, CD = 404 ft, TD = 600 ft Camp Oliver Well: 400 gpm, CD = 451 ft, TD = 706 ft	COMMENTS, ACTIONS, DATES Incorporate new pumping rate data into the CAP-Part A and -Part B reports prepared for Fort Stewart.
DISTRIBUTION: Melanie Little (Fort Stewart DPW) Central Records (SAIC) Project File (SAIC)	

CONTACT REPORT	
INDIVIDUAL CONTACTED, TITLE: Jeff Barnes	ORIGINATOR: Patty Stoll
ORGANIZATION: Georgia Department of Natural Resources	DATE CONTACTED: October 1, 1997
PHONE: (912) 353- 3225	TIME CONTACTED: 11:00 am
ADDRESS:	CONTACT TYPE: telephone
SUBJECT: Update Supply Well Information Liberty County Supply Wells for Water Resources Survey	
DISCUSSION: During a telephone conversation with Georgia Department of Natural Resources regarding drinking water wells in Liberty County, it was suggested that I contact Mr. Jeff Barnes. After being transferred to Mr. Barnes and explaining our needs, he agreed to send a printout of the permitted drinking water systems in Liberty County. On October 17, 1997, we received the list of permitted drinking water systems in Liberty County.	COMMENTS, ACTIONS, DATES Review list of permitted drinking water supply wells for proximity to Fort Stewart CAP-Part A and -Part B sites.
DISTRIBUTION: Melanie Little (Fort Stewart DPW) Central Records (SAIC) Project File (SAIC)	

APPENDIX IV

SOIL BORING LOGS

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HTRW DRILLING LOG

HOLE NUMBER 62-11

PROJECT: Fort Stewart USTs | INSPECTOR J. Celeste | SHEET 1 OF 1

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		CONCRETE				
	1	CLAY (CH), fine grained, some sand, soft to very soft, moist to wet, brown (7.5 YR 5/3)	5.1 ppm			
	2	NO RECOVERY				
	3					
	4					
	5	Silty SAND (SM), fine grained, very soft and wet, gray and brown (7.5 YR 5/2)	59.8 ppm		Soil Sample 621111	
	6	NO RECOVERY				
	7					
	8					DRILLED TO 8.0 FT BGS TO SET 3/4" MONITORING POINT SCREENED FROM 2.7 to 7.7 FT BGS
	9					COLLECTED GROUNDWATER SAMPLE 621112 FROM MONITORING POINT
	10					

HTRW DRILLING LOG

HOLE NUMBER 62-12

PROJECT: Fort Stewart USTs | INSPECTOR J. Celeste | SHEET 1 OF 1

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		CONCRETE				
	1	CLAY (CH), fine grained, some sand, soft, light yellowish brown, (10 YR 6/4)				
	2	Silty SAND (SM), fine grained, dark brown to black with light gray (10 YR 3/3 to 2/1)	4.6 ppm		Soil Sample 621211	
	3	Silty SAND (SM), fine grained, soft to very soft, very pale brown. (10 YR 7/3)	4.1 ppm			
	4					▽ wet below 4.0 ft BGS
	5	CLAY (CH), fine grained, some sand, soft to firm, wet, light yellow and yellowish orange to light grayish brown, (10 YR 6/2)				
	6					
	7	Silty SAND (SM), fine grained, soft, wet, light grayish brown (10 YR 6/2)				
	8	CLAY (CH), fine grained, some sand, firm, light grayish brown w/ red & orange mottling (10 YR 6/2)				PUSHED TO 13.0 FT BGS TO SET 3/4" MONITORING POINT SCREENED FROM 2.9 TO 12.9 FT BGS
	9					COLLECTED GROUNDWATER SAMPLE 621212 FROM MONITORING POINT
	10					

HTRW DRILLING LOG

HOLE NUMBER 62-13

PROJECT: Fort Stewart USTs | INSPECTOR J. Celeste | SHEET 1 OF 1

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		CONCRETE				
	1–2	Silty SAND (SM), fine grained, soft to very soft with some roots, dark gray to light gray, (10 YR 4/1 to 7/1)	8.6 ppm		Soil Sample 621311	
	3	silty SAND (SM), fine grained, soft, yellowish brown, (10 YR 5/4)	8.2 ppm			
		silty SAND (SM), dark brown with light gray, (10 YR 2/2)				
	4	NO RECOVERY				
	5	CLAY (CH), fine grained, some sand, soft, wet, gray, (2.5 Y 6/1)	8.2 ppm			
	6	silty SAND (SM), fine grained, firm to hard, wet, red (2.5 YR 4/8)				▽ = Wet below 6.2 FT BGS
		silty SAND (SM), fine grained, firm to hard, dry, pale yellow (2.5 Y 7/4)				
		CLAY (CH), fine grained, some sand, firm, wet, red (2.5 YR 5/6)				
	7	CLAY (CH), fine grained, firm to hard, wet, gray with red and white mottling				
	8					PUSHED TO 13.0 FT BGS TO SET 3/4" MONITORING POINT SCREENED FROM 2.9 TO 12.9 FT BGS
	9					COLLECTED GROUNDWATER SAMPLE 621312 FROM MONITORING POINT
	10					

HTRW DRILLING LOG

HOLE NUMBER 62-14

PROJECT: Fort Stewart USTs

INSPECTOR J. Celeste

SHEET 1 OF 1

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	1	CONCRETE				
		Silty SAND(SM), fine grained, soft to very soft, brown (7.5 YR 4/2)				
		CLAY (CH), fine grained, some sand, soft to firm, gray with yellow and orange mottling (2.5 Y 6/1)	6.6 ppm			
	2	Silty SAND (SM), fine grained, soft, dark brown with light gray (7.5 YR 3/2)				
	3		6.8 ppm		Soil Sample 621411	
	4	NO RECOVERY				▽ wet below 4.0 ft BGS
	5	CLAY(CH), fine grained, some sand, soft to firm, wet, brown and light gray (7.5 YR 5/4 and 7.5 YR 6/1)	7.4 ppm			
	6					
			7.3 ppm			
	7	CLAY(CH), fine grained, some sand, firm, wet, dark gray with red & orange mottling (7.5 YR 4/1)				
		CLAY(CH), fine grained, some sand, firm, gray with red, yellow and white mottling (7.5 YR 6/1)				
	8					PUSHED TO 13.0 FT BGS TO SET 3/4" MONITORING POINT SCREENED FROM 2.9 TO 12.9 FT BGS
	9					COLLECTED GROUNDWATER SAMPLE 621412 FROM MONITORING POINT
	10					

HTRW DRILLING LOG

HOLE NUMBER 62-15

PROJECT: Fort Stewart USTs | INSPECTOR J. Celeste | SHEET 1 OF 1

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0	CONCRETE				
	1	CLAY (CH), some sand, soft to firm, red, (10 R 5/6)				
	2	CLAY (CH), some sand, soft to firm, red, (7.5 YR 5/2)	6.5 ppm			
	3	Silty SAND (SM), fine grained, soft, dark brown with some light gray, (7.5 YR 3/2)				
	4	NO RECOVERY			Soil Sample 621511	
	4	Silty SAND (SM), fine grained, soft, dark brown with some light gray, (7.5 YR 3/2)	13.0 ppm			
	5	CLAY (CH), fine grained, some sand, soft to firm, wet, brownish yellow with red mottling, (10 YR 6/6)				▽ wet below 5.0 ft BGS
	7	CLAY (CH), fine grained, some sand, soft to firm, wet, brownish yellow with red mottling, (10 YR 6/1)				
	8					PUSHED TO 16.0 FT BGS TO SET 3/4" MONITORING POINT SCREENED FROM 2.9 TO 12.9 FT BGS
	9					COLLECTED GROUNDWATER SAMPLE 621512 FROM MONITORING POINT
	10					

HTRW DRILLING LOG

HOLE NUMBER 62-16

PROJECT: Fort Stewart USTs

INSPECTOR T. Coffey

SHEET 1 OF 1

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	Sandy TOPSOIL				
	1	Sandy CLAY (CH), mottled red, brown, black				
	2					▽ wet below 2.0 FT BGS
	3	NO RECOVERY				
	4	Sandy CLAY (CH), mottled red, brown, black				
	5	CLAY (CL), some sand, massive, light brownish gray				
	6					
	7					
	8					
	9					PUSHED TO 14.0 FT BGS TO SET 2" MONITORING POINT SCREENED FROM 3.2 TO 13.2 FT BGS
	10					

APPENDIX V

SOIL LABORATORY REPORTS

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Table V-A. Summary of CAP-Part A Soil and Sediment Analytical Results

Station:	GUST	62-01	62-01	62-02	62-02	62-03
Sample ID:	Soil	620111	620121	620211	620221	620311
Sample Interval:	Threshold	0.0 - 2.0	4.0 - 6.0	0.0 - 2.0	2.0 - 4.0	0.0 - 2.0
Collection Date:	Level[a]	07-May-98	07-May-98	07-May-98	07-May-98	20-Sep-98
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS						
Benzene	0.008	0.0024 U	0.0024 U	0.0022 U	0.0222 U	0.0023 U
Toluene	6	0.0087 =	0.0024 U	0.0099 =	0.237 =	0.0023 U
Ethylbenzene	10	0.0024 U	0.0024 U	0.0022 U	0.0222 U	0.0023 U
Xylenes, Total	700	0.007 U	0.0072 U	0.0067 U	0.0667 U	0.0068 U
POLYNUCLEAR AROMATIC HYDROCARBONS						
2-Chloronaphthalene	NRC	0.392 U	0.398 U	0.373 U	0.37 U	0.374 U
Acenaphthene	NRC	0.392 U	0.398 U	0.373 U	0.37 U	0.374 U
Acenaphthylene	NRC	0.392 U	0.398 U	0.373 U	0.37 U	0.374 U
Anthracene	NRC	0.392 U	0.398 U	0.373 U	0.37 U	0.374 U
Benzo(*a*)anthracene	NRC	0.392 U	0.398 U	0.373 U	0.37 U	0.374 U
Benzo(*a*)pyrene	NRC	0.392 U	0.398 U	0.373 U	0.37 U	0.374 U
Benzo(*b*)fluoranthene	NRC	0.392 U	0.398 U	0.373 U	0.37 U	0.374 U
Benzo(*g,h,i*)perylene	NRC	0.392 U	0.398 U	0.373 U	0.37 U	0.374 U
Benzo(*k*)fluoranthene	NRC	0.392 U	0.398 U	0.373 U	0.37 U	0.374 U
Chrysene	NRC	0.392 U	0.398 U	0.373 U	0.37 U	0.374 U
Dibenzo(*a,h*)anthracene	NRC	0.392 U	0.398 U	0.373 U	0.37 U	0.374 U
Fluoranthene	NRC	0.392 U	0.398 U	0.373 U	0.37 U	0.374 U
Fluorene	NRC	0.392 U	0.398 U	0.373 U	0.37 U	0.374 U
Indeno(*1,2,3-cd*)pyrene	NRC	0.392 U	0.398 U	0.373 U	0.37 U	0.374 U
Naphthalene	NRC	0.392 U	0.398 U	0.373 U	0.37 U	0.374 U
Phenanthrene	NRC	0.392 U	0.061 J	0.373 U	0.37 U	0.374 U
Pyrene	NRC	0.392 U	0.398 U	0.373 U	0.37 U	0.374 U
OTHER ANALYTES						
Lead	NRC		3.1 =		1.2 =	
Total Petroleum Hydrocarbons	NRC	624 =	741 =	74.1 =	17.2 U	2.97 UJ

NOTE:

May 1998 sampling was performed prior to the new CAP-Part A guidance that was published in May 1998; thus, the new SW-846 analytical methods were not used during that sampling event.

Contract for the September 1998 sampling was prior to the new CAP-Part A guidance that was published in May 1998; thus, the new SW-846 analytical methods were not used during that sampling event.

February 1999 sampling was performed in accordance with the new CAP-Part A guidance that was published in May 1998.

[a] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table A, Column 2)

NRC no regulatory criteria

TPH total petroleum hydrocarbons

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

J Indicates that the value for the compound was an estimated value.

= Indicates that the compound was detected at the concentration reported.

Table V-A. Summary of CAP-Part A Soil and Sediment Analytical Results (continued)

Station:	GUST	62-03	62-04	62-05	62-05	62-06
Sample ID:	Soil	620321	620421	620511	620521	620611
Sample Interval:	Threshold	2.0 - 4.0	0.0 - 2.0	0.0 - 2.0	4.0 - 6.0	0.5 - 2.0
Collection Date:	Level[a]	20-Sep-98	20-Sep-98	18-Sep-98	18-Sep-98	20-Sep-98
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS						
Benzene	0.008	0.0023 U	0.0022 U	0.0022 U	0.0022 U	0.0023 U
Toluene	6	0.0023 U	0.0022 U	0.0022 U	0.191 =	0.0023 U
Ethylbenzene	10	0.0023 U	0.0022 U	0.0022 U	0.0022 U	0.0023 U
Xylenes, Total	700	0.0069 U	0.0066 U	0.0066 U	0.006 J	0.007 U
POLYNUCLEAR AROMATIC HYDROCARBONS						
2-Chloronaphthalene	NRC	0.382 U	0.361 U	0.361 U	0.358 U	0.382 U
Acenaphthene	NRC	0.382 U	0.361 U	0.361 U	0.358 U	0.382 U
Acenaphthylene	NRC	0.382 U	0.361 U	0.361 U	0.358 U	0.382 U
Anthracene	NRC	0.382 U	0.361 U	0.361 U	0.358 U	0.382 U
Benzo(*a*)anthracene	NRC	0.382 U	0.361 U	0.361 U	0.358 U	0.382 U
Benzo(*a*)pyrene	NRC	0.382 U	0.361 U	0.361 U	0.358 U	0.382 U
Benzo(*b*)fluoranthene	NRC	0.382 U	0.361 U	0.361 U	0.358 U	0.382 U
Benzo(*g,h,i*)perylene	NRC	0.382 U	0.361 U	0.361 U	0.358 U	0.382 U
Benzo(*k*)fluoranthene	NRC	0.382 U	0.361 U	0.361 U	0.358 U	0.382 U
Chrysene	NRC	0.382 U	0.361 U	0.361 U	0.358 U	0.382 U
Dibenzo(*a,h*)anthracene	NRC	0.382 U	0.361 U	0.361 U	0.358 U	0.382 U
Fluoranthene	NRC	0.382 U	0.361 U	0.361 U	0.358 U	0.382 U
Fluorene	NRC	0.382 U	0.361 U	0.361 U	0.358 U	0.382 U
Indeno(*1,2,3-cd*)pyrene	NRC	0.382 U	0.361 U	0.361 U	0.358 U	0.382 U
Naphthalene	NRC	0.382 U	0.361 U	0.361 U	0.358 U	0.382 U
Phenanthrene	NRC	0.382 U	0.361 U	0.361 U	0.358 U	0.382 U
Pyrene	NRC	0.382 U	0.361 U	0.361 U	0.358 U	0.382 U
OTHER ANALYTES						
Lead	NRC	14.8 =	4 =		2.5 =	
Total Petroleum Hydrocarbons	NRC	11.5 J	8.92 UJ	37.5 J	44.9 J	5.2 UJ

NOTES:

May 1998 sampling was performed prior to the new CAP-Part A guidance that was published in May 1998; thus, the new SW-846 analytical methods were not used during that sampling event.

Contract for the September 1998 sampling was prior to the new CAP-Part A guidance that was published in May 1998; thus, the new SW-846 analytical methods were not used during that sampling event.

February 1999 sampling was performed in accordance with the new CAP-Part A guidance that was published in May 1998.

" Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table A, Column 2)

NRC no regulatory criteria

TPH total petroleum hydrocarbons

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

J Indicates that the value for the compound was an estimated value.

= Indicates that the compound was detected at the concentration reported.

Table V-A. Summary of CAP-Part A Soil and Sediment Analytical Results (continued)

Station:	GUST	62-06	62-08	62-08	62-09	62-09
Sample ID:	Soil	620621	620811	620821	620911	620921
Sample Interval:	Threshold	4.0 - 6.0	0.7 - 2.0	4.0 -6.0	0.7 - 2.0	4.0 -6.0
Collection Date:	Level[a]	20-Sep-98	17-Feb-99	17-Feb-99	17-Feb-99	17-Feb-99
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS						
Benzene	0.008	0.0109 J	0.0593 =	0.0104 J	0.0018 U	0.002 U
Toluene	6	0.144 J	0.764 J	0.0274 J	0.0018 J	0.0008 J
Ethylbenzene	10	0.211 J	0.135 J	0.181 =	0.0018 U	0.002 U
Xylenes, Total	700	0.95 J	0.245 J	0.362 =	0.001 J	0.00072 J
POLYNUCLEAR AROMATIC HYDROCARBONS						
2-Chloronaphthalene	NRC	3.74 U	0.758 U	1.46 U	0.366 U	1.43 U
Acenaphthene	NRC	3.74 U	0.758 U	1.46 U	0.366 U	1.43 U
Acenaphthylene	NRC	3.74 U	0.758 U	1.46 U	0.366 U	1.43 U
Anthracene	NRC	3.74 U	0.758 U	1.46 U	0.366 U	1.43 U
Benzo(*a*)anthracene	NRC	3.74 U	0.758 U	1.46 U	0.366 U	1.43 U
Benzo(*a*)pyrene	NRC	3.74 U	0.758 U	1.46 U	0.366 U	1.43 U
Benzo(*b*)fluoranthene	NRC	3.74 U	0.758 U	1.46 U	0.366 U	1.43 U
Benzo(*g,h,i*)perylene	NRC	3.74 U	0.758 U	1.46 U	0.366 U	1.43 U
Benzo(*k*)fluoranthene	NRC	3.74 U	0.758 U	1.46 U	0.366 U	1.43 U
Chrysene	NRC	3.74 U	0.758 U	1.46 U	0.366 U	1.43 U
Dibenzo(*a,h*)anthracene	NRC	3.74 U	0.758 U	1.46 U	0.366 U	1.43 U
Fluoranthene	NRC	3.74 U	0.758 U	1.46 U	0.366 U	1.43 U
Fluorene	NRC	3.74 U	0.758 U	0.393 J	0.366 U	1.43 U
Indeno(*1,2,3-cd*)pyrene	NRC	3.74 U	0.758 U	1.46 U	0.366 U	1.43 U
Naphthalene	NRC	3.74 U	0.758 U	0.818 J	0.366 U	1.43 U
Phenanthrene	NRC	1.97 J	0.758 U	0.986 J	0.366 U	1.43 U
Pyrene	NRC	3.74 U	0.758 U	1.46 U	0.366 U	1.43 U
OTHER ANALYTES						
Lead	NRC	5.1 =		3 =		1.2 =
Total Petroleum Hydrocarbons	NRC	7860 J	104 J	3070 =	8.93 U	12.8 U

NOTES:

May 1998 sampling was performed prior to the new CAP-Part A guidance that was published in May 1998; thus, the new SW-846 analytical methods were not used during that sampling event.

Contract for the September 1998 sampling was prior to the new CAP-Part A guidance that was published in May 1998; thus, the new SW-846 analytical methods were not used during that sampling event.

February 1999 sampling was performed in accordance with the new CAP-Part A guidance that was published in May 1998.

[a] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table A, Column 2)

NRC no regulatory criteria

TPH total petroleum hydrocarbons

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

J Indicates that the value for the compound was an estimated value.

= Indicates that the compound was detected at the concentration reported.

Table V-A. Summary of CAP-Part A Soil and Sediment Analytical Results (continued)

Station:	GUST	62-10	62-10	62-S1	62-S2
Sample ID:	Soil	621011	621021	62S110	62S210
Sample Interval:	Threshold	0.8 - 2.0	4.0 -6.0	Sediment	Sediment
Collection Date:	Level[a]	21-Feb-99	21-Feb-99	20-Sep-98	20-Sep-98
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS					
Benzene	0.008	0.0034 =	0.0109 J	0.0027 U	0.0032 U
Toluene	6	0.144 J	1.77 J	0.0027 U	0.0032 U
Ethylbenzene	10	0.007 =	0.014 J	0.0027 U	0.0032 U
Xylenes, Total	700	0.0066 =	0.0115 J	0.008 U	0.0097 U
POLYNUCLEAR AROMATIC HYDROCARBONS					
2-Chloronaphthalene	NRC	0.351 U	1.5 U	0.438 U	0.53 U
Acenaphthene	NRC	0.351 U	1.5 U	0.438 U	0.53 U
Acenaphthylene	NRC	0.351 U	1.5 U	0.438 U	0.53 U
Anthracene	NRC	0.351 U	1.5 U	0.438 U	0.53 U
Benzo(*a*)anthracene	NRC	0.351 U	1.5 U	0.438 U	0.53 U
Benzo(*a*)pyrene	NRC	0.351 U	1.5 U	0.438 U	0.53 U
Benzo(*b*)fluoranthene	NRC	0.351 U	1.5 U	0.438 U	0.53 U
Benzo(*g,h,i*)perylene	NRC	0.351 U	1.5 U	0.438 U	0.53 U
Benzo(*k*)fluoranthene	NRC	0.351 U	1.5 U	0.438 U	0.53 U
Chrysene	NRC	0.351 U	1.5 U	0.438 U	0.53 U
Dibenzo(*a,h*)anthracene	NRC	0.351 U	1.5 U	0.438 U	0.53 U
Fluoranthene	NRC	0.351 U	1.5 U	0.438 U	0.53 U
Fluorene	NRC	0.351 U	1.5 U	0.438 U	0.53 U
Indeno(1,2,3-cd)pyrene	NRC	0.351 U	1.5 U	0.438 U	0.53 U
Naphthalene	NRC	0.351 U	1.5 U	0.438 U	0.53 U
Phenanthrene	NRC	0.351 U	1.5 U	0.438 U	0.53 U
Pyrene	NRC	0.351 U	1.5 U	0.438 U	0.53 U
OTHER ANALYTES					
Lead	NRC		3.1 =		
Total Petroleum Hydrocarbons	NRC	15.2 U	39.2 =	20.2 J	30 J

NOTES:

May 1998 sampling was performed prior to the new CAP-Part A guidance that was published in May 1998; thus, the new SW-846 analytical methods were not used during that sampling event.

Contract for the September 1998 sampling was prior to the new CAP-Part A guidance that was published in May 1998; thus, the new SW-846 analytical methods were not used during that sampling event.

February 1999 sampling was performed in accordance with the new CAP-Part A guidance that was published in May 1998.

[a] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table A, Column 2)

NRC no regulatory criteria

TPH total petroleum hydrocarbons

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

J Indicates that the value for the compound was an estimated value.

= Indicates that the compound was detected at the concentration reported.

Analytical data sheets associated with the CAP-Part A investigation were provided in the CAP-Part A Report (SAIC 1999).

Table V-B. Summary of CAP-Part B Soil Analytical Results

Station:	GUST	62-11	62-12	62-13	62-14	62-15
Sample ID:	Soil	621111	621211	621311	621411	621511
Sample Interval:	Threshold	4.0 - 5.8	1.0 - 3.0	0.6 - 2.3	2.5 - 3.4	3.0 - 5.0
Collection Date:	Levels[a]	17-Jan-00	17-Jan-00	17-Jan-00	17-Jan-00	17-Jan-00
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS						
Benzene	0.008	0.0012 =	0.0010 U	0.00091 U	0.0010 U	0.00098 U
Toluene	6	0.0034 =	0.0010 U	0.00096 =	0.00046 J	0.00098 U
Ethylbenzene	10	0.0047 =	0.0023 =	0.0022 =	0.0024 =	0.0027 =
Xylenes, Total	700	0.0155 =	0.0056 =	0.0050 =	0.0092 =	0.0120 =
POLYNUCLEAR AROMATIC HYDROCARBONS						
2-Chloronaphthalene	NRC	0.0415 U	0.367 U	0.0347 U	0.0367 U	0.0358 U
Acenaphthene	NRC	0.0415 U	0.367 U	0.0347 U	0.0367 U	0.0358 U
Acenaphthylene	NRC	0.0415 U	0.367 U	0.0347 U	0.0367 U	0.0358 U
Anthracene	NRC	0.0415 U	0.367 U	0.0347 U	0.0367 U	0.0358 U
Benzo(*a*)anthracene	NRC	0.0415 U	0.367 U	0.0347 U	0.0367 U	0.0358 U
Benzo(*a*)pyrene	NRC	0.0415 U	0.367 U	0.0347 U	0.0367 U	0.0358 U
Benzo(*b*)fluoranthene	NRC	0.0415 U	0.367 U	0.0347 U	0.0367 U	0.0358 U
Benzo(*g,h,i*)perylene	NRC	0.0415 U	0.367 U	0.0347 U	0.0367 U	0.0358 U
Benzo(*k*)fluoranthene	NRC	0.0415 U	0.367 U	0.0347 U	0.0367 U	0.0358 U
Chrysene	NRC	0.0415 U	0.367 U	0.0347 U	0.0367 U	0.0358 U
Dibenzo(*a,h*)anthracene	NRC	0.0415 U	0.367 U	0.0347 U	0.0367 U	0.0358 U
Fluoranthene	NRC	0.0415 U	0.367 U	0.0347 U	0.0367 U	0.0358 U
Fluorene	NRC	0.0415 U	0.367 U	0.0347 U	0.0367 U	0.0358 U
Indeno(*1,2,3-cd*)pyrene	NRC	0.0415 U	0.367 U	0.0347 U	0.0367 U	0.0358 U
Naphthalene	NRC	0.0410 J	0.367 U	0.0347 U	0.0367 U	0.0358 U
Phenanthrene	NRC	0.0769 J	0.367 U	0.0347 U	0.0367 U	0.0358 U
Pyrene	NRC	0.0415 U	0.367 U	0.0347 U	0.0367 U	0.0358 U
OTHER ANALYTES						
Lead	NRC	4.8 =	2.3 J	3.1 =	2.2 J	2.2 J
Total Petroleum Hydrocarbons	NRC	4140 =	4.04 U	3.45 U	5.73 U	2.34 U

NOTES:

January 2000 sampling was performed in accordance with the new CAP-Part A guidance that was published in May 1998.

[a] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table A, Column 2)

NRC no regulatory criteria

TPH total petroleum hydrocarbons

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

J Indicates that the value for the compound was an estimated value.

= Indicates that the compound was detected at the concentration reported.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621111

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB007S

Matrix: (soil/water) SOIL Lab Sample ID: 20700003

Sample wt/vol: 6.3 (g/mL) G Lab File ID: 2T107

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: not dec. 20 Date Analyzed: 01/24/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	1.2		=
108-88-3	Toluene	3.4		=
100-41-4	Ethylbenzene	4.7		=
107-02-8	Xylenes (total)	15.5		=

FORM I VOA

DATA VALIDATION COPY

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621111

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB007S

Matrix: (soil/water) SOIL Lab Sample ID: 20700003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 8C510

Level: (low/med) LOW Date Received: 01/15/00

% Moisture: 20 decanted: (Y/N) N Date Extracted: 01/20/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/21/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

USQ

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	41.0	J
91-58-7	2-Chloronaphthalene	41.5	U
208-96-8	Acenaphthylene	41.5	U
83-32-9	Acenaphthene	41.5	U
86-73-7	Fluorene	41.5	U
85-01-8	Phenanthrene	76.9	
120-12-7	Anthracene	41.5	U
206-44-0	Fluoranthene	41.5	U
129-00-0	Pyrene	41.5	U
56-55-3	Benzo(a)anthracene	41.5	U
218-01-9	Chrysene	41.5	U
205-99-2	Benzo(b)fluoranthene	41.5	U
207-08-9	Benzo(k)fluoranthene	41.5	U
50-32-8	Benzo(a)pyrene	41.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	41.5	U
53-70-3	Dibenz(a,h)anthracene	41.5	U
191-24-2	Benzo(g,h,i)perylene	41.5	U

GQ1

GQ1

INORGANIC ANALYSIS DATA PACKAGE

SDG No.: FSAB007S Method Type: SW846

Sample ID: 20700003 Client ID: 621111

Contract: SAIC028 Lab Code: Case No.: SAS No.:

Matrix: SOIL Date Received: 1/18/2000 Level: LOW % Solids: 80.20

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-92-1	Lead	4.8	mg/kg	=		P	0.13	TJA61 Trace ICP1	13100

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Certificate of Analysis

Company : SAIC
Address : 800 Oak Ridge Turnpike
Oak Ridge, TN 37831

Report Date: February 7, 2000

Contact: Ms. Leslie Barbour
Project: CAP-Part A and B UST Sites

Client Sample ID:	621111	Project:	SAIC00200
Sample ID:	20700003	Client ID:	SAIC028
Matrix:	Soil		
Collect Date:	17-JAN-00		
Receive Date:	18-JAN-00		
Collector:	Client		
Moisture:	19.8%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch
Fourier Transform IR Federal										
EPA 418.1 Modified TPH by IR										
Total Petroleum Hydrocarbons		4140	123	10	mg/kg	10	MS1	02/01/00	1500	9719

Notes:
The Qualifiers in this report are defined as follows :

H Holding time exceeded

J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.

R Indicates that a quality control analyte recovery is outside of specified acceptance criteria.

U Indicates the compound was analyzed for but not detected above the detection limit

The above sample is reported on a dry weight basis.
This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc.
standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at 843-556-8171 Ext. 4485.

Reviewed by

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621211

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB007S

Matrix: (soil/water) SOIL Lab Sample ID: 20700002

Sample wt/vol: 5.4 (g/mL) G Lab File ID: 2S511

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: not dec. 9 Date Analyzed: 01/21/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	1.0	U	
108-88-3	Toluene	1.0	U	
100-41-4	Ethylbenzene	2.3		
107-02-8	Xylenes (total)	5.6		

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621211

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB007S

Matrix: (soil/water) SOIL Lab Sample ID: 20700002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 8C509

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: 9 decanted: (Y/N) N Date Extracted:01/20/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/21/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	36.7	U
91-58-7	2-Chloronaphthalene	36.7	U
208-96-8	Acenaphthylene	36.7	U
83-32-9	Acenaphthene	36.7	U
86-73-7	Fluorene	36.7	U
85-01-8	Phenanthrene	36.7	U
120-12-7	Anthracene	36.7	U
206-44-0	Fluoranthene	36.7	U
129-00-0	Pyrene	36.7	U
56-55-3	Benzo(a)anthracene	36.7	U
218-01-9	Chrysene	36.7	U
205-99-2	Benzo(b)fluoranthene	36.7	U
207-08-9	Benzo(k)fluoranthene	36.7	U
50-32-8	Benzo(a)pyrene	36.7	U
193-39-5	Indeno(1,2,3-cd)pyrene	36.7	U
53-70-3	Dibenz(a,h)anthracene	36.7	U
191-24-2	Benzo(g,h,i)perylene	36.7	U

U

TOTAL METALS

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

DG No.: FSAB007S Method Type: SW846

Sample ID: 20700002 Client ID: 621211

Contract: SAIC028 Lab Code: Case No.: SAS No.:

Matrix: SOIL Date Received: 1/18/2000 Level: LOW % Solids: 90.90

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-92-1	Lead	2.3	mg/kg	J	B	P	0.12	TJA61 Trace ICP1	13100

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Certificate of Analysis

Company : SAIC
Address : 800 Oak Ridge Turnpike
Oak Ridge, TN 37831

Report Date: February 7, 2000

Contact: Ms. Leslie Barbour
Project: CAP-Part A and B UST Sites

Client Sample ID:	621211
Sample ID:	20700002
Matrix:	Soil
Collect Date:	17-JAN-00
Receive Date:	18-JAN-00
Collector:	Client
Moisture:	9.1%

Project: SAIC00200
Client ID: SAIC028

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch
Fourier Transform IR Federal											
EPA 418.1 Modified TPH by IR											
Total Petroleum Hydrocarbons	U	4.04	U	10.9	10	mg/kg	1	MSL	02/01/00	1500	9719

Notes:
The Qualifiers in this report are defined as follows :

H Holding time exceeded
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
R Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
U Indicates the compound was analyzed for but not detected above the detection limit

The above sample is reported on a dry weight basis.
This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at 843-556-8171 Ext. 4485.

Reviewed by

DUPLICATE

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621213

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB007S

Matrix: (soil/water) SOIL Lab Sample ID: 20700001

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 2T106

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: not dec. 7 Date Analyzed: 01/24/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	1.1	U	U
108-88-3	Toluene	1.1	U	U
100-41-4	Ethylbenzene	2.5		=
107-02-8	Xylenes (total)	5.9		=

DUPLICATE

EPA SAMPLE NO.

621213

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB007S

Matrix: (soil/water) SOIL Lab Sample ID: 20700001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 8C508

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: 7 decanted: (Y/N) N Date Extracted:01/20/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/21/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	35.7	U
91-58-7	2-Chloronaphthalene	35.7	U
208-96-8	Acenaphthylene	35.7	U
83-32-9	Acenaphthene	35.7	U
86-73-7	Fluorene	35.7	U
85-01-8	Phenanthrene	35.7	U
120-12-7	Anthracene	35.7	U
206-44-0	Fluoranthene	35.7	U
129-00-0	Pyrene	35.7	U
56-55-3	Benzo(a)anthracene	35.7	U
218-01-9	Chrysene	35.7	U
205-99-2	Benzo(b)fluoranthene	35.7	U
207-08-9	Benzo(k)fluoranthene	35.7	U
50-32-8	Benzo(a)pyrene	35.7	U
193-39-5	Indeno(1,2,3-cd)pyrene	35.7	U
53-70-3	Dibenz(a,h)anthracene	35.7	U
191-24-2	Benzo(g,h,i)perylene	35.7	U

U

INORGANIC ANALYSIS DATA PACKAGE

SDG No.: FSAB007S

Method Type: SW846

Sample ID: 20700001

Client ID: 621213

Contract: SAIC028

Lab Code:

Case No.:

SAS No.:

Matrix: SOIL

Date Received: 1/18/2000

Level: LOW

% Solids: 93.30

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-92-1	Lead	1.5	mg/kg	5	B	P	0.11	TJA61 Trace ICP1	13100

Color Before:

Clarity Before:

Texture:

Color After:

Clarity After:

Artifacts:

Comments:

Certificate of Analysis

Company : SAIC
Address : 800 Oak Ridge Turnpike
Oak Ridge, TN 37831

Report Date: February 7, 2000

Contact: Ms. Leslie Barbour
Project: CAP-Part A and B UST Sites

Client Sample ID: 621213
Sample ID: 20700001
Matrix: Soil
Collect Date: 17-JAN-00
Receive Date: 18-JAN-00
Collector: Client
Moisture: 6.67%

Project: SAIC00200
Client ID: SAIC028

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch
Fourier Transform IR Federal											
EPA 418.1 Modified TPH by IR											
Total Petroleum Hydrocarbons	U	1.07	U	10.6	10	mg/kg	1	MS1	02/01/00	1500	9719

Notes:
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H Holding time exceeded
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
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U Indicates the compound was analyzed for but not detected above the detection limit

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This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at 843-556-8171 Ext. 4485.

Reviewed by

DATA VALIDATION
COPY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621311

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB007S

Matrix: (soil/water) SOIL Lab Sample ID: 20700004

Sample wt/vol: 5.8 (g/mL) G Lab File ID: 2S513

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: not dec. 4 Date Analyzed: 01/21/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	0.91	U
108-88-3	Toluene	0.96	
100-41-4	Ethylbenzene	2.2	
107-02-8	Xylenes (total)	5.0	

1D

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621311

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSA3007S

Matrix: (soil/water) SOIL Lab Sample ID: 20700004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 8C511

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: 4 decanted: (Y/N) N Date Extracted:01/20/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/21/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	34.7	U
91-58-7	2-Chloronaphthalene	34.7	U
208-96-8	Acenaphthylene	34.7	U
83-32-9	Acenaphthene	34.7	U
86-73-7	Fluorene	34.7	U
85-01-8	Phenanthrene	34.7	U
120-12-7	Anthracene	34.7	U
206-44-0	Fluoranthene	34.7	U
129-00-0	Pyrene	34.7	U
56-55-3	Benzo(a)anthracene	34.7	U
218-01-9	Chrysene	34.7	U
205-99-2	Benzo(b)fluoranthene	34.7	U
207-08-9	Benzo(k)fluoranthene	34.7	U
50-32-8	Benzo(a)pyrene	34.7	U
193-39-5	Indeno(1,2,3 cd)pyrene	34.7	U
53-70-3	Dibenz(a,h)anthracene	34.7	U
191-24-2	Benzo(g,h,i)perylene	34.7	U

U

INORGANIC ANALYSIS DATA PACKAGE

SDG No.: FSAB007S Method Type: SW846

Sample ID: 20700004 Client ID: 621311

Contract: SAIC028 Lab Code: Case No.: SAS No.:

Matrix: SOIL Date Received: 1/18/2000 Level: LOW % Solids: 95.90

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-92-1	Lead	31	mg/kg		=	P	0.11	TJA61 Trace ICP1	13100

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Certificate of Analysis

Company : SAIC
Address : 800 Oak Ridge Turnpike
Oak Ridge, TN 37831

Report Date: February 7, 2000

Contact: Ms. Leslie Barbour
Project: CAP-Part A and B UST Sites

Client Sample ID:	621311	Project:	SAIC00200
Sample ID:	20700004	Client ID:	SAIC028
Matrix:	Soil		
Collect Date:	17-JAN-00		
Receive Date:	18-JAN-00		
Collector:	Client		
Moisture:	4.06%		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch
Fourier Transform IR Federal											
EPA 418.1 Modified TPH by IR											
Total Petroleum Hydrocarbons	U	3.45	U	10.3	10	mg/kg	1	MS1	02/01/00	1500	9719

Notes:
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H Holding time exceeded

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standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at 843-556-8171 Ext. 4485.

Reviewed by

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621411

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB007S

Matrix: (soil/water) SOIL Lab Sample ID: 20700005

Sample wt/vol: 5.3 (g/mL) G Lab File ID: 2S514

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: not dec. 9 Date Analyzed: 01/21/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	0.46	J
100-41-4	Ethylbenzene	2.4	
107-02-8	Xylenes (total)	9.2	

FORM I VOA OLM03.0

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

621411

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB007S

Matrix: (soil/water) SOIL Lab Sample ID: 20700005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 8C512

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: 9 decanted: (Y/N) N Date Extracted:01/20/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/21/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	36.7	U
91-58-7	2-Chloronaphthalene	36.7	U
208-96-8	Acenaphthylene	36.7	U
83-32-9	Acenaphthene	36.7	U
86-73-7	Fluorene	36.7	U
85-01-8	Phenanthrene	36.7	U
120-12-7	Anthracene	36.7	U
206-44-0	Fluoranthene	36.7	U
129-00-0	Pyrene	36.7	U
56-55-3	Benzo(a)anthracene	36.7	U
218-01-9	Chrysene	36.7	U
205-99-2	Benzo(b)fluoranthene	36.7	U
207-08-9	Benzo(k)fluoranthene	36.7	U
50-32-8	Benzo(a)pyrene	36.7	U
193-39-5	Indeno(1,2,3-cd)pyrene	36.7	U
53-70-3	Dibenz(a,h)anthracene	36.7	U
191-24-2	Benzo(g,h,i)perylene	36.7	U

U

INORGANIC ANALYSIS DATA PACKAGE

SDG No.: FSAB007S Method Type: SW846

Sample ID: 20700005 Client ID: 621411

Contract: SAIC028 Lab Code: Case No.: SAS No.:

Matrix: SOIL Date Received: 1/18/2000 Level: LOW % Solids: 90.80

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-92-1	Lead	2.2	mg/kg	J	B	P	0.12	TJA61 Trace ICP1	13100

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Certificate of Analysis

Company : SAIC
Address : 800 Oak Ridge Turnpike
Oak Ridge, TN 37831

Report Date: February 7, 2000

Contact: Ms. Leslie Barbour
Project: CAP-Part A and B UST Sites

Client Sample ID:	621411	Project:	SAIC00200
Sample ID:	20700005	Client ID:	SAIC028
Matrix:	Soil		
Collect Date:	17-JAN-00		
Receive Date:	18-JAN-00		
Collector:	Client		
Moisture:	9.24%		

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch
Fourier Transform IR Federal										
EPA 418.1 Modified TPH by IR										
Total Petroleum Hydrocarbons	U	5.73	U	10.9	10	mg/kg	1	MS1 02/01/00	1500	9719

Notes:
The Qualifiers in this report are defined as follows :

H Holding time exceeded
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
R Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
U Indicates the compound was analyzed for but not detected above the detection limit

The above sample is reported on a dry weight basis.
This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc.
standard operating procedures. Please direct any questions to your Project Manager. Valerie Davis at 843-556-8171 Ext. 4485.

Reviewed by

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621511

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB007S

Matrix: (soil/water) SOIL Lab Sample ID: 20700006

Sample wt/vol: 5.5 (g/mL) G Lab File ID: 2S515

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: not dec. 7 Date Analyzed: 01/21/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	0.98	U
108-88-3	Toluene	0.98	U
100-41-4	Ethylbenzene	2.7	
107-02-8	Xylenes (total)	12.0	

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: 621511

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB007S

Matrix: (soil/water) SOIL Lab Sample ID: 20700006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 8C513

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: 7 decanted: (Y/N) N Date Extracted: 01/20/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/21/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	35.8	U
91-58-7	2-Chloronaphthalene	35.8	U
208-96-8	Acenaphthylene	35.8	U
83-32-9	Acenaphthene	35.8	U
86-73-7	Fluorene	35.8	U
85-01-8	Phenanthrene	35.8	U
120-12-7	Anthracene	35.8	U
206-44-0	Fluoranthene	35.8	U
129-00-0	Pyrene	35.8	U
56-55-3	Benzo(a)anthracene	35.8	U
218-01-9	Chrysene	35.8	U
205-99-2	Benzo(b)fluoranthene	35.8	U
207-08-9	Benzo(k)fluoranthene	35.8	U
50-32-8	Benzo(a)pyrene	35.8	U
193-39-5	Indeno(1,2,3-cd)pyrene	35.8	U
53-70-3	Dibenz(a,h)anthracene	35.8	U
191-24-2	Benzo(g,h,i)perylene	35.8	U

INORGANIC ANALYSIS DATA PACKAGE

SDG No.: FSAB007S Method Type: SW846

Sample ID: 20700006 Client ID: 621511

Contract: SAIC028 Lab Code: Case No.: SAS No.:

Matrix: SOIL Date Received: 1/18/2000 Level: LOW % Solids: 93.10

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-92-1	Lead	2.2	mg/kg	J	B	P	0.11	TJA61 Trace ICP1	13100

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Certificate of Analysis

Company : SAIC
Address : 800 Oak Ridge Turnpike
Oak Ridge, TN 37831

Report Date: February 7, 2000

Contact: Ms. Leslie Barbour
Project: CAP-Part A and B UST Sites

Client Sample ID:	621511
Sample ID:	20700006
Matrix:	Soil
Collect Date:	17-JAN-00
Receive Date:	18-JAN-00
Collector:	Client
Moisture:	6.91%

Project: SAIC00200
Client ID: SAIC028

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch
Fourier Transform IR Federal										
EPA 418.1 Modified TPH by IR										
Total Petroleum Hydrocarbons	U	2.34	U	10.6	10	mg/kg	1	MS1 02/01/00	1500	9719

Notes:
The Qualifiers in this report are defined as follows :

H Holding time exceeded
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
R Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
U Indicates the compound was analyzed for but not detected above the detection limit

The above sample is reported on a dry weight basis.
This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc.
standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at 843-556-8171 Ext. 4485.

Reviewed by

DATA

Science Applications International Corporation
33 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

1 of 2

CHAIN OF CUSTODY RECORD

COC NO.: D055067

PROJECT NAME: Ft. Stewart USTs D.O. #55

PROJECT NUMBER: 01-1624-04-2352-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	PAH, Lead	Dissolved Iron	TPH	TCLP BTEX	TCLP Lead	VOC	Oil & Grease	Total Phenols	pH	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
021213	1/17/00	1020	soil	1		1		1							3		20700 001
021211	1/17/00	1020		1		1		1							3		002
021111	1/17/00	1710		1		1		1							3		003
021311	1/17/00	1130		1		1		1							3		004
021411	1/17/00	1307		1		1		1							3		005
021511	1/17/00	0910		1		1		1							3		006
FDW0116	1/17/00	1600	water								2	2	2	1	7	20702001	24 Hr. Turn
021112	1/17/00	1745		2		1									3		20703001
021212	1/17/00	1045		2		1									3		002
021312	1/17/00	1145		2		1									3		003
021412	1/17/00	1310		2		1									3		004
021512	1/17/00	0945		2		1									3		005
021612	1/17/00	1550		2		1									3		006

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod, Charleston, SC 29417

PHONE NO: (803) 556 8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
	1/14/00 1121		1/18/00 1407
COMPANY NAME: SAIC		COMPANY NAME: GEL	
RELINQUISHED BY:	Date/Time 1-15-00	RELINQUISHED BY:	Date/Time
COMPANY NAME: SAIC	1121	COMPANY NAME:	
RELINQUISHED BY:	Date/Time 1-15-00	RECEIVED BY:	Date/Time
COMPANY NAME: SAIC	1407	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS:

Cooler ID: #760

Cooler Temperature 4°C

FEDEX NUMBER:

- Oil & Grease and Total Phenols are NOT preserved
- Dissolved Iron samples are preserved w/ HNO_3 to pH < 2

V-33

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APPENDIX VI

ALTERNATE CONCENTRATION LIMIT AND ALTERNATE THRESHOLD LEVEL CALCULATIONS

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1.0 ALTERNATE CONCENTRATION LIMITS

The maximum benzene concentration in groundwater was 82.1 µg/L in May 1998. Benzo(*a*)anthracene, chrysene, naphthalene, and phenanthrene were also selected as COPCs in groundwater. The modeling results for benzene estimated a DAF of 1 for the industrial wastewater line and 48 for the storm drain. The DAFs for benzene were infinity for the drainage ditch and Mill Creek, indicating that contamination will never reach these locations. PAH constituents are much less mobile in the environment than benzene; thus, the DAF of 48 was used to develop ACLs for the PAH constituents. Compound-specific regulatory levels or risk-based screening criteria were used in conjunction with site-specific DAFs identified for the potential migration of contamination from the site to determine the ACL for each compound. The ACLs are presented in Table VI-A along with the maximum observed concentrations for each constituent.

Table VI-A. Alternate Concentration Limits for Contaminants in Groundwater

Contaminant	Regulatory Level (µg/L)	DAF[a]	ACL[b] (µg/L)	Maximum Observed Concentration (µg/L)	
				CAP-Part A	CAP-Part B
Benzene	71.28[c]	1	71.28	**82.1**	23.1
Benzo(*a*)anthracene	0.092[d]	48	4.4	ND	**19.8**
Chrysene	9.2[d]	48	442	ND	112.5
Naphthalene	6.5[d]	48	312	**7860**	47.9
Phenanthrene	182.5[d]	48	8760	7450	117

[a] DAF = maximum benzene observed concentration ÷ predicted benzene concentration at the receptor
= 82.1 ÷ 82.3 ≈ 1 at the industrial wastewater line
= 82.1 ÷ 1.72 ≈ 48 at the storm drain
[b] ACL = regulatory level × DAF
[c] In-Stream Water Quality Standard
[d] risk-based screening criterion
Bold values exceed the calculated ACL.

2.0 ALTERNATE THRESHOLD LEVELS

The highest benzene concentration in soil was 0.0593 mg/kg in sample 620811, which was located at 0.7 – 2.0 feet BGS in boring 62-08. The nearest potential receptor location is an industrial wastewater line, which is located within the area of soil contamination. As discussed in Section 1.0 above, the DAF for the lateral migration of BTEX compounds was determined to be 1 for the industrial wastewater line. Since the soil contamination is located at or above the water, the dilution for migration of leachate to the water table was calculated using SESOIL modeling. The ATLs for soil are presented in Table VI-B along with the maximum observed concentrations for benzene.

The ATL for benzene can be calculated using the following steps:

- Step 1 – calculate the fractional organic carbon content of the contaminated soil:

$$f_{cs} = \left(TOC + \frac{TPH_{avg}}{1.724}\right) \times 1E-06 = \left(1987\ mg/kg + \frac{1400\ mg/kg}{1.724}\right) \times 1E-06 = 0.0028\ \text{(dimensionless)}$$

- Step 2 – calculate the contaminant concentration in soil pore water directly in contact with contaminated soil:

$$C_w = \frac{C_s}{K_{oc} \times f_{cs}} = \frac{0.0593 \text{ mg / kg}}{(81 \text{ ml / g})(0.0028)} = 0.2614 \text{ mg / L}$$

- Step 3 – calculate the DAF based on the SESOIL–predicted maximum contaminant concentration in groundwater:

$$DAF = \frac{C_w}{C_{max,w}} = \frac{0.2614 \text{ mg / L}}{0.018 \text{ mg / L}} = 14.5 \text{ (dimensionless)}$$

- Step 4 – calculate the ATL:

$ATL = (K_{oc})\,(f_{cs})\,(C_{std})\,(DAF_l)\,(DAF_w)$

where

K_{oc} = organic carbon partitioning coefficient (GUST CAP-Part A Guidance, Appendix I, Table 1)
f_{cs} = fractional organic carbon content (calculated in step 1)
C_{std} = applicable water quality standard
DAF_w = DAF for the lateral migration of groundwater
DAF_l = DAF for the vertical migration of leachate

Constituent	K_{oc} (mL/g)	f_{cs}	C_{std} (mg/L)	DAF_l	DAF_w	Calculated ATL (mg/kg)
Benzene	81	0.0028	0.07128[a]	14.5	1	0.234

[a] In-Stream Water Quality Standard.

Table VI-B. Alternate Threshold Levels for Contaminated Soil

Constituent	ATL (mg/kg)	Maximum Observed Concentration (mg/kg)	
		CAP-Part A	CAP-Part B
Benzene	0.234	0.0593	0.0012

Bold values exceed the calculated ATL.

APPENDIX VII

MONITORING WELL DETAILS

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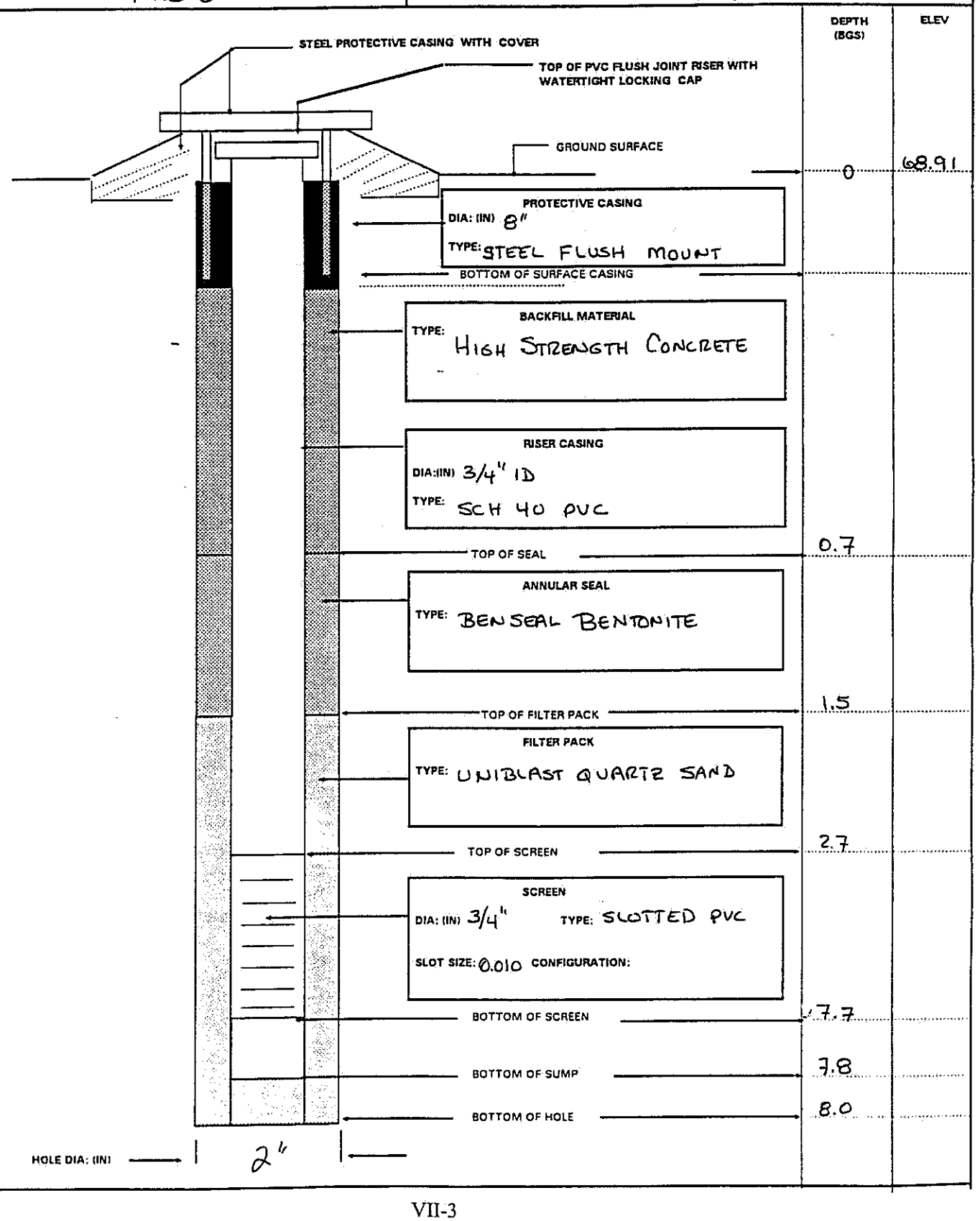
MONITORING WELL

PROJECT: UST 100B

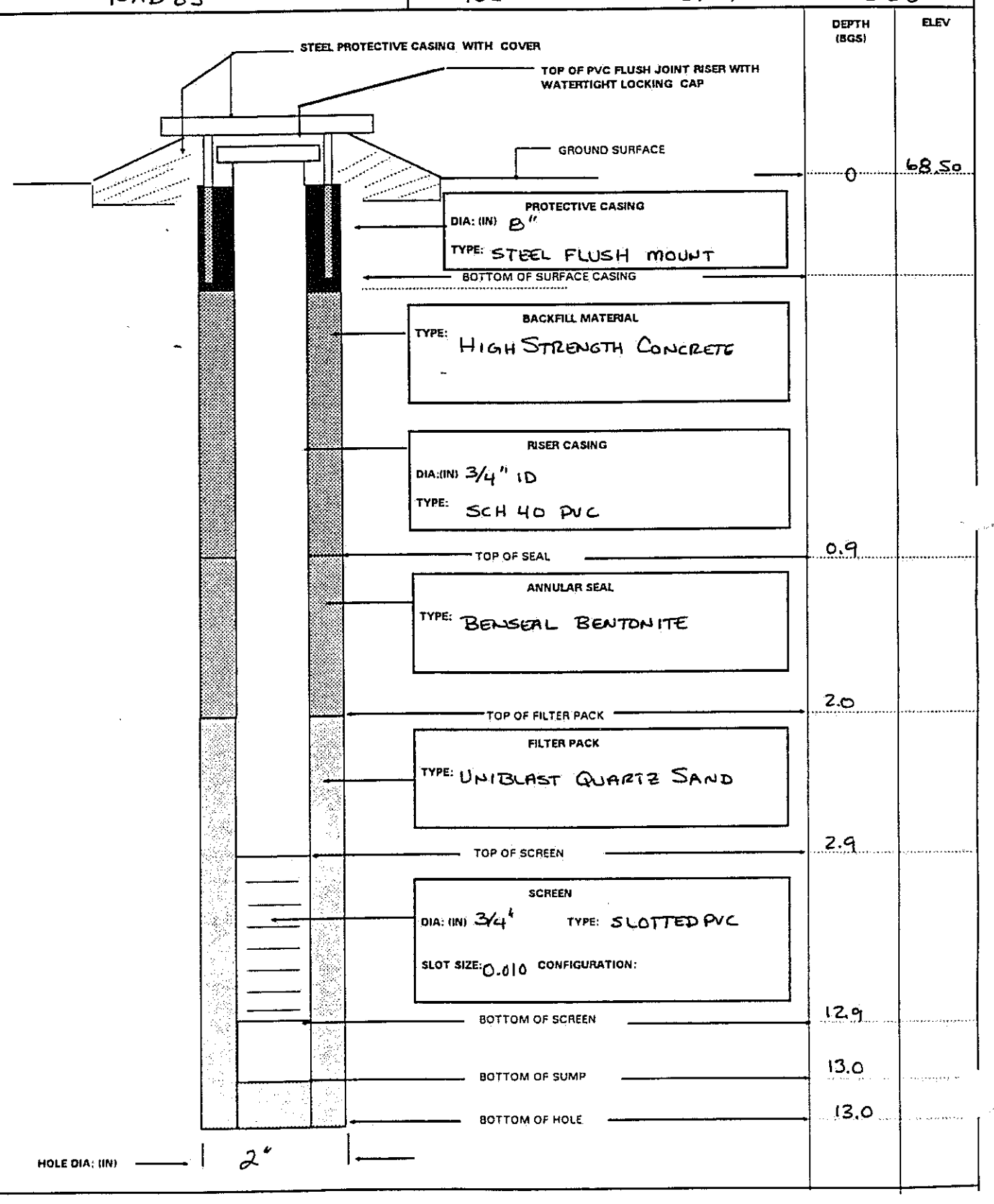
WELL NUMBER: 62-11	BEGIN: 1/17/00	END: 1/17/00	
COORDINATES: N: 684650.25 E: 821857.41	REFERENCE POINT: TOC	ELEVATION: 68.57	DATUM/UNITS: NGVD88
DATUM/UNITS: NAD 83			



MONITORING WELL

PROJECT: UST 100B

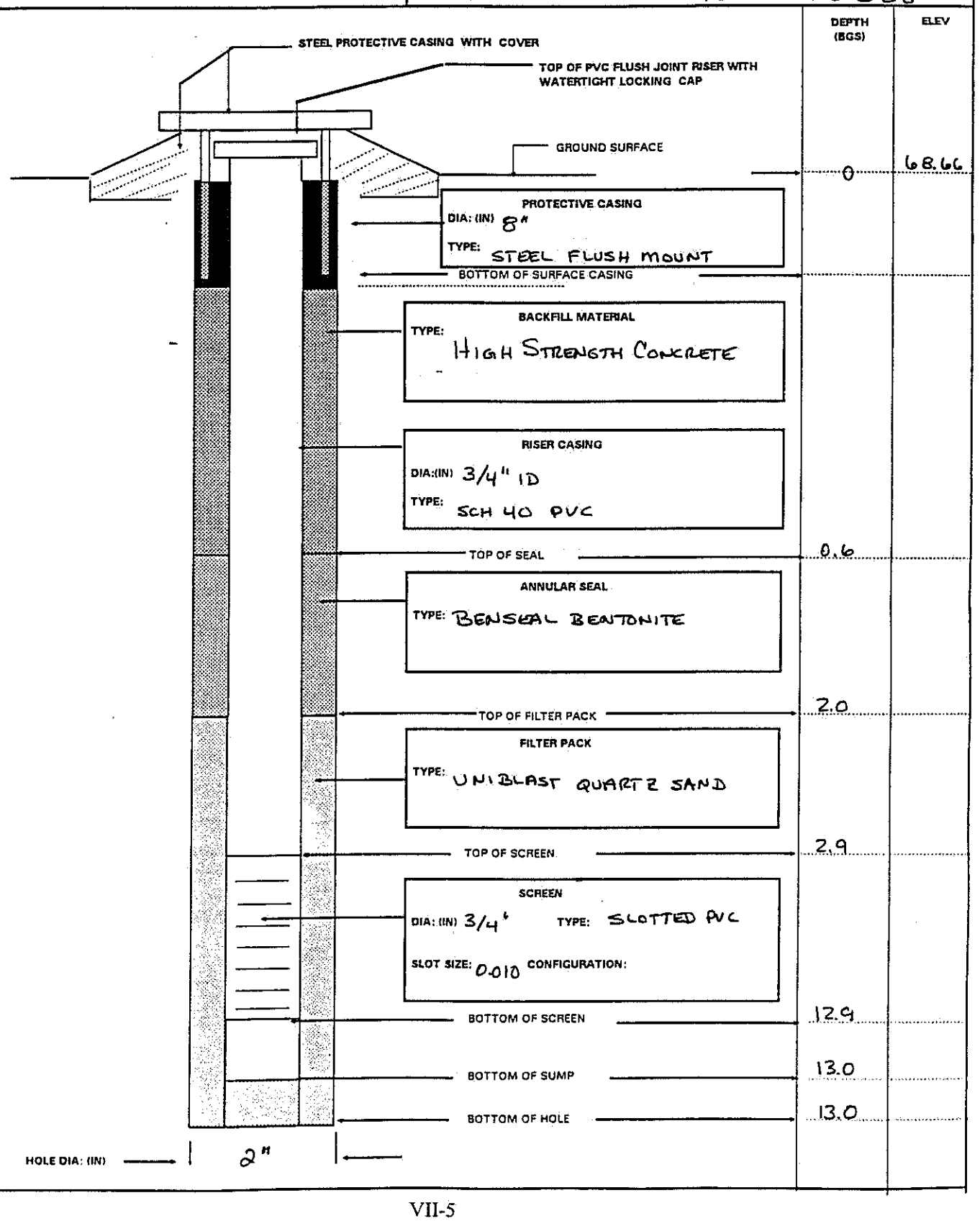
WELL NUMBER: 62-12	BEGIN: 1/17/00	END: 1/17/00
COORDINATES: N: 684582.96 E: 821855.01	REFERENCE POINT: TOC	ELEVATION: 68.24
DATUM/UNITS: NAD 83		DATUM/UNITS: NGVD 88



MONITORING WELL

PROJECT: UST 100B

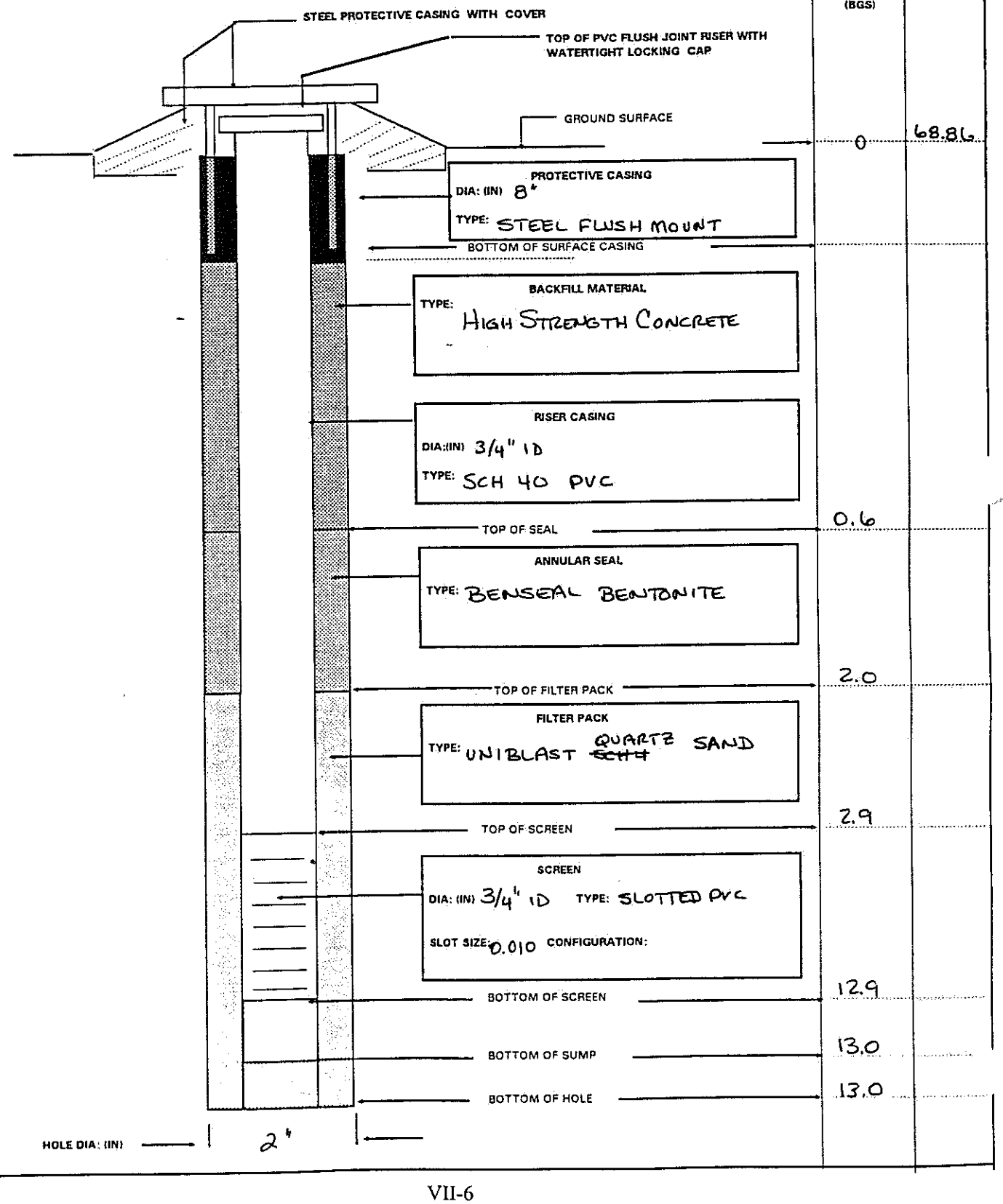
WELL NUMBER: 62-13	BEGIN: 1/17/00	END: 1/17/00
COORDINATES: N: 684575.94 E: 821824.34	REFERENCE POINT: TOC	ELEVATION: 68.42
DATUM/UNITS: NAD83		DATUM/UNITS: NGVD 88



MONITORING WELL

PROJECT: UST100B

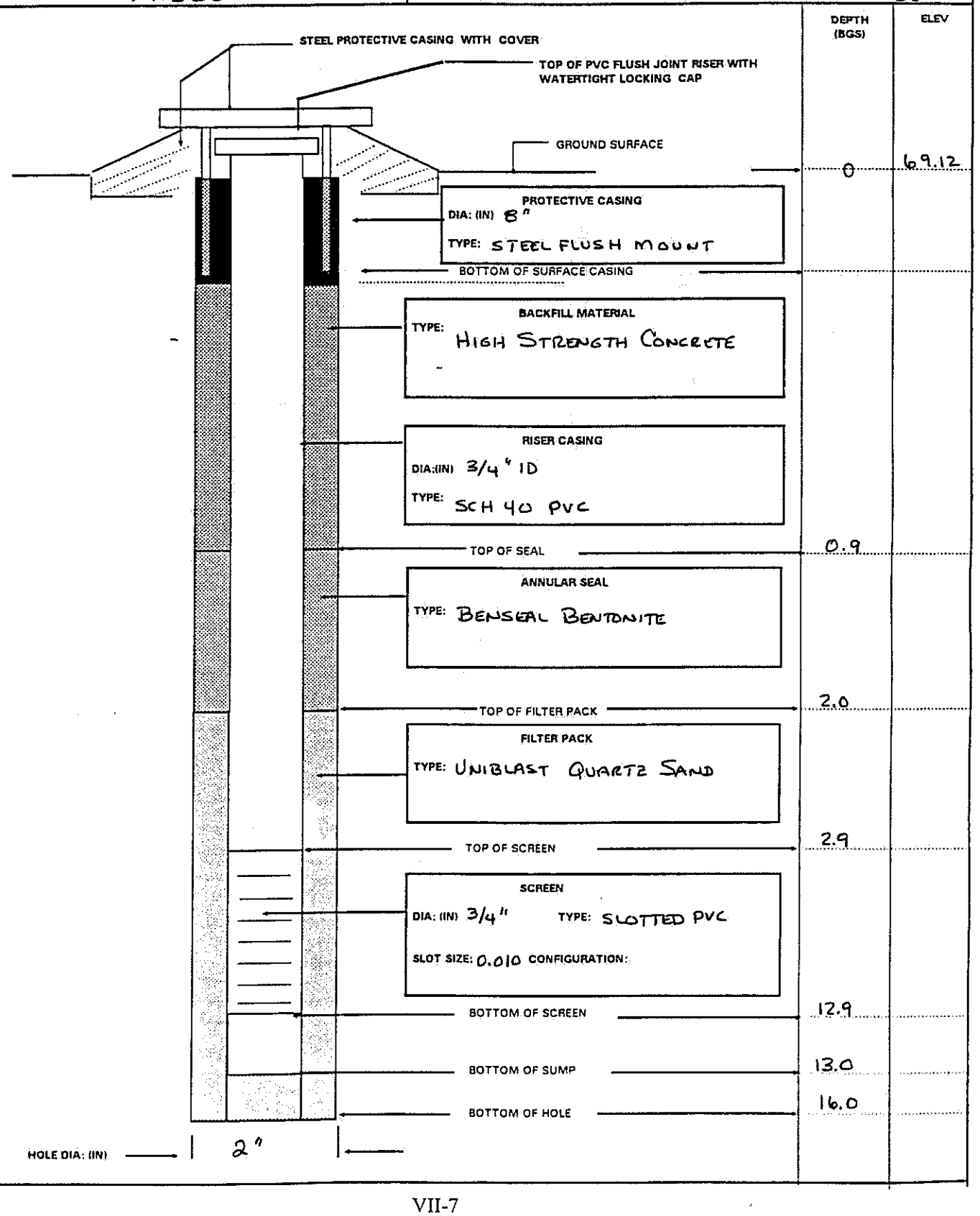
WELL NUMBER: 62-14		BEGIN: 1/17/00	END: 1/17/00
COORDINATES:	N: 684589.07 E: 821806.33	REFERENCE POINT:	ELEVATION: / DATUM/UNITS:
DATUM/UNITS: NAD83		TOC	68.52 NGVD88



MONITORING WELL

PROJECT: UST 100B

WELL NUMBER: 62-15	BEGIN: 1/17/00	END: 1/17/00
COORDINATES: N: 684610.91 E: 821809.34	REFERENCE POINT: TOC	ELEVATION: 68.76
DATUM/UNITS: NAD83		DATUM/UNITS: NGVD88



MONITORING WELL

PROJECT: UST 100 B

WELL NUMBER: 62-16

COORDINATES: N: 684695.62
E: 821829.93

DATUM/UNITS: NAD83

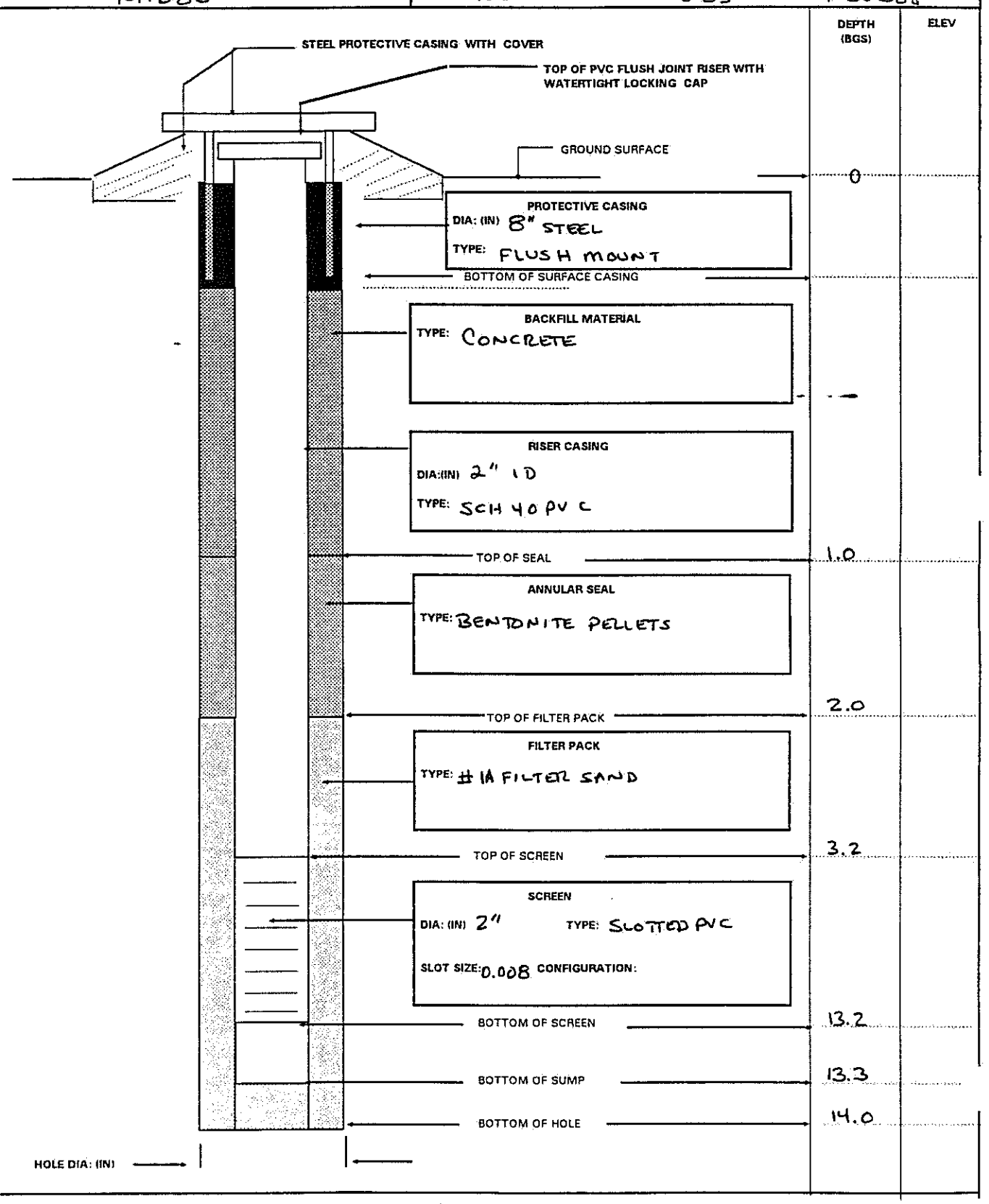
BEGIN: 11/19/99

END: 11/19/99

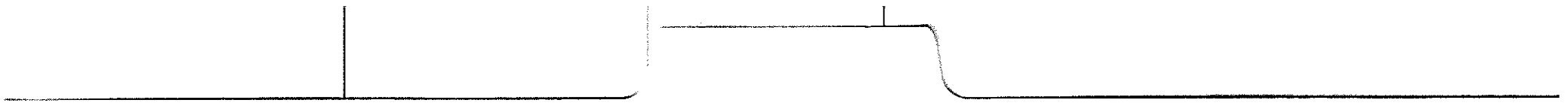
REFERENCE POINT: TOC

ELEVATION: 68.33

DATUM/UNITS: NGVD88



APPENDIX VIII



APPENDIX VIII

GROUNDWATER LABORATORY RESULTS

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Table VIII-A. Summary of CAP-Part A Groundwater and Surface Water Analytical Results

Station:		In-Stream	62-01	62-02	62-03	62-04	62-05
Sample ID:		Water	620112	620212	620312	620412	620512
Screened Interval (ft BGS):	Federal	Quality	2.0 - 12.0	2.0 - 12.0	0.0 - 13.7	0.0 - 13.5	0.0 - 12.5
Collection Date:	MCLs[a]	Standards[b]	07-May-98	07-May-98	20-Sep-98	20-Sep-98	18-Sep-98
Units:	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS							
Benzene	5	71.28	7.8 =	6.1 =	3.9 =	2 U	2 U
Toluene	1000	200000	77.3 =	6.6 =	2 U	2 U	7.5 =
Ethylbenzene	700	28718	20 =	6.9 =	2 U	2 U	2 U
Xylenes, Total	10000	-	113 =	36.1 =	6 U	6 U	1.1 J
POLYNUCLEAR AROMATIC HYDROCARBONS							
2-Chloronaphthalene	-	-	404 U	10.6 U	10 U	10.2 U	10.3 U
Acenaphthene	-	-	404 U	10.6 U	10 U	10.2 U	10.3 U
Acenaphthylene	-	-	404 U	10.6 U	10 U	10.2 U	10.3 U
Anthracene	-	110000	404 U	10.6 U	10 U	10.2 U	10.3 U
Benzo(a)anthracene	-	0.0311	404 U	10.6 U	10 U	10.2 U	10.3 U
Benzo(a)pyrene	0.2	0.0311	404 U	10.6 U	10 U	10.2 U	10.3 U
Benzo(b)fluoranthene	-	-	404 U	10.6 U	10 U	10.2 U	10.3 U
Benzo(g,h,i)perylene	-	-	404 U	10.6 U	10 U	10.2 U	10.3 U
Benzo(k)fluoranthene	-	0.0311	404 U	10.6 U	10 U	10.2 U	10.3 U
Chrysene	-	0.0311	404 U	10.6 U	10 U	10.2 U	10.3 U
Dibenzo(a,h)anthracene	-	0.0311	404 U	10.6 U	10 U	10.2 U	10.3 U
Fluoranthene	-	370	404 U	10.6 U	10 U	10.2 U	10.3 U
Fluorene	-	14000	404 U	7.9 J	10 U	10.2 U	10.3 U
Indeno(1,2,3-cd)pyrene	-	0.0311	404 U	10.6 U	10 U	10.2 U	10.3 U
Naphthalene	-	-	323 J	48 =	10 U	10.2 U	10.3 U
Phenanthrene	-	-	340 J	24.5 =	10 U	10.2 U	10.3 U
Pyrene	-	11000	404 U	9 J	10 U	10.2 U	10.3 U

NOTES:

May 1998 sampling was performed prior to the new CAP-Part A guidance that was published in May 1998; thus, the new SW-846 analytical methods were not used during that sampling event.

Contract for the September 1998 sampling was prior to the new CAP-Part A guidance that was published in May 1998; thus, the new SW-846 analytical methods were not used during that sampling event.

February 1999 sampling was conducted in accordance with the new CAP-Part A guidance that was published in May 1998.

Elevated PAH detection limits are a result of associated organic content such as TPH or other organic compounds. During extraction of the PAH compounds, all other organic compounds are extracted, causing a wide range of organic compounds to be present; thus, the target PAHs become small peaks in the chromatograph. As a result, the laboratory dilutes the concentrate, in turn elevating the detection limit.

[a] U.S. Environmental Protection Agency MCL

[b] GA EPD In-Stream Water Quality Standards (Chapter 391-03-6.03)

BGS below ground surface

MCL maximum contaminant level

NRC no regulatory criteria

Laboratory Qualifiers

U Indicates the compound was not detected at the concentration reported.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

J Indicates the value for the compound is an estimated value.

= Indicates the compound was detected at the concentration reported.

Table VIII-A. Summary of CAP-Part A Groundwater and Surface Water Analytical Results (continued)

Station:		In-Stream	62-06	62-07	62-07	62-07	62-07
Sample ID:		Water	620612	620712	620722	620732	620742
Screened Interval (ft BGS):	Federal	Quality	0.1 - 10.1	6.0 - 10.0	11.0 - 15.0	16.0 - 20.0	21.0 - 25.0
Collection Date:	MCLs[a]	Standards[b]	20-Sep-98	18-Sep-98	18-Sep-98	18-Sep-98	18-Sep-98
Units:	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS							
Benzene	5	71.28	82.1 =	32.1 J	2 U	2 U	2 U
Toluene	1000	200000	197 =	150 J	5.8 =	11 =	2 U
Ethylbenzene	700	28718	52.1 =	28.1 J	2.9 =	4.1 J	2 U
Xylenes, Total	10000	-	229 =	153 J	9 =	26.3 =	6 U
POLYNUCLEAR AROMATIC HYDROCARBONS							
2-Chloronaphthalene	-	-	9900 U	111 U	10.2 U	10.4 U	10.6 U
Acenaphthene	-	-	9900 U	111 U	10.2 U	10.4 U	10.6 U
Acenaphthylene	-	-	9900 U	111 U	10.2 U	10.4 U	10.6 U
Anthracene	-	110000	9900 U	111 U	10.2 U	10.4 U	10.6 U
Benzo(a)anthracene	-	0.0311	9900 U	111 U	10.2 U	10.4 U	10.6 U
Benzo(a)pyrene	0.2	0.0311	9900 U	111 U	10.2 U	10.4 U	10.6 U
Benzo(b)fluoranthene	-	-	9900 U	111 U	10.2 U	10.4 U	10.6 U
Benzo(g,h,i)perylene	-	-	9900 U	111 U	10.2 U	10.4 U	10.6 U
Benzo(k)fluoranthene	-	0.0311	9900 U	111 U	10.2 U	10.4 U	10.6 U
Chrysene	-	0.0311	9900 U	111 U	10.2 U	10.4 U	10.6 U
Dibenzo(a,h)anthracene	-	0.0311	9900 U	111 U	10.2 U	10.4 U	10.6 U
Fluoranthene	-	370	9900 U	111 U	10.2 U	10.4 U	10.6 U
Fluorene	-	14000	9900 U	111 U	10.2 U	10.4 U	10.6 U
Indeno(1,2,3-cd)pyrene	-	0.0311	9900 U	111 U	10.2 U	10.4 U	10.6 U
Naphthalene	-	-	7860 J	111 U	8.8 J	10.4 U	10.6 U
Phenanthrene	-	-	7450 J	111 U	10.2 U	10.4 U	10.6 U
Pyrene	-	11000	9900 U	111 U	10.2 U	10.4 U	10.6 U

NOTES:

May 1998 sampling was performed prior to the new CAP-Part A guidance that was published in May 1998; thus, the new SW-846 analytical methods were not used during that sampling event.

Contract for the September 1998 sampling was prior to the new CAP-Part A guidance that was published in May 1998; thus, the new SW-846 analytical methods were not used during that sampling event.

February 1999 sampling was conducted in accordance with the new CAP-Part A guidance that was published in May 1998.

Elevated PAH detection limits are a result of associated organic content such as TPH or other organic compounds. During extraction of the PAH compounds, all other organic compounds are extracted, causing a wide range of organic compounds to be present; thus, the target PAHs become small peaks in the chromatograph. As a result, the laboratory dilutes the concentrate, in turn elevating the detection limit.

[a] U.S. Environmental Protection Agency MCL

[b] GA EPD In-Stream Water Quality Standards (Chapter 391-03-6.03)

BGS below ground surface

MCL maximum contaminant level

NRC no regulatory criteria

Laboratory Qualifiers

U Indicates the compound was not detected at the concentration reported.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

J Indicates the value for the compound is an estimated value.

= Indicates the compound was detected at the concentration reported.

Table VIII-A. Summary of CAP-Part A Groundwater and Surface Water Analytical Results (continued)

Station:		In-Stream	62-08	62-09	62-10	62-S2
Sample ID:		Water	620812	620912	621012	62S219
Screened Interval (ft BGS):	Federal	Quality	0.0 - 10.5	0.4 - 15.4	0.0 - 11.4	Surface Water
Collection Date:	MCLs[a]	Standards[b]	17-Feb-99	17-Feb-99	21-Feb-99	18-Sep-98
Units:	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS						
Benzene	5	71.28	47 =	2.7 =	27.1 =	2 U
Toluene	1000	200000	20.4 =	2 U	8 =	2 U
Ethylbenzene	700	28718	23.2 =	2 U	22.5 =	2 U
Xylenes, Total	10000	-	104 =	2.2 J	67.2 =	6 U
POLYNUCLEAR AROMATIC HYDROCARBONS						
2-Chloronaphthalene	-	-	14.3 U	10.3 U	13 U	10.1 U
Acenaphthene	-	-	2.4 J	10.3 U	2 J	10.1 U
Acenaphthylene	-	-	14.3 U	10.3 U	13 U	10.1 U
Anthracene	-	110000	14.3 U	10.3 U	13 U	10.1 U
Benzo(a)anthracene	-	0.0311	14.3 U	10.3 U	13 U	10.1 U
Benzo(a)pyrene	0.2	0.0311	14.3 U	10.3 U	13 U	10.1 U
Benzo(b)fluoranthene	-	-	14.3 U	10.3 U	13 U	10.1 U
Benzo(g,h,i)perylene	-	-	14.3 U	10.3 U	13 U	10.1 U
Benzo(k)fluoranthene	-	0.0311	14.3 U	10.3 U	13 U	10.1 U
Chrysene	-	0.0311	14.3 U	10.3 U	13 U	10.1 U
Dibenzo(a,h)anthracene	-	0.0311	14.3 U	10.3 U	13 U	10.1 U
Fluoranthene	-	370	14.3 U	10.3 U	13 U	10.1 U
Fluorene	-	14000	3.3 J	10.3 U	2.7 J	10.1 U
Indeno(1,2,3-cd)pyrene	-	0.0311	14.3 U	10.3 U	13 U	10.1 U
Naphthalene	-	-	37.2 =	11.2 =	35.1 =	10.1 U
Phenanthrene	-	-	5.2 J	10.3 U	3.3 J	10.1 U
Pyrene	-	11000	0.95 J	10.3 U	13 U	10.1 U

NOTES:

May 1998 sampling was performed prior to the new CAP-Part A guidance that was published in May 1998; thus, the new SW-846 analytical methods were not used during that sampling event.

Contract for the September 1998 sampling was prior to the new CAP-Part A guidance that was published in May 1998; thus, the new SW-846 analytical methods were not used during that sampling event.

February 1999 sampling was conducted in accordance with the new CAP-Part A guidance that was published in May 1998.

Elevated PAH detection limits are a result of associated organic content such as TPH or other organic compounds. During extraction of the PAH compounds, all other organic compounds are extracted, causing a wide range of organic compounds to be present; thus, the target PAHs become small peaks in the chromatograph. As a result, the laboratory dilutes the concentrate, in turn elevating the detection limit.

[a] U.S. Environmental Protection Agency MCL

[b] GA EPD In-Stream Water Quality Standards (Chapter 391-03-6.03)

BGS below ground surface

MCL maximum contaminant level

NRC no regulatory criteria

Laboratory Qualifiers

U Indicates the compound was not detected at the concentration reported.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

J Indicates the value for the compound is an estimated value.

= Indicates the compound was detected at the concentration reported.

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Analytical data sheets associated with the CAP-Part A investigation were provided in the CAP-Part A Report (SAIC 1999).

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Table VIII-B. Summary of CAP-Part B Groundwater Analytical Results

Station:		In-Stream	62-11	62-12	62-13	62-14	62-15	62-16
Sample ID:	Federal	Water	621112	621212	621312	621412	621512	621612
Sample Interval:	SDWA	Quality	2.7 - 7.7	2.9 - 12.9	2.9 - 12.9	2.9 - 12.9	2.9 - 12.9	3.2 - 13.2
Collection Date:	MCLs[a]	Standards[b]	17-Jan-00	17-Jan-00	17-Jan-00	17-Jan-00	17-Jan-00	17-Jan-00
Units:	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS								
Benzene	5	71.28	23.1 =	3 =	17.2 =	1 U	0.22 J	1 U
Toluene	1000	200000	110 =	0.28 J	0.58 J	1 U	0.32 J	1 U
Ethylbenzene	700	28718	27.7 =	2.2 =	8.3 =	2.2 =	2.3 =	1 U
Xylenes, Total	10000	NRC	133 =	9.1 =	27.9 =	5.4 =	9.1 =	3 U
POLYNUCLEAR AROMATIC HYDROCARBONS								
2-Chloronaphthalene	NRC	NRC	18.9 U	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Acenaphthene	NRC	NRC	24.2 =	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Acenaphthylene	NRC	NRC	18.9 U	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Anthracene	NRC	110000	22.3 =	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Benzo(a)anthracene	NRC	0.0311	19.8 =	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Benzo(a)pyrene	0.2	0.0311	18.9 U	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Benzo(b)fluoranthene	NRC	NRC	18.9 U	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Benzo(g,h,i)perylene	NRC	NRC	18.9 U	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Benzo(k)fluoranthene	NRC	0.0311	18.9 U	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Chrysene	NRC	0.0311	12.5 J	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Dibenzo(a,h)anthracene	NRC	0.0311	18.9 U	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Fluoranthene	NRC	370	94.6 =	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Fluorene	NRC	14000	21.5 =	1.3 U	1.2 J	1 U	1.3 U	1.4 UJ
Indeno(1,2,3-cd)pyrene	NRC	0.0311	18.9 U	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Naphthalene	NRC	NRC	47.9 =	15.1 =	32.6 =	1 U	3.2 =	1.4 UJ
Phenanthrene	NRC	NRC	117 =	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
Pyrene	NRC	11000	67.2 =	1.3 U	1.2 U	1 U	1.3 U	1.4 UJ
OTHER ANALYTES								
Iron (dissolved)			87700 =	2600 =	5190 =	4770 =	8590 =	2550 =

NOTES:

[a] U.S. Environmental Protection Agency MCL
[b] GA EPD In-Stream Water Quality Standards (Chapter 391-03-6.03)
BGS below ground surface
MCL maximum contaminant level
NRC no regulatory criteria
SDWA Safe Drinking Water Act

Laboratory Qualifiers

U Indicates the compound was not detected at the concentration reported.
UJ Indicates that the compound was not detected above an approximated sample quantitation limit.
J Indicates the value for the compound is an estimated value.
= Indicates the compound was detected at the concentration reported.

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621112

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB009W

Matrix: (soil/water) WATER Lab Sample ID: 20703001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2T124

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: not dec. _____ Date Analyzed: 01/24/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 5.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	23.1		=
108-88-3	Toluene	110		=
100-41-4	Ethylbenzene	27.7		=
107-02-8	Xylenes (total)	133		=

DATA VALIDATION
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621112

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB009W

Matrix: (soil/water) WATER Lab Sample ID: 20703013

Sample wt/vol: 530.0 (g/mL) ML Lab File ID: 5C412

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: _____ decanted: (Y/N)___ Date Extracted:01/19/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/20/00

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	47.9	
91-58-7	2-Chloronaphthalene	18.9	U
208-96-8	Acenaphthylene	18.9	U
83-32-9	Acenaphthene	24.2	
86-73-7	Fluorene	21.5	
85-01-8	Phenanthrene	117	
120-12-7	Anthracene	22.3	
206-44-0	Fluoranthene	94.6	
129-00-0	Pyrene	67.2	
56-55-3	Benzo(a)anthracene	19.8	
218-01-9	Chrysene	12.5	J
205-99-2	Benzo(b)fluoranthene	18.9	U
207-08-9	Benzo(k)fluoranthene	18.9	U
50-32-8	Benzo(a)pyrene	18.9	U
193-39-5	Indeno(1,2,3-cd)pyrene	18.9	U
53-70-3	Dibenz(a,h)anthracene	18.9	U
191-24-2	Benzo(g,h,i)perylene	18.9	U

FORM I SV-1 OLM03.0

TOTAL METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

G No.: FSAB009W Method Type: SW846

Sample ID: 20703001 Client ID: 621112

Contract: SAIC028 Lab Code: Case No.: SAS No.:

Matrix: WATER Date Received: 1/18/2000 Level: LOW % Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	87700	µg/L			P	3.99	TJA61 Trace ICP2	13100

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

DATA VALIDATION
COPY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621212

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB009W

Matrix: (soil/water) WATER Lab Sample ID: 20703002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2T112

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: not dec. _____ Date Analyzed: 01/24/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	3.0	
108-88-3	Toluene	0.28	J
100-41-4	Ethylbenzene	2.2	
107-02-8	Xylenes (total)	9.1	

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621212

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB009W

Matrix: (soil/water) WATER Lab Sample ID: 20703011

Sample wt/vol: 750.0 (g/mL) ML Lab File ID: 5C410

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: _____ decanted: (Y/N)___ Date Extracted:01/19/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/20/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	15.1	
91-58-7	2-Chloronaphthalene	1.3	U
208-96-8	Acenaphthylene	1.3	U
83-32-9	Acenaphthene	1.3	U
86-73-7	Fluorene	1.3	U
85-01-8	Phenanthrene	1.3	U
120-12-7	Anthracene	1.3	U
206-44-0	Fluoranthene	1.3	U
129-00-0	Pyrene	1.3	U
56-55-3	Benzo(a)anthracene	1.3	U
218-01-9	Chrysene	1.3	U
205-99-2	Benzo(b)fluoranthene	1.3	U
207-08-9	Benzo(k)fluoranthene	1.3	U
50-32-8	Benzo(a)pyrene	1.3	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.3	U
53-70-3	Dibenz(a,h)anthracene	1.3	U
191-24-2	Benzo(g,h,i)perylene	1.3	U

C =

TOTAL METALS

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

SDG No.: FSAB009W

Method Type: SW846

Sample ID: 20703002

Client ID: 621212

Contract: SAIC028

Lab Code:

Case No.:

SAS No.:

Matrix: WATER

Date Received: 1/18/2000

Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	2600	µg/L	=		P	2.00	TJA61 Trace ICP2	13100

Color Before:

Clarity Before:

Texture:

Color After:

Clarity After:

Artifacts:

Comments:

DATA VALIDATION COPY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621312

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB009W

Matrix: (soil/water) WATER Lab Sample ID: 20703003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2T113

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: not dec. _____ Date Analyzed: 01/24/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	17.2		9
108-88-3	Toluene	0.58	J	
100-41-4	Ethylbenzene	8.3		
107-02-8	Xylenes (total)	27.9		

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621312

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB009W

Matrix: (soil/water) WATER Lab Sample ID: 20703014

Sample wt/vol: 800.0 (g/mL) ML Lab File ID: 5C413

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: _____ decanted: (Y/N)___ Date Extracted:01/19/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/20/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	32.6	
91-58-7	2-Chloronaphthalene	1.2	U
208-96-8	Acenaphthylene	1.2	U
83-32-9	Acenaphthene	1.2	U
86-73-7	Fluorene	1.2	J
85-01-8	Phenanthrene	1.2	U
120-12-7	Anthracene	1.2	U
206-44-0	Fluoranthene	1.2	U
129-00-0	Pyrene	1.2	U
56-55-3	Benzo(a)anthracene	1.2	U
218-01-9	Chrysene	1.2	U
205-99-2	Benzo(b)fluoranthene	1.2	U
207-08-9	Benzo(k)fluoranthene	1.2	U
50-32-8	Benzo(a)pyrene	1.2	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.2	U
53-70-3	Dibenz(a,h)anthracene	1.2	U
191-24-2	Benzo(g,h,i)perylene	1.2	U

C4 → C11

INORGANIC ANALYSIS DATA PACKAGE

SDG No.: FSAB009W Method Type: SW846

Sample ID: 20703003 Client ID: 621312

Contract: SAIC028 Lab Code: Case No.: SAS No.:

Matrix: WATER Date Received: 1/18/2000 Level: LOW % Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	5190	µg/L	=		P	2.00	TJA61 Trace ICP2	13100

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621412

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB009W

Matrix: (soil/water) WATER Lab Sample ID: 20703004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2T114

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: not dec. _____ Date Analyzed: 01/24/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	1.0	U	U
100-41-4	Ethylbenzene	2.2		=
107-02-8	Xylenes (total)	5.4		=

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621412

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB009W

Matrix: (soil/water) WATER Lab Sample ID: 20703009

Sample wt/vol: 970.0 (g/mL) ML Lab File ID: 5C408

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: _____ decanted: (Y/N)___ Date Extracted:01/19/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/20/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1.0	U
91-58-7	2-Chloronaphthalene	1.0	U
208-96-8	Acenaphthylene	1.0	U
83-32-9	Acenaphthene	1.0	U
86-73-7	Fluorene	1.0	U
85-01-8	Phenanthrene	1.0	U
120-12-7	Anthracene	1.0	U
206-44-0	Fluoranthene	1.0	U
129-00-0	Pyrene	1.0	U
56-55-3	Benzo(a)anthracene	1.0	U
218-01-9	Chrysene	1.0	U
205-99-2	Benzo(b)fluoranthene	1.0	U
207-08-9	Benzo(k)fluoranthene	1.0	U
50-32-8	Benzo(a)pyrene	1.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	U
53-70-3	Dibenz(a,h)anthracene	1.0	U
191-24-2	Benzo(g,h,i)perylene	1.0	U

U

INORGANIC ANALYSIS DATA PACKAGE

SDG No.: FSAB009W

Method Type: SW846

Sample ID: 20703004

Client ID: 621412

Contract: SAIC028

Lab Code:

Case No.:

SAS No.:

Matrix: WATER

Date Received: 1/18/2000

Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	4770	µg/L	=		P	2.00	TJA61 Trace ICP2	13100

Color Before:

Clarity Before:

Texture:

Color After:

Clarity After:

Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621512

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB009W

Matrix: (soil/water) WATER Lab Sample ID: 20703005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2T115

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: not dec. _____ Date Analyzed: 01/24/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	0.22	J
108-88-3	Toluene	0.32	J
100-41-4	Ethylbenzene	2.3	
107-02-8	Xylenes (total)	9.1	

54 = =

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621512

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB009W

Matrix: (soil/water) WATER Lab Sample ID: 20703010

Sample wt/vol: 750.0 (g/mL) ML Lab File ID: 5C409

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: _____ decanted: (Y/N)___ Date Extracted:01/19/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/20/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	3.2	
91-58-7	2-Chloronaphthalene	1.3	U
208-96-8	Acenaphthylene	1.3	U
83-32-9	Acenaphthene	1.3	U
86-73-7	Fluorene	1.3	U
85-01-8	Phenanthrene	1.3	U
120-12-7	Anthracene	1.3	U
206-44-0	Fluoranthene	1.3	U
129-00-0	Pyrene	1.3	U
56-55-3	Benzo(a)anthracene	1.3	U
218-01-9	Chrysene	1.3	U
205-99-2	Benzo(b)fluoranthene	1.3	U
207-08-9	Benzo(k)fluoranthene	1.3	U
50-32-8	Benzo(a)pyrene	1.3	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.3	U
53-70-3	Dibenz(a,h)anthracene	1.3	U
191-24-2	Benzo(g,h,i)perylene	1.3	U

FORM I SV-1 OLM03.0

TOTAL METALS

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

)G No.: FSAB009W Method Type: SW846

Sample ID: 20703005 Client ID: 621512

Contract: SAIC028 Lab Code: Case No.: SAS No.:

Matrix: WATER Date Received: 1/18/2000 Level: LOW % Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	8590	µg/L			P	2.00	TJA61 Trace ICP2	13100

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621612

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB009W

Matrix: (soil/water) WATER Lab Sample ID: 20703006

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2T116

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: not dec. _____ Date Analyzed: 01/24/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	1.0	U	
100-41-4	Ethylbenzene	1.0	U	
107-02-8	Xylenes (total)	3.0	U	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

621612

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: FSAB009W

Matrix: (soil/water) WATER Lab Sample ID: 20703012

Sample wt/vol: 720.0 (g/mL) ML Lab File ID: 5C422

Level: (low/med) LOW Date Received: 01/18/00

% Moisture: _____ decanted: (Y/N)___ Date Extracted:01/19/00

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 01/20/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	Naphthalene	1.4	U
91-58-7	2-Chloronaphthalene	1.4	U
208-96-8	Acenaphthylene	1.4	U
83-32-9	Acenaphthene	1.4	U
86-73-7	Fluorene	1.4	U
85-01-8	Phenanthrene	1.4	U
120-12-7	Anthracene	1.4	U
206-44-0	Fluoranthene	1.4	U
129-00-0	Pyrene	1.4	U
56-55-3	Benzo(a)anthracene	1.4	U
218-01-9	Chrysene	1.4	U
205-99-2	Benzo(b)fluoranthene	1.4	U
207-08-9	Benzo(k)fluoranthene	1.4	U
50-32-8	Benzo(a)pyrene	1.4	U
193-39-5	Indeno(1,2,3-cd)pyrene	1.4	U
53-70-3	Dibenz(a,h)anthracene	1.4	U
191-24-2	Benzo(g,h,i)perylene	1.4	U

UJ GDZ

FORM I SV-1 OLM03.0

INORGANIC ANALYSIS DATA PACKAGE

SDG No.: FSAB009W

Method Type: SW846

Sample ID: 20703006

Client ID: 621612

Contract: SAIC028

Lab Code:

Case No.:

SAS No.:

Matrix: WATER

Date Received: 1/18/2000

Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	2550	µg/L			P	2.00	TJA61 Trace ICP2	13100

Color Before:

Clarity Before:

Texture:

Color After:

Clarity After:

Artifacts:

Comments:

SAIC
An Employee Owned Company
Science Applications International Corporation

100 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.: DD5546

PROJECT NAME: Ft. Stewart USTs D.O. #55

PROJECT NUMBER: 01-1624-04-2352-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Laura Lumley (Printed Name) Laura Lumley

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	PAH, Lead	Dissolved Iron	TPH	TCLP BTEX	TCLP Lead	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
621412	1/17/00	1340	water		2						2		20703 009
621512	1/17/00	0945			2						2		010
621212	1/17/00	1045			2						2		011
621612	1/17/00	1550			2						2		012
621112	1/17/00	1745			2						2		013
621312	1/17/00	1145			2						2		014

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road Charleston, SC 29417

PHONE NO: (803) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 12	Cooler Temperature: 4°C
COMPANY NAME: SAIC	1/18/00 1121	COMPANY NAME: GEL	1/18/00 1407	Cooler ID: #704	FEDEX NUMBER:
RECEIVED BY:	Date/Time 1-18-00	RELINQUISHED BY:	Date/Time		
COMPANY NAME: S.E.L	1121	COMPANY NAME:			
RELINQUISHED BY:	Date/Time 1-18-00	RECEIVED BY:	Date/Time		
COMPANY NAME: S.E.L	1407	COMPANY NAME:			

SAIC
Science Applications International Corporation
333 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481 4000

1 of 2

CHAIN OF CUSTODY RECORD

COC NO.: D055067

PROJECT NAME: Ft. Stewart USTs D.O. #55

PROJECT NUMBER: 01-1624-04-2352-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature) / (Printed Name): Laura Lumley

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	PAH, Lead	Dissolved Iron	TPH	TCLP BTEX	TCLP Lead	VOC	Oil & Grease	Total Phenols	pH	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
021213	1/17/00	1020	Soil	1				1							3		20700 001
021211	1/17/00	1020		1				1							3		002
021111	1/17/00	1710		1				1							3		003
021311	1/17/00	1130		1				1							3		004
021411	1/17/00	1307		1				1							3		005
021511	1/17/00	0910		1				1							3		006
DUP116	1/17/00	1600	water								2	2	2	1	7	20702001	*24 Hr. Turn
021112	1/17/00	1745		2											3		20703001
021212	1/17/00	1045		2											3		002
021312	1/17/00	1145		2											3		003
021412	1/17/00	1310		2											3		004
021512	1/17/00	0945		2											3		005
021612	1/17/00	1550		2											3		006

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod, Charleston, SC 29417

PHONE NO: (803) 556 8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	1/14/00 1121		
COMPANY NAME: SAIC		COMPANY NAME: GEL	1/18/00 1407
RELINQUISHED BY:	Date/Time 1-18-00	RELINQUISHED BY:	Date/Time
COMPANY NAME: SAIC	1121	COMPANY NAME:	
RELINQUISHED BY:	Date/Time 1-18-00	RECEIVED BY:	Date/Time
COMPANY NAME: SAIC	1407	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS:

Cooler ID: #760

Cooler Temperature: 4°C

FEDEX NUMBER:

- Oil & Grease and Total Phenols are NOT preserved
- Dissolved Iron samples are preserved w/ HNO_3 to pH < 2

APPENDIX IX

CONTAMINATED SOIL DISPOSAL

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During UST removal and excavation activities in 1993 through 1996, all contaminated soil removed during the entire project (i.e., all USTs removed under contract with ACE, to include clean and nonclean closures) was tested in accordance with disposal facility requirements and transported to Kedesh, Inc., Highway 84, Ludowici, GA 31316.

The Closure Report for UST 100B was not submitted to GA EPD in 1996 because review of the closure analytical data indicated that a CAP-Part A would be required (i.e., per requirements of GUST-9, Item 15, page 12, dated August 1995). However, all pertinent information (i.e., copies of analytical data, manifests, and maps) are provided in the CAP-Part A Report (SAIC 1999). Disposal manifests for the UST 100B site were submitted to GA EPD USTMP in September 1998 with the UST 207A (Facility ID #9-089039) Closure Report response to comments correspondence (Perez 1998). Approximately 39.28 tons of contaminated soil were excavated from the site.

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APPENDIX X

SITE RANKING FORM

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The site ranking score has been revised to reflect the current site conditions using the most recent data available. The revised site ranking score is 63,100, as opposed to the score of 3,100 that was reported in the CAP-Part A Report dated October 1999. The revised Site Ranking Form is included in this appendix.

The following revisions were made on the Site Ranking Form to prepare the revised site score:

- Free product was observed in well 62-11 in February 2000, and efforts to remove the product have been implemented; thus, the "sheen to 1/8-inch" box was checked in Item E.

- The CAP-Part B groundwater data from well 62-11 in January 2000 were used in Item F since the well was installed closest to the tank pit. These data reflect the most current site conditions and are being used to supercede any previous groundwater data.

- The benzene concentrations in groundwater do not exceed the IWQS; thus, the distance to the closest surface water body or utility trench being impacted is less than 500 feet because the industrial wastewater line is not being impacted above the benzene IWQS.

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SITE RANKING FORM

Facility Name: UST 100B, Building 1350 **Ranked by:** S. Stoller

County: Liberty **Facility ID #:** 9-089081 **Date Ranked:** 8/10/00

SOIL CONTAMINATION (based on soil closure and CAP-Part A data)

A. Total PAHs –
Maximum Concentration found on the site
(Assume <0.660 mg/kg if only gasoline was stored on site)

☐	≤0.660 mg/kg	=	0
☐	>0.66 - 1 mg/kg	=	10
☐	>1 - 10 mg/kg	=	25
* ☒	>10 mg/kg	=	50

* *Closure sample TK100B-S1 (1996)*

B. Total Benzene -
Maximum Concentration found on the site

☐	≤0.005 mg/kg	=	0
☐	>0.005 - .05 mg/kg	=	1
* ☒	>0.05 - 1 mg/kg	=	10
☐	>1 - 10 mg/kg	=	25
☐	>10 - 50 mg/kg	=	40
☐	>50 mg/kg	=	50

* *CAP-Part A soil sample 620811 (1999)*

C. Depth to Groundwater
(bls = below land surface)

☐	>50' bls	=	1
☐	>25' - 50' bls	=	2
☐	>10' - 25' bls	=	5
☒	≤10' bls	=	10

Fill in the blanks: (A. 50) + (B. 10) = (60) x (C. 10) = (D. 600)

GROUNDWATER CONTAMINATION (based on CAP-Part A groundwater data)

E. Free Product (Nonaqueous-phase liquid hydrocarbons; See Guidelines For definition of "sheen").

☐	No free product	=	0
☒	Sheen - 1/8"	=	250
☐	>1/8" - 6"	=	500
☐	>6" - 1ft.	=	1,000
☐	For every additional inch, add another 100 points = 1,000 + _____		

F. Dissolved Benzene -
Maximum Concentration at the site
(One well must be located at the source of the release.)

☐	≤5 µg/L	=	0
* ☒	>5 - 100 µg/L	=	5
☐	>100 - 1,000 µg/L	=	50
☐	>1,000 - 10,000 µg/L	=	500
☐	>10,000 µg/L	=	1500

* ***CAP-Part B sample 621112 (January 2000)***

Fill in the blanks: (E. 250) + (F. 5) = (G. 1250)

Facility Name: UST 100B, Building 1350 **County:** Liberty **Facility ID #:** 9-089081

POTENTIAL RECEPTORS (MUST BE FIELD-VERIFIED)

Distance from nearest contaminant plume boundary to the nearest downgradient and hydraulically connected Point of Withdrawal for water supply. **If the point of withdrawal is not hydraulically connected, evidence as outlined in the CAP-A guidance document MUST be presented to substantiate this claim.**

H. Public Water Supply

☐	Impacted	= 2000
☐	≤500'	= 500
☐	>500' - ¼ mi	= 25
☐	¼ mi - 1 mi	= 10
☐	>1 mi - 2 mi	= 2
* ☒	> 2 mi	= 0

For lower susceptibility areas only:

☐	>1 mi	= 0

Note: If site is in lower susceptibility area, do not use the shaded areas.

* For justification that withdrawal point is not hydraulically connected, see attached text.

I. Non-Public Water Supply

☐	Impacted	= 1000
☐	≤100'	= 500
☐	>100' - 500'	= 25
☐	>500' - ¼ mi	= 5
☐	>¼ - ½ mi	= 2
☒	>½ mi	= 0

For lower susceptibility areas only:

☐	>¼ mi	= 0

J. Distance from nearest Contaminant Plume boundary to downgradient Surface Waters **OR UTILITY TRENCHES & VAULTS** (a utility trench may be omitted from ranking if its invert elevation is more than 5 feet above the water table)

☐	Impacted	= 500
* ☒	≤500'	= 50
☐	>500' - 1,000'	= 5
☐	>1,000'	= 2

K. Distance from any Free Product to basements and crawl spaces

☐	Impacted	= 500
☐	<500'	= 50
☐	>500' - 1,000'	= 5
☒	>1,000' or no free product.	= 0

* *Industrial wastewater line is located at or below the water table, benzene concentrations less than IWQS.*

Fill in the blanks: (H. 0) + (I. 0) + (J. 50) + (K. 0) = L. 50

(G. 1250) x (L. 50) = M. 62500

(M. 62000) + (D. 600) = N. 63100

P. **SUSCEPTIBILITY AREA MULTIPLIER**

☐ If site is located in a Low Ground-Water Pollution Susceptibility Area = 0.5

☒ All other sites = 1

Q. **EXPLOSION HAZARD**

Have any explosive petroleum vapors, possibly originating from this release, been detected in any subsurface structure (e.g., utility trenches, basements, vaults, crawl spaces, etc.)?

☐ Yes = 200,000

☒ No = 0

Fill in the blanks: (N. 63100) x (P. 1) = (63100) + (Q. 0)

= 63100
ENVIRONMENTAL SENSITIVITY SCORE

OTHER GEOLOGIC AND HYDROLOGIC DATA

The following information is presented to supply supplemental information to Item H of the Site Ranking Form and provides detailed information relating to the geologic and hydrogeologic conditions at Fort Stewart that supports Fort Stewart's determination that the water withdrawal point(s) located at Fort Stewart is (are) not hydraulically connected to the surficial aquifer.

1.0 REGIONAL AND LOCAL GEOLOGY

Fort Stewart is located within the coastal plain physiographic province. This province is typified by nine southeastward-dipping strata that increase in thickness from 0 feet at the fall line, located approximately 150 miles inland from the Atlantic coast, to approximately 4,200 feet at the coast. State geologic records describe a probable petroleum exploration well (the No. 1 Jelks-Rogers) located in the region as encountering crystalline basement rocks at a depth of 4,254 feet BGS. This well provides the most complete record for Cretaceous, Tertiary, and Quaternary sedimentary strata in the region.

The Cretaceous section was found to be approximately 1,970 feet thick and dominated by clastics. The Tertiary section was found to be approximately 2,170 feet thick and dominated by limestone with a 175-foot thick cap of dark green phosphatic clay. This clay is regionally extensive and is known as the Hawthorn Group. The interval from approximately 110 feet to the surface is Quaternary in age and composed primarily of sand with interbeds of clay or silt. This section is undifferentiated into separate formations (Herrick and Vochis 1963).

State geologic records contain information regarding a well drilled in October 1942, 1.8 miles north of Flemington at Liberty Field of Camp Stewart (now known as Fort Stewart). This well is believed to be an artesian well located approximately one-quarter mile north of the runway at Wright Army Airfield within the FSMR. The log for this well describes a 410-foot section, the lowermost 110 feet of which consisted predominantly of limestone sediments, above which 245 feet of dark green phosphatic clay typical of the Hawthorn Group were encountered. The uppermost portion of the section was found to be Quaternary-age interbedded sands and clays. The top 15 feet of these sediments were described as sandy clay (Herrick and Vochis 1963).

The surface soil located throughout the Fort Stewart garrison area consists of Stilson loamy sand. The surface layer of this soil is typically dark grayish brown loamy sand measuring approximately 6 inches in depth. The surface layer is underlain by material consisting of pale yellow loamy sand and extends to a depth of approximately 29 inches. The subsoil is dominantly sandy clay loam and extends to a depth of 72 inches or more (Herrick and Vochis 1963).

2.0 REGIONAL AND LOCAL HYDROGEOLOGY

The hydrogeology in the vicinity of Fort Stewart is dominated by two aquifers referred to as the Principal Artesian and the surficial aquifers. The Principal Artesian aquifer is the lowermost hydrologic unit and is regionally extensive from South Carolina through Georgia, Alabama, and most of Florida. Known elsewhere as the Floridan, this aquifer is composed primarily of Tertiary-age limestone, including the Bug Island Formation, the Ocala Group, and the Suwannee Limestone. These formations are approximately 800 feet thick, and groundwater from this aquifer is used primarily for drinking water (Arora 1984).

The uppermost hydrologic unit is the surficial aquifer, which consists of widely varying amounts of sand and clay ranging from 55 to 150 feet in thickness. This aquifer is primarily used for domestic lawn and agricultural irrigation. The top of the water table ranges from approximately 2 to 10 feet BGS. The base of the aquifer corresponds to the top of the underlying dense clay of the Hawthorn Group. The Hawthorn Group was not

encountered during drilling at this site but is believed to be located at 40 to 50 feet BGS; thus, the effective aquifer thickness would be approximately 35 to 45 feet. Soil surveys for Liberty and Long counties describe the occurrence of a perched water table within the Stilson loamy sands present within Fort Stewart (Looper 1980).

The confining layer for the Principal Artesian aquifer is the phosphatic clay of the Hawthorn Group and ranges in thickness from 15 to 90 feet. The vertical hydraulic conductivity of this confining unit is on the order of 10^{-8} cm/sec. There are minor occurrences of aquifer material within the Hawthorn Group; however, they have limited utilization (Miller 1990). The Hawthorn Group has been divided into three formations: Coosawhatchie Formation, Markshead Formation, and Parachula Formation, which are listed from youngest to oldest.

The Coosawhatchie Formation is composed predominantly of clay, but also has sandy clay, argillaceous sand, and phosphorite units. The formation is approximately 170 feet thick in the Savannah, Georgia, area. This unit disconformably overlies the Markshead Formation and is distinguished from the underlying unit by dark phosphatic clays or phosphorite in the lower part and fine-grained sand in the upper part.

The Markshead Formation is approximately 70 feet thick in the Savannah, Georgia, area and consists of light-colored phosphatic, slightly dolomitic, argillacerous sand to fine-grained sandy clay with scattered beds of dolostone, limestone, and siliceous, and dolomitic and less calcareous.

The Parachula Formation consists of sand, clay, limestone, and dolomite and is approximately 10 feet thick in the Savannah, Georgia, area. The Parachula Formation generally overlies the Suwannee Limestone in Georgia.

Groundwater encountered at all the UST investigation sites is part of the surficial aquifer system. Based on the facts that all public and nonpublic water supply wells draw water from the Principal (Floridan) Aquifer and that the Hawthorn confining unit separates the Principal Aquifer from the surficial aquifer, it is concluded that there is no hydraulic interconnection between the surficial aquifer (and associated groundwater plumes, if applicable) located beneath former UST sites and identified water supply withdrawal points at Fort Stewart.

APPENDIX XI

COPIES OF PUBLIC NOTIFICATION LETTERS AND CERTIFIED RECEIPTS OF NEWSPAPER NOTICE

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AFFIDAVIT OF PUBLICATION
SAVANNAH MORNING NEWS

STATE OF GEORGIA
CHATHAM COUNTY

Personally appeared before me, JOAN T. JENKINS, to me known, who being sworn, deposes and says:

That she/he is the CLASSIFIED ADV. SUPV of Southeastern Newspaper Corporation, a Georgia corporation, doing business in Chatham County, Georgia under the trade name of Savannah Morning News, a daily newspaper published in said county;

That she/he is authorized to make affidavits of publication on behalf of said published corporation;

That said newspaper is of general circulation in said county and in the area adjacent thereto;

That he has reviewed the regular editions of the Savannah Morning News, published

on 7-16, 2000, 7-23 2000,

________, 2000, ________, 2000,

and finds that the following advertisement, to-wit:

015 Miscellaneous Notices

PUBLIC NOTICE
Notification of Corrective Action Plan Underground Storage Tank Releases
FORT STEWART, Georgia

The Georgia EPD (GEPD) has required Fort Stewart Directorate of Public Works to prepare Corrective Action Plans Part A or Part-B to investigate and/or clean up contamination at the underground storage tank sites listed at the end of this notification. These plans will be submitted to the GEPD on or before November 30, 2000. If you want to examine a copy of one or more of the plans, please contact: Environmental Branch (Attn: T. Rutland), Directorate of Public Works, Bldg. 1137, HQS 3D IN DIV (MECH) and Fort Stewart, 1550 Frank Cochran Dr., Fort Stewart, Ga. 31314-4927

A copy will be mailed at a nominal fee.

Comments to the plan will be accepted until December 31, 2000, and should be directed to GEPD at 404-362-2687. Following is the mailing address:
GEPD USTMP, 4244 International Parkway, Suite 104, Atlanta, Ga. 30354

Fort Stewart, Part A or Part B Underground Storage Tank Sites
Site; Facility ID#; Building
61, 9-089104, 1161
15 and 16, 9-089012, 1721
93, 9-089112, 1130
36 and 37, 9-089016, 1510
100B, 9-089081, 1350
5 and 6, 9-089066, 1824

Joan T. Jenkins
(Deponent)

Appeared in each of said editions.

Sworn to and subscribed
Before me this 24 day
of July, 2000

Lillie D. Lang
LILLIE D. LANG
Notary Public, Chatham County, Ga.
My Commission Expires Apr. 8, 2001
Notary Public, Chatham County, Ga.

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APPENDIX XII

GUST TRUST FUND REIMBURSEMENT APPLICATION AND CLAIM FOR REIMBURSEMENT

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Fort Stewart is a federally owned facility and has funded the investigation for the UST 100B, Building 1350, Facility ID #9-089081, using Department of Defense Environmental Restoration Account Funds. Application for GUST Trust Fund reimbursement is not being pursued at this time.

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