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United States Army
Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 8003
Wayside Area

NJDEP UST Registration No. 0192477-1
NJDEP Closure Approval No. C-92-2953

July 1995

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ENVIRONMENTAL TECHNOLOGIES CORPORATION

UNDERGROUND STORAGE TANK
CLOSURE AND SITE INVESTIGATION REPORT

BUILDING 8003

WAYSIDE AREA
NJDEP UST REGISTRATION NO. 0192477-1
NJDEP CLOSURE APPROVAL NO. C-92-2953

JULY 1995

PROJECT NO.: 09-5004-01
CONTRACT NO.: DACA51-94-D-0014

PREPARED FOR:

UNITED STATES ARMY, FORT MONMOUTH, NEW JERSEY
DIRECTORATE OF PUBLIC WORKS
BUILDING 167
FORT MONMOUTH, NJ 07703

PREPARED BY:

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EXECUTIVE SUMMARY

UST Closure

On July 8, 1993, a steel underground storage tank (UST) with fiberglass coating was closed by removal in accordance with Closure Approval No. C-92-2953 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 0192477-1, was located immediately adjacent to Building 8003 in the Wayside area of U.S. Army, Fort Monmouth. UST No. 0192477-1 was a 1,000-gallon No. 2 fuel oil UST. The UST fill port was located directly above the tank. The tank closure was performed by All Service Environmental Inc.

Site Assessment

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) (*Technical Requirements*) and the NJDEP *Field Sampling Procedures Manual*. Soils surrounding the tank were screened visually and with air monitoring instruments for evidence of contamination. Following removal, the UST was inspected for corrosion holes. No corrosion holes were noted in the UST and no potentially contaminated soils were observed surrounding the tank.

On July 8, 1993, following removal of the UST, post-excavation soil samples were collected. Post-excavation samples A, B, C, D, E, and F were collected from a total of six (6) locations along the base and sidewalls of the excavation. All samples were analyzed for total petroleum hydrocarbons (TPHC).

On July 9, 1993, due to detected concentrations of TPHC along the south wall of the excavation, approximately 12 cubic yards of potentially contaminated soils were removed. Following removal of this soil, post-excavation soil samples G, H, I, and J were collected at four (4) locations along the base and sidewalls of the expanded portions of the excavation. All of these samples were analyzed for TPHC.

On July 13, 1993, due to detected concentrations of TPHC along the south wall of the excavation, approximately 5 cubic yards of potentially contaminated soils were removed. No soil samples were collected on this day. On July 14, 1993, approximately 12 cubic yards of potentially contaminated soils were removed along the southeast wall of the excavation, due to OVA readings of over 5 ppm. No soil samples were collected on this day.

On July 15, 1993, approximately 30 cubic yards of potentially contaminated soils were removed from the bottom of the excavation, due to OVA readings of over 2.5 ppm. Post-excavation soil samples K, L, M, N, O, and DUP O were collected from a total of five (5) locations along the base and sidewalls of the excavation, and were analyzed for TPHC.

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Because sample K contained a TPHC concentration exceeding 1,000 mg/kg, on July 29, 1993, an additional soil sample was collected at sampling location K. This new sample was labeled as sample Q and was analyzed for volatile organic compounds plus a forward library search of 15 peaks (VOC+15) and base neutral compounds plus a forward library search of 15 peaks (BNC + 15).

Findings

All post-excavation soil samples collected from the UST excavation and from below piping associated with the former UST at Building 8003 contained concentration of contaminants below the NJDEP most stringent soil cleanup criteria (N.J.A.C. 7:26E and revisions dated February 3, 1994).

All samples analyzed for TPHC contained concentrations well below the NJDEP residential direct contact soil cleanup criteria for total organic contaminants of 10,000 mg/kg. The samples collected on July 8, 1993 (samples A, B, C, D, E, and F) contained TPHC concentrations ranging from non-detectable to 1,000 mg/kg. The samples collected on July 9, 1993, from the expanded portions of the excavation (samples G, H, I, and J), contained TPHC concentrations ranging from non-detectable to 4,900 mg/kg. The samples collected on July 15, 1993, from the expanded portions of the excavation (samples K, L, M, N, and O), contained TPHC concentrations ranging from non-detectable to 2,640 mg/kg.

Sample Q, collected on July 29, 1993 and analyzed for VOC+15 and BNC+15, contained concentrations of contaminants that were either non-detectable or well below the corresponding NJDEP residential direct contact and impact to groundwater soil cleanup criteria.

Site Restoration

Following receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with a combination of uncontaminated excavated soil and certified clean fill. The excavation site was then restored to its original condition.

Conclusions and Recommendations

Based on the analytical result of the post-excavation soil samples, soils with concentrations of contaminants exceeding the NJDEP soil cleanup criteria do not remain in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 0192477-1 at Building 8003.

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1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 0192477-1, was closed at Building 8003 at U.S. Army Fort Monmouth, New Jersey on July 8, 1993. Refer to site location map on Figure 1. This report presents the results of the United States Army Directorate of Public Works' (DPW) implementation of the UST Decommissioning/Closure Plan submitted to the NJDEP on August 5, 1992. The plan was approved on September 14, 1992 and assigned TMS No. C-92-2953. The UST was a steel, 1,000-gallon No. 2 fuel oil tank, with fiberglass coating.

Decommissioning activities for UST No. 0192477-1 complied with all applicable Federal, State and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to: N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., and Occupational Safety and Health Administration (OSHA) 1910.146 & 1910.120. All permits including but not limited to the NJDEP-approved Decommissioning/Closure Plan were posted onsite for inspection. All Service Environmental Inc., the contractor that conducted the decommissioning activities, is registered and certified by the NJDEP for performing UST closure activities. Closure of UST No. 0192477 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST closure approval and signed certifications for UST No. 0192477-1 are included in Appendices A and B, respectively.

Based on an inspection of the UST, field screening of subsurface soils and analytical results of collected soil samples, the DPW has concluded that no historical discharges are associated with the UST, or associated piping.

This UST Closure and Site Investigation Report has been prepared by BCM Engineers/Smith Environmental Technologies Corporation to assist the United States Army DPW in complying with the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST) regulations. The applicable NJDEP-BUST regulations at the date of closure were the *Interim Closure Requirements for Underground Storage Tank Systems* (N.J.A.C. 7:14B-1 et seq. September 1990 and revisions dated November 1, 1991).

This report was prepared using information required at the time of closure. Where possible, information required by the *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) (*Technical Requirements*) was included. Section 1 of this UST Closure and Site Investigation Report provides a summary of the UST decommissioning activities. Section 2 of this report describes the site investigation activities. Conclusions and recommendations, including the results of the soil sampling investigation, are presented in the final section of this report.

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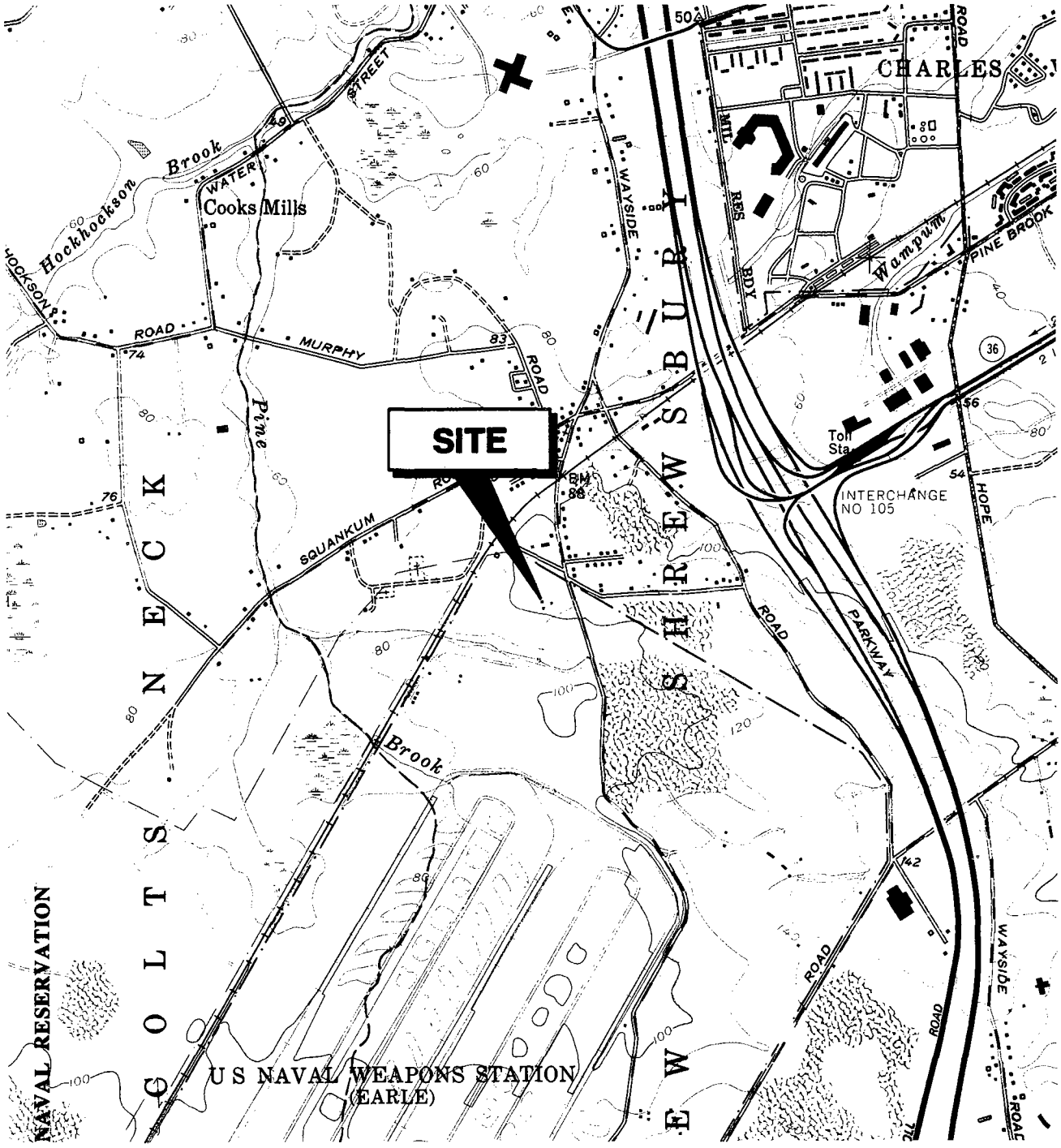
U.S. Army
Department of Public Works
Fort Monmouth, New Jersey



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SCALE
0 2000 FT.

NEW JERSEY
QUADRANGLE LOCATION

Source: U.S.G.S. Quadrangle Long Branch, N.J.

Project No. 00-5004-01

Figure 1
Site Location Map

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1.2 SITE DESCRIPTION

Building 8003 is located in the northwest corner of the Wayside area of Fort Monmouth, as shown on Figure 1. Building 8003 is a radio testing facility for the Army base. UST No. 0192477-1 was located north of Building 8003. A site map is provided on Figure 2. The USTs appurtenant piping ran less than 15 feet to a fill port area. The fill port area was located directly above the tank.

1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 8003. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Wayside area.

Regional Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The Main Post, Charles Wood, and the Evans areas are located in what may be referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapecza, 1989). These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. Over 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand) while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown, and Navesink Formations). The individual thicknesses for these units vary greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

Local Geology

Based on the regional geologic map (Jablonski, 1968), the Tertiary age Vincentown and Kirkwood Formations outcrop at the Wayside area. The Vincentown Formation lies unconformably over the Hornerstown Sand and dips to the southeast at 27 feet per mile. The upper member of the Vincentown Formation ranges from a fine- to medium- grained quartz sand

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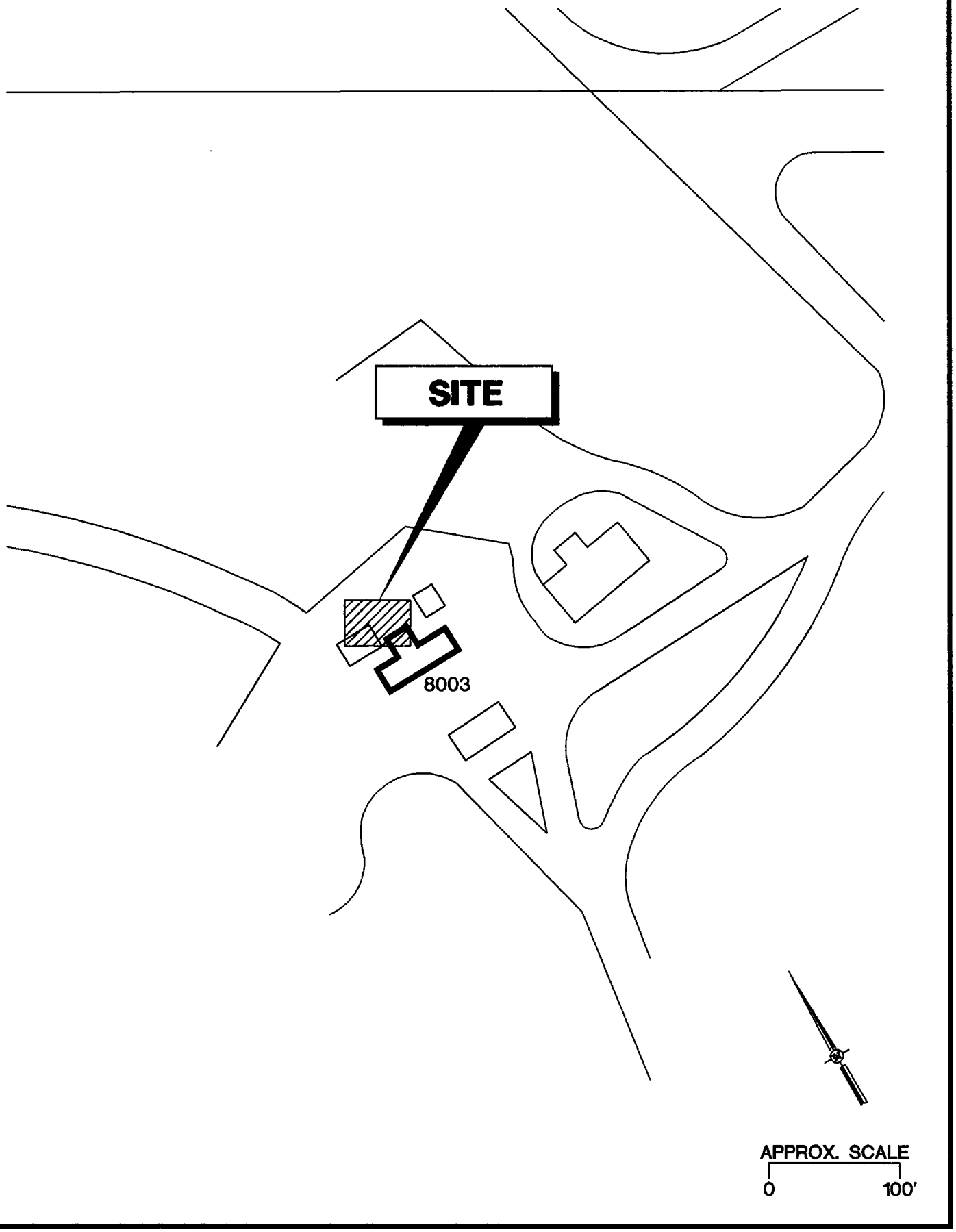

Source: BCM/Smith Environmental Technologies Corporation (016)

Project No. 09-5004-01

Figure 2
Building 8003
Site Map

to a sandy, clayey, limestone. The sand in this member is similar to coquina by its micaceous, glauconitic, calcareous, and fossiliferous attributes.

The Kirkwood Formation unconformably overlies the Vincentown Formation and dips to the southeast at a rate of 20 feet per mile. The lower unit of the Kirkwood Formation appears to be primarily brown silt in Monmouth County (Jablonski). The upper unit is fine yellowish-brown or light gray quartz sand containing layers of clay.

Hydrogeology

The water table aquifer at the Wayside area is identified as part of the "composite confining units," or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation.

The Kirkwood Formation has been described by Jablonski to consist of alternating layers of sand and clay that are chiefly discontinuous. Development of the aquifer in the Kirkwood Formation has been limited. Only a small percentage of the county is underlain by an aquifer thickness of 30 feet or more.

According to Jablonski, those wells that tap this aquifer may produce from 5 to 1,236 gallons per minute (gpm). Some well owners have reported water that requires treatment to remove iron. The water has also been reported to contain noticeable amounts of hydrogen sulfide gas, but this can be removed easily by aeration.

Shallow groundwater is locally influenced within the Wayside area by the following factors:

- tidal influence (based on proximity to the Atlantic Ocean, rivers and tributaries)
- topography
- nature of the fill material within the Wayside area
- presence of clay and silt lenses in the natural overburden deposits
- local groundwater recharge areas (i.e., streams, lakes)

Due to the fluvial nature of the overburden deposits (i.e., sand and clay lenses), shallow groundwater flow direction is best determined on a case-by-case basis.

Building 8003 is located approximately 850 feet miles north of Pine Brook, the nearest water body. Based on the Wayside area topography, the groundwater flow in the area of Building 8003 is anticipated to be to the southwest.

1.3 HEALTH AND SAFETY

Before, during, and after all decommissioning activities, hazards at the work site which may have posed a threat to the Health and Safety of all personnel who were involve with, or were affected

by, the decommissioning of the UST system were minimized. All areas which posed, or may have been suspected to pose a vapor hazard were monitored by a qualified individual utilizing an vapor analyzer (OVA). The individual ascertained if the area was properly vented to render the area safe, as defined by OSHA.

1.4 REMOVAL OF UNDERGROUND STORAGE TANK

1.4.1 General Procedures

- All underground obstructions (utilities, etc.) were marked out by the contractor performing the closure prior to excavation activities.
- All activities were carried out with the greatest regard to safety and health and the safeguarding of the environment.
- All excavated soils were visually examined and screened with an OVA for evidence of contamination. Potentially contaminated soils were identified and logged during closure activities.
- Surface materials (i.e., asphalt, concrete, etc.) were excavated and staged separately from all soil and recycled in accordance with all applicable regulations and laws.
- A Sub-Surface Evaluator from the DPW was present during all closure activities.

1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After the removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 410 gallons of liquid were removed from the UST. The liquids were transported and disposed of by Casie Ecology Oil Salvage Inc., a NJDEP-approved petroleum recycling and disposal company located in Vineland, New Jersey. See Appendix C for manifest (No. NJA-1708420, which lists the combined liquid removed from USTs at Buildings 8003 and 8006).

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP-BUST regulations. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for corrosion holes. No cracks, punctures or corrosion holes were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually and with an OVA for evidence of contamination. No evidence of contamination was noted prior to the first round of samples collected on July 8, 1993.

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1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The tank was transported by All Service Environmental to Monmouth County Reclamation Center, for recycling in compliance with all applicable regulations and laws. A copy of the UST Disposal Certificate was not available.

The Subsurface Evaluator labeled the UST prior to transport with the following information:

- site of origin
- contact person
- NJDEP UST Facility ID number
- name of transporter/contact person
- destination site/contact person

1.6 MANAGEMENT OF EXCAVATED SOILS

Based on OVA air monitoring and TPHC analysis results from the first round of sampling collected on July 8, 1993, approximately 12 cubic yards of potentially contaminated soils were excavated from the south wall of the excavation. A second round of sampling was collected on the same day. Due to elevated concentrations of TPHC from the second round of sampling, approximately 47 cubic yards of potentially contaminated soils were removed over a three-day period.

All potentially contaminated soils were stockpiled separately from other excavated material and were placed on and covered with polyethylene sheets. Potentially contaminated soils were transported to a concrete pad near Building 8005 for storage prior to ultimate disposal at Soil Remediation of Philadelphia. Soils that did not exhibit signs of contamination were used as backfill following removal of the UST.

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2.0 SITE INVESTIGATION ACTIVITIES

2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All TPHC analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory. All VOC+15 analyses were performed and reported by Twenty First Century Environmental Inc. Both Laboratories are NJDEP-certified testing laboratories. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP Field Sampling Procedures Manual (1992). Sampling frequency and parameters analyzed complied with the NJDEP-BUST document "*Interim Closure Requirements for Underground Storage Tank Systems*" (September 1990 and revisions dated November 1, 1991) which was the applicable regulation at the date of the closure. All records of the Site Investigation activities are maintained by the Fort Monmouth DPW Environmental Office.

The following Parties participated in Closure and Site Investigation Activities:

- Closure Contractor: All Service Environmental Inc.
  Contact Person: Mark Turoff
  Phone Number: (914)365-0800
  NJDEP Company Certification No.: G3100194

- Subsurface Evaluator: Charles M. Appleby
  Employer: U.S. Army, Fort Monmouth
  Phone Number: (908) 532-6224
  NJDEP Certification No.: 002056

- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory
  Contact Person: Brian K. McKee
  Phone Number: (908)532-4359
  NJDEP Company Certification No.: 13461

- Analytical Laboratory: Twenty First Century Environmental Inc.
  Contact Person: Richard Lynch
  Phone Number: (609)467-9521
  NJDEP Company Certification No.: 08031

- Hazardous Waste Hauler: Casie Ecology Oil Salvage
  Contact Person: Greg Call
  Phone Number: (609)696-4401
  NJDEP Hazardous Waste Hauler No.: S6747

2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP-Certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soils were removed from the excavation surrounding UST No. 0192477-1 until no evidence of contamination remained.

2.3 SOIL SAMPLING

On July 8, 1993, following removal of the UST, post-excavation soil samples were collected. Post-excavation samples A, B, C, D, E, and F were collected from a total of six (6) locations along the base and sidewalls of the excavation. Refer to soil sampling location map on Figure 3. All samples were analyzed for total petroleum hydrocarbons (TPHC).

On July 9, 1993, due to detected concentrations of TPHC along the south wall of the excavation, approximately 12 cubic yards of potentially contaminated soils were removed. Following removal of this soil, post-excavation soil samples G, H, I, and J were collected four (4) locations along the base and sidewalls of the expanded portions of the excavation. Refer to soil sampling location map on Figure 3. All of these samples were analyzed for TPHC.

On July 13, 1993, due to detected concentrations of TPHC along the south wall of the excavation, approximately 5 cubic yards of potentially contaminated soils were removed. No soil samples were collected on this day. On July 14, 1993, approximately 12 cubic yards of potentially contaminated soils were removed along the southeast wall of the excavation, due to OVA readings of over 5 ppm. No soil samples were collected on this day.

On July 15, 1993, approximately 30 cubic yards of potentially contaminated soils were removed from the bottom of the excavation, due to OVA readings of over 2.5 ppm. Post-excavation soil samples K, L, M, N, O, and DUP O were collected from a total of five (5) locations along the base and sidewalls of the excavation, and were analyzed for TPHC. Refer to soil sampling location map on Figure 3.

Because sample K contained a TPHC concentration exceeding 1,000 mg/kg, on July 29, 1993, a soil sample was collected at sampling location K. This new sample was labeled as sample Q and was analyzed for volatile organic compounds plus a forward library search of 10 peaks (VOC+15) and base neutral compounds plus a forward library search of 15 peaks (BNC + 15) following results of a high concentration of TPHC at that location. A summary of post-excavation soil sampling activities is provided on Table 1.

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements* and the NJDEP *Field Sampling Procedures Manual.* A summary of sampling activities including parameters analyzed is provided on Table 1. Figure 3 depicts the location of the post-excavation soil samples. The samples were collected using decontaminated

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 8003, WAYSIDE
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and Methods) *	Sampling Method
A	7/8/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
B	7/8/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
C	7/8/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
D	7/8/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
E	7/8/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
F	7/8/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
G	7/9/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
H	7/9/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
I	7/9/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
J	7/9/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
K	7/15/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
L	7/15/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
M	7/15/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
N	7/15/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
O	7/15/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
DUP O	7/15/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
Q	7/29/93	Soil	Post-Excavation	VOCs, BNCs	Stainless Steel Scoop

* Notes:

TPHC	Total Petroleum Hydrocarbons (Method 418.1 / soil and aqueous)
VOCs	Volatile Organic Compounds plus 15 tentatively identified compounds (Method 8240:soil / 624:aqueous)
BNCs	Base Neutral Compounds plus 15 tentatively identified compounds (Method 8270:soil / 625:aqueous)

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stainless steel scoops. Following soil sampling activities, the samples being analyzed for TPHC were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey. Samples being analyzed for VOC+15 were chilled and delivered to Twenty First Century Environmental located in Bridgeport, New Jersey.

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3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected from a total of six locations on July 8, 1993, from a total of four locations on July 9, 1993, and from a total of five locations on July 15, 1993. All of these samples were analyzed for TPHC. On July 29, 1993, one sample was collected and was analyzed for VOC+15 and BNC + 15. The post-excavation soil sample results were compared to the NJDEP residential direct contact soil cleanup criteria for total organic contaminants, VOCs, and BNCs (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided on Table 2 and the soil sampling results are shown on Figure 3. The analytical data package is provided in Appendix D. The full data package, including associated quality control data, is on file at the U.S. Army Fort Monmouth, DPW.

All samples analyzed for TPHC contained concentrations well below the NJDEP residential direct contact soil cleanup criteria for total organic contaminants of 10,000 mg/kg. The samples collected on July 8, 1993 (samples A, B, C, D, E, and F) contained TPHC concentrations ranging from non-detectable to 1,000 mg/kg. The samples collected on July 9, 1993, from the expanded portions of the excavation (samples G, H, I, and J), contained TPHC concentrations ranging from non-detectable to 4,900 mg/kg. The samples collected on July 15, 1993, from the expanded portions of the excavation (samples K, L, M, N, and O), contained TPHC concentrations ranging from non-detectable to 2,640 mg/kg.

Sample Q, which was collected on July 29, 1993, and analyzed for VOC+15 and BN+15 contained concentrations of contaminants that were either non-detectable or well below the corresponding NJDEP residential direct contact and impact to groundwater soil cleanup criteria.

3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 8003 were below the applicable NJDEP soil cleanup criteria.

Based on the post-excavation soil sampling results, soils with contaminant concentrations exceeding the applicable NJDEP soil cleanup criteria , do not remain in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 0192477-1 at Building 8003.

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 8003, WAYSIDE AREA
FT. MONMOUTH, NEW JERSEY

Sample ID/Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
A/3.5-4.0'	1237.1	7-08-93	7-08-93	Total Solid	--	--	94%	--	--
				TPHC	3.3	yes	180.0	10,000	--
B/3.5-4.0'	1237.2	7-08-93	7-08-93	Total Solid	--	--	93%	--	--
				TPHC	3.3	yes	182.0	10,000	--
C/3.5-4.0'	1237.3	7-08-93	7-08-93	Total Solid	--	--	92%	--	--
				TPHC	3.3	yes	ND	10,000	--
D/3.5-4.0'	1237.4	7-08-93	7-08-93	Total Solid	--	--	90%	--	--
				TPHC	13.0	yes	1,000.0	10,000	--
E/8.5-9.0'	1237.5	7-08-93	7-08-93	Total Solid	--	--	92%	--	--
				TPHC	13.0	yes	985.0	10,000	--
F/8.5-9.0'	1237.6	7-08-93	7-08-93	Total Solid	--	--	90%	--	--
				TPHC	3.3	yes	199.0	10,000	--
G/3.5-4.0'	1240.8	7-09-93	7-10-93	Total Solid	--	--	90%	--	--
				TPHC	3.3	yes	ND	10,000	--
H/3.5-4.0'	1240.9	7-09-93	7-10-93	Total Solid	--	--	86%	--	--
				TPHC	3.3	yes	ND	10,000	--
I/3.5-4.0'	1240.10	7-09-93	7-10-93	Total Solid	--	--	87%	--	--
				TPHC	53.0	yes	4900.0	10,000	--
J/8.5-9.0'	1240.11	7-09-93	7-10-93	Total Solid	--	--	95%	--	--
				TPHC	3.3	yes	ND	10,000	--

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 8003, WAYSIDE AREA
FT. MONMOUTH, NEW JERSEY

Sample ID/Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Sample Quantitation Limit (mg/kg)	Compound of Comcern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
K/4.0-4.5'	1246.1	7-15-93	7-16-93	Total Solid	--	--	91%	--	--
				TPHC	20.0	yes	2640.0	10,000	--
L/4.0-4.5'	1246.2	7-15-93	7-16-93	Total Solid	--	--	91%	--	--
				TPHC	3.3	yes	ND	10,000	--
M/4.0-4.5'	1246.3	7-15-93	7-16-93	Total Solid	--	--	86%	--	--
				TPHC	3.3	yes	ND	10,000	--
N/4.0-4.5'	1246.4	7-15-93	7-16-93	Total Solid	--	--	93%	--	--
				TPHC	3.3	yes	ND	10,000	--
O/8.5-9.0'	1246.5	7-15-93	7-16-93	Total Solid	--	--	96%	--	--
				TPHC	3.3	yes	24.2	10,000	--
DUP O/8.5-9.0'	1246.6	7-15-93	7-16-93	Total Solid	--	--	96%	--	--
				TPHC	3.3	yes	27.0	10,000	--

Note:

* Unless noted otherwise
** NJDEP Residential Direct Contact soil cleanup criteria for total organics
-- Not applicable / does not exceed criteria
TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 8003, WAYSIDE, SITE Q (Dup of K)
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS

Sample ID/Depth	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
Q/4.0-4.5'	07-29-93	08-08-93	Acrolein	7.1	--	ND	--	--
			Acrylonitrile	7.1	--	ND	1/1	--
			Chloromethane	1.4	--	ND	520/10	--
			Bromomethane	1.4	--	ND	79/1	--
			Vinyl Chloride	1.4	--	ND	2/10	--
			Chloroethane	1.4	--	ND	--	--
			Acetone	1.4	--	ND B	1,000/100	--
			1,1-Dichloroethene	0.71	--	ND	8/10	--
			Carbon Disulfide	1.4	--	ND	--	--
			Methylene Chloride	0.71	--	0.3 JB	49/1	--
			1,2-Dichloroethene (trans)	0.71	--	ND	1,000/50	--
			1,1-Dichloroethane	0.71	--	ND	570/10	--
			Vinyl Acetate	0.71	--	ND	--	--
			2-Butanone	1.4	--	ND	1,000/50	--
			Chloroform	0.71	--	ND	19/1	--
			1,1,1-Trichloroethane	0.71	--	ND	210/50	--
			Carbon Tetrachloride	0.71	--	ND	2/1	--
			1,2-Dichloroethane	0.71	--	ND	6/1	--
			Benzene	0.71	yes	ND	3/1	--
			Trichloroethene	0.71	--	ND	23/1	--
			1,2-Dichloropropane	0.71	--	ND	10	--
			Bromodichloromethane	0.71	--	ND	11/1	--
			2-Chloroethylvinylether	1.4	--	ND	--	--
			2-Hexanone	1.4	--	ND	--	--
			trans-1,3-Dichloropropene	0.71	--	ND	4/1	--
			Toluene	0.71	yes	ND	1,000/500	--
			cis-1,3-Dichloropropene	0.71	--	ND	4/1	--

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 8003, WAYSIDE, SITE Q (Dup of K)
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS (Continued)

Sample ID/Depth	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
Q/4.0-4.5'	07-29-93	08-08-93	1,1,2,2-Tetrachloroethane	0.71	--	ND	34/1	--
			1,1,2-Trichloroethane	0.71	--	ND	22/1	--
			4-Methyl-2-pentanone	1.4	--	ND	1,000/50	--
			Tetrachloroethene	0.71	--	ND	4/0.1 *	--
			Dibromochloromethane	0.71	--	ND	110/1	--
			Chlorobenzene	0.71	--	ND	37/1	--
			Ethylbenzene	0.71	yes	ND	1,000/100	--
			Xylenes (Total)	0.71	yes	ND	410/10	--
			Styrene	0.71	--	ND	--	--
			Bromoform	0.71	--	ND	86/1	--
			m-Dichlorobenzene	0.71	--	ND	--	--
			p-Dichlorobenzene	0.71	--	ND	--	--
			o-Dichlorobenzene	0.71	--	ND	--	--

Note:

* The tetrachlororethene results were compared to the soil cleanup criteria for tetrachloroethylene; tetrachloroethene is a synonym for tetrachloroethylene
** Residential Direct Contact / Impact to Groundwater
-- Not applicable / does not exceed criteria
(J) Indicates detected below sample quantitation limit
(B) Indicates also present in blank
(ND) Indicates compound not detected

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 8003, WAYSIDE, SITE Q (Dup of K)
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES

Sample ID/Depth	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
Q/4.0-4.5'	07-29-93	08-19-93	N-Nitrosodiethylamine	1.9	--	ND	--	--
			bis(2 chloroethyl)Ether	1.9	--	ND	0.66/10	--
			1,3-Dichlorobenzene	1.9	--	ND	5,100/100	--
			1,4-Dichlorobenzene	1.9	--	ND	570/100	--
			Benzyl Alcohol	1.9	--	ND	10,000/50	--
			1,2-Dichlorobenzene	1.9	--	ND	5,100/50	--
			bis(2-chloroisopropyl)Ether	1.9	--	ND	2,300/10	--
			N-Nitroso-Di-n-Propylamine	1.9	--	ND	0.66/10	--
			Hexachloroethane	1.9	--	ND	6/100	--
			Nitrobenzene	1.9	--	ND	28/10	--
			Isophorone	1.9	--	ND	1,100/50	--
			bis(2-Chloroethoxy)Methane	1.9	--	ND	--	--
			1,2,4-Trichlorobenzene	1.9	--	ND	68/100	--
			Naphthalene	1.9	--	ND	230/100	--
			4-Chloroaniline	1.9	--	ND	230	--
			Hexachlorobutadiene	1.9	--	ND	1/100	--
			2-Methylnaphthalene	1.9	--	ND	--	--
			Hexachlorocyclopentadiene	1.9	--	ND	400/100	--
			2-Chloronaphthalene	1.9	--	ND	--	--
			2-Nitroaniline	9.4	--	ND	--	--
			Dimethyl Phthalate	1.9	--	ND	10,000/50	--
			Acenaphthylene	1.9	--	ND	--	--
			3-Nitroaniline	9.4	--	ND	--	--
			Anthracene	1.9	--	ND	10,000/100	--

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 8003, WAYSIDE, SITE Q (Dup of K)
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES (Continued)

Sample ID/Depth	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
Q/4.0-4.5'	07-29-93	08-19-93	Pyrene	1.9	--	ND	1,700/100	--
			Benzo(k)Fluoranthene	1.9	--	ND	0.9/500	--
			Benzoic Acid	9.4	--	ND	--	--
			Acenaphthene	1.9	--	ND	3,400/100	--
			Dibenzofuran	1.9	--	ND	--	--
			2,4-Dinitrotoluene	1.9	--	ND	1/10	--
			2,6-Dinitrotoluene	1.9	--	ND	1/10	--
			Diethylphthalate	1.9	--	ND	10,000/50	--
			4-Chlorophenyl-phenlyether	1.9	--	ND	--	--
			4-Nitroaniline	9.4	--	ND	--	--
			N-Nitrosodiphenylamine	1.9	--	ND	140/100	--
			4-Bromophenyl-phenylether	1.9	--	ND	--	--
			Hexachlorobenzene	1.9	--	ND	0.66/100	--
			Phenanthrene	1.9	--	ND	--	--
			Fluoranthene	1.9	--	ND	2,300/100	--
			Butylbenzylphthalate	1.9	--	ND	1,100/100	--
			3,3-Dichlorobenzidine	3.7	--	ND	2/100	--
			Benzo(a)Anthracene	1.9	--	ND	0.9/500	--
			bis(2-Ethylhexyl)Phthalate	1.9	--	ND	49/100	--
			Di-n-Octyl Phthalate	1.9	--	ND	1,100/100	--
			Benzo(b)Fluoranthene	1.9	--	ND	0.9/50	--
			Indeno(1,2,3-cd)Pyrene	1.9	--	ND	0.9/500	--
			Dibenzo(a,h)Anthracene	1.9	--	ND	--	--
			Benzo(g,h,i)Perylene	1.9	--	ND	--	--

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BIULDING 8003, WAYSIDE, SITE Q (Dup of K)
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES (Continued)

Sample ID/Depth	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
Q/4.0-4.5'	07-29-93	08-19-93	Benzidine	3.7	--	ND	--	--
			Fluorene	1.9	--	ND	2,300/100	--
			Di-n-butylphthalate	1.9	--	ND	5,700/100	--
			Chrysene	1.9	--	ND	9/500	--
			Benzene(a) Pyrene	1.9	--	ND	0.66/100	--

Note:

**	Residential Direct Contact / Impact to Groundwater
--	Not applicable / does not exceed criteria
(J)	Indicates detected below sample quantitation limit
(B)	Indicates also present in blank
(ND)	Indicates compound not detected

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 8003, WAYSIDE, SITE Q (Dup of K)
FORT MONMOUTH, NEW JERSEY
VOLATILE TICS

Sample ID/Depth	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
Q/4.0-4.5'	07-29-93	08-08-93	2-Octene,2,6-dimethyl-	--	--	1.5	--	--
			Cyclopropane, trimethylmethylene	--	--	0.48	--	--
			Cyclopropane,1-(1,1-dimethylethyl)-2-methyl	--	--	0.55	--	--
			Cyclooctane,1,5-dimethyl-	--	--	0.52	--	--
			Cyclopentane,1,3-dimethyl-2-(1-methyletheny	--	--	0.66	--	--
			1,4-Hexadiene,2,3-dimethyl-	--	--	1.4	--	--
			Ethanone,1-(1-cyclohexen-1-yl)-	--	--	0.55	--	--
			Cyclohexanone,5-methyl-2-(1-methylethenyl)-	--	--	0.45	--	--
			2-Decene,4-methyl-,(Z)-	--	--	1.8	--	--
			1,4-Undecadiene, (Z)-	--	--	0.43	--	--
			Naphthalene,decahydro-	--	--	4.4	--	--
			Cyclohexane,2,4-diethyl-1-methyl-	--	--	1.4	--	--

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 8003, WAYSIDE, SITE Q (Dup of K)
FORT MONMOUTH, NEW JERSEY
VOLATILE TICS (Continued)

Sample ID/Depth	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
Q/4.0-4.5'	07-29-93	08-08-93	Bicyclo[3.3.1]non-2-en-9-one	--	--	0.93	--	--
			Cyclohexanone,5-methyl-2-(1-methylethyliden-	--	--	4.7	--	--
			3-Octyne,2,2,7,-trimethyl-	--	--	4.7	--	--
			4,5-Nonadiene,2-methyl-	--	--	1.1	--	--
			4,5-Nonadiene	--	--	2.2	--	--
			Total TICS	--	--	27.77	--	--

Note:

** Residential Direct Contact / Impact to Groundwater
-- Not applicable / does not exceed criteria

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 8003, WAYSIDE, SITE Q (Dup of K)
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILE TICS

Sample ID/Depth	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
Q/4.0-4.5'	07-29-93	08-19-93	Unknown Substituted Alkane	--	--	9.8	--	--
			Unknown Substituted Alkane	--	--	7.4	--	--
			Unknown Substituted Alkane	--	--	13.0	--	--
			Unknown Substituted Alkane	--	--	23.0	--	--
			Unknown Substituted Alkane	--	--	9.7	--	--
			Unknown Substituted Alkane	--	--	27.0	--	--
			Unknown Substituted Alkane	--	--	36.0	--	--
			Unknown	--	--	15.0	--	--
			Unknown Substitued Alkane	--	--	11.0	--	--
			Unknown Substitued Alkane	--	--	51.0	--	--
			Unknown	--	--	15.0	--	--
			Unknown Substitued Alkane	--	--	23.0	--	--
			Unknown Substitued Alkane	--	--	6.1	--	--
			Unknown Substitued Alkane	--	--	10.0	--	--
			Unknown Substitued Alkane	--	--	6.2	--	--
			Unknown Substitued Alkane	--	--	5.7	--	--

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 8003, WAYSIDE, SITE Q (Dup of K)
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILE TICS (Continued)

Sample ID/Depth	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
Q/4.0-4.5'	07-29-93	08-19-93	Unknown Substitued Alkane	--	--	3.6	--	--
			Unknown Substitued Alkane	--	--	5.9	--	--
			Unknown Substitued Alkane	--	--	4.5	--	--
			Unknown Substitued Alkane	--	--	3.2	--	--
			Total TICS	--	--	286.1	--	--

Note:

** Residential Direct Contact / Impact to Groundwater
-- Not applicable / does not exceed criteria

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 8003, WAYSIDE, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	07-29-93	08-08-93	Acrolein	50	--	ND
			Acrylonitrile	50	--	ND
			Chloromethane	10	--	ND
			Bromomethane	10	--	ND
			Vinyl Chloride	10	--	ND
			Chloroethane	10	--	ND
			Acetone	10	--	2.2 JB
			1,1-Dichloroethene	5	--	ND
			Carbon Disulfide	10	--	ND
			Methylene Chloride	5	--	ND B
			1,2-Dichloroethene (trans)	5	--	ND
			1,1-Dichloroethane	5	--	ND
			Vinyl Acetate	5	--	ND
			2-Butanone	10	--	ND
			Chloroform	5	--	ND
			1,1,1-Trichloroethane	5	--	ND
			Carbon Tetrachloride	5	--	ND
			1,2-Dichloroethane	5	--	ND
			Benzene	5	yes	ND
			Trichloroethene	5	--	ND
			1,2-Dichloropropane	5	--	ND
			Bromodichloromethane	5	--	ND
			2-Chloroethylvinylether	10	--	ND
			2-Hexanone	10	--	ND
			trans-1,3-Dichloropropene	5	--	ND
			Toluene	5	yes	ND

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 8003, WAYSIDE, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	07-29-93	08-08-93	cis-1,3-Dichloropropene	5	--	ND
			1,1,2,2-Tetrachloroethane	5	--	ND
			1,1,2-Trichloroethane	5	--	ND
			4-Methyl-2-pentanone	10	--	ND
			Tetrachloroethene	5	--	ND
			Dibromochloromethane	5	--	ND
			Chlorobenzene	5	--	ND
			Ethylbenzene	5	yes	ND
			Xylenes (Total)	5	yes	ND
			Styrene	5	--	ND
			Bromoform	5	--	ND
			m-Dichlorobenzene	5	--	ND
			p-Dichlorobenzene	5	--	ND
			o-Dichlorobenzene	5	--	ND

Note:

-- Not applicable / does not exceed criteria
(B) Indicates also present in blank
(J) Indicates detected below sample quantitation limit
(ND) Indicates compound not detected
(NA) Not available for this constituent

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 8003, WAYSIDE, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	07-29-93	08-18-93	N-Nitrosodiethylamine	10	--	ND
			bis(2 chloroethyl)Ether	10	--	ND
			1,3-Dichlorobenzene	10	--	ND
			1,4-Dichlorobenzene	10	--	ND
			Benzyl Alcohol	10	--	ND
			1,2-Dichlorobenzene	10	--	ND
			bis(2-chloroisopropyl)Ether	10	--	ND
			N-Nitroso-Di-n-Propylamine	10	--	ND
			Hexachloroethane	10	--	ND
			Nitrobenzene	10	--	ND
			Isophorone	10	--	ND
			bis(2-Chloroethoxy)Methane	10	--	ND
			1,2,4-Trichlorobenzene	10	--	ND
			Naphthalene	10	--	ND
			4-Chloroaniline	10	--	ND
			Hexachlorobutadiene	10	--	ND
			2-Methylnaphthalene	10	--	ND
			Hexachlorocyclopentadiene	10	--	ND
			2-Chloronaphthalene	10	--	ND
			2-Nitroaniline	50	--	ND
			Dimethyl Phthalate	10	--	ND
			Acenaphthylene	10	--	ND
			3-Nitroaniline	50	--	ND
			Anthracene	10	--	ND

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 8003, WAYSIDE, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	07-29-93	08-18-93	Pyrene	10	--	ND
			Benzo(k)Fluoranthene	10	--	ND
			Benzoic Acid	50	--	ND
			Acenaphthene	10	--	ND
			Dibenzofuran	10	--	ND
			2,4-Dinitrotoluene	10	--	ND
			2,6-Dinitrotoluene	10	--	ND
			Diethylphthalate	10	--	ND
			4-Chlorophenyl-phenlyether	10	--	ND
			4-Nitroaniline	50	--	ND
			N-Nitrosodiphenylamine	10	--	ND
			4-Bromophenyl-phenylether	10	--	ND
			Hexachlorobenzene	10	--	ND
			Phenanthrene	10	--	ND
			Fluoranthene	10	--	ND
			Butylbenzylphthalate	10	--	ND
			3,3-Dichlorobenzidine	20	--	ND
			Benzo(a)Anthracene	10	--	ND
			bis(2-Ethylhexyl)Phthalate	10	--	ND B
			Di-n-Octyl Phthalate	10	--	ND
			Benzo(b)Fluoranthene	10	--	ND
			Indeno(1,2,3-cd)Pyrene	10	--	ND
			Dibenzo(a,h)Anthracene	10	--	ND
			Benzo(g,h,i)Perylene	10	--	ND

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BIULDING 8003, WAYSIDE, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	07-29-93	08-18-93	Benzidine	20	--	ND
			Fluorene	10	--	ND
			Di-n-butylphthalate	10	--	ND
			Chrysene	10	--	ND
			Benzene(a) Pyrene	10	--	ND

Note:

-- Not applicable / does not exceed criteria
(B) Indicates also present in blank
(J) Indicates detected below sample quantitation limit
(ND) Indicates compound not detected
(NA) Not available for this constituent

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 8003, WAYSIDE, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILE TICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	07-29-93	08-18-93	Unknown	--	--	4
			Unknown	--	--	7
			Unknown	--	--	6
			Unknown	--	--	7
			Unknown	--	--	12
			Unknown	--	--	3
			Unknown	--	--	3
			Unknown	--	--	2
			Unknown	--	--	3
			Unknown	--	--	5
			Unknown	--	--	10
			Unknown	--	--	6
			Total TICS	--	--	68

Note:

-- Not applicable / does not exceed criteria

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 8003, WAYSIDE, TRIP BLANK
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitaton Limit (ug/l)	Compound of Concern	Result (ug/l)
Trip Blank	07-29-93	08-08-93	Acrolein	50	--	ND
			Acrylonitrile	50	--	ND
			Chloromethane	10	--	ND
			Bromomethane	10	--	ND
			Vinyl Chloride	10	--	ND
			Chloroethane	10	--	ND
			Acetone	10	--	4 JB
			1,1-Dichloroethene	5	--	ND
			Carbon Disulfide	10	--	ND
			Methylene Chloride	5	--	ND B
			1,2-Dichloroethene (trans)	5	--	ND
			1,1-Dichloroethane	5	--	ND
			Vinyl Acetate	5	--	ND
			2-Butanone	10	--	ND
			Chloroform	5	--	ND
			1,1,1-Trichloroethane	5	--	ND
			Carbon Tetrachloride	5	--	ND
			1,2-Dichloroethane	5	--	ND
			Benzene	5	yes	ND
			Trichloroethene	5	--	ND
			1,2-Dichloropropane	5	--	ND
			Bromodichloromethane	5	--	ND
			2-Chloroethylvinylether	10	--	ND
			2-Hexanone	10	--	ND
			trans-1,3-Dichloropropene	5	--	ND
			Toluene	5	yes	ND

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 8003, WAYSIDE, TRIP BLANK
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Trip Blank	07-29-93	08-08-93	cis-1,3-Dichloropropene	5	--	ND
			1,1,2,2-Tetrachloroethane	5	--	ND
			1,1,2-Trichloroethane	5	--	ND
			4-Methyl-2-pentanone	10	--	ND
			Tetrachloroethene	5	--	ND
			Dibromochloromethane	5	--	ND
			Chlorobenzene	5	--	ND
			Ethylbenzene	5	yes	ND
			Xylenes (Total)	5	yes	ND
			Styrene	5	--	ND
			Bromoform	5	--	ND
			m-Dichlorobenzene	5	--	ND
			p-Dichlorobenzene	5	--	ND
			o-Dichlorobenzene	5	--	ND

Note:

-- Not applicable / does not exceed criteria
(B) Indicates also present in blank
(J) Indicates detected below sample quantitation limit
(ND) Indicates compound not detected
(NA) Not available for this constituent

SMITH

APPENDIX A

NJDEP BUST CLOSURE APPROVAL

UNDERGROUND STORAGE TANK SYSTEM
CLOSURE APPROVAL

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION - BUREAU OF UNDERGROUND STORAGE TANKS
CN-029, TRENTON, NJ 08625-0029

TMS # C-92-2953 **UST #** 0192477 – 1 Bldg 8603

US Army Fort Monmouth
DEH Bldg. 167
Ft. Monmouth, NJ 07703

(Monmouth)

THE ABOVE LISTED FACILITY IS HEREBY GRANTED APPROVAL TO PERFORM THE FOLLOWING ACTIVITY IN ACCORDANCE WITH N.J.A.C. 7:14B-1 et seq.:

REMOVAL: One 1,000 gallon #2 fuel oil (UST)s, and appurtenant piping.

SITE ASSESSMENT: Soil samples will be taken every five (5) feet along the center line of each tank and one (1) soil sample for every 15 feet along all associated piping. Two (2) additional samples will be taken from around the tank and biased to the areas of highest field screened readings. Samples will be analyzed for TPHC. If sample results are greater than 1,000ppm than samples will be analyzed for VO+10.

ON-SITE MANAGER: Dinkerrai Desai **TELEPHONE:** 908-532-1475

OWNER: **TELEPHONE:**

EFFECTIVE DATE: September 14, 1992

THIS FORM MUST BE DISPLAYED AT THE SITE DURING THE APPROVED ACTIVITY AND MUST BE MADE AVAILABLE FOR INSPECTION AT ALL TIMES.

Michael S Kelly (for)

KEVIN F. KRATINA, ACTING BUREAU CHIEF
BUREAU OF UNDERGROUND STORAGE TANKS

UST-011 GREEN- APPLICANT COPY- APPLICANT COPY- LCO COPY- TMS COPY- R&B

SMITH

APPENDIX B

CERTIFICATIONS

UST-014
2/91

FOR STATE USE ONLY

UST # _____
Date Rec'd _____
TMS # _____
Staff _____

State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 029
Trenton, NJ 08625-0029
Tel. # 609-984-3156
Fax. # 609-292-5604

Scott A. Weiner
Commissioner

Karl J. Delaney
Director

UNDERGROUND STORAGE TANK SITE ASSESSMENT SUMMARY

Under the provisions of the Underground Storage of Hazardous Substances Act in accordance with N.J.A.C. 7:14B

This Summary form shall be used by all owners and operators of Underground Storage Tank Systems (USTS) who have either reported a release and are subject to the site assessment requirements of N.J.A.C. 7:14B-8.2 or who have closed USTS pursuant to N.J.A.C. 7:14B-9.1 et seq. and are subject to the site assessment requirements of N.J.A.C. 7:14B-9.2 and 9.3.

INSTRUCTIONS:

- *Please print legibly or type.*
- *Fill in all applicable blanks. This form will require various attachments in order to complete the Summary. The technical guidance document, Interim Closure Requirements for UST's, explains the regulatory (and technical) requirements for closure and the Scope of Work, Investigation and Corrective Action Requirements for Discharges from Underground Storage Tanks and Piping Systems explains the regulatory (and technical) requirements for corrective action.*
- *Return one original of the form and all required attachments to the above address.*
- *Attach a scaled site diagram of the subject facility which shows the information specified in Item IV B of this form.*
- *Explain any "No" or "N/A" response on a separate sheet.*

Date of Submission 26 JUL 1995

Building 8003

0192477-1
FACILITY REGISTRATION #

I. FACILITY NAME AND ADDRESS

U.S. Army Fort Monmouth New Jersey
Directorate of Engineering and Housing Building 167
Fort Monmouth New Jersey 07703 County Monmouth
Telephone No. 908-532-6224

OWNER'S NAME AND ADDRESS, if different from above

Telephone No. _____

II. DISCHARGE REPORTING REQUIREMENTS

A. Was contamination found? ___Yes _X_ No If Yes, Case No._____
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)

B. The substance(s) discharged was(were) N/A

C. Have any vapor hazards been mitigated? ___Yes ___No _X_ N/A

III. DECOMMISSIONING OF TANK SYSTEMS

Closure Approval No. C-92-2953

The site assessment requirements associated with tank decommissioning are explained in the Technical Guidance Document, **Interim Closure Requirements for UST's**, Section V. A-D. Attach complete documentation of the methods used and the results obtained for each of the steps of tank decommissioning used. Please include a site map which shows the locations of all samples and borings, the location of all tanks and piping runs at the facility at the beginning of the tank closure operation and annotated to differentiate the status of all tanks and piping (e.g., removed, abandoned, temporarily closed, etc.). The same site map can be used to document other parts of the site assessment requirements, if it is properly and legibly annotated.

IV. SITE ASSESSMENT REQUIREMENTS

A. Excavated Soil

Any evidence of contamination in excavated soil will require that the soil be classified as either Hazardous Waste or Non-Hazardous Waste. Please include all required documentation of compliance with the requirements for handling contaminated excavated soil (if any was present) as explained in the technical guidance documents for closure and corrective action. Describe amount of soil removed, its classification, and disposal location.

B. Scaled Site Diagrams

1. Scaled site diagrams must be attached which include the following information:

   a. North arrow and scale
   b. The locations of the ground water monitoring wells
   c. Location and depth of each soil sample and boring
   d. All major surface and sub-surface structures and utilities
   e. Approximate property boundaries
   f. All existing or closed underground storage tank systems, including appurtenant piping
   g. A cross-sectional view indicating depth of tank, stratigraphy and location of water table
   h. Locations of surface water bodies

C. Soil samples and borings (check appropriate answer)

1. Were soil samples taken from the excavation as prescribed? _X_ Yes ___ No ___ N/A

2. Were soil borings taken at the tank system closure site as prescribed? ___ Yes ___ No _X_ N/A

3. Attach the analytical results in tabular form and include the following information about each sample:
   a. Customer sample number (keyed to the site map)
   b. The depth of the soil sample
   c. Soil boring logs
   d. Method detection limit of the method used
   e. QA/QC Information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed 0

2. Attach the analytical results of the ground water samples in tabular form. Include the following information for each sample from each well:

   a. Site diagram number for each well installed
   b. Depth of ground water surface
   c. Depth of screened interval
   d. Method detection limit of the method used
   e. Well logs
   f. Well permit numbers
   g. QA/QC Information as required

V. SOIL CONTAMINATION

A. Was soil contamination found? ___ Yes X No
If "Yes", please answer Question B-E
If "No", please answer Question B

B. The highest soil contamination still remaining in the ground has been determined to be:
1. ND ppb total BTEX, 4.7(Tics) ppb total non-targeted VOC
2. ND ppb total B/N, 51.0 (Tics) ppb total non-targeted B/N
3. 2640.0 ppm TPHC
4. ND ppb _____ (for non-petroleum substance)

See Table 2 for other parameters

C. Remediation of free product contaminated soils

1. All free product contaminated soil on the property boundaries and above the water table are believed to have been removed from the subsurface ___ Yes X No
2. Free product contaminated soils are suspected to exist below the water table ___ Yes X No
3. Free product contaminated soils are suspected to exist off the property boundaries. ___ Yes X No

D. Was the vertical and horizontal extent of contamination determined? ___ Yes ___ No X N/A

E. Does soil contamination intersect ground water? ___ Yes ___ No X N/A

VI. GROUND WATER CONTAMINATION N/A

A. Was ground water contamination found? ___ Yes ___ No
If "Yes", please answer Questions B-G.
If "No", please answer only Question B.

B. The highest ground water contamination at any 1 sampling location and at any 1 sampling event to date has been determined to be:

1. _____ ppb total BTEX, _____ ppb total non-targeted VOC
2. _____ ppb total B/N, _____ ppb total non-targeted B/N
3. _____ ppb total MTBE, _____ ppb total TBA
4. _____ ppb _____ (for non-petroleum substance)
5. greatest thickness of separate phase product found _____
6. separate phase product has been delineated ___ Yes ___ No ___ N/A

C. Result(s) of well search

1. A well search (including a review of manual well records) indicates that private, municipal or commercial wells do exist within the distances specified in the Scope of Work. ___ Yes ___ No ___ N/A

2. The number of these wells identified is _____.

D. Proximity of wells and contaminant plume

1. The shallowest depth of any well noted in the well search which may be in the horizontal or vertical potential path(s) of the contaminant plume(s) is _____ feet below grade (consideration has been given for the effects of pumping, subsurface structures, etc. on the direction(s) of contaminant migration). This well is _____ feet from the source and its screening begins at a depth of _____ feet.

2. The shallowest depth to the top of the well screen for any well in the potential path of the plume(s) (as described in D1 above) is _____ feet below grade. This well is located _____ feet from the source.

3. The closest horizontal distance of a private, commercial or municipal well in the potential path of the plume (as determined in D1) is _____ feet from the source. This well is _____ feet deep and screening begins at a depth of _____ feet.

E. A plan for separate phase product recovery has been included. ___Yes ___No ___N/A

F. A ground water contour map has been submitted which includes the ground water elevations for each well. ___Yes ___No ___N/A

G. Delineation of contamination

1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries. ___Yes ___No

2. The plume is suspected to continue off the property at concentrations greater than MCLs. ___Yes ___No

3. Off property access (circle one): is being sought has been approved has been denied

VII. SITE ASSESSMENT CERTIFICATION [preparer of site assessment plan - N.J.A.C. 7:14B-8.3(b) &9.5(a)3]

The person signing this certification as the "Qualified Ground Water Consultant" (as defined in N.J.A.C.7:14B-1.6) responsible for the design and implementation of the site assessment plan as specified in N.J.A.C. 7:14B-8.3(a) & 9.2(b)2, must supply the name of the certifying organization and certification number.

"I certify under penalty of law that the information provided in this document is true, accurate, and complete and was obtained by procedures in compliance with N.J.A.C. 7:14B-8 and 9. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) Charles Appleby SIGNATURE _____

COMPANY NAME U.S. Army Fort Monmouth DATE 2-27-95
(Preparer of Site Assessment Plan)

CERTIFYING ORGANIZATION NJDEP CERTIFICATION NUMBER 2056

UST-014-
2/91

VIII. TANK DECOMMISSIONING CERTIFICATION [person performing tank decommissioning portion of closure plan- N.J.A.C. 7:14B-9.5(a)4]

"I certify under penalty of law that tank decommissioning activities were performed in compliance with N.J.A.C. 7:14B-9.2(b)3. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) ALL SERVICE ENVIRONMENTAL, INC SIGNATURE _____

COMPANY NAME 523 Route 303 Orangeburg, NY 10962 DATE 9-30-93

(Performer of Tank Decommissioning)

IX. CERTIFICATIONS BY THE RESPONSIBLE PARTY(IES) OF THE FACILITY

A. The following certification shall be signed by the highest ranking individual with overall responsibility for that facility [N.J.A.C. 7:14B-2.3(c)1i].

"I certify under penalty of law that the information provided in this document is true, accurate, and complete . I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) James Ott SIGNATURE _____

COMPANY NAME U.S. Army Fort Monmouth DATE 7/27/95

B. The following certification shall be signed as follows [according to the requirements of N.J.A.C. 7:14B-2.3(C)2i]:

1. For a corporation, by a principal executive officer of at least the level of vice president.
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
3. For a municipality, State, Federal or other public agency by either the principal executive officer or ranking elected official.
4. In cases where the highest ranking corporate partnership, governmental officer or official at the facility as required in A above is the same person as the official required to certify in B, only the certification in A need to be made. In all other cases, the certifications of A and B shall be made.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) _____ SIGNATURE _____

COMPANY NAME _____ DATE _____

SMITH

APPENDIX C

WASTE MANIFEST

State of New Jersey
Department of Environmental Protection and Energy
Hazardous Waste Regulation Program
Manifest Section
CN 028, Trenton, NJ 08625-0028

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039. Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJD078022172 — Manifest Document No. 2 7 7 8 1
2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: NWS Earle-Ea096, Route 34, Colts Neck, NJ
4. Generator's Phone (908) 577-0515

A. State Manifest Document Number: NJA 1708420
B. State Generator's ID: 5406
C. State Trans. ID:
D. Transporter's Phone (609) 696-4401
E. State Trans. ID:
F. Transporter's Phone ( )
G. State Facility's ID: 061AD1MP03
H. Facility's Phone (609) 696-4401

5. Transporter 1 Company Name: Casle Ecology Oil Salvage, Inc. TA Casle/Protank — 6. US EPA ID Number: N J D 0 4 3 9 9 5 4 9 9
7. Transporter 2 Company Name — 8. US EPA ID Number:
9. Designated Facility Name and Site Address: Casle Ecology Oil Salvage, Inc. TA Casle/Protank, 3209 E. Mill Rd, Vineland, N.J. 08360 — 10. US EPA ID Number: N J D 0 4 3 9 9 5 4 9 9

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. X Combustible Liquid, N.O.S. Combustible Liquid, NA1993	0 0 1	T	00990	G	X 1 2 2
b.					
c.					
d. —					

J. Additional Descriptions for Materials Listed Above: a. L,T Water Soil/Sed. b. c. d.
K. Handling Codes for Wastes Listed Above: a. b. c. d.

15. Special Handling Instructions and Additional Information
24 hour emergency response telephone #( )
CFII 0092F2 E.P.G. 127

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: JOHN PAWLUS — Signature: John Pawlus — Month Day Year: 10 20 92

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Jim Melvin — Signature — Month Day Year: 10 20 92

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Month Day Year

EPA Form 8700-22 (Rev. 9/88) Previous editions are obsolete. SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES
8 — GENERATOR COPY

In case of emergency -- spill immediately call the state the emergency number listed in and the N.J. Dept. of Environmental Protection and Energy, (609) 292-7172

SMITH

APPENDIX D

SOIL ANALYTICAL DATA PACKAGE

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEPE Certification # 13461

Client: U.S. Army
DEH, SELFM-EH-EV
Bldg. 167
Ft. Monmouth, NJ 07703

Lab. ID #: 1237.1-.6
Sample Rec'd: 07/08/93
Analysis Start: 07/08/93
Analysis Comp: 07/08/93

Analysis: 418.1 (TPH)
Matrix: Soil
Analyst: S. Hubbard

NJDEPE UST Reg.#: 00192477-1
TMS #: C-92-2953
NJDEPE Case #:
Location #: Bldg. # 8003

SITE Assessment

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1237.1	Site A hNu = ND	94	180.	3.3
1237.2	Site B hNu = ND	93	182.	3.3
1237.3	Site C hNu = ND	92	ND	3.3
1237.4	Site D hNu = ND	90	1000.	13.
1237.5	Site E hNu = ND	92	985.	13.
1237.6	Site F hNu = ND	90	199.	3.3
M. Bl.	METHOD BLANK	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit
* = Silica Gel Added # = hNu reading ND

1237.1 Dup = 99%: 1337.1 Spike = 97% recovery

Brian K. McKee
Laboratory Director

SERV-AIR, INC.
An E-SYSTEMS Company

P.O. #:

Chain of Custody

Project #: Bldg. 8003
Customer: DEH-Environmental
Phone: x26224

Sampler: Charles Appleby
Date / Time: 7/8/93
Site Name: Bldg. 8063
UST# 00192477-1
Site Assessment

Analysis Parameters
Start:
Finish:
Preservation Method

Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	TPHC	Remarks
1237.1	7/8/93 1200	Site A	Soil	1	X	HNU - ND
.2	1201	B		1	X	ND
.3	1201	C smell		1	X	ND
.4	1202	D		1	X	ND
.5	1203	E		1	X	ND
.6	1204	F		1	X	ND
.7						

HNU - Calibrated To 55 ppm Span Gas
Span =

Relinquished By (signature)	Date / Time	Received By (signature)	Shipped By:
	7/8/93 1210		Personal
Relinquished By (signature)	Date / Time	Received for Lab by (signature):	Date / Time
	7/8/93 1321	Sarah J. Hubbard	7-8-93 1327

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.

SAI-ENV COC form 01 Page 1 of 1 Pages Rev. A Date: 02 Apr 93

FT. MONMOUTH OFFICE
E-SYSTEMS, INC. • P. O. BOX 369, BUILDING 1209 • FT. MONMOUTH, NEW JERSEY 07703-5000 • (201) 544-0995

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEPE Certification # 13461

Client: U.S. Army
DEH, SELFM-EH-EV
Bldg. 167
Ft. Monmouth, NJ 07703

Lab. ID #: 1237.1-.6
Sample Rec'd: 07/08/93
Analysis Start: 07/08/93
Analysis Comp: 07/08/93

Analysis: 418.1 (TPH)
Matrix: Soil
Analyst: S. Hubbard

SITE Assessment

NJDEPE UST Reg.#: 00192477-1
TMS #: C-92-2953
NJDEPE Case #:
Location #: Bldg. # 8003

July 8, 1993
1448 Sarah Hubbard

Blank
33.75 (75 MV) R 9993
67.5 (171 MV)
135 (325.4 MV)

1237.1
1237.1 (123.4 MV)
0.000 (131 MV)
1237.1 Spike 304 MV)
1237.2 122 (MV)
1237.3 (ND)
1237.4 Spike Blank
1237.4 1:4 dil (166 MV)
1237.5 1:4 dil (165 MV)
1237.6 (130 MV)
1237.7 1:4 dil (136 MV)

PHC Conformance/Non-conformance Summary Report

	No	Yes
1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank	✓	
2. Matrix Spike/Matrix Sp Dup. Recoveries Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range)		✓
3. IR Spectra submitted for standards, blanks, & samples		✓
4. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	N/A	
5. Extraction holding time met. (If not met, list number of days exceeded for each sample)		✓
6. Analysis holding time met. (If not met, list number of days exceeded for each sample)		✓

Comments: _____

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Brian K. McKee
Laboratory Manager

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEPE Certification # 13461

Client: U.S. Army
DEH, SELFM-EH-EV
Bldg. 167
Ft. Monmouth, NJ 07703

Lab. ID #: 1240.8-.11
Sample Rec'd: 07/09/93
Analysis Start: 07/10/93
Analysis Comp: 07/10/93

Analysis: 418.1 (TPH)
Matrix: Soil
Analyst: S. Hubbard

NJDEPE UST Reg.#: 00192477-1
TMS #: C-93-2953
NJDEPE Case #:
Location #: 8003

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1240.8	Site G,SSW Wall #	90	ND	3.3
1240.9	Site H,S Wall #	86	ND	3.3
1240.10	Site I,SSE Wall #	87	4900.	53.
1240.11	Site J, Below pad,SW corner #	95	ND	3.3
M. Bl.	METHOD BLANK	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit
* = Silica Gel Added # = hNu reading = ND

1240.11 Dup =100%; 1240.11 Spike = 85%; Spike Dup.= 87%

Brian K. McKee
Laboratory Director

SERV-AIR, INC.
An E-SYSTEMS Company

P.O. #:

Chain of Custody

Project #:	Sampler: Charles Appleby DEH	Date / Time 7/9/93	Analysis Parameters	Start:
Customer: C. Appleby, DEH	Site Name: Bldg. 8003 UST Site Assessment Remedial Phase			Finish:
Phone: x26224				Preservation Method

Lab Sample ID Number	Date/Time		Customer Sample Location/ID Number	Sample Matrix	# of Bottles	TPHC	HNU	Remarks
1240.8	7/9/93	1705	Site G SSW Wall	Soil	1	X	ND	
.9	↓	1706	Site H S Wall	Soil	1	X	ND	
.10		1707	Site I SSE Wall	Soil	1	X	ND	
.11		1708	Site J - below Pad SW Corner	Soil	1	X	ND	

Relinquished By (signature)	Date / Time	Received By (signature)	Shipped By:
	7/9/93 1845		
Relinquished By (signature)	Date / Time	Received for Lab by (signature):	Date / Time

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.

SAI-ENV COC form 01 Page 1 of 1 Pages Rev. A Date: 02 Apr 93

FT. MONMOUTH OFFICE
E-SYSTEMS, INC. • P. O. BOX 369, BUILDING 1209 • FT. MONMOUTH, NEW JERSEY 07703-5000 • (201) 544-0995

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEPE Certification # 13461

Client: U.S. Army
DEH, SELFM-EH-EV
Bldg. 167
Ft. Monmouth, NJ 07703

Lab. ID #: 1246.1-.6
Sample Rec'd: 07/15/93
Analysis Start: 07/16/93
Analysis Comp: 07/16/93

Analysis: 418.1 (TPH)
Matrix: Soil
Analyst: S. Hubbard

NJDEPE UST Reg.#: 00192477-1
TMS #: C-92-2953
NJDEPE Case #:
Location #: Bldg. # 8003

Site Remediation

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1246.1	Site K, SW. SIDE WALL hNu = 5	91	2640. *	20.
1246.2	Site L, S. SIDE WALL hNu = ND	91	ND	3.3
1246.3	Site M, SE. SIDE WALL hNu = ND	86	ND	3.3
1246.4	Site N, E. SIDEWALL hNu = ND	93	ND	3.3
1246.5	Site O, SE. PIT BOTTOM hNu = ND	96	24.2	3.3
1246.6	Site P, (dup of O) hNu = ND	96	27.0	3.3
M. Bl.	METHOD BLANK	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit
* = Silica Gel Added

1246.6 Dup = 95%: 1246.6 Spike = 90%: 1246.6 Spike Dup. = 98%

Brian K. McKee
Laboratory Director

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEPE Certification # 13461

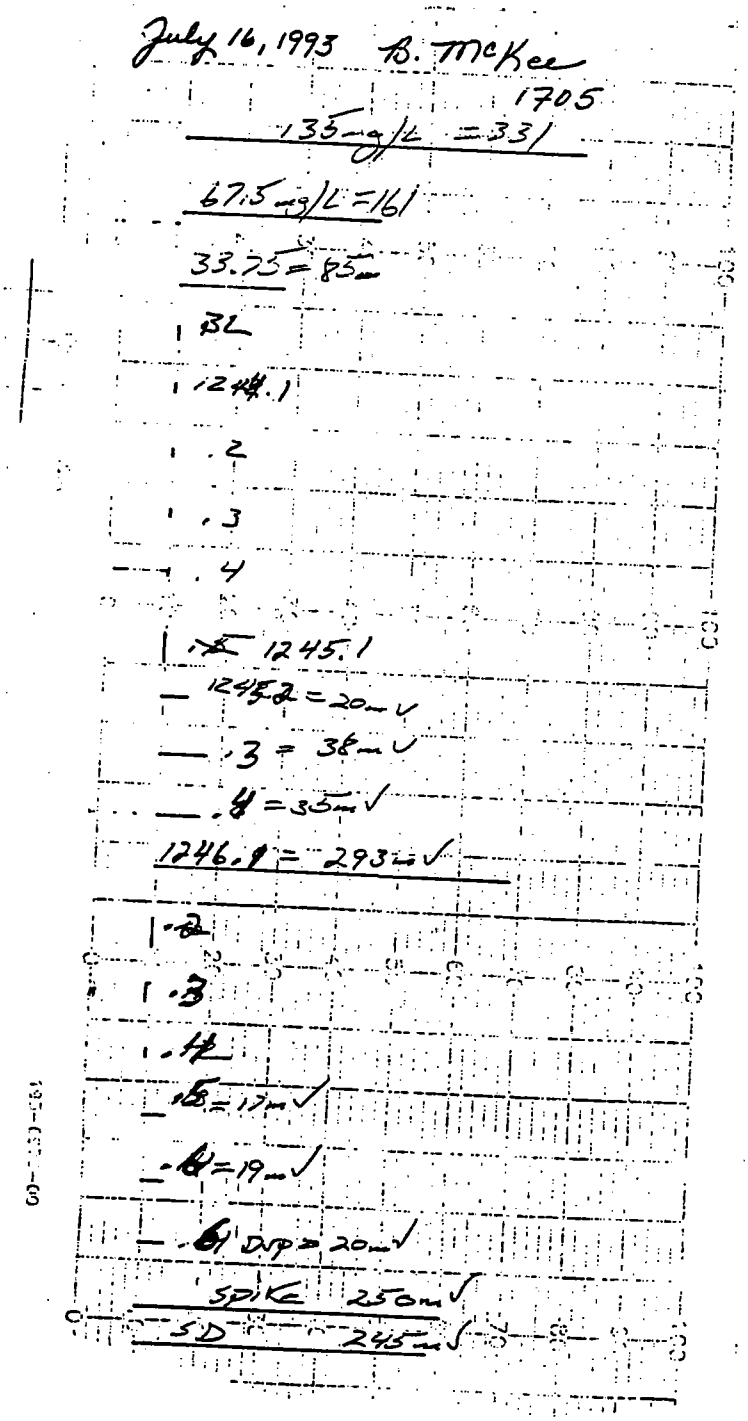
Client: U.S. Army
DEH, SELFM-EH-EV
Bldg. 167
Ft. Monmouth, NJ 07703

Lab. ID #: 1246.1-.6
Sample Rec'd: 07/15/93
Analysis Start: 07/16/93
Analysis Comp: 07/16/93

Analysis: 418.1 (TPH)
Matrix: Soil
Analyst: S. Hubbard

NJDEPE UST Reg.#: 00192477-1
TMS #: C-92-2953
NJDEPE Case #:
Location #: Bldg. # 8003

Site Remediation



SERV-AIR, INC.
An E-SYSTEMS Company

P.O. #:

Chain of Custody

Project #: C-92-2953
Customer: DEH
Phone: x 26224

Sampler: C. Appleby
Site Name: Bldg. 8003
UST-00192477-1
UST Site Remediation

Date / Time: 7/15/93 | 1230

Analysis Parameters: TPHC

Start:
Finish:

Preservation Method

Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	TPHC	Hnu	Remarks
1246.9	7/15/93 1445	Site K SW Sidewall	Soil	1	X	5 ppm	
.20	7/15/93 1446	Site L S Sidewall	Soil	1	X	ND	
.21	7/15/93 1447	Site M SE Sidewall	Soil	1	X	ND	
.22	7/15/93 1448	Site N E Sidewall	Soil	1	X	ND	
.23	7/15/93 1449	Site O SE Pit Bottom	Soil	1	X	ND	
.24	7/15/93 1450	Site P (Duplicate of O)	Soil	1	X	ND	

Hnu - S/N = 270136
Span = 8.2 @ 55 ppm Span

Relinquished By (signature)	Date / Time	Received By (signature)	Shipped By:
	7/15/93 1630		
Relinquished By (signature)	Date / Time	Received for Lab by (signature):	Date / Time

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.

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PHC Conformance/Non-conformance Summary Report

	No	Yes
1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank	✓	
2. Matrix Spike/Matrix Sp Dup. Recoveries Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range)		✓
3. IR Spectra submitted for standards, blanks, & samples		✓
4. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	N/A	
5. Extraction holding time met. (If not met, list number of days exceeded for each sample)		✓
6. Analysis holding time met. (If not met,list number of days exceeded for each sample)		✓

Comments: _____

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Brian K. McKee
Laboratory Manager

UST ANALYSIS RESULT CHECKLIST

(one form for each site report)

Building No. 8003 Laboratory(SAI/~~Conts~~) ID#s 1252.1

IJO No. 93-0116 Date Sampled: 7-29-93

Date Analysis Submitted: _____ Date Reviewed: 5-12-94

ITEM	ITEM OF WORK	ITEM COMPLETE (YES/NO)	COMMENTS
A	Labor and Equip. Supplied	N	
B	Work done by Cert. Lab	Y	
C	Trip and Field Blanks, ect. Supplied by Contractor	Y	
D	Contractor picked up samples at Bldg. 490	N	Fed Ex
G	Aqueous samples analyzed for Xylene, ~~MTBE, TBA~~	Y	
H	Chain of Custody correct (Hnu, Site Names, SAI #'s)	Y	
H	MW sampling field data (DTW, Hnu/OVA, ect..)	N/A	
H	Laboratory Decon. Narrative	NA	
J	Samples were not distributed to another Laboratory	Y	
K	Appropriate NJDEPE checklists are completed	Y	
J	Result headers are correct	Y	
J	QA/QC data	Y	
J	Non-TIC results reported within 48 hrs.		
J	Final Report complete within 3-Weeks (3 copies)		
J	Final Report complete within 4- weeks (3 copies) PP+40		
J	List Approved Contract Deviations	NA	

ANALYSIS / SERVICE	COST	QUANTITY	SUB-TOTAL
SOIL- B/N+15	$190.00	2	380
SOIL- VOA+15	140.00	3	420
SOIL- VOA+15, XYLENE,Pb	150.00		
SOIL- B/N+15, VOA+15, XYLENE, Pb	340.00		
SOIL- PP+40	625.00		
AQUEOUS- 624(XYLENE,TBA,MTBE) 625, Pb	340.00		
MONITORING WELL SAMPLING	65.00		
		TOTAL	$ 800

REVIEWERS NAME B. MK

618 HERON DRIVE, P.O. BOX 489 • BRIDGEPORT, NJ 08014-0489 • 609-467-9521

E-SYSTEMS, INC.

PROJECT: U.S. ARMY-FORT MONMOUTH, NJ BLDG 8003

ANALYSIS NO:	CLIENT ID:
A 3249	SITE Q
A 3250	TRIP BLANK
A 3251	FIELD BLANK

DATE RECEIVED: AUGUST 2, 1993

TWENTY FIRST CENTURY
ENVIRONMENTAL, INC.

RICHARD W. LYNCH
LABORATORY MANAGER

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

	No	Yes
1. Chromatograms Labeled/Compounds Identified (Field Samples and Method Blanks)	___	✓
2. GC/MS Tune Specifications		
a. BFB Meet Criteria	___	✓
b. DFTPP Meet Criteria	___	✓
3. GC/MS Tuning Frequency - Performed every 24 hours for 600 series and 12 hours for 8000 series.	___	✓
4. GC/MS Calibration - Initial Calibration performed within 30 days before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series	___	✓
5. GC/MS Calibration Requirements		
a. Calibration Check Compounds	___	✓
b. System Performance Check Compounds	___	✓

6. Blank Contamination - If yes, list compounds and concentrations in each blank:

a. VOA Fraction: Acetone + Methylene Chloride Below MDL
b. B/N Fraction: Bis (2-Ethylhexyl) Phthalate at 17 PPB + Unknowns
c. Acid Fraction: _____

7. Surrogate Recoveries Meet Criteria	___	✓

If not met, list those compounds and their recoveries which fall outside the acceptable range:

a. VOA Fraction: _____
b. B/N Fraction: _____
c. Acid Fraction: _____

If not met, were the calculations checked and the results qualified as "estimated"?	___	N/A
8. Matrix Spike/ Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries which fall outside the acceptable range)	___	✓

a. VOA Fraction: _____
b. B/N Fraction: _____
c. Acid Fraction: _____

9. Internal Standard Area/Retention Time Shift Meet Criteria	___	✓

Bldg 8003

7-29-93

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT (CONTINUED)

	No	Yes
10. Extraction Holding Time Met	___	✓

If not met, list number of days exceeded for each sample: _____

11. Analysis Holding Time Met	___	✓

If not met, list number of days exceeded for each sample: _____

Additional Comments: This form completed By Prime Contractor

Laboratory Manager: B. MK Date: 5-12-94

TABLE OF CONTENTS

SERV-AIR, INC.
An E-SYSTEMS Company

A3244-50

Early Monday pick-up - Skip - P.O.C.

P.O. #:

Chain of Custody

Project #: 8003	Sampler: Charles	Date / Time 7/29/93	Start:
Customer: DEH Charles Appleby	Site Name: Bldg. 8003 UST# 00192477-1 Closing # C-92-2953 detailed analysis / Resampling.		Finish:
Phone: x26224			

Analysis Parameters: VOA 1/5; BTEX 1/5; Preservation Method

Lab Sample ID Number	Date/Time		Customer Sample Location/ID Number	Sample Matrix	# of Bottles	VOA 1/5	BTEX 1/5	HNU	Remarks	
1252.1	7/29/93	1415	Site Q (duplicate of K)	Soil	3 2 CA	X	X	6.0		N/D
1252.2	N/A	N/A	TRIP Blank	AQ	2	X	X	NA		N/A
1252.3	7/29/93	1405	Field Blank	AQ	2	X	X	NA		N/A

* One trip blank sent to lab w/ bubble.

48 TAT From Pick-up

HNU - Calibrated to 58 ppm Methane Span = 6.8 at 1345 hrs

Relinquished By (signature)	Date / Time	Received By (signature)	Shipped By:
	7/29/93 1515		hand

Relinquished By (signature)	Date / Time	Received for Lab by (signature):	Date / Time
		Sarah J. Hubbard	7/28/93 1520

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody. on file for Site K

SAI-ENV COC form 01 Page ___ of ___ Pages Rev A Date: 02 Apr 93

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J. Cole 8/2/93 14:05

NARRATIVE

There were no problems encountered during the analysis of this batch of samples (A3249 to A3251). All extractions and analysis were completed within proper hold times.

Purgeables	U.S.E.P.A. Method 624 - This is a purge and trap Gas Chromatograph/ Mass Spectrometer (GC/MS) method applicable to the determination of the compounds listed in the U.S.E.P.A. Manual entitled "Test Procedures for the Analysis of Organic Pollutants". An HP5996 GC/MS was used with a capillary column. Method detection limits are as stated. Soil samples are prepared for analysis as prescribed in Method 8240 from SW846.
Acid Extractables Base Neutrals	U.S.E.P.A. Method 625 - This method covers the determination of a number of organic compounds that are partitioned in an organic solvent and amenable to gas chromatography. This is a gas chromatography/mass spectrometer (GC/MS) method applicable to the determination of the compounds listed in the U.S.E.P.A. Manual entitled "Test Procedures for the Analysis of Organic Pollutants". A HP5970 was used with a DB-5 FSCC. Method detection limits are as stated. Soil samples were prepared for analysis as prescribed in Method 3550 and analyzed as prescribed in Method 8270 from SW846.

LABORATORY CHRONICLE

RECEIPT/REFRIGERATION 8/2/93

ORGANICS
EXTRACTION

1. Acids NA
2. Base/Neutrals 8/3/93
3. Pesticides/PCB's/Herbicides NA
4. Petroleum Hydrocarbons/Oil & Grease NA

ANALYSIS

1. Volatiles 8/8/93
2. Acids NA
3. Base/Neutrals 8/19/93
4. Pesticides/PCB's/Herbicides NA
5. Petroleum Hydrocarbons/Oil & Grease NA
6. Total Organic Carbon NA

Section Supervisor
Review & Approval Jeffrey D Braxton

INORGANICS

1. Metals NA
2. Cyanides NA
3. Phenols NA

OTHER ANALYTES

Section Supervisor
Review & Approval NA

Quality Control Supervisor
Review & Approval

Laboratory Director
Review & Approval Richard W Symm

If fractions are re-extracted and re-analyzed because initial endeavors did not meet quality control acceptance criteria, include dates for both.

RESULT SUMMARY

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Soil
SAMPLE NUMBER	A3249	DILUTION FACTOR	125.00
CLIENT ID	1252.1 SITE 9 BLDG 8003	COMMENTS	HNU 6.0
DATA FILE	>B1089	DATE ANALYZED	08/08/93

COMPOUND	UG/KG		MDL	COMPOUND	UG/KG		MDL
Acrolein	ND		7100	Bromodichloromethane	ND		710
Acrylonitrile	ND		7100	2-Chloroethylvinylether	ND		1400
Chloromethane	ND		1400	2-Hexanone	ND		1400
Bromomethane	ND		1400	trans-1,3-Dichloropropene	ND		710
Vinyl Chloride	ND		1400	Toluene	ND		710
Chloroethane	ND		1400	cis-1,3-Dichloropropene	ND		710
Acetone	ND	B	1400	1,1,2,2-Tetrachloroethane	ND		710
1,1-Dichloroethene	ND		710	1,1,2-Trichloroethane	ND		710
Carbon Disulfide	ND		1400	4-Methyl-2-pentanone	ND		1400
Methylene Chloride	300	JB	710	Tetrachloroethene	ND		710
1,2-Dichloroethene(trans)	ND		710	Dibromochloromethane	ND		710
1,1-Dichloroethane	ND		710	Chlorobenzene	ND		710
Vinyl Acetate	ND		710	Ethylbenzene	ND		710
2-Butanone	ND		1400	m&p-Xylenes	ND		710
Chloroform	ND		710	o-Xylene	ND		710
1,1,1-Trichloroethane	ND		710	Styrene	ND		710
Carbon Tetrachloride	ND		710	Bromoform	ND		710
1,2-Dichloroethane	ND		710	m-Dichlorobenzene	ND		710
Benzene	ND		710	p-Dichlorobenzene	ND		710
Trichloroethene	ND		710	o-Dichlorobenzene	ND		710
1,2-Dichloropropane	ND		710				

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	89.7	70 - 121	OK
Toluene-d8	91.3	81 - 117	OK
Bromofluorobenzene	79.5	74 - 121	OK

Percent Solid of 88.0 is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

21st Century Environmental, Inc.
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH, NJ	MATRIX	Soil
SAMPLE NUMBER	A3249	DILUTION FACTOR	5.00
CLIENT ID	SITE 0 BLDG 8003	QA BATCH	
DATA FILE	>C1963	DATE ANALYZED	08/19/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
N-Nitrosodimethylamine	ND	1900	Acenaphthene	ND	1900
bis(-2-Chloroethyl)Ether	ND	1900	Dibenzofuran	ND	1900
1,3-Dichlorobenzene	ND	1900	2,4-Dinitrotoluene	ND	1900
1,4-Dichlorobenzene	ND	1900	2,6-Dinitrotoluene	ND	1900
Benzyl Alcohol	ND	1900	Diethylphthalate	ND	1900
1,2-Dichlorobenzene	ND	1900	4-Chlorophenyl-phenlyether	ND	1900
bis(2-chloroisopropyl)Ether	ND	1900	4-Nitroaniline	ND	9400
N-Nitroso-Di-n-Propylamine	ND	1900	N-Nitrosodiphenylamine	ND	1900
Hexachloroethane	ND	1900	4-Bromophenyl-phenylether	ND	1900
Nitrobenzene	ND	1900	Hexachlorobenzene	ND	1900
Isophorone	ND	1900	Phenanthrene	ND	1900
bis(-2-Chloroethoxy)Methane	ND	1900	Fluoranthene	ND	1900
1,2,4-Trichlorobenzene	ND	1900	Butylbenzylphthalate	ND	1900
Naphthalene	ND	1900	3,3'-Dichlorobenzidine	ND	3700
4-Chloroaniline	ND	1900	Benzo(a)Anthracene	ND	1900
Hexachlorobutadiene	ND	1900	bis(2-Ethylhexyl)Phthalate	ND	1900
2-Methylnaphthalene	ND	1900	Di-n-Octyl Phthalate	ND	1900
Hexachlorocyclopentadiene	ND	1900	Benzo(b)Fluoranthene	ND	1900
2-Chloronaphthalene	ND	1900	Indeno(1,2,3-cd)Pyrene	ND	1900
2-Nitroaniline	ND	9400	Dibenzo(a,h)Anthracene	ND	1900
Dimethyl Phthalate	ND	1900	Benzo(g,h,i)Perylene	ND	1900
Acenaphthylene	ND	1900	Benzidine	ND	3700
3-Nitroaniline	ND	9400	Fluorene	ND	1900
Anthracene	ND	1900	Di-n-butylphthalate	ND	1900
Pyrene	ND	1900	Chrysene	ND	1900
Benzo(k)Flouranthene	ND	1900	Benzo(a)Pyrene	ND	1900
Benzoic Acid	ND	9400			

Percent Solid fo 88.0 is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

E1

EPA SAMPLE NUMBER

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

1252.1
SITE Q

Client Name: US ARMY FT. MONMOUTH, NJ Client ID: BLDG 8003

Matrix: (soil/water) SOIL Lab Sample ID: A3249

Sample wt/vol: .04 (g/mL) g Lab File ID: >B1089

Level: MED Date Received: 08/02/93

% Moisture: 12 Date Analyzed 08/08/93

Column: CAP Dilution Factor: 125

Number TICs Found 17 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	4057425	2-Octene, 2,6-dimethyl- (8CI9CI)	15.23	1500
2	34462287	Cyclopropane, trimethylmethylene- (9CI)	15.46	480
3	61142254	Cyclopropane, 1-(1,1-dimethylethyl)-2-methyl	15.61	550
4	21328574	Cyclooctane, 1,5-dimethyl- (8CI9CI)	15.89	520
5	61142312	Cyclopentane, 1,3-dimethyl-2-(1-methylethenyl	16.09	660
6	18669528	1,4-Hexadiene, 2,3-dimethyl- (8CI9CI)	16.36	1400
7	932661	Ethanone, 1-(1-cyclohexen-1-yl)- (9CI)	16.64	550
8	29606799	Cyclohexanone, 5-methyl-2-(1-methylethenyl)-	16.85	450
9	74630301	2-Decene, 4-methyl-, (Z)- (9CI)	17.29	1800
10	55976142	1,4-Undecadiene, (Z)- (9CI)	17.50	430
11	91178	Naphthalene, decahydro- (8CI9CI)	17.66	4400
12	61142709	Cyclohexane, 2,4-diethyl-1-methyl- (9CI)	18.01	1400
13	4844115	Bicyclo[3.3.1]non-2-en-9-one (8CI9CI)	18.48	930
14	15932806	Cyclohexanone, 5-methyl-2-(1-methylethyliden	18.82	4700
15	55402136	3-Octyne, 2,2,7-trimethyl- (9CI)	19.21	4700
16	55956326	4,5-Nonadiene, 2-methyl- (9CI)	19.33	1100
17	821749	4,5-Nonadiene (8CI9CI)	19.94	2200

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
SITE Q

Lab Name: 21st Century Environmental Contract: N/A

Client: US ARMY FT. MONMOUTH, NJ Client ID: BLDG 8003

Matrix: (soil/water) SOIL Lab Sample ID: A3249

Sample wt/vol: 30 (g/mL) g Lab File ID: >C1963

Level: (low/med) LOW Date Received: NA

% Moisture: 12 Date Extracted: 08/03/93

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 08/19/93

GPC Cleanup: (Y/N) N Dilution Factor: 1

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST CONC
	UNKNOWN SUBSTITUTED ALKANE	12.83	9800
	UNKNOWN SUBSTITUTED ALKANE	13.60	7400
	UNKNOWN SUBSTITUTED ALKANE	13.75	13000
	UNKNOWN SUBSTITUTED ALKANE	14.16	23000
	UNKNOWN SUBSTITUTED ALKANE	15.07	9700
	UNKNOWN SUBSTITUTED ALKANE	15.27	27000
	UNKNOWN SUBSTITUTED ALKANE	15.60	36000
	UNKNOWN	16.25	15000
	UNKNOWN SUBSTITUED ALKANE	16.52	11000
	UNKNOWN SUBSTITUED ALKANE	16.95	51000
	UNKNOWN	17.60	15000
	UNKNOWN SUBSTITUED ALKANE	18.20	23000
	UNKNOWN SUBSTITUED ALKANE	18.77	6100
	UNKNOWN SUBSTITUED ALKANE	19.38	10000
	UNKNOWN SUBSTITUED ALKANE	19.46	6200
	UNKNOWN SUBSTITUED ALKANE	20.51	5700
	UNKNOWN SUBSTITUED ALKANE	20.61	3600
	UNKNOWN SUBSTITUED ALKANE	21.58	5900
	UNKNOWN SUBSTITUED ALKANE	22.61	4500
	UNKNOWN SUBSTITUED ALKANE	23.58	3200

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Water
SAMPLE NUMBER	A3250	DILUTION FACTOR	1.00
CLIENT ID	1252.2 TRIP BLANK BLDG 8003	COMMEN S	HNU ND
DATA FILE	>B1087	DATE ALYZED	08/08/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
Acrolein	ND	50	Bromodichloromethane	ND	5
Acrylonitrile	ND	50	2-Chloroethylvinylether	ND	10
Chloromethane	ND	10	2-Hexanone	ND	10
Bromomethane	ND	10	trans-1,3-Dichloropropene	ND	5
Vinyl Chloride	ND	10	Toluene	ND	5
Chloroethane	ND	10	cis-1,3-Dichloropropene	ND	5
Acetone	4.0 JB	10	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethene	ND	5	1,1,2-Trichloroethane	ND	5
Carbon Disulfide	ND	10	4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND B	5	Tetrachloroethene	ND	5
1,2-Dichloroethene(trans)	ND	5	Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5	Chlorobenzene	ND	5
Vinyl Acetate	ND	5	Ethylbenzene	ND	5
2-Butanone	ND	10	m&p-Xylenes	ND	5
Chloroform	ND	5	o-Xylene	ND	5
1,1,1-Trichloroethane	ND	5	Styrene	ND	5
Carbon Tetrachloride	ND	5	Bromoform	ND	5
1,2-Dichloroethane	ND	5	m-Dichlorobenzene	ND	5
Benzene	ND	5	p-Dichlorobenzene	ND	5
Trichloroethene	ND	5	o-Dichlorobenzene	ND	5
1,2-Dichloropropane	ND	5			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	72.0	70 - 121	OK
Toluene-d8	88.2	81 - 117	OK
Bromofluorobenzene	78.5	74 - 121	OK

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

1252.2 TRIP BLANK

Lab Name:21st Century Environmental

Client Name: US ARMY FT. MONMOUTH, NJ

Client ID: BLDG 8003

Matrix: (soil/water) SOIL

Lab Sample ID: A3250

Sample wt/vol: 5 (g/mL) g

Lab File ID: >B1087

Level: (low/med) LOW

Date Received: 08/02/93

% Moisture: NA

Date Analyzed: 08108/93

Column: DB-624

Dilution Factor: 1

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	No Unknowns			

FORM I VOA-TIC 1/87 Rev

00011

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Water
SAMPLE NUMBER	A3251	DILUTION FACTOR	1.00
CLIENT ID	1252.3 FIELD BLANK BLDG 8003	COMMEN S	HNU ND
DATA FILE	>B1088	DATE ALYZED	08/08/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
Acrolein	ND	50	Bromodichloromethane	ND	5
Acrylonitrile	ND	50	2-Chloroethylvinylether	ND	10
Chloromethane	ND	10	2-Hexanone	ND	10
Bromomethane	ND	10	trans-1,3-Dichloropropene	ND	5
Vinyl Chloride	ND	10	Toluene	ND	5
Chloroethane	ND	10	cis-1,3-Dichloropropene	ND	5
Acetone	2.2 JB	10	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethene	ND	5	1,1,2-Trichloroethane	ND	5
Carbon Disulfide	ND	10	4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND B	5	Tetrachloroethene	ND	5
1,2-Dichloroethene(trans)	ND	5	Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5	Chlorobenzene	ND	5
Vinyl Acetate	ND	5	Ethylbenzene	ND	5
2-Butanone	ND	10	m&p-Xylenes	ND	5
Chloroform	ND	5	o-Xylene	ND	5
1,1,1-Trichloroethane	ND	5	Styrene	ND	5
Carbon Tetrachloride	ND	5	Bromoform	ND	5
1,2-Dichloroethane	ND	5	m-Dichlorobenzene	ND	5
Benzene	ND	5	p-Dichlorobenzene	ND	5
Trichloroethene	ND	5	o-Dichlorobenzene	ND	5
1,2-Dichloropropane	ND	5			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	74.2	70 - 121	OK
Toluene-d8	90.0	81 - 117	OK
Bromofluorobenzene	78.7	74 - 121	OK

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

21st Century Environmental, Inc.
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH, NJ	MATRIX	Water
SAMPLE NUMBER	A3251	DILUTION FACTOR	1.00
CLIENT ID	FIELD BLANK BLDG 8003	QA BATCH	
DATA FILE	>C1940	DATE ANALYZED	08/18/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
N-Nitrosodimethylamine	ND	10	Acenaphthene	ND	10
bis(-2-Chloroethyl)Ether	ND	10	Dibenzofuran	ND	10
1,3-Dichlorobenzene	ND	10	2,4-Dinitrotoluene	ND	10
1,4-Dichlorobenzene	ND	10	2,6-Dinitrotoluene	ND	10
Benzyl Alcohol	ND	10	Diethylphthalate	ND	10
1,2-Dichlorobenzene	ND	10	4-Chlorophenyl-phenlyether	ND	10
bis(2-chloroisopropyl)Ether	ND	10	4-Nitroaniline	ND	50
N-Nitroso-Di-n-Propylamine	ND	10	N-Nitrosodiphenylamine	ND	10
Hexachloroethane	ND	10	4-Bromophenyl-phenylether	ND	10
Nitrobenzene	ND	10	Hexachlorobenzene	ND	10
Isophorone	ND	10	Phenanthrene	ND	10
bis(-2-Chloroethoxy)Methane	ND	10	Fluoranthene	ND	10
1,2,4-Trichlorobenzene	ND	10	Butylbenzylphthalate	ND	10
Naphthalene	ND	10	3,3'-Dichlorobenzidine	ND	20
4-Chloroaniline	ND	10	Benzo(a)Anthracene	ND	10
Hexachlorobutadiene	ND	10	bis(2-Ethylhexyl)Phthalate	ND B	10
2-Methylnaphthalene	ND	10	Di-n-Octyl Phthalate	ND	10
Hexachlorocyclopentadiene	ND	10	Benzo(b)Fluoranthene	ND	10
2-Chloronaphthalene	ND	10	Indeno(1,2,3-cd)Pyrene	ND	10
2-Nitroaniline	ND	50	Dibenzo(a,h)Anthracene	ND	10
Dimethyl Phthalate	ND	10	Benzo(g,h,i)Perylene	ND	10
Acenaphthylene	ND	10	Benzidine	ND	20
3-Nitroaniline	ND	50	Fluorene	ND	10
Anthracene	ND	10	Di-n-butylphthalate	ND	10
Pyrene	ND	10	Chrysene	ND	10
Benzo(k)Flouranthene	ND	10	Benzo(a)Pyrene	ND	10
Benzoic Acid	ND	50			

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

1252.3 FIELD BLANK

Lab Name:21st Century Environmental

Client Name: US ARMY FT. MONMOUTH, NJ

Client ID: BLDG 8003

Matrix: (soil/water) SOIL

Lab Sample ID: A3251

Sample wt/vol: 5 (g/mL) g

Lab File ID: >B1088

Level: (low/med) LOW

Date Received: 08/02/93

% Moisture: NA

Date Analyzed: 08108/93

Column: DB-624

Dilution Factor: 1

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	No Unknowns			

FORM I VOA-TIC 1/87 Rev

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FIELD BLANK

Lab Name: 21st Century Environmental Contract: N/A

Client: US ARMY FT. MONMOUTH, NJ Client ID: BLDG 8003

Matrix: (soil/water) WATER Lab Sample ID: A3251

Sample wt/vol: 1000 (g/mL) mL Lab File ID: >C1940

Level: (low/med) LOW Date Received: NA

% Moisture: 100 Date Extracted: 08/03/93

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 08/18/93

GPC Cleanup: (Y/N) N Dilution Factor: 1

Number TICs found: 12 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST CONC
	UNKNOWN	18.21	4
	UNKNOWN	18.61	7
	UNKNOWN	18.74	6
	UNKNOWN	19.00	7
	UNKNOWN	19.43	12
	UNKNOWN	19.72	3
	UNKNOWN	19.78	3
	UNKNOWN	19.92	2
	UNKNOWN	20.17	3
	UNKNOWN	20.61	5
	UNKNOWN	24.39	10
	UNKNOWN	26.19	6

FORM I SV-TIC 1/87 Rev.

DATA PACKAGE

0101.6

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Soil
SAMPLE NUMBER	A3249	DILUTION FACTOR	125.00
CLIENT ID	1252.1 SITE D BLDG 8003	COMMENTS	HNU 6.0
DATA FILE	>B1089	DATE ANALYZED	08/08/93

COMPOUND	UG/KG		MDL	COMPOUND	UG/KG		MDL
Acrolein	ND		7100	Bromodichloromethane	ND		710
Acrylonitrile	ND		7100	2-Chloroethylvinylether	ND		1400
Chloromethane	ND		1400	2-Hexanone	ND		1400
Bromomethane	ND		1400	trans-1,3-Dichloropropene	ND		710
Vinyl Chloride	ND		1400	Toluene	ND		710
Chloroethane	ND		1400	cis-1,3-Dichloropropene	ND		710
Acetone	ND	B	1400	1,1,2,2-Tetrachloroethane	ND		710
1,1-Dichloroethene	ND		710	1,1,2-Trichloroethane	ND		710
Carbon Disulfide	ND		1400	4-Methyl-2-pentanone	ND		1400
Methylene Chloride	300	JB	710	Tetrachloroethene	ND		710
1,2-Dichloroethene(trans)	ND		710	Dibromochloromethane	ND		710
1,1-Dichloroethane	ND		710	Chlorobenzene	ND		710
Vinyl Acetate	ND		710	Ethylbenzene	ND		710
2-Butanone	ND		1400	m&p-Xylenes	ND		710
Chloroform	ND		710	o-Xylene	ND		710
1,1,1-Trichloroethane	ND		710	Styrene	ND		710
Carbon Tetrachloride	ND		710	Bromoform	ND		710
1,2-Dichloroethane	ND		710	m-Dichlorobenzene	ND		710
Benzene	ND		710	p-Dichlorobenzene	ND		710
Trichloroethene	ND		710	o-Dichlorobenzene	ND		710
1,2-Dichloropropane	ND		710				

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	89.7	70 - 121	OK
Toluene-d8	91.3	81 - 117	OK
Bromofluorobenzene	79.5	74 - 121	OK

Percent Solid of 88.0 is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

21st Century Environmental, Inc.
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH, NJ	MATRIX	Soil
SAMPLE NUMBER	A3249	DILUTION FACTOR	5.00
CLIENT ID	SITE 0 BLDG 8003	QA BATCH	
DATA FILE	>C1963	DATE ANALYZED	08/19/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
N-Nitrosodimethylamine	ND	1900	Acenaphthene	ND	1900
bis(-2-Chloroethyl)Ether	ND	1900	Dibenzofuran	ND	1900
1,3-Dichlorobenzene	ND	1900	2,4-Dinitrotoluene	ND	1900
1,4-Dichlorobenzene	ND	1900	2,6-Dinitrotoluene	ND	1900
Benzyl Alcohol	ND	1900	Diethylphthalate	ND	1900
1,2-Dichlorobenzene	ND	1900	4-Chlorophenyl-phenlyether	ND	1900
bis(2-chloroisopropyl)Ether	ND	1900	4-Nitroaniline	ND	9400
N-Nitroso-Di-n-Propylamine	ND	1900	N-Nitrosodiphenylamine	ND	1900
Hexachloroethane	ND	1900	4-Bromophenyl-phenylether	ND	1900
Nitrobenzene	ND	1900	Hexachlorobenzene	ND	1900
Isophorone	ND	1900	Phenanthrene	ND	1900
bis(-2-Chloroethoxy)Methane	ND	1900	Fluoranthene	ND	1900
1,2,4-Trichlorobenzene	ND	1900	Butylbenzylphthalate	ND	1900
Naphthalene	ND	1900	3,3'-Dichlorobenzidine	ND	3700
4-Chloroaniline	ND	1900	Benzo(a)Anthracene	ND	1900
Hexachlorobutadiene	ND	1900	bis(2-Ethylhexyl)Phthalate	ND	1900
2-Methylnaphthalene	ND	1900	Di-n-Octyl Phthalate	ND	1900
Hexachlorocyclopentadiene	ND	1900	Benzo(b)Fluoranthene	ND	1900
2-Chloronaphthalene	ND	1900	Indeno(1,2,3-cd)Pyrene	ND	1900
2-Nitroaniline	ND	9400	Dibenzo(a,h)Anthracene	ND	1900
Dimethyl Phthalate	ND	1900	Benzo(g,h,i)Perylene	ND	1900
Acenaphthylene	ND	1900	Benzidine	ND	3700
3-Nitroaniline	ND	9400	Fluorene	ND	1900
Anthracene	ND	1900	Di-n-butylphthalate	ND	1900
Pyrene	ND	1900	Chrysene	ND	1900
Benzo(k)Flouranthene	ND	1900	Benzo(a)Pyrene	ND	1900
Benzoic Acid	ND	9400			

Percent Solid fo 88.0 is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

E1

EPA SAMPLE NUMBER

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

1252.1
SITE Q

Client Name: US ARMY FT. MONMOUTH, NJ Client ID: BLDG 8003

Matrix: (soil/water) SOIL Lab Sample ID: A3249

Sample wt/vol: .04 (g/mL) g Lab File ID: >B1089

Level: MED Date Received: 08/02/93

% Moisture: 12 Date Analyzed 08/08/93

Column: CAP Dilution Factor: 125

Number TICs Found 17 CONCENTRATION UNITS (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	4057425	2-Octene, 2,6-dimethyl- (8CI9CI)	15.23	1500
2	34462287	Cyclopropane, trimethylmethylene- (9CI)	15.46	480
3	61142254	Cyclopropane, 1-(1,1-dimethylethyl)-2-methyl	15.61	550
4	21328574	Cyclooctane, 1,5-dimethyl- (8CI9CI)	15.89	520
5	61142312	Cyclopentane, 1,3-dimethyl-2-(1-methyletheny	16.09	660
6	18669528	1,4-Hexadiene, 2,3-dimethyl- (8CI9CI)	16.36	1400
7	932661	Ethanone, 1-(1-cyclohexen-1-yl)- (9CI)	16.64	550
8	29606799	Cyclohexanone, 5-methyl-2-(1-methylethenyl)-	16.85	450
9	74630301	2-Decene, 4-methyl-, (Z)- (9CI)	17.29	1800
10	55976142	1,4-Undecadiene, (Z)- (9CI)	17.50	430
11	91178	Naphthalene, decahydro- (8CI9CI)	17.66	4400
12	61142709	Cyclohexane, 2,4-diethyl-1-methyl- (9CI)	18.01	1400
13	4844115	Bicyclo[3.3.1]non-2-en-9-one (8CI9CI)	18.48	930
14	15932806	Cyclohexanone, 5-methyl-2-(1-methylethyliden	18.82	4700
15	55402136	3-Octyne, 2,2,7-trimethyl- (9CI)	19.21	4700
16	55956326	4,5-Nonadiene, 2-methyl- (9CI)	19.33	1100
17	821749	4,5-Nonadiene (8CI9CI)	19.94	2200

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SITE Q

Name:21st Century Environmental Contract:N/A

Client: US ARMY FT. MONMOUTH, NJ Client ID: BLDG 8003

Matrix: (soil/water) SOIL Lab Sample ID: A3249

Sample wt/vol: 30 (g/mL) g Lab File ID: >C1963

Level: (low/med) LOW Date Received: NA

% Moisture: 12 Date Extracted:08/03/93

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 08/19/93

GPC Cleanup: (Y/N) N Dilution Factor: 1

Number TICs found: 20 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST CONC
	UNKNOWN SUBSTITUTED ALKANE	12.83	9800
	UNKNOWN SUBSTITUTED ALKANE	13.60	7400
	UNKNOWN SUBSTITUTED ALKANE	13.75	13000
	UNKNOWN SUBSTITUTED ALKANE	14.16	23000
	UNKNOWN SUBSTITUTED ALKANE	15.07	9700
	UNKNOWN SUBSTITUTED ALKANE	15.27	27000
	UNKNOWN SUBSTITUTED ALKANE	15.60	36000
	UNKNOWN	16.25	15000
	UNKNOWN SUBSTITUED ALKANE	16.52	11000
	UNKNOWN SUBSTITUED ALKANE	16.95	51000
	UNKNOWN	17.60	15000
	UNKNOWN SUBSTITUED ALKANE	18.20	23000
	UNKNOWN SUBSTITUED ALKANE	18.77	6100
	UNKNOWN SUBSTITUED ALKANE	19.38	10000
	UNKNOWN SUBSTITUED ALKANE	19.46	6200
	UNKNOWN SUBSTITUED ALKANE	20.51	5700
	UNKNOWN SUBSTITUED ALKANE	20.61	3600
	UNKNOWN SUBSTITUED ALKANE	21.58	5900
	UNKNOWN SUBSTITUED ALKANE	22.61	4500
	UNKNOWN SUBSTITUED ALKANE	23.58	3200

FORM I SV-TIC 1/87 Rev.

QUANT REPORT

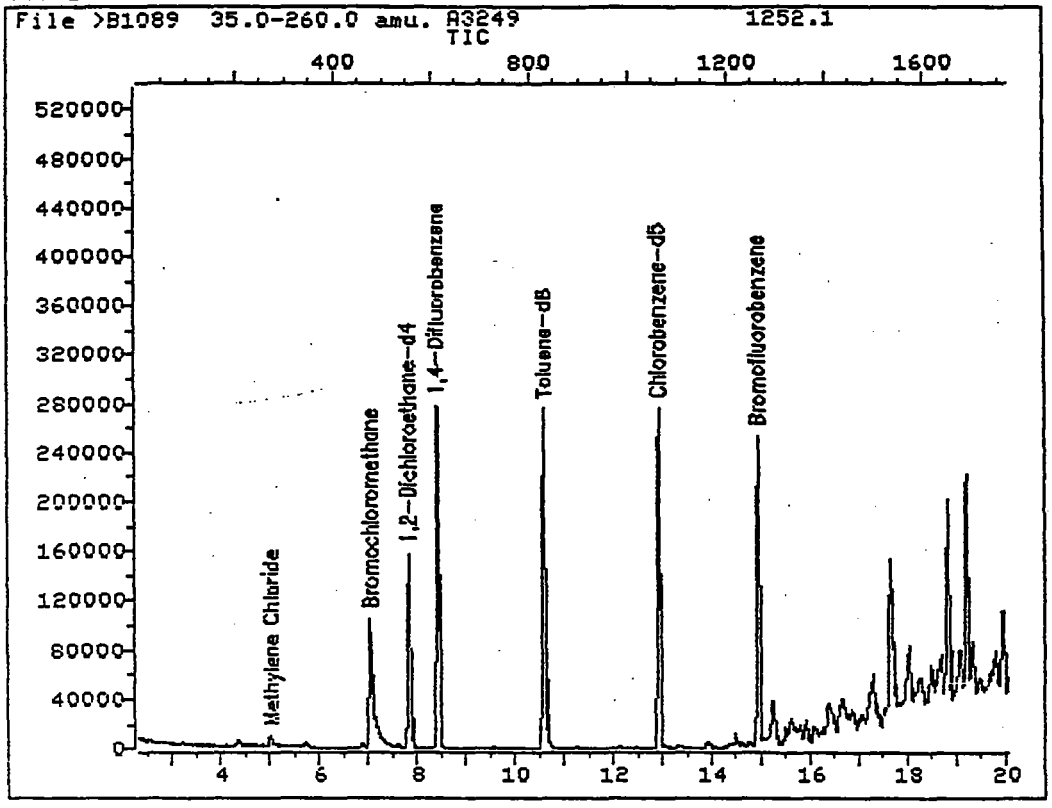
Operator ID: JEFF Quant Rev: 6 Quant Time: 930808 21:53
Output File: ^B1089::QT Injected at: 930808 21:28
Data File: >B1089::D2 Dilution Factor: 1.00000
Name: A3249
Misc: 1252.1 .04g

ID File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930808 17:44

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	7.05	472	87602	50.00	UG/L	100
15)	Methylene Chloride	5.02	270	10205	2.12	UG/L	92
23)	1,2-Dichloroethane-d4	7.82	549	219307	44.85	UG/L	100
24)	*1,4-Difluorobenzene	8.41	608	434211	50.00	UG/L	100
33)	Toluene-d8	10.59	826	369191	45.65	UG/L	100
35)	*Chlorobenzene-d5	12.91	1057	306450	50.00	UG/L	100
48)	Bromofluorobenzene	14.92	1258	177797	39.74	UG/L	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM

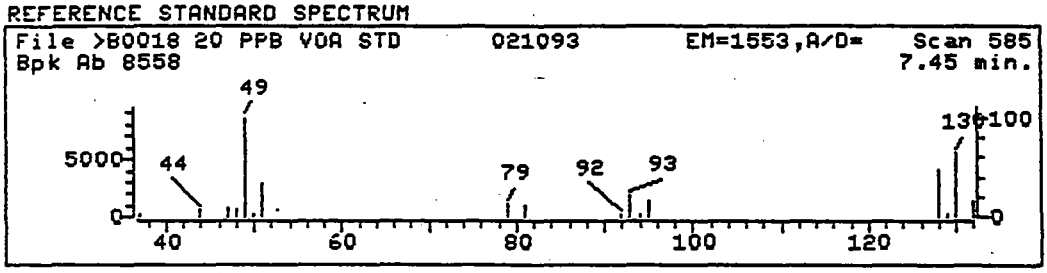


Data File: >B1089::D2 Quant Output File: ^B1089::QT
Name: A3249
Misc: 1252.1 .04g

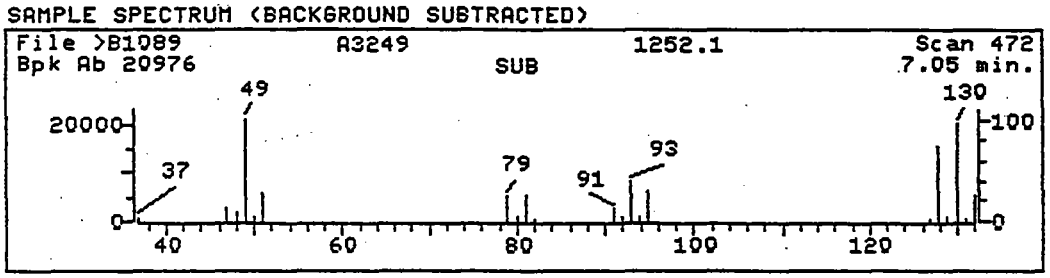
Id File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930808 17:44

Operator ID: JEFF
Quant Time: 930808 21:53
Injected at: 930808 21:28

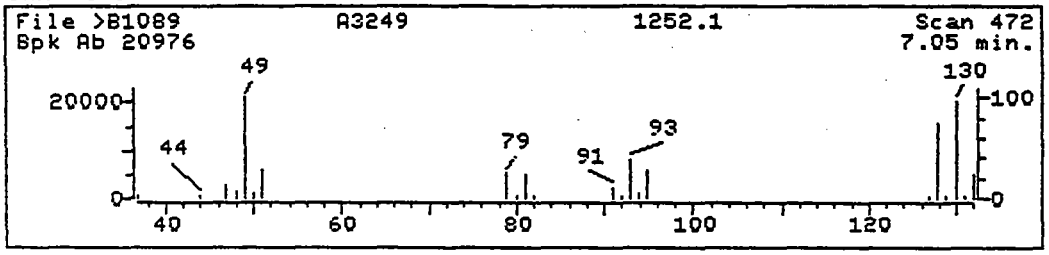
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >B1089::D2 Quant Output File: ^B1089::QT
Name: A3249
Misc: 1252.1 .04g
Quant Time: 930808 21:53 Quant ID File: ID0401::SC
Injected at: 930808 21:28 Last Calibration: 930808 17:44

Compound No: 1 (ISTD)
Compound Name: Bromochloromethane
Scan Number: 472
Retention Time: 7.05 min.
Quant Ion: 128.0
Area: 87602
Concentration: 50.00 UG/L
q-value: 100

QUANT REPORT

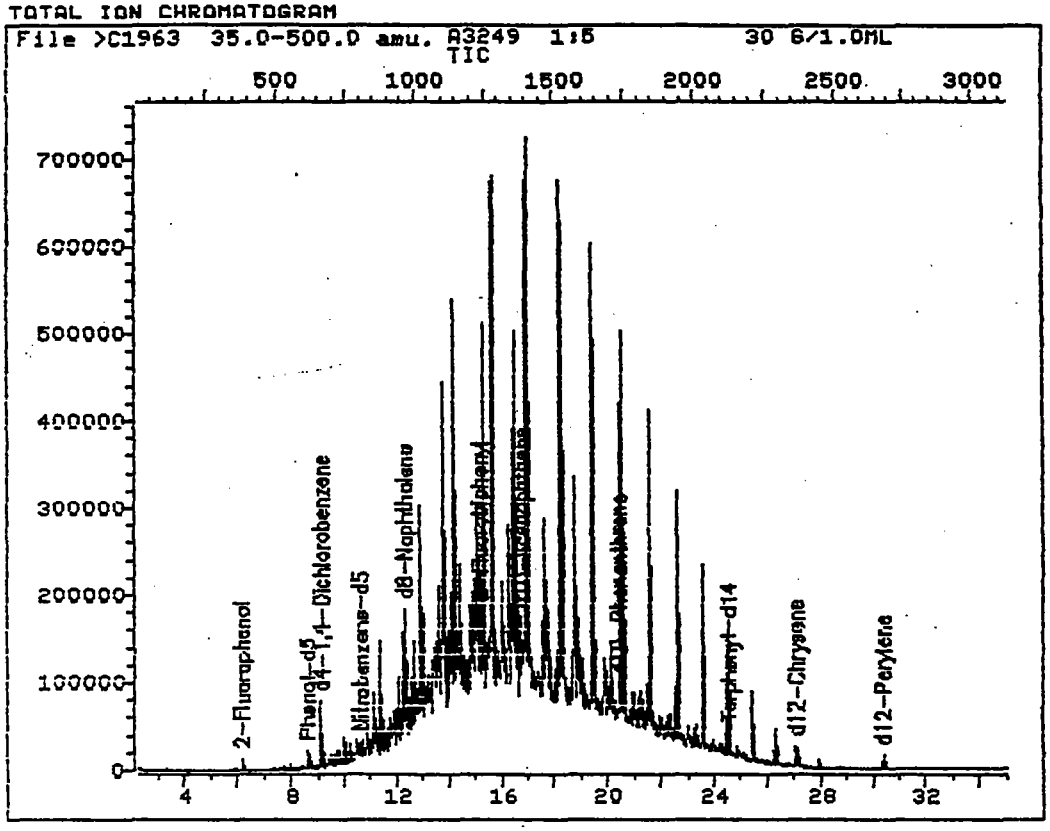
Operator ID: JEFF Quant Rev: 6 Quant Time: 930927 10:38
Output File: ^C1963::QT Injected at: 930819 19:11
Data File: >C1963::E4 Dilution Factor: 1.00000
Name: A3249 1:5
Misc: 30 G/1.0ML BTL# 9

ID File: ID819C::D3
Title: hSL BNA STD
Last Calibration: 930819 11:42

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.12	657	34582	40.00	UG/L	97
4)	2-Fluorophenol	6.17	374	6522	10.54	UG/L	95
5)	Phenol-d5	8.62	609	11731	12.48	UG/L	84
18)	*d8-Naphthalene	12.30	960	78992	40.00	UG/L	89
19)	Nitrobenzene-d5	10.61	799	7123	7.31	UG/L	91
33)	*d10-Acenaphthene	16.75	1382	34433	40.00	UG/L	97
38)	2-Fluorobiphenyl	15.15	1231	10658	7.86	UG/L	90
53)	*d10-Phenanthrene	20.40	1727	34188	40.00	UG/L	99
64)	*d12-Chrysene	27.05	2357	18513	40.00	UG/L	93
67)	Terphenyl-d14	24.54	2118	4241	7.20	UG/L	95
73)	*d12-Perylene	30.39	2676	14419	40.00	UG/L	92

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >C1963::E4 Quant Output File: ^C1963::QT
Name: A3249 1:5
Misc: 30 G/1.0ML BTL# 9

Id File: ID819C::D3
Title: hSL BNA STD
Last Calibration: 930819 11:42

Operator ID: JEFF
Quant Time: 930927 10:38
Injected at: 930819 19:11

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Water
SAMPLE NUMBER	A3250	DILUTION FACTOR	1.00
CLIENT ID	1252.2 TRIP BLANK BLDG 8003	COMMEN S	HNU ND
DATA FILE	>B1087	DATE ALYZED	08/08/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
Acrolein	ND	50	Bromodichloromethane	ND	5
Acrylonitrile	ND	50	2-Chloroethylvinylether	ND	10
Chloromethane	ND	10	2-Hexanone	ND	10
Bromomethane	ND	10	trans-1,3-Dichloropropene	ND	5
Vinyl Chloride	ND	10	Toluene	ND	5
Chloroethane	ND	10	cis-1,3-Dichloropropene	ND	5
Acetone	4.0 JB	10	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethene	ND	5	1,1,2-Trichloroethane	ND	5
Carbon Disulfide	ND	10	4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND B	5	Tetrachloroethene	ND	5
1,2-Dichloroethene(trans)	ND	5	Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5	Chlorobenzene	ND	5
Vinyl Acetate	ND	5	Ethylbenzene	ND	5
2-Butanone	ND	10	m&p-Xylenes	ND	5
Chloroform	ND	5	o-Xylene	ND	5
1,1,1-Trichloroethane	ND	5	Styrene	ND	5
Carbon Tetrachloride	ND	5	Bromoform	ND	5
1,2-Dichloroethane	ND	5	m-Dichlorobenzene	ND	5
Benzene	ND	5	p-Dichlorobenzene	ND	5
Trichloroethene	ND	5	o-Dichlorobenzene	ND	5
1,2-Dichloropropane	ND	5			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	72.0	70 - 121	OK
Toluene-d8	88.2	81 - 117	OK
Bromofluorobenzene	78.5	74 - 121	OK

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

1252.2
TRIP BLANK

Lab Name: 21st Century Environmental

Client Name: US ARMY FT. MONMOUTH, NJ

Client ID: BLDG 8003

Matrix: (soil/water) SOIL

Lab Sample ID: A3250

Sample wt/vol: 5 (g/mL) g

Lab File ID: >B1087

Level: (low/med) LOW

Date Received: 08/02/93

% Moisture: NA

Date Analyzed: 08108/93

Column: DB-624

Dilution Factor: 1

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	No Unknowns			

FORM I VOA-TIC 1/87 Re

00037

QUANT REPORT

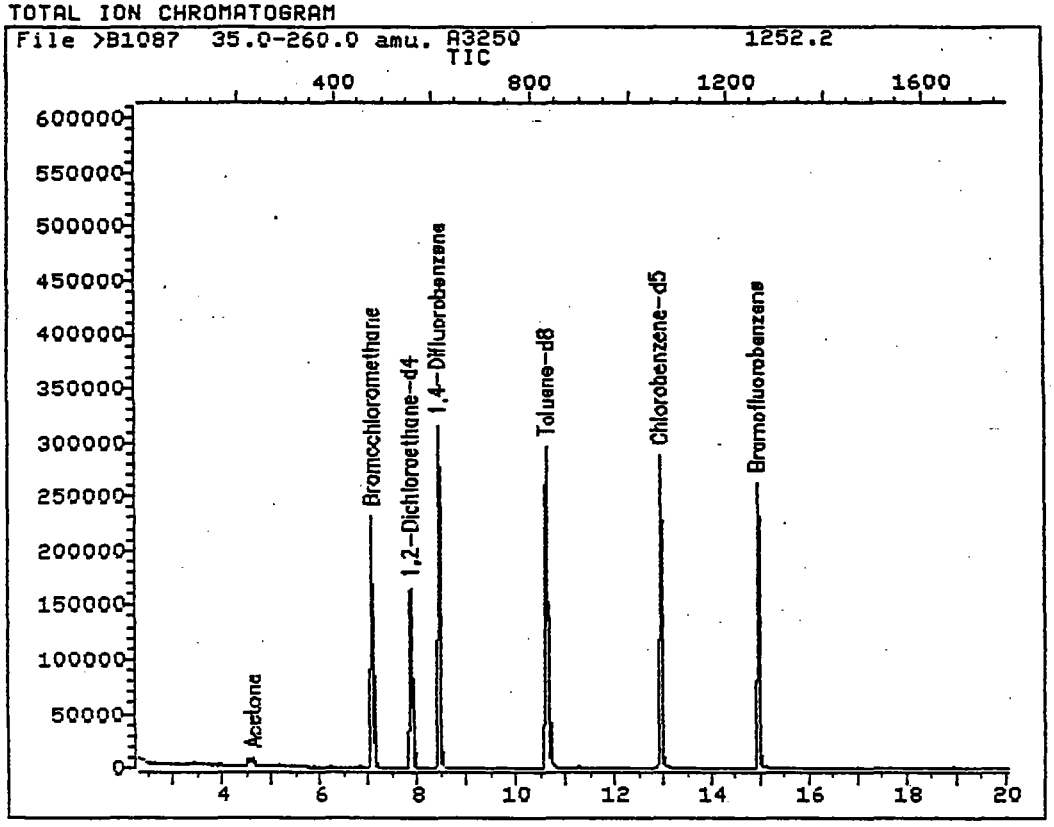
Operator ID: JEFF Quant Rev: 6 Quant Time: 930808 20:56
Output File: ^B1087::QT Injected at: 930808 20:30
Data File: >B1087::D2 Dilution Factor: 1.00000
Name: A3250
Misc: 1252.2 5mL

ID File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930808 17:44

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	7.08	475	111209	50.00	UG/L	100
9)	Acetone	4.61	229	18935	3.97	UG/L	81
13)	1,2-Dichloroethane-d4	7.86	553	223535	36.01	UG/L	100
14)	*1,4-Difluorobenzene	8.45	612	466856	50.00	UG/L	100
33)	Toluene-d8	10.62	829	383277	44.08	UG/L	100
55)	*Chlorobenzene-d5	12.93	1059	317116	50.00	UG/L	100
78)	Bromofluorobenzene	14.94	1260	181666	39.24	UG/L	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B1087::D2 Quant Output File: ^B1087::QT
Name: A3250
Misc: 1252.2 5mL

Id File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930808 17:44

Operator ID: JEFF
Quant Time: 930808 20:56
Injected at: 930808 20:30

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Water
SAMPLE NUMBER	A3251	DILUTION FACTOR	1.00
CLIENT ID	1252.3 FIELD BLANK BLDG 8003	COMMEN S	HNU ND
DATA FILE	>B1088	DATE ALYZED	08/08/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
Acrolein	ND	50	Bromodichloromethane	ND	5
Acrylonitrile	ND	50	2-Chloroethylvinylether	ND	10
Chloromethane	ND	10	2-Hexanone	ND	10
Bromomethane	ND	10	trans-1,3-Dichloropropene	ND	5
Vinyl Chloride	ND	10	Toluene	ND	5
Chloroethane	ND	10	cis-1,3-Dichloropropene	ND	5
Acetone	2.2 JB	10	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethene	ND	5	1,1,2-Trichloroethane	ND	5
Carbon Disulfide	ND	10	4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND B	5	Tetrachloroethene	ND	5
1,2-Dichloroethene(trans)	ND	5	Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5	Chlorobenzene	ND	5
Vinyl Acetate	ND	5	Ethylbenzene	ND	5
2-Butanone	ND	10	m&p-Xylenes	ND	5
Chloroform	ND	5	o-Xylene	ND	5
1,1,1-Trichloroethane	ND	5	Styrene	ND	5
Carbon Tetrachloride	ND	5	Bromoform	ND	5
1,2-Dichloroethane	ND	5	m-Dichlorobenzene	ND	5
Benzene	ND	5	p-Dichlorobenzene	ND	5
Trichloroethene	ND	5	o-Dichlorobenzene	ND	5
1,2-Dichloropropane	ND	5			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	74.2	70 - 121	OK
Toluene-d8	90.0	81 - 117	OK
Bromofluorobenzene	78.7	74 - 121	OK

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

21st Century Environmental, Inc.
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH, NJ	MATRIX	Water
SAMPLE NUMBER	A3251	DILUTION FACTOR	1.00
CLIENT ID	FIELD BLANK BLDG 8003	QA BATCH	
DATA FILE	>C1940	DATE ANALYZED	08/18/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
N-Nitrosodimethylamine	ND	10	Acenaphthene	ND	10
bis(-2-Chloroethyl)Ether	ND	10	Dibenzofuran	ND	10
1,3-Dichlorobenzene	ND	10	2,4-Dinitrotoluene	ND	10
1,4-Dichlorobenzene	ND	10	2,6-Dinitrotoluene	ND	10
Benzyl Alcohol	ND	10	Diethylphthalate	ND	10
1,2-Dichlorobenzene	ND	10	4-Chlorophenyl-phenlyether	ND	10
bis(2-chloroisopropyl)Ether	ND	10	4-Nitroaniline	ND	50
N-Nitroso-Di-n-Propylamine	ND	10	N-Nitrosodiphenylamine	ND	10
Hexachloroethane	ND	10	4-Bromophenyl-phenylether	ND	10
Nitrobenzene	ND	10	Hexachlorobenzene	ND	10
Isophorone	ND	10	Phenanthrene	ND	10
bis(-2-Chloroethoxy)Methane	ND	10	Fluoranthene	ND	10
1,2,4-Trichlorobenzene	ND	10	Butylbenzylphthalate	ND	10
Naphthalene	ND	10	3,3'-Dichlorobenzidine	ND	20
4-Chloroaniline	ND	10	Benzo(a)Anthracene	ND	10
Hexachlorobutadiene	ND	10	bis(2-Ethylhexyl)Phthalate	ND B	10
2-Methylnaphthalene	ND	10	Di-n-Octyl Phthalate	ND	10
Hexachlorocyclopentadiene	ND	10	Benzo(b)Fluoranthene	ND	10
2-Chloronaphthalene	ND	10	Indeno(1,2,3-cd)Pyrene	ND	10
2-Nitroaniline	ND	50	Dibenzo(a,h)Anthracene	ND	10
Dimethyl Phthalate	ND	10	Benzo(g,h,i)Perylene	ND	10
Acenaphthylene	ND	10	Benzidine	ND	20
3-Nitroaniline	ND	50	Fluorene	ND	10
Anthracene	ND	10	Di-n-butylphthalate	ND	10
Pyrene	ND	10	Chrysene	ND	10
Benzo(k)Flouranthene	ND	10	Benzo(a)Pyrene	ND	10
Benzoic Acid	ND	50			

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

1252.3
FIELD BLANK

Lab Name:21st Century Environmental

Client Name: US ARMY FT. MONMOUTH, NJ

Client ID: BLDG 8003

Matrix: (soil/water) SOIL

Lab Sample ID: A3251

Sample wt/vol: 5 (g/mL) g

Lab File ID: >B1088

Level: (low/med) LOW

Date Received: 08/02/93

% Moisture: NA

Date Analyzed: 08/08/93

Column: DB-624

Dilution Factor: 1

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	No Unknowns			

FORM I VOA-TIC 1/87 Re

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FIELD BLANK

Lab Name: 21st Century Environmental Contract: N/A

Client: US ARMY FT. MONMOUTH, NJ Client ID: BLDG 8003

Matrix: (soil/water) WATER Lab Sample ID: A3251

Sample wt/vol: 1000 (g/mL) mL Lab File ID: >C1940

Level: (low/med) LOW Date Received: NA

% Moisture: 100 Date Extracted: 08/03/93

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 08/18/93

GPC Cleanup: (Y/N) N Dilution Factor: 1

Number TICs found: 12 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST CONC
	UNKNOWN	18.21	4
	UNKNOWN	18.61	7
	UNKNOWN	18.74	6
	UNKNOWN	19.00	7
	UNKNOWN	19.43	12
	UNKNOWN	19.72	3
	UNKNOWN	19.78	3
	UNKNOWN	19.92	2
	UNKNOWN	20.17	3
	UNKNOWN	20.61	5
	UNKNOWN	24.39	10
	UNKNOWN	26.19	6

FORM I SV-TIC 1/87 Rev.

QUANT REPORT

Operator ID: JEFF
Output File: ^B1088::QT
Data File: >B1088::D2
Name: A3251
Misc: 1252.3

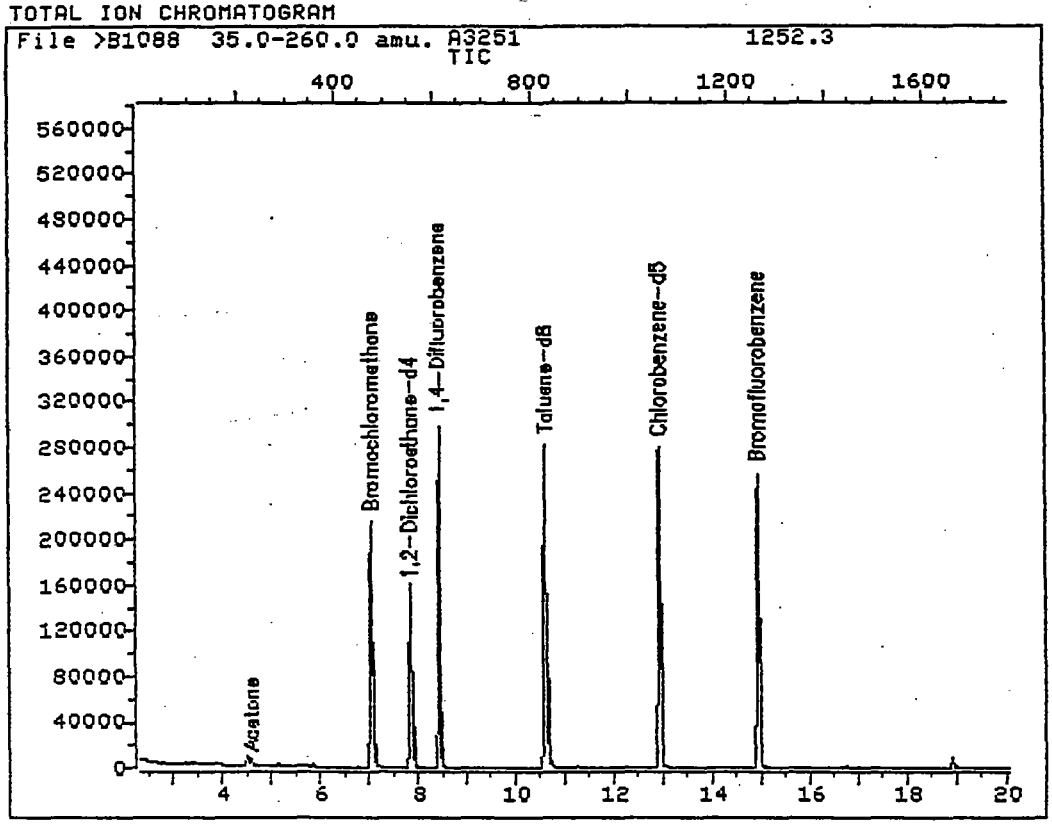
Quant Rev: 6 Quant Time: 930808 21:24
Injected at: 930808 20:59
Dilution Factor: 1.00000
5mL

ID File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930808 17:44

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	7.07	473	105506	50.00	UG/L	100
9)	Acetone	4.59	226	10219	2.26	UG/L	81
23)	1,2-Dichloroethane-d4	7.85	551	218511	37.11	UG/L	100
24)	*1,4-Difluorobenzene	8.43	609	447604	50.00	UG/L	100
33)	Toluene-d8	10.60	826	375209	45.01	UG/L	100
35)	*Chlorobenzene-d5	12.92	1057	310134	50.00	UG/L	100
48)	Bromofluorobenzene	14.92	1257	178210	39.36	UG/L	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B1088::D2 Quant Output File: ^B1088::QT
Name: A3251
Misc: 1252.3 5mL

Id File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930808 17:44

Operator ID: JEFF
Quant Time: 930808 21:24
Injected at: 930808 20:59

QUANT REPORT

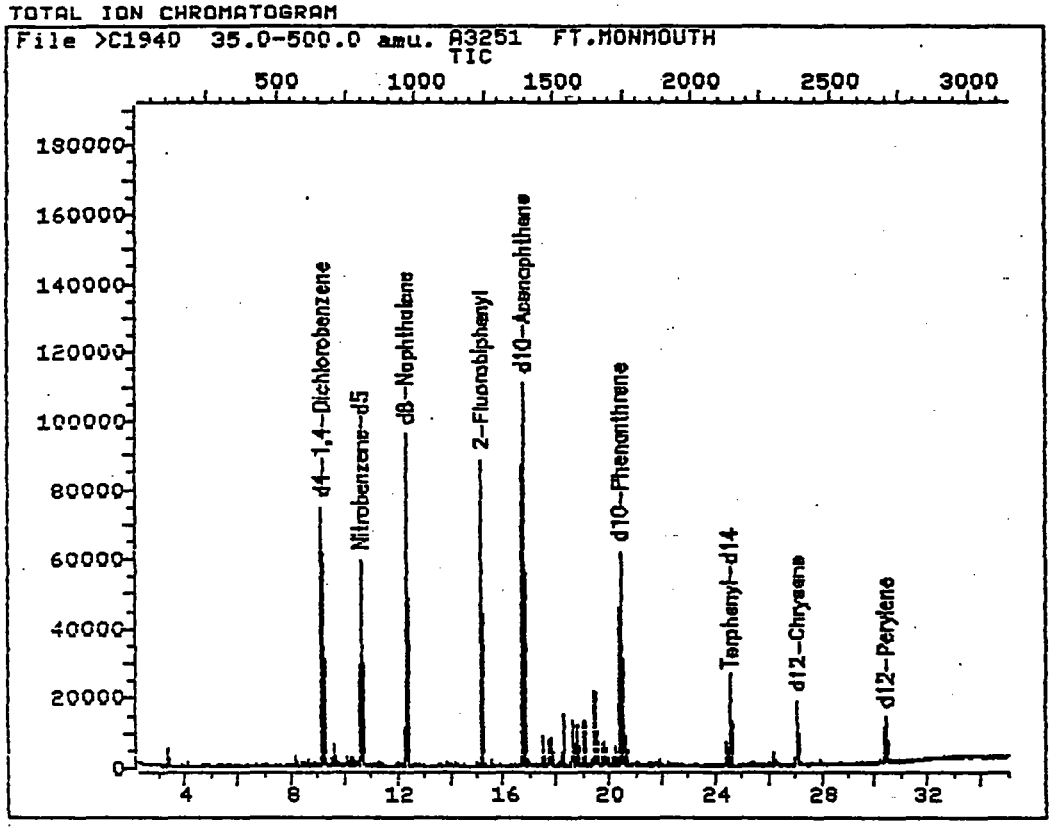
Operator ID: JEFF Quant Rev: 6 Quant Time: 930818 17:32
Output File: ^C1940::E4 Injected at: 930818 16:55
Data File: >C1940::DA Dilution Factor: 1.00000
Name: A3251 FT.MONMOUTH
Misc: BTL# 3

ID File: ID818C::DA
Title: hSL BNA STD
Last Calibration: 930818 15:11

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.14	658	34491	40.00	UG/L	97
18)	*d8-Naphthalene	12.30	961	86093	40.00	UG/L	89
9)	Nitrobenzene-d5	10.61	799	36731	33.99	UG/L	89
3)	*d10-Acenaphthene	16.74	1387	49742	40.00	UG/L	94
38)	2-Fluorobiphenyl	15.15	1235	53460	28.39	UG/L	92
3)	*d10-Phenanthrene	20.39	1737	49725	40.00	UG/L	99
4)	*d12-Chrysene	27.05	2376	16496	40.00	UG/L	93
67)	Terphenyl-d14	24.54	2135	20862	38.96	UG/L	94
73)	*d12-Perylene	30.39	2696	12167	40.00	UG/L	94

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >C1940 Quant Output File: ^C1940::E4
Name: A3251 FT.MONMOUTH
Misc: BTL# 3

Id File: ID818C::DA
Title: hSL BNA STD
Last Calibration: 930818 15:11

Operator ID: JEFF
Quant Time: 930818 17:32
Injected at: 930818 16:55

Q C RESULTS

21st Century Environmental Inc
SOIL VOLATILE SURROGATE RECOVERY

SAMPLE NO.	S1 (DCE)#	S2 (TOL)#	S3 (BFB)#	TOT OUT
BLANK	93	97	98	0
BLANK	91	105	100	0
A3250	72	88	78	0
A3251	74	90	79	0
A3249	90	91	79	0
A2798MS	98	99	99	0
A2798MSD	96	98	101	0

	QC LIMITS
S1 (DCE) = 1,2-Dichloroethane-d4	70-121
S2 (TOL) = Toluene-d8	81-117
S3 (BFB) = Bromofluorobenzene	74-121

Column used to flag surrogate recovery values

21st Century Environmental Inc.
SOIL semi-VOLATILE SURROGATE RECOVERY

SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (FPH)#	S6 (TBP)#	TOT OUT
NA BLNK	56	58	72	---	---	---	0
A3249	73	79	72	---	---	---	0
A3282MS	80	80	90	---	---	---	0
A3282MS	82	81	96	---	---	---	0

	QC LIMITS
S1 (NBZ) = Nitrobenzene-d5	(23-120)
S2 (FBP) = 2-Fluorobiphenyl	(30-115)
S3 (TPH) = Terphenyl-d14	(18-137)
S4 (PHL) = Phenol-d5	(24-113)
S5 (FPH) = 2-Fluorophenol	(25-121)
S6 (TBP) = 2,4,6-Tribromophenol	(19-122)

Column used to flag surrogate recovery values

21st Century Environmental Inc.
WATER semi-VOLATILE SURROGATE RECOVERY

SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (FPH)#	S6 (TBP)#	TOT OUT
AQ BLNK	58	48	79	---	---	---	0
A3251	68	57	78	---	---	---	0

	QC LIMITS
S1 (NBZ) = Nitrobenzene-d5	(35-114)
S2 (FBP) = 2-Fluorobiphenyl	(43-116)
S3 (TPH) = Terphenyl-d14	(33-141)
S4 (PHL) = Phenol-d5	(10-94)
S5 (FPH) = 2-Fluorophenol	(21-100)
S6 (TBP) = 2,4,6-Tribromophenol	(10-123)

Column used to flag surrogate recovery values

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract: N/A

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

Matrix Spike - EPA Sample No.: A2798 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50.0	ND	50.5	101	59-172
Trichloroethene	50.0	ND	37.6	75	62-137
Benzene	50.0	ND	48.5	97	66-142
Toluene	50.0	ND	42.8	86	59-139
Chlorobenzene	50.0	ND	42.3	85	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50.00	51.3	103	2	22	59-172
Trichloroethene	50.00	34.9	70	7	24	62-137
Benzene	50.00	47.7	95	2	21	66-142
Toluene	50.00	44.0	88	2	21	59-139
Chlorobenzene	50.00	43.3	87	2	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of qc limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

QUANT REPORT

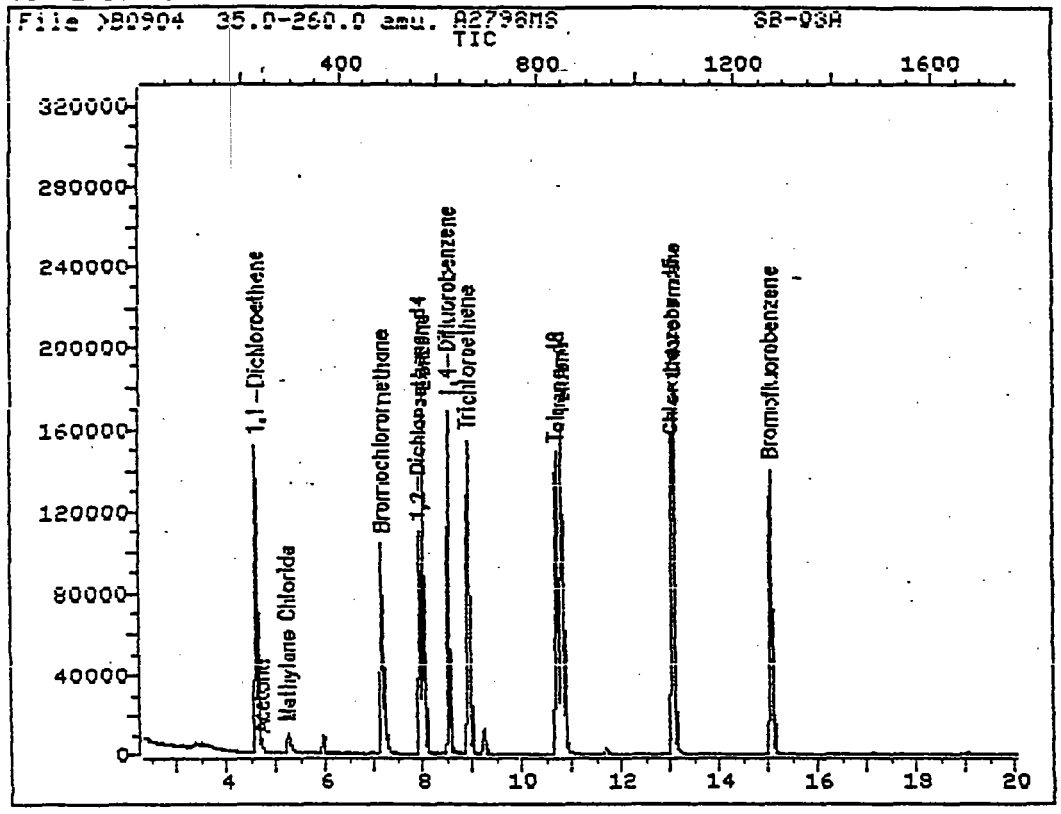
Operator ID: MANAGER Quant Rev: 6 Quant Time: 930723 18:27
Output File: ^B0904::QT Injected at: 930723 18:01
Data File: >B0904::D3 Dilution Factor: 1.00000
Name: A2798MS
Misc: SB-03A 5g

ID File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930723 13:33

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	7.16	483	55346	50.00	UG/L	100
9)	Acetone	4.70	237	12037	7.78	UG/L	74
10)	1,1-Dichloroethene	4.61	228	165573	50.53	UG/L	100
15)	Methylene Chloride	5.23	290	13736	6.78	UG/L	85
23)	1,2-Dichloroethane-d4	7.94	560	150588	48.96	UG/L	100
24)	*1,4-Difluorobenzene	8.52	618	234857	50.00	UG/L	100
26)	Benzene	8.03	569	242565	48.51	UG/L	100
27)	Trichloroethene	8.91	657	91767	37.59	UG/L	86
33)	Toluene-d8	10.71	837	184953	49.42	UG/L	100
34)	Toluene	10.81	847	217195	42.80	UG/L	95
39)	*Chlorobenzene-d5	13.03	1068	138271	50.00	UG/L	100
42)	Chlorobenzene	13.08	1073	153934	42.34	UG/L	96
48)	Bromofluorobenzene	15.04	1269	93114	49.52	UG/L	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B0904::D3 Quant Output File: ^B0904::QT
Name: A2798MS
Misc: SB-03A 5g

Id File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930723 13:33

Operator ID: MANAGER
Quant Time: 930723 18:27
Injected at: 930723 18:01

QUANT REPORT

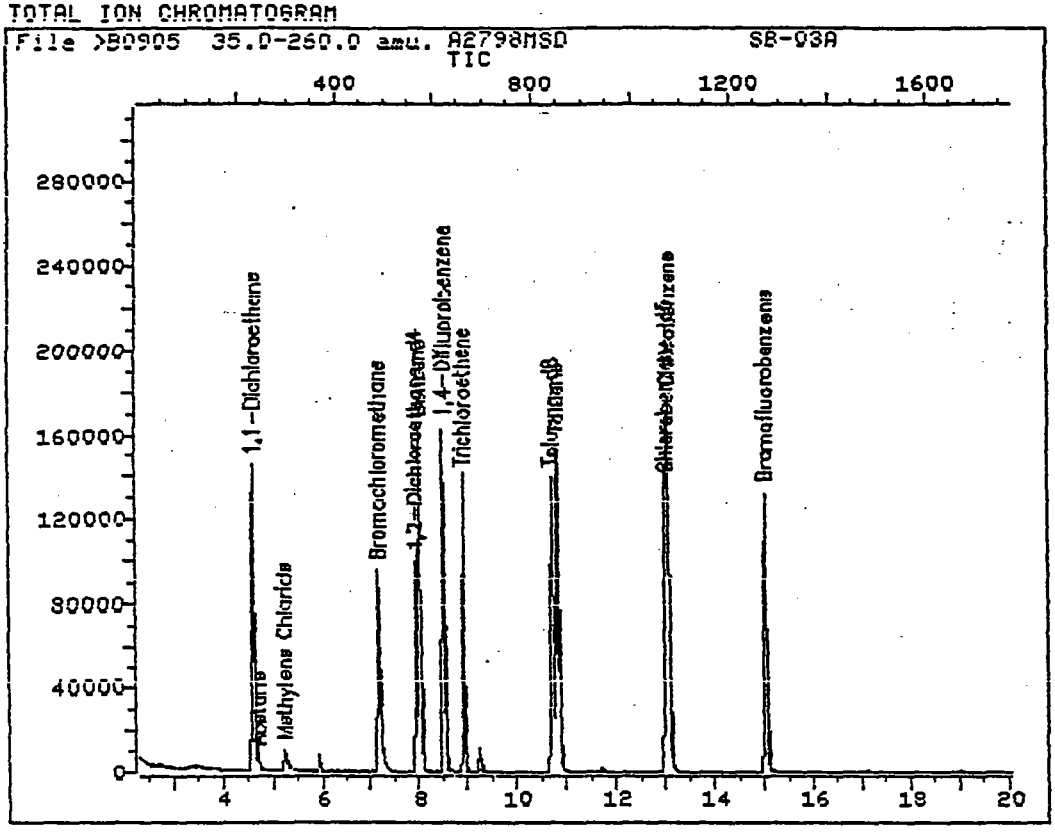
Operator ID: MANAGER Quant Rev: 6 Quant Time: 930723 18:57
Output File: ^B0905::QT Injected at: 930723 18:30
Data File: >B0905::D3 Dilution Factor: 1.00000
Name: A2798MSD
Misc: SB-03A 5g

ID File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930723 13:33

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	7.16	484	52801	50.00	UG/L	100
9)	Acetone	4.70	239	16152	10.94	UG/L	75
10)	1,1-Dichloroethene	4.60	229	160440	51.32	UG/L	100
15)	Methylene Chloride	5.22	291	14759	7.63	UG/L	89
23)	1,2-Dichloroethane-d4	7.93	561	140625	47.92	UG/L	100
24)	*1,4-Difluorobenzene	8.52	620	224279	50.00	UG/L	100
26)	Benzene	8.02	570	227650	47.67	UG/L	100
27)	Trichloroethene	8.90	658	81447	34.94	UG/L	86
33)	Toluene-d8	10.70	838	175864	49.20	UG/L	100
34)	Toluene	10.80	848	213278	44.01	UG/L	91
35)	*Chlorobenzene-d5	13.01	1068	131680	50.00	UG/L	100
42)	Chlorobenzene	13.06	1073	149847	43.28	UG/L	91
48)	Bromofluorobenzene	15.02	1269	90051	50.29	UG/L	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B0905::D3 Quant Output File: ^B0905::QT
Name: A2798MSD
Misc: SB-03A 5g

Id File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930723 13:33

Operator ID: MANAGER
Quant Time: 930723 18:57
Injected at: 930723 18:30

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: 21st Century Environmental Contract No.:
Lab Code: Case No: SAS No.: SDG No.:
MATRIX SPIKE- EPA SAMPLE NO.: A3282

COMPOUND NAME	SPIKE ADDED UG/KG	MS CONC UG/KG	SAMP CONC UG/KG	MS % REC#	QC LIMITS RECOVERY
Phenol	100	65.8	ND	66	26-90
2-Chlorophenol	100	65.8	ND	66	25-102
1,-4-Dichlorobenzene	50	30.2	ND	60	28-104
N-Nitroso-di-n-prop. (1)	50	32.0	ND	64	41-126
1,2,4-Trichlorobenzene	50	29.4	ND	59	38-107
4-Chloro-3-methylphenol	100	67.5	ND	68	26-103
Acenapthene	50	32.6	ND	65	31-137
4-Nitrophenol	100	57.8	ND	58	11-114
2,4-Dinitrotoluene	50	32.7	ND	65	28-89
Pentachlorophenol	100	68.3	ND	68	17-109
Pyrene	50	37.7	ND	75	35-142

COMPOUND NAME	SPIKE ADDED UG/KG	MSD CONC UG/KG	MSD % REC.	% RPD	QC LIMITS RPD	QC LIMITS RECOV
Phenol	100	67.9	68	3	35	26-90
2-Cholrophenol	100	67.9	68	3	50	25-102
1,-4-Dichlorobenzene	50	30.4	61	1	27	28-104
n-Nitroso-di-n-prop.	50	33.2	66	4	38	41-126
1,2,4-Trichlorobenzene	50	29.0	58	2	23	38-107
4-Chloro-3-Methylphenol	100	69.1	69	2	33	26-103
Acenaphthene	50	33.2	66	2	19	31-137
4-Nitrophenol	100	54.8	55	5	50	11-114
2,4-Dinitrotoluene	50	31.9	64	2	47	28-89
Pentachlorophenol	100	69.4	69	2	47	17-109
Pyrene	50	43.3	87	15	36	32-142

18

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values
Values outside of qc limits

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

COMMENTS: _____

QUANT REPORT

Operator ID: JEFF
Output File: ^C2232::D2
Data File: >C2232::D4
Name: A3282MS
Misc:

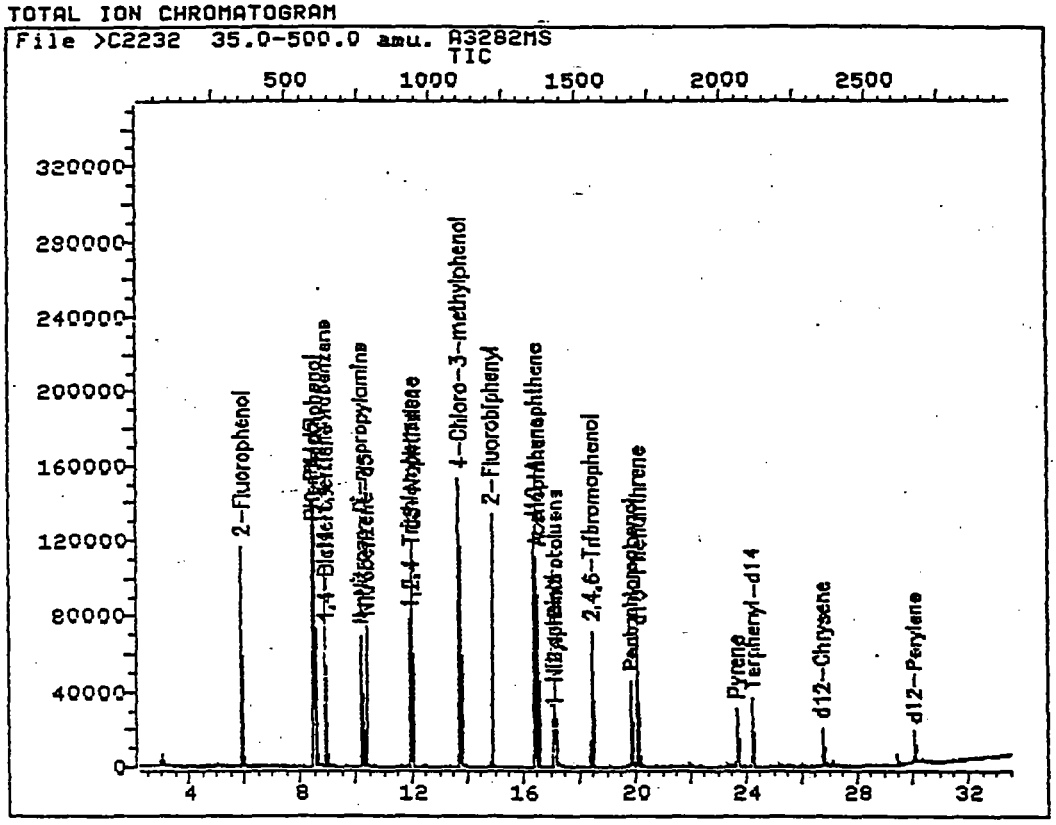
Quant Rev: 6
Quant Time: 930914 13:21
Injected at: 930914 12:44
Dilution Factor: 1.00000
BTL# 1

ID File: ID914C::SC
Title: hSL BNA STD
Last Calibration: 930914 12:00

	Compound	R.T.	Scan#	Area	Conc	Units	q
)	*d4-1,4-Dichlorobenzene	8.87	632	45927	40.00	UG/L	94
4)	2-Fluorophenol	5.90	347	60811	78.05	UG/L	94
5)	Phenol-d5	8.40	587	88042	88.44	UG/L	95
)	Phenol	8.43	590	72883	65.76	UG/L	79
8)	2-Chlorophenol	8.47	593	58362	65.77	UG/L	96
0)	1,4-Dichlorobenzene	8.92	636	30779	30.15	UG/L	99
)	N-Nitroso-Di-n-propylamine	10.17	756	26191	31.95	UG/L	82
)	*d8-Naphthalene	12.04	935	101507	40.00	UG/L	94
9)	Nitrobenzene-d5	10.36	774	44801	40.11	UG/L	87
)	1,2,4-Trichlorobenzene	11.97	929	24791	29.41	UG/L	98
)	4-Chloro-3-methylphenol	13.75	1099	61240	67.48	UG/L	92
3)	*d10-Acenaphthene	16.45	1358	52028	40.00	UG/L	97
8)	2-Fluorobiphenyl	14.87	1207	75947	40.14	UG/L	94
)	Acenaphthene	16.52	1365	54254	32.57	UG/L	94
9)	4-Nitrophenol	17.11	1421	11577	57.76	UG/L	54
7)	2,4-Dinitrotoluene	17.16	1426	14530	32.72	UG/L	63
)	*d10-Phenanthrene	20.09	1707	52255	40.00	UG/L	98
)	2,4,6-Tribromophenol	18.44	1549	13115	78.16	UG/L	96
9)	Pentachlorophenol	19.85	1684	9796	68.28	UG/L	96
4)	*d12-Chrysene	26.73	2343	16427	40.00	UG/L	96
)	Pyrene	23.65	2048	27830	37.70	UG/L	95
7)	Terphenyl-d14	24.24	2104	22404	45.17	UG/L	86
3)	*d12-Perylene	30.05	2661	14884	40.00	UG/L	93

Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >C2232::D4 Quant Output File: ^C2232::D2
Name: A3282MS
Misc: BTL# 1

Id File: ID914C::SC
Title: hSL BNA STD
Last Calibration: 930914 12:00

Operator ID: JEFF
Quant Time: 930914 13:21
Injected at: 930914 12:44

QUANT REPORT

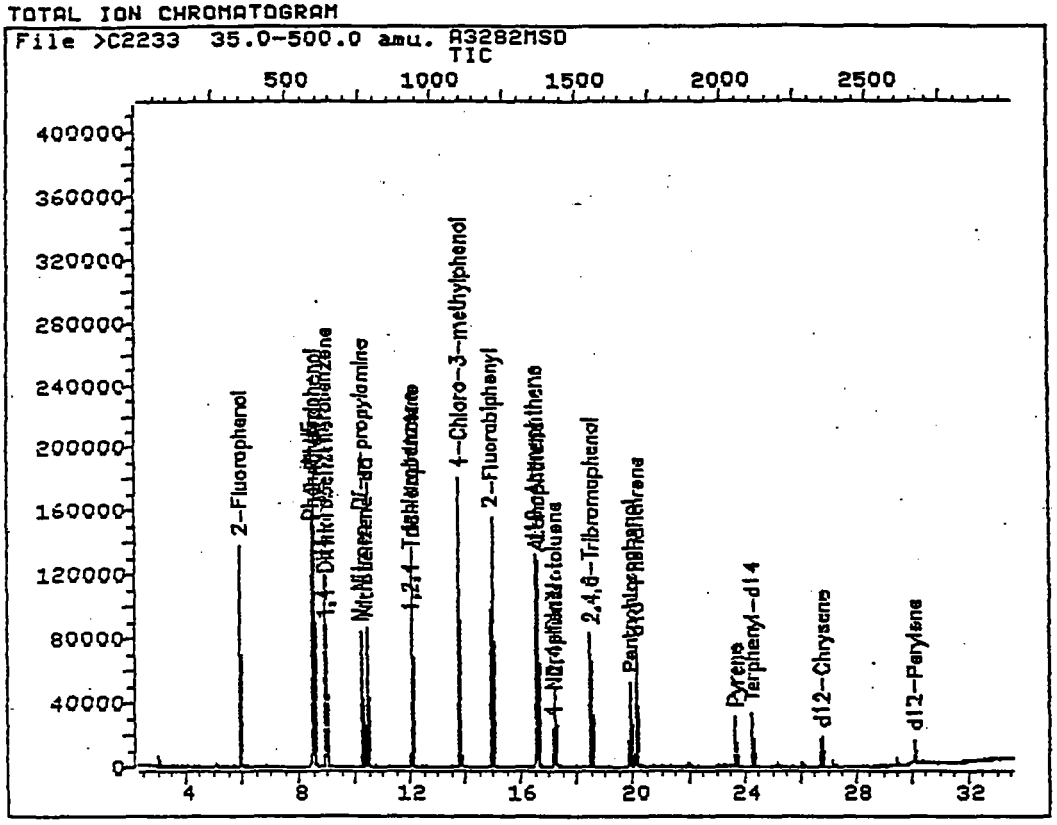
perator ID: JEFF Quant Rev: 6 Quant Time: 930914 14:07
utput File: ^C2233::D2 Injected at: 930914 13:30
Data File: >C2233::D4 Dilution Factor: 1.00000
Name: A3282MSD
isc: BTL# 2

ID File: ID914C::SC
itle: hSL BNA STD
ast Calibration: 930914 12:00

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	8.88	630	51832	40.00	UG/L	98
4)	2-Fluorophenol	5.91	345	71412	81.21	UG/L	91
5)	Phenol-d5	8.42	586	102888	91.58	UG/L	94
6)	Phenol	8.45	589	84518	67.57	UG/L	80
8)	2-Chlorophenol	8.47	591	67964	67.86	UG/L	95
0)	1,4-Dichlorobenzene	8.92	634	35078	30.45	UG/L	99
6)	N-Nitroso-Di-n-propylamine	10.18	754	30750	33.24	UG/L	87
18)	*d8-Naphthalene	12.05	933	114369	40.00	UG/L	95
19)	Nitrobenzene-d5	10.37	772	51758	41.13	UG/L	88
7)	1,2,4-Trichlorobenzene	11.98	927	27538	29.00	UG/L	93
31)	4-Chloro-3-methylphenol	13.76	1097	70615	69.06	UG/L	93
33)	*d10-Acenaphthene	16.46	1356	57247	40.00	UG/L	96
3)	2-Fluorobiphenyl	14.89	1205	84537	40.61	UG/L	95
3)	Acenaphthene	16.54	1363	60768	33.16	UG/L	95
45)	4-Nitrophenol	17.12	1419	12083	54.79	UG/L	54
7)	2,4-Dinitrotoluene	17.16	1423	15573	31.88	UG/L	63
3)	*d10-Phenanthrene	20.10	1704	54228	40.00	UG/L	98
56)	2,4,6-Tribromophenol	18.46	1547	13237	76.01	UG/L	96
59)	Pentachlorophenol	19.87	1682	10333	69.40	UG/L	99
4)	*d12-Chrysene	26.75	2339	14276	40.00	UG/L	97
65)	Pyrene	23.66	2043	27752	43.26	UG/L	98
67)	Terphenyl-d14	24.25	2100	20589	47.77	UG/L	92
3)	*d12-Perylene	30.07	2657	11964	40.00	UG/L	93

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >C2233::D4 Quant Output File: ^C2233::D2
Name: A3282MSD
Misc: BTL# 2

Id File: ID914C::SC
Title: hSL BNA STD
Last Calibration: 930914 12:00

Operator ID: JEFF
Quant Time: 930914 14:07
Injected at: 930914 13:30

21st Century Environmental Inc.

GC/MS STANDARD p-BROMOFLUOROBENZENE (BFB) TUNE
CRITERIA FOR VOLATILES 50ng

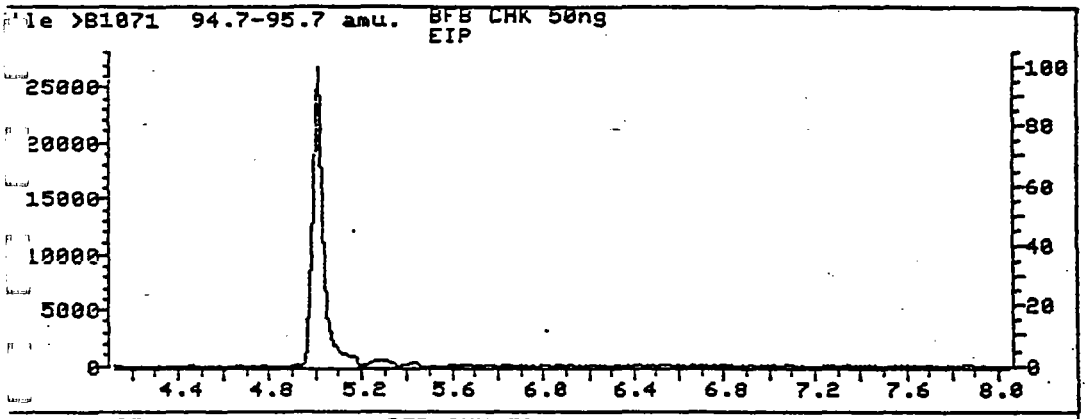
DATE AND TIME OF INJECTION: 8/08/93 16:11
INSTRUMENT ID: 5995

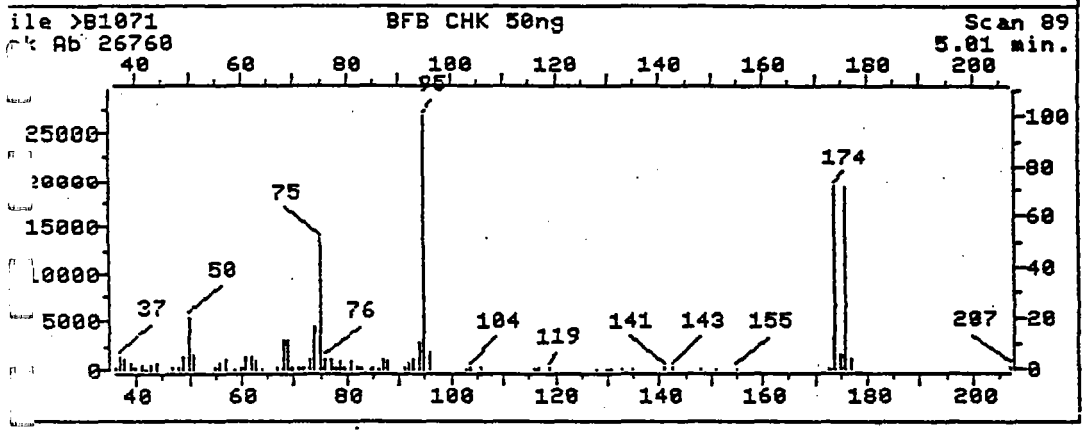
DATA RELEASE AUTHORIZED BY Richard W Lynch

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
50	15-40% of mass 95	20.20	20.20	Ok
75	30-60% of mass 95	51.11	51.11	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.04	7.04	Ok
173	Less than 2% of mass 174	.50	.70	Ok
174	Greater than 50% of mass 95	72.02	72.02	Ok
175	5-9% of mass 174	5.51	7.65	Ok
176	95-101% of mass 174	71.03	98.63	Ok
177	5-9% of mass 176	4.46	6.28	Ok

THIS PERFORMANCE AFFECTS ALL SAMPLES
STANDARDS AND BLANKS LISTED BELOW

SAMPLE ID	LAB ID		DATE TIME
>B1071::D2	BFB CHK 50ng		8/08/93 16:11
>B1083::D2	HSL CAL CHK 50ppb		8/08/93 16:47
>B1084::D2	BLANK		8/08/93 18:02
>B1085::D2	BLANK		8/08/93 19:07
>B1087::D2	A3250		8/08/93 20:30
>B1088::D2	A3251		8/08/93 20:59
>B1089::D2	A3249		8/08/93 21:28
>B1091::D2	A3277		8/08/93 22:25
>B1092::D2	A3219		8/08/93 22:55





>B1071 BFB CHK 50ng
89 NRM

File: >B1071 Scan #: 89 Retn. time: 5.01

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
36.05	1.271	56.00	2.201	73.95	16.390	90.95	1.005	133.00	.482
37.00	5.314	57.00	4.619	75.00	51.113	91.95	2.709	134.90	.344
38.00	4.604	58.90	.381	76.00	4.563	92.95	4.503	140.95	.729
39.00	2.395	60.00	1.158	77.00	4.552	94.00	10.994	142.90	.654
40.00	.523	60.95	5.176	78.00	1.278	95.00	100.000	147.95	.288
41.05	1.577	61.95	4.787	78.90	3.692	96.00	7.044	151.00	.344
41.95	.400	62.95	3.516	79.85	1.013	102.95	.407	155.00	.377
42.95	1.338	64.05	.295	80.95	3.714	104.00	.781	172.80	.501
43.95	2.309	67.00	.706	81.95	1.009	105.90	.553	173.00	.501
47.00	1.241	68.00	11.958	82.95	1.009	115.90	.404	174.00	72.018
48.00	.882	69.00	11.902	84.40	.206	116.90	.620	174.95	5.508
49.00	4.686	69.95	1.076	84.90	.759	118.95	.886	175.95	71.031
50.00	20.198	71.15	.658	86.10	.239	127.85	.355	177.05	4.458
50.95	6.263	72.05	.807	87.00	4.413	129.95	.407	207.05	1.117
55.05	1.252	73.05	4.454	88.00	3.688	130.95	.355		

21st Century Environmental Inc.

GC/MS STANDARD DECAFLUOROTRIPHENYLPHOSPHINE(DFTPP) TUNE
CRITERIA FOR SEMIVOLATILES 50ng

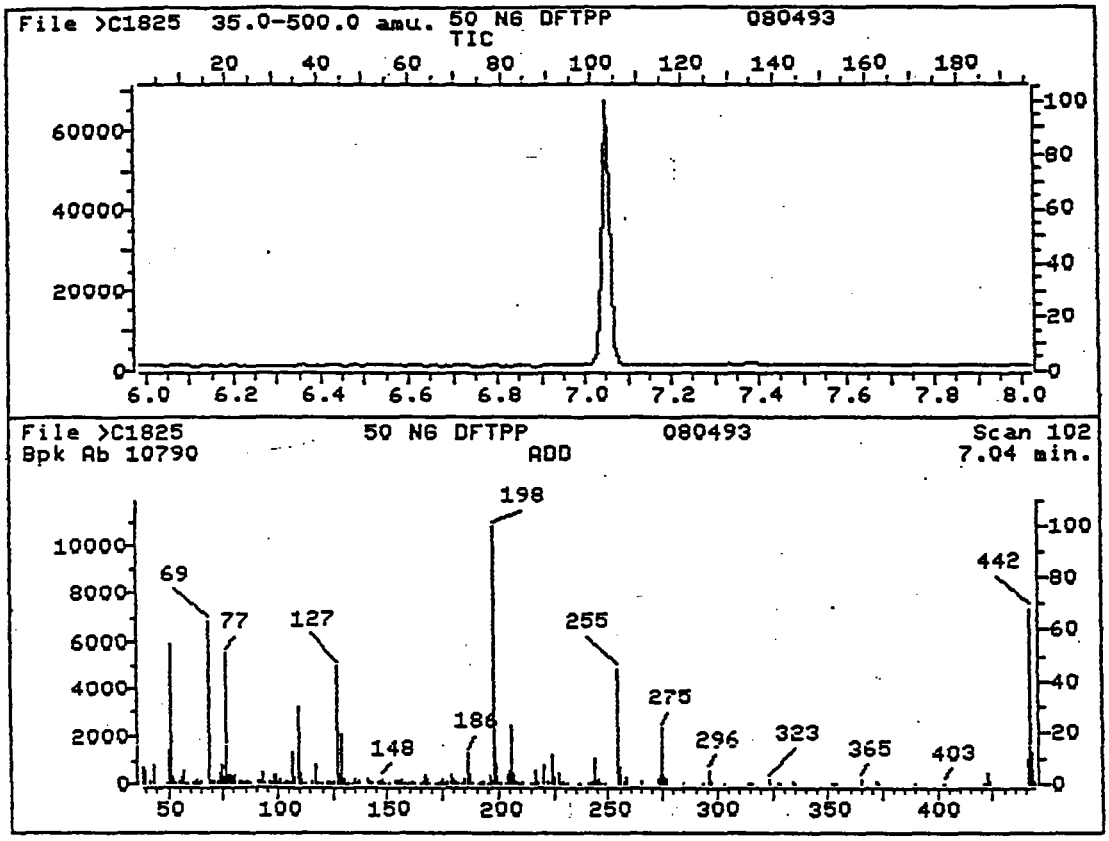
DATE AND TIME OF INJECTION: 8/04/93 10:42
INSTRUMENT ID: 5970

DATA RELEASE AUTHORIZED BY Richard W Lynch

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	54 38	54.38	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	63.50	63.50	Ok
70	Less than 2% of mass 69	0.58	0.91	Ok
127	40-60% of mass 198	46.20	46.20	Ok
197	Less than 1% of mass 198	0.53	0.53	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	7.26	7.26	Ok
275	10-30% of mass 198	21.32	21.32	Ok
365	Greater than 1% of mass 198	1.40	1.40	Ok
441	0-100% of mass 443	10.00	77.57	Ok
442	Greater than 40% of mass 198	12.89	68.00	Ok
443	17-23% of mass 442	9.36	18.96	Ok

THIS PERFORMANCE AFFECTS ALL SAMPLES
STANDARDS AND BLANKS LISTED BELOW

SAMPLE ID		LAB ID		DATE TIME
>C1825::D5		50 NG DFTPP		8/04/93 10:42
>C1826::D4		50 PPM BNA STD		8/04/93 11:06
>C1827::D4		20 PPM BNA STD		8/04/93 12:43
>C1828::D4		80 PPM BNA STD		8/04/93 13:42
>C1829::D4		120 PPM BNA STD		8/04/93 14:30
>C1830::D4		160 PPM BNA STD		8/04/93 15:20
>C1831::D4		NA BLNK 8/3		8/04/93 16:10
>C1832::D4		A2937		8/04/93 17:00
>C1833::D4		A2863		8/04/93 17:49
>C1834::D4		TCLP BLNK 8/4		8/04/93 18:39
>C1835::D4		A3264 CWM		8/04/93 19:28
>C1836::D4		A3271 CWM		8/04/93 20:16
>C1837::D4		A3284 CWM		8/04/93 21:04
>C1838::D4		A3290 CWM		8/04/93 21:52



>C1825 50 NG DFTPP 080493
102 ADD NRM

File: >C1825 Scan #: 102 Retn. time: 7.04

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
38.30	.908	92.00	.658	142.60	.204	192.80	.825	255.95	6.877
39.10	6.506	93.00	4.569	142.90	.278	193.10	.176	256.95	.630
40.00	5.079	93.80	.176	146.00	.510	195.20	.185	258.05	2.437
41.20	1.196	94.20	.204	146.25	.297	196.00	3.290	264.80	.918
42.10	.176	96.05	.565	147.05	1.084	196.75	.528	273.05	1.715
43.20	1.585	96.95	.204	148.05	2.141	197.95	100.000	273.95	3.614
44.10	7.210	98.05	3.383	148.95	.408	198.85	7.257	274.95	21.316
49.05	.408	98.95	3.188	150.85	.093	199.95	.306	275.95	2.836
50.05	13.336	99.85	.278	152.95	.547	201.45	.445	276.95	1.733
51.05	54.384	101.05	2.020	153.95	.584	202.75	.445	284.95	.176
52.15	2.298	103.15	.500	155.05	1.029	203.95	3.031	293.00	.241
53.15	.213	103.95	1.205	156.05	1.789	204.95	4.949	295.90	5.209
55.15	.908	105.05	1.270	157.15	.352	206.05	21.983	296.90	.806
56.15	2.280	106.05	.426	157.95	.380	207.05	4.078	302.95	.352
57.05	5.264	107.05	12.558	158.90	.232	208.05	.658	314.00	.167
57.90	.195	108.05	2.261	159.90	.491	208.95	.269	314.90	.315
59.00	.093	110.00	29.472	160.90	1.019	210.10	.176	315.90	.139
61.10	.482	111.00	4.254	161.70	.269	211.00	.741	323.10	1.585
62.00	.565	112.10	.389	165.10	.417	214.90	.213	323.95	.241

				187.90	1.724	217.90	.936	333.95	1.121
69.00	63.503	118.00	.399	168.90	.334	220.90	7.804	335.05	.232
70.10	.575	120.00	.148	171.75	.213	222.85	1.297	351.85	.454
71.15	.714	122.05	.510	172.85	.306	223.95	11.770	352.95	.213
73.05	.621	122.85	1.233	173.95	.834	224.95	2.669	354.05	.287
74.05	4.551	123.75	.612	175.05	1.464	226.95	4.384	364.90	1.798
75.05	7.720	123.95	.158	175.95	.408	227.95	.436	372.00	.945
76.05	2.539	124.95	.630	176.95	.741	228.95	.964	372.90	.158
77.05	50.945	126.95	46.200	178.95	3.290	230.95	.445	390.00	.111
78.05	3.346	128.05	3.577	179.95	2.020	235.90	.139	401.95	.195
79.05	3.355	129.05	18.943	181.05	.964	236.90	.213	402.95	.222
79.95	2.271	130.05	1.529	181.95	.148	240.90	.148	421.00	.204
80.95	3.726	130.95	.297	183.95	.204	242.00	.361	422.00	.454
82.05	.982	131.95	.130	185.00	1.807	243.00	.732	423.10	3.948
83.20	1.047	134.00	.473	186.00	12.150	244.00	10.009	424.00	.797
84.00	.380	135.00	1.464	187.00	2.975	245.10	1.251	441.00	10.000
85.00	1.029	136.00	.482	188.20	.185	246.00	1.483	442.00	67.998
85.90	1.029	136.90	.556	188.90	.482	246.80	.213	443.00	12.892
87.10	.473	141.00	1.918	191.00	.306	249.05	.250	444.10	1.019
91.10	.927	142.00	.769	191.90	.982	254.95	45.088		

21st Century Environmental Inc.

GC/MS STANDARD DECAFLUOROTRIPHENYLPHOSPHINE(DFTPP) TUNE
CRITERIA FOR SEMIVOLATILES 50ng

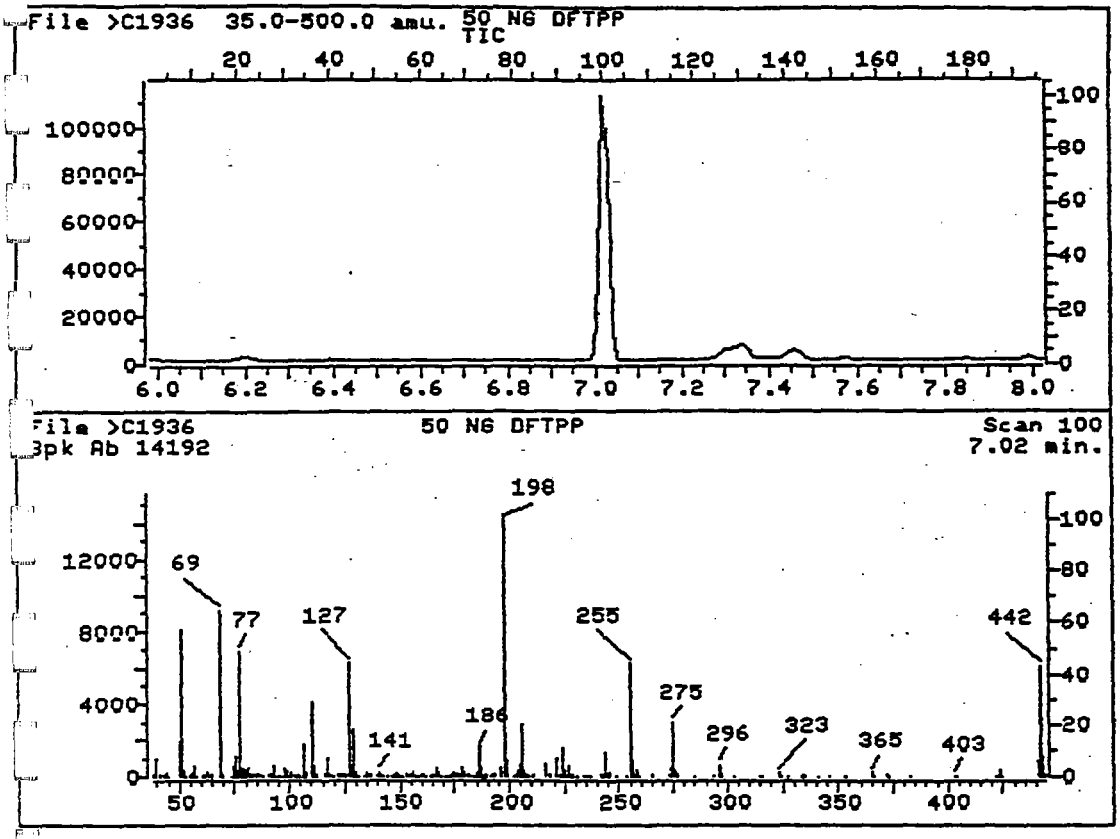
DATE AND TIME OF INJECTION: 8/18/93 13:03
INSTRUMENT ID: 5970

DATA RELEASE AUTHORIZED BY Richard W Symonds

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	57.10	57.10	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	64.73	64.73	Ok
70	Less than 2% of mass 69	.51	.79	Ok
127	40-60% of mass 198	44.62	44.62	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.22	6.22	Ok
275	10-30% of mass 198	20.84	20.84	Ok
365	Greater than 1% of mass 198	1.41	1.41	Ok
441	0-100% of mass 443	5.97	77.56	Ok
442	Greater than 40% of mass 198	43.38	43.38	Ok
443	17-23% of mass 442	7.69	17.74	Ok

THIS PERFORMANCE AFFECTS ALL SAMPLES
STANDARDS AND BLANKS LISTED BELOW

SAMPLE ID		LAB ID		DATE TIME
>C1936::DA		50 NG DFTPP		8/18/93 13:03
>C1937::DA		50 PPM BNA STD		8/18/93 13:45
>C1938::DA		AQ BLNK 7/27		8/18/93 15:08
>C1940::DA		A3251 FT.MONMOUTH		8/18/93 16:55
>C1942::D5		A3249 FT MNMTH		8/18/93 18:49
>C1943::D5		A3237 ACCUQUAL		8/18/93 19:38
>C1944::D5		AQ BLNK 8/11		8/18/93 20:27
>C1945::D5		A3238 ACCUQUAL		8/18/93 21:15
>C1946::D5		A3240 ACCUQUAL		8/18/93 22:03
>C1947::D5		A3241 ACCUQUAL		8/18/93 22:51
>C1948::D5		A3242 ACCUQUAL		8/18/93 23:38
>C1949::DA		A3243 ACCUQUAL		8/19/93 0:26



>C1936 50 NG DFTPP
100 NRM

File: >C1936 Scan #: 100 Retn. time: 7.02

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
38.10	.754	93.00	4.488	148.00	1.980	193.05	1.001	259.10	.268
39.10	6.497	94.00	.296	149.10	.536	196.00	3.671	265.05	.874
40.00	2.255	95.10	.183	150.00	.169	198.00	100.000	272.95	1.219
41.10	.669	96.00	.303	151.20	.324	199.00	6.222	274.05	3.410
43.10	.578	98.00	3.016	153.10	.676	201.60	.486	275.05	20.843
44.10	1.973	99.00	2.741	154.10	.465	203.10	.521	276.00	2.579
45.10	.162	101.00	1.790	155.05	1.001	204.10	2.910	277.00	1.318
50.05	13.296	103.05	.662	156.05	1.881	205.00	5.116	285.00	.240
51.05	57.096	104.05	1.106	157.05	.458	206.10	20.272	293.05	.331
52.05	2.748	105.05	.944	157.95	.486	207.00	2.656	296.05	4.481
53.05	.148	107.05	12.296	158.95	.366	208.00	.662	297.05	.676
55.05	.634	107.95	1.973	160.05	.613	208.95	.225	303.00	.493
56.05	1.797	110.05	29.207	160.95	1.043	210.95	.881	315.10	.409
57.05	4.362	111.05	3.974	162.05	.190	216.05	.430	316.00	.289
58.05	.247	112.05	.507	164.05	.204	216.95	5.207	323.05	1.494
61.00	.648	116.00	.796	165.05	.789	218.05	.634	324.05	.345
62.10	.592	117.00	7.004	166.05	.719	221.05	7.096	327.05	.233
63.00	1.994	118.10	.613	167.05	3.749	223.00	1.311	333.20	.134
64.00	.268	119.00	.120	168.05	1.684	224.00	10.583	334.10	.979
65.10	.930	120.10	.268	169.00	.345	225.00	2.861	335.10	.176

73.10	.279	124.00	.889	173.00	.486	228.00	.528	353.05	.324
74.10	4.115	125.00	.550	174.10	.839	229.00	.810	354.05	.388
75.05	7.244	127.00	44.617	175.10	1.367	231.00	.388	365.00	1.409
76.05	2.304	128.00	4.002	176.00	.620	234.00	.204	366.10	.183
77.05	49.239	129.05	18.644	177.10	.789	235.10	.233	372.15	.782
78.05	3.291	130.05	1.698	178.00	.254	235.95	.169	373.15	.225
78.95	3.178	130.95	.275	179.00	3.107	236.95	.352	383.15	.176
80.05	2.635	134.05	.380	180.00	2.093	242.05	.543	403.05	.366
81.05	3.805	135.05	1.416	181.10	1.085	243.05	.698	404.05	.092
81.95	.902	136.05	.669	182.95	.134	244.05	9.118	421.20	.359
82.95	.831	137.05	.683	184.05	.197	245.15	1.149	422.20	.204
84.05	.190	140.05	.134	185.05	1.353	246.05	1.360	423.20	2.452
85.05	.655	141.05	2.100	186.05	11.662	249.05	.261	424.15	.395
86.05	.824	142.00	.719	187.05	3.157	253.00	.225	441.10	5.968
87.05	.458	143.00	.486	188.15	.310	255.00	44.666	442.10	43.377
88.00	.176	144.90	.106	189.05	.613	256.00	6.116	443.10	7.694
91.10	.902	146.00	.338	191.05	.331	257.10	.423	444.10	.698
92.00	.761	147.00	1.268	192.05	.923	258.00	2.213		

21st Century Environmental Inc.

GC/MS STANDARD DECAFLUOROTRIPHENYLPHOSPHINE(DFTPP) TUNE
CRITERIA FOR SEMIVOLATILES 50ng

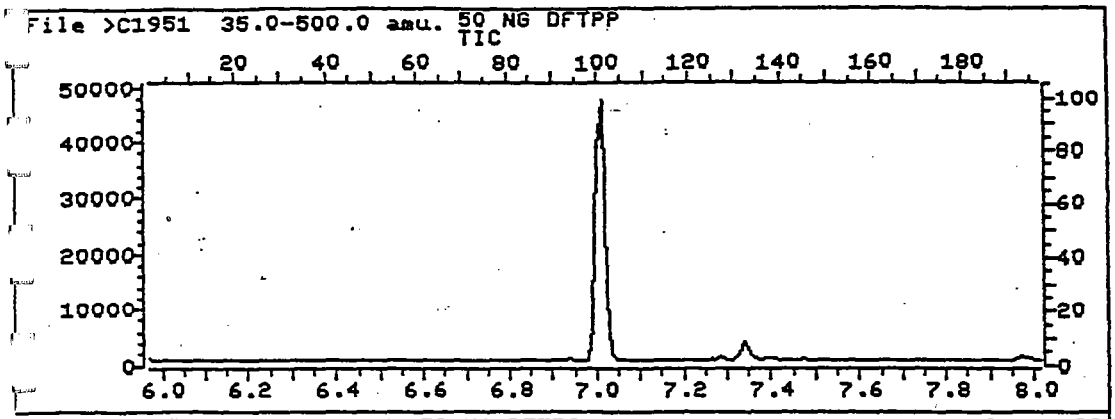
DATE AND TIME OF INJECTION: 8/19/93 8:55
INSTRUMENT ID: 5970

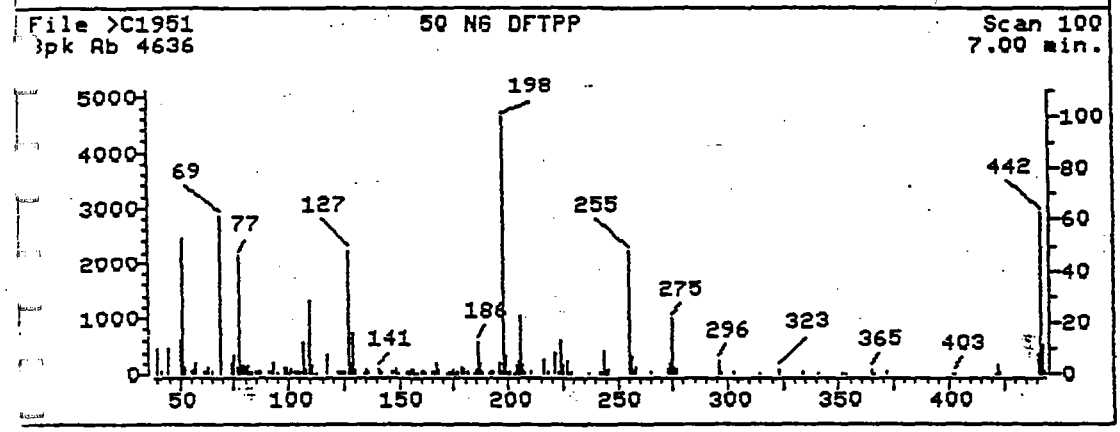
DATA RELEASE AUTHORIZED BY Richard W Lynch.

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	53.11	53.11	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	61.28	61.28	Ok
70	Less than 2% of mass 69	0.00	0.00	Ok
127	40-60% of mass 198	48.02	48.02	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	7.20	7.20	Ok
275	10-30% of mass 198	21.18	21.18	Ok
365	Greater than 1% of mass 198	2.09	2.09	Ok
441	0-100% of mass 443	8.24	70.35	Ok
442	Greater than 40% of mass 198	62.58	62.58	Ok
443	17-23% of mass 442	11.71	18.72	Ok

THIS PERFORMANCE AFFECTS ALL SAMPLES
STANDARDS AND BLANKS LISTED BELOW

SAMPLE ID		LAB ID		DATE TIME
>C1951::D3		50 NG DFTPP		8/19/93 8:55
>C1953::D3		50 PPM BNA STD		8/19/93 10:29
>C1954::DA		AQ BLANK 8/3		8/19/93 11:33
>C1955::DA		A3462 DOWNER 8/17		8/19/93 12:39
>C1957::DA		NA BLNK 8/17		8/19/93 14:14
>C1958::DA		A3162 8/3		8/19/93 15:02
>C1963::D3		A3249 1:5		8/19/93 19:11





>C1951 50 NG DFTPP
100 NRM

File: >C1951 Scan #: 100 Retn. time: 7.00

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
38.00	.777	93.00	4.098	149.00	.388	193.05	1.230	255.90	6.881
39.10	5.457	94.70	.216	152.90	.626	195.90	4.034	256.90	.539
40.00	10.246	95.00	.216	154.00	.647	196.60	.841	257.90	2.394
41.10	.561	98.00	2.739	154.90	1.381	197.90	100.000	264.95	.992
44.00	9.771	99.00	2.912	155.95	1.833	198.90	7.204	272.95	1.769
50.05	13.072	100.00	.367	157.05	.388	200.00	.431	273.95	4.012
51.05	53.106	101.00	2.092	157.75	.345	201.30	.669	274.95	21.182
51.95	2.912	102.95	.712	159.85	.582	202.80	.431	275.90	2.783
55.05	.518	103.95	1.035	160.95	.906	204.00	3.149	276.90	1.424
56.05	1.812	105.05	.906	161.95	.324	205.00	5.242	295.95	5.069
57.05	4.185	106.95	12.489	164.95	.669	205.90	22.045	296.85	.712
60.95	.669	108.05	2.071	166.05	.949	206.90	2.977	302.90	.690
62.00	.604	109.95	28.473	166.95	4.055	208.00	.928	314.90	.475
63.00	2.502	110.85	3.624	167.95	1.682	210.25	.561	322.95	1.898
65.00	.841	111.95	.475	172.00	.453	210.85	.928	333.90	1.230
69.00	61.281	116.90	7.291	172.90	.841	216.85	5.500	340.80	.280
74.00	4.314	121.80	.539	174.00	.841	217.95	.863	351.95	.367
74.95	7.506	122.90	1.100	175.00	1.381	220.95	8.326	353.85	.475
76.15	2.222	123.90	.561	175.90	.410	222.90	1.186	364.90	2.092

0045

[illegible]	[illegible]	[illegible]	48.018	178.10	.302	224.80	3.149	371.95	.928
78.95	3.149	128.00	4.120	178.90	2.826	226.90	5.155	401.85	.302
79.95	2.351	128.85	16.005	179.90	2.071	227.80	.431	402.95	.431
80.95	3.710	129.85	1.402	181.00	1.208	228.80	1.122	422.00	.388
81.95	1.100	133.85	.345	183.95	.237	236.95	.367	423.00	3.732
82.95	1.035	134.95	1.618	184.85	1.381	241.95	.712	423.95	.561
84.95	.669	135.95	.518	185.95	12.640	242.95	.733	441.00	8.240
85.95	.841	141.05	1.898	186.95	3.840	243.95	9.577	442.00	62.575
86.95	.539	142.00	.777	188.05	.561	244.95	1.208	443.00	11.713
90.90	.733	146.90	1.057	190.95	.324	245.95	1.704	444.00	1.143
91.90	1.035	148.00	1.898	191.95	.863	254.90	47.908		

Continuing Calibration Check
HSL Compounds

Case No: _____ Calibration Date: 08/08/93

Contractor: 21ST Century Env Time: 16:47

Contract No: _____ Laboratory ID: >B1083

Instrument ID: Volatile Inst B Initial Calibration Date: 08/08/93

Minimum $\overline{RF}$ for SPCC is .300 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Chloromethane	.62606	.63907	2.08		**	
Bromomethane	.69960	.61039	12.75			
Vinyl Chloride	1.18469	1.20064	1.35	*		
Chloroethane	.69218	.57611	16.77			
Acrolein	.04161	.03155	24.18			(Conc=80.00)
1,1,2-Trichlorotrifluoroethane	4.50782	4.47762	.67			
Trichlorofluromethane	6.67465	6.68037	.09			
Acetone	2.07146	2.14441	3.52			
1,1-Dichloroethene	3.90347	3.77673	3.25	*		
Carbon Disulfide	6.53731	6.44727	1.38			
Methyl Tertiary Butyl Ether	9.55207	9.61184	.63			
Tertiary Butyl Alcohol	2.59416	5.71655	120.36			
Acrylonitrile	1.08871	1.22858	12.85			
Methylene Chloride	2.63973	2.75346	4.31			
1,2-Dichloroethene(trans)	3.40125	3.76104	10.58			
1,1-Dichloroethane	4.76576	4.56737	4.16		**	
Vinyl Acetate	.11778	.13139	11.56			
2-Butanone	2.24954	2.17204	3.45			
Chloroform	5.70180	5.58724	2.01	*		
1,1,1-Trichloroethane	4.88262	5.01059	2.62			
Carbon Tetrachloride	3.84010	3.90598	1.72			
1,2-Dichloroethane-d4	2.58951	2.79064	7.77			(Conc=50.00)
1,2-Dichloroethane	.71949	.66888	7.03			
Benzene	1.13019	1.08872	3.67			
Trichloroethene	.51423	.48817	5.07			
1,2-Dichloropropane	.32781	.29880	8.85	*		
Bromodichloromethane	.70492	.62547	11.27			
2-Chloroethylvinylether	.32138	.30188	6.07			
2-Hexanone	.40837	.37582	7.97			
trans-1,3-Dichloropropene	.60570	.54422	10.15			
Toluene-d8	.99602	.93124	6.50			
Toluene	1.36101	1.11938	17.75	*		

RF - Response Factor from daily standard file at 50.00 UG/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: _____ Calibration Date: 08/08/93

Contractor: 21ST Century Env Time: 16:47

Contract No: Laboratory ID: >B1083

Instrument ID: Volatile Inst B Initial Calibration Date: 08/08/93

Minimum $\overline{RF}$ for SPCC is .300 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
cis-1,3-Dichloropropene	.50552	.46641	7.74		
1,1,2,2-Tetrachloroethane	.41673	.42505	2.00		**
1,1,2-Trichloroethane	.37205	.35112	5.62		
4-Methyl-2-pentanone	.39016	.37710	3.35		
Tetrachloroethene	.45563	.43304	4.96		
Dibromochloromethane	.59309	.55200	6.93		
Chlorobenzene	.88865	.80535	9.37		**
Ethylbenzene	1.47417	1.37139	6.97	*	
m&p-Xylenes	1.21117	1.10084	9.11		
o-Xylene	1.14312	1.02954	9.94		
Styrene	.92440	.84037	9.09		
Bromoform	.46794	.44561	4.77		**
Bromofluorobenzene	.74177	.73003	1.58		
m-Dichlorobenzene	.69970	.68658	1.87		
p-Dichlorobenzene	.70685	.70148	.76		
o-Dichlorobenzene	.65772	.63748	3.08		

RF - Response Factor from daily standard file at 50.00 UG/L

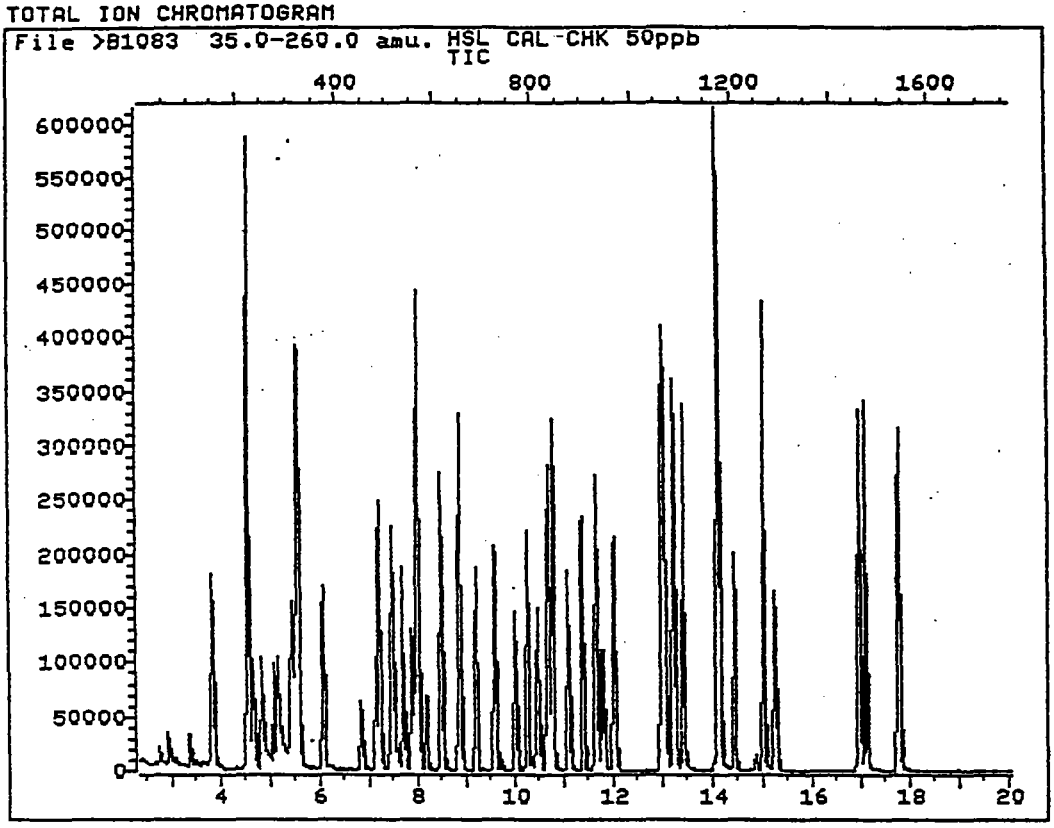
$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

0106.1

TOTAL ION CHROMATOGRAM



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Name: HSL CAL CHK 50ppb
Misc:

Id File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930806 17:41

Operator ID: JEFF
Quant Time: 930808 17:17
Injected at: 930808 16:47

Continuing Calibration Check
HSL Compounds

Case No: _____ Calibration Date: 08/18/93

Contractor: 21st Century Envir Time: 13:45

Contract No: _____ Laboratory ID: >C1937

Instrument ID: 5970C Initial Calibration Date: 08/11/93

Minimum $\overline{RF}$ for SPCC is 0.050 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Pyridine	.65734	.57934	11.87			
n-Nitrosodimethylamine	.49429	.52480	6.17			
2-Fluorophenol	.67573	.69827	3.34			(Conc=100.00)
Phenol-d5	1.07017	.94883	11.34			(Conc=100.00)
Phenol	1.16729	1.03200	11.59	*		
bis(-2-Chloroethyl)Ether	.96170	.88158	8.33			
2-Chlorophenol	.82230	.74601	9.28			
1,3-Dichlorobenzene	.83325	.82400	1.11			
1,4-Dichlorobenzene	.85726	.86095	.43	*		
Benzyl Alcohol	.57737	.47953	16.95			
1,2-Dichlorobenzene	.84946	.81758	3.75			
2-Methylphenol	.83373	.70019	16.02			
bis(2-Chloroisopropyl)ether	1.25739	1.20573	4.11			
4-Methylphenol	.89397	.69070	22.74			(Conc=100.00)
N-Nitroso-Di-n-propylamine	.88424	.70341	20.45		**	
Hexachloroethane	.38531	.36974	4.04			
Nitrobenzene-d5	.49741	.50206	.93			(Conc=50.00)
Nitrobenzene	.48162	.49529	2.84			
Isophorone	1.02566	.82038	20.01			
2-Nitrophenol	.26864	.27551	2.56	*		
2,4-Dimethylphenol	.34444	.33464	2.84			
Benzoic Acid	.22446	.16338	27.21			
bis(-2-Chloroethoxy)Methane	.52355	.47478	9.32			
2,4-Dichlorophenol	.34779	.32962	5.22	*		
1,2,4-Trichlorobenzene	.34661	.38278	10.44			
Naphthalene	1.10169	1.13201	2.75			
4-Chloroaniline	.46964	.40833	13.06			
Hexachlorobutadiene	.17065	.19408	13.73	*		
4-Chloro-3-methylphenol	.38243	.32494	15.03	*		
2-Methylnaphthalene	.75260	.70304	6.59			
Hexachlorocyclopentadiene	.25716	.27681	7.64		**	
2,4,6-Trichlorophenol	.40900	.43791	7.07	*		

RF - Response Factor from daily standard file at 50.00 ug/l

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: _____ Calibration Date: 08/18/93

Contractor: 21st Century Envir Time: 13:45

Contract No: _____ Laboratory ID: >C1937

Instrument ID: 5970C Initial Calibration Date: 08/11/93

Minimum $\overline{RF}$ for SPCC is 0.050 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
2,4,5-Trichlorophenol	.43047	.46373	7.73			
2-Chloronaphthalene	1.28011	1.39737	9.16			
2-Fluorobiphenyl	1.45517	1.51402	4.04			(Conc=50.00)
2-Nitroaniline	.47005	.51268	9.07			
Dimethyl Phthalate	1.40935	1.55982	10.68			
Acenaphthylene	1.84308	2.00077	8.56			
3-Nitroaniline	.28546	.31779	11.33			
Acenaphthene	1.25365	1.38644	10.59	*		
2,4-Dinitrophenol	.16061	.18639	16.05		**	
4-Nitrophenol	.16931	.17755	4.87		**	
Dibenzofuran	1.75586	1.96571	11.95			
2,4-Dinitrotoluene	.36178	.45385	25.45			
2,6-Dinitrotoluene	.34080	.39536	16.01			
Diethylphthalate	1.22992	1.61647	31.43			
4-Chlorophenyl-phenylether	.60332	.69719	15.56			
Fluorene	1.28695	1.52539	18.53			
4-Nitroaniline	.23514	.27142	15.43			
4,6-Dinitro-2-methylphenol	.16842	.15877	5.73			
N-Nitrosodiphenylamine	.75599	.73956	2.17	*		
2,4,6-Tribromophenol	.10562	.09806	7.16			(Conc=100.00)
4-Bromophenyl-phenylether	.28010	.26948	3.79			
Hexachlorobenzene	.24637	.26180	6.26	*		
Pentachlorophenol	.12136	.10540	13.15		**	
Phenanthrene	1.19358	1.23234	3.25			
Anthracene	1.14023	1.19230	4.57			
Di-n-Butylphthalate	1.35015	1.72180	27.53			
Fluoranthene	.76841	.91595	19.20	*		
Pyrene	1.86334	1.85862	.25			
Benzidine	.08234	.06456	21.59			
Terphenyl-d14	1.22246	1.29852	6.22			(Conc=50.00)
Butylbenzylphthalate	1.02253	1.16923	14.35			
3,3'-Dichlorobenzidine	.36320	.36575	.70			

RF - Response Factor from daily standard file at 50.00 ug/l

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: | Calibration Date: 08/18/93

Contractor: 21st Century Envir | Time: 13:45

Contract No: | Laboratory ID: >C1937

Instrument ID: 5970C | Initial Calibration Date: 08/11/93

Minimum $\overline{RF}$ for SPCC is 0.050 | Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Benzo(a)Anthracene	1.23841	1.26268	1.96		
Bis(2-Ethylhexyl)Phthalate	1.42162	1.58408	11.43		
Chrysene	1.13403	1.16207	2.47		
Di-n-octyl phthalate	2.63377	3.28636	24.78	*	
Benzo(b)fluoranthene	1.26407	1.33458	5.58		
Benzo(k)Fluoranthene	1.23222	1.23042	.15		
Benzo(a)Pyrene	1.16392	1.19467	2.64	*	
Indeno(1,2,3-cd)Pyrene	1.08569	1.02416	5.67		
Dibenzo(a,h)Anthracene	.88264	.85525	3.10		
Benzo(g,h,i)Perylene	.93702	.88070	6.01		

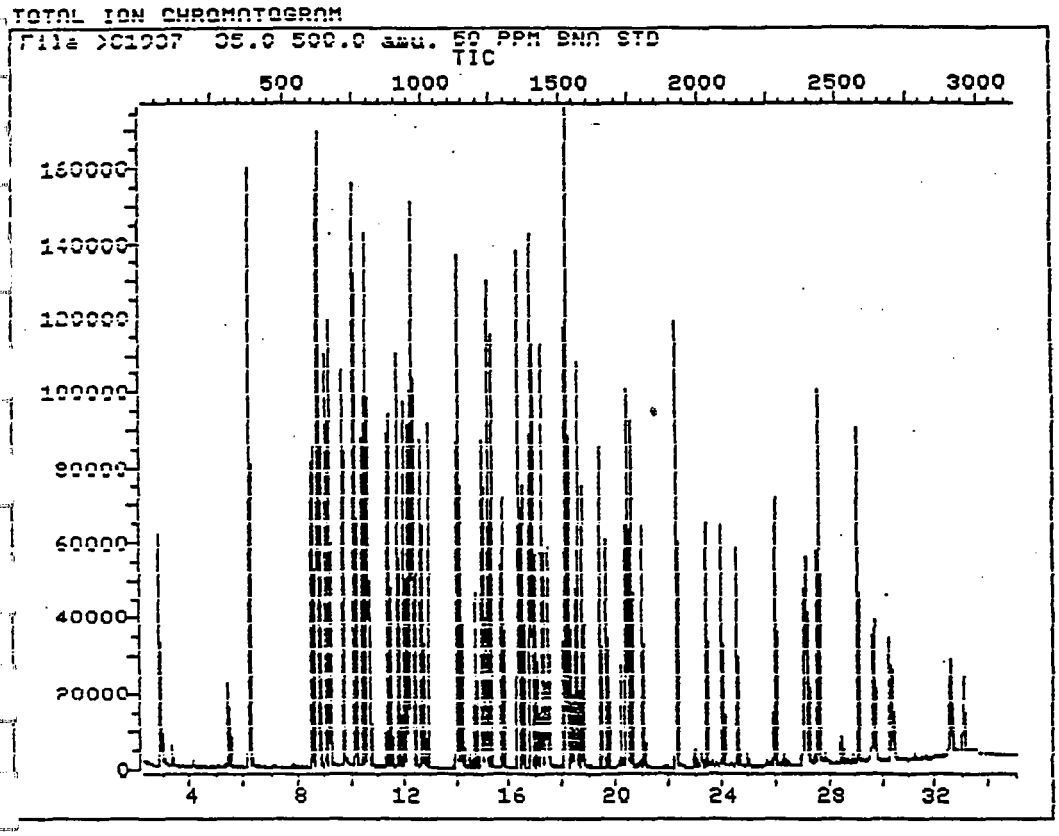
RF - Response Factor from daily standard file at 50.00 ug/l

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

03053



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Name: 50 PPM BNA STD
Misc: BTL# 2

Id File: ID811C::D3
Title: hSL BNA STD
Last Calibration: 930811 16:45

Operator ID: JEFF
Quant Time: 930818 14:23
Injected at: 930818 13:45

Continuing Calibration Check
HSL Compounds

Case No: _____ Calibration Date: 08/19/93

Contractor: 21st Century Envir Time: 10:29

Contract No: Laboratory ID: >C1953

Instrument ID: 5970C Initial Calibration Date: 08/11/93

Minimum $\overline{RF}$ for SPCC is 0.050 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Pyridine	.65734	.47432	27.84			
n-Nitrosodimethylamine	.49429	.50943	3.06			
2-Fluorophenol	.67573	.71607	5.97			(Conc=100.00)
Phenol-d5	1.07017	1.08733	1.60			(Conc=100.00)
Phenol	1.16729	1.15335	1.19	*		
bis(-2-Chloroethyl)Ether	.96170	.99785	3.76			
2-Chlorophenol	.82230	.86175	4.80			
1,3-Dichlorobenzene	.83325	.88513	6.23			
1,4-Dichlorobenzene	.85726	.87874	2.51	*		
Benzyl Alcohol	.57737	.55194	4.40			
1,2-Dichlorobenzene	.84946	.87880	3.45			
2-Methylphenol	.83373	.84276	1.08			
bis(2-Chloroisopropyl)ether	1.25739	1.27036	1.03			
4-Methylphenol	.89397	.87170	2.49			(Conc=100.00)
N-Nitroso-Di-n-propylamine	.88424	.90351	2.18		**	
Hexachloroethane	.38531	.40998	6.40			
Nitrobenzene-d5	.49741	.49367	.75			(Conc=50.00)
Nitrobenzene	.48162	.49129	2.01			
Isophorone	1.02566	.91638	10.66			
2-Nitrophenol	.26864	.28203	4.98	*		
2,4-Dimethylphenol	.34444	.34822	1.10			
Benzoic Acid	.22446	.18027	19.69			
bis(-2-Chloroethoxy)Methane	.52355	.51900	.87			
2,4-Dichlorophenol	.34779	.34737	.12	*		
1,2,4-Trichlorobenzene	.34661	.36858	6.34			
Naphthalene	1.10169	1.16513	5.76			
4-Chloroaniline	.46964	.41985	10.60			
Hexachlorobutadiene	.17065	.18460	8.18	*		
4-Chloro-3-methylphenol	.38243	.31203	18.41	*		
2-Methylnaphthalene	.75260	.72102	4.20			
Hexachlorocyclopentadiene	.25716	.27810	8.14		**	
2,4,6-Trichlorophenol	.40900	.43291	5.85	*		

RF - Response Factor from daily standard file at 50.00 ug/l

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

03079

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 08/19/93

Contractor: 21st Century Envir Time: 10:29

Contract No: Laboratory ID: >C1953

Instrument ID: 5970C Initial Calibration Date: 08/11/93

Minimum $\overline{RF}$ for SPCC is 0.050 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
2,4,5-Trichlorophenol	.43047	.42493	1.29			
2-Chloronaphthalene	1.28011	1.43550	12.14			
2-Fluorobiphenyl	1.45517	1.57600	8.30			(Conc=50.00)
2-Nitroaniline	.47005	.44200	5.97			
Dimethyl Phthalate	1.40935	1.40913	.02			
Acenaphthylene	1.84308	1.94950	5.77			
3-Nitroaniline	.28546	.24006	15.90			
Acenaphthene	1.25365	1.32226	5.47	*		
2,4-Dinitrophenol	.16061	.11260	29.89		**	
4-Nitrophenol	.16931	.09468	44.08		**	
Dibenzofuran	1.75586	1.78155	1.46			
2,4-Dinitrotoluene	.36178	.32435	10.35			
2,6-Dinitrotoluene	.34080	.32180	5.58			
Diethylphthalate	1.22992	1.20279	2.21			
4-Chlorophenyl-phenylether	.60332	.60775	.73			
Fluorene	1.28695	1.28736	.03			
4-Nitroaniline	.23514	.16267	30.82			
4,6-Dinitro-2-methylphenol	.16842	.14059	16.53			
N-Nitrosodiphenylamine	.75599	.84964	12.39	*		
2,4,6-Tribromophenol	.10562	.09936	5.93			(Conc=100.00)
4-Bromophenyl-phenylether	.28010	.30814	10.01			
Hexachlorobenzene	.24637	.27271	10.69	*		
Pentachlorophenol	.12136	.09573	21.12		**	
Phenanthrene	1.19358	1.24242	4.09			
Anthracene	1.14023	1.19521	4.82			
Di-n-Butylphthalate	1.35015	1.40075	3.75			
Fluoranthene	.76841	.78852	2.62	*		
Pyrene	1.86334	1.89499	1.70			
Benzidine	.08234	.03533	57.10			
Terphenyl-d14	1.22246	1.27249	4.09			(Conc=50.00)
Butylbenzylphthalate	1.02253	1.01177	1.05			
3,3'-Dichlorobenzidine	.36320	.29609	18.48			

RF - Response Factor from daily standard file at 50.00 ug/l

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

00071

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 08/19/93

Contractor: 21st Century Envir Time: 10:29

Contract No: Laboratory ID: >C1953

Instrument ID: 5970C Initial Calibration Date: 08/11/93

Minimum $\overline{RF}$ for SPCC is 0.050 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Benzo(a)Anthracene	1.23841	1.17240	5.33		
Bis(2-Ethylhexyl)Phthalate	1.42162	1.42189	.02		
Chrysene	1.13403	1.14616	1.07		
Di-n-octyl phthalate	2.63377	2.96149	12.44	*	
Benzo(b)fluoranthene	1.26407	1.34335	6.27		
Benzo(k)Fluoranthene	1.23222	1.24255	.84		
Benzo(a)Pyrene	1.16392	1.17212	.70	*	
Indeno(1,2,3-cd)Pyrene	1.08569	1.04302	3.93		
Dibenzo(a,h)Anthracene	.88264	.84120	4.69		
Benzo(g,h,i)Perylene	.93702	.85172	9.10		

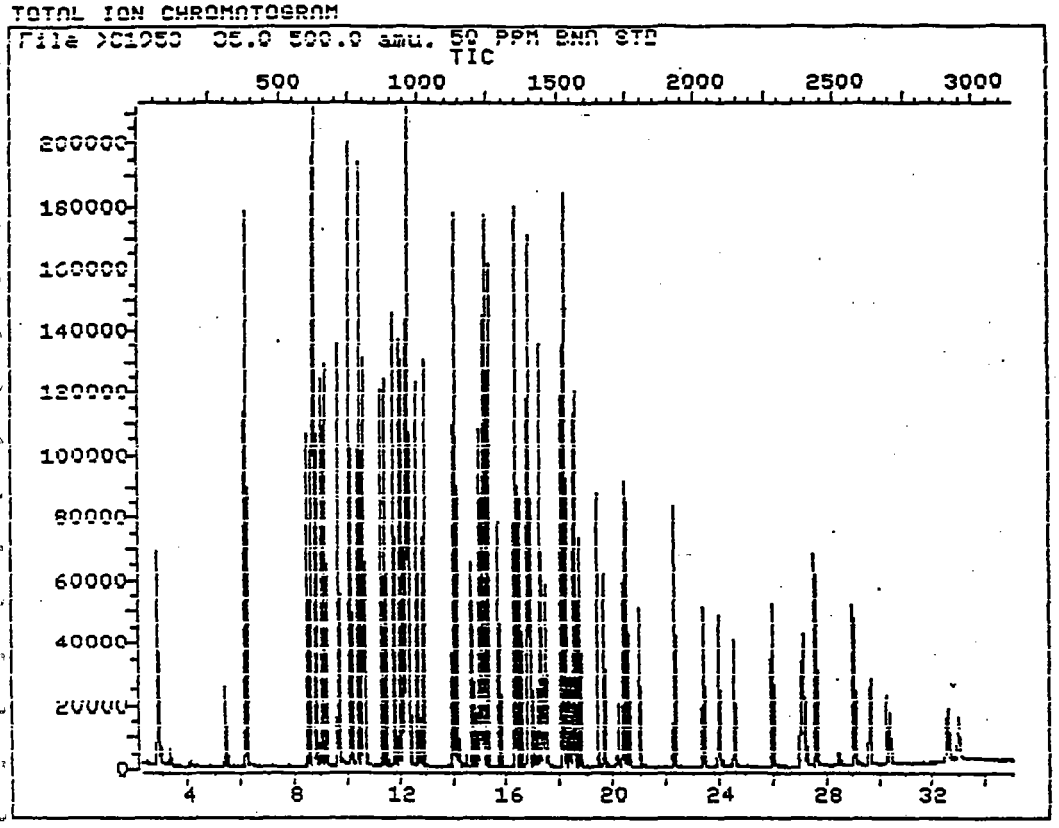
RF - Response Factor from daily standard file at 50.00 ug/l

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

TOTAL ION CHROMATOGRAM



Data File: >C1953::DA Quant Output File: ^C1953::DA
Name: 50 PPM BNA STD
Misc: BTL# 2

Id File: ID811C::D3
Title: hSL BNA STD
Last Calibration: 930811 16:45

Operator ID: JEFF
Quant Time: 930819 11:06
Injected at: 930819 10:29

21st Century Environmental Inc.

GC/MS STANDARD p-BROMOFLUOROBENZENE (BFB) TUNE
CRITERIA FOR VOLATILES 50ng

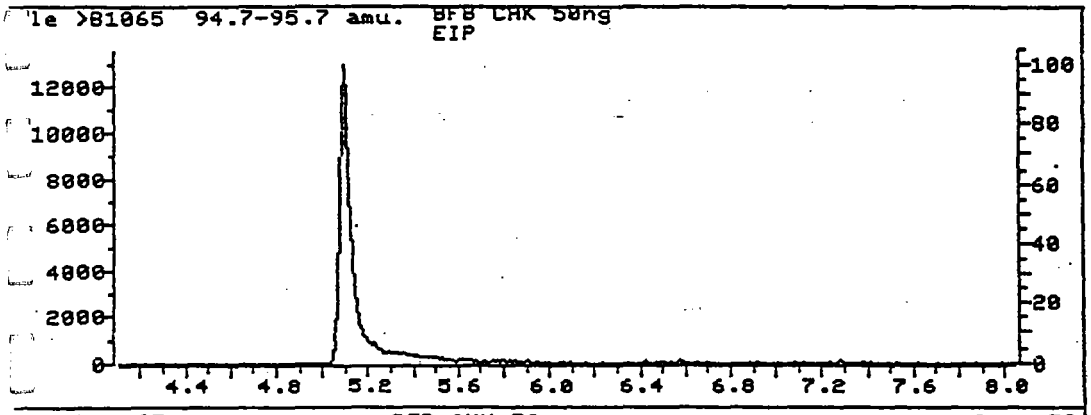
DATE AND TIME OF INJECTION: 8/06/93 12:27
INSTRUMENT ID: 5995

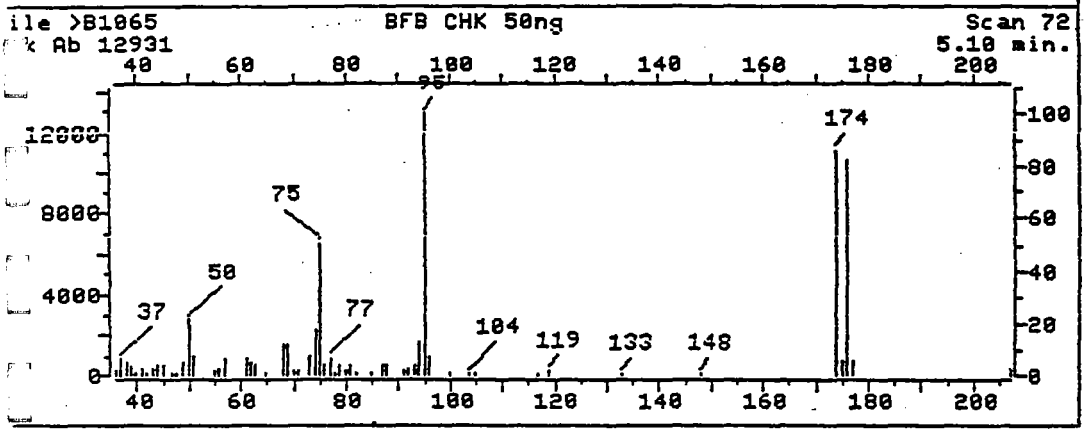
DATA RELEASE AUTHORIZED BY Richard W Lynch.

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	21.37	21.37	Ok
75	30-60% of mass 95	50.88	50.88	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.73	7.73	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	86.30	86.30	Ok
175	5-9% of mass 174	5.58	6.47	Ok
176	95-101% of mass 174	82.86	96.01	Ok
177	5-9% of mass 176	5.55	6.70	Ok

THIS PERFORMANCE AFFECTS ALL SAMPLES
STANDARDS AND BLANKS LISTED BELOW

SAMPLE ID		LAB ID		DATE TIME
>B1065::D2		BFB CHK 50ng		8/06/93 12:27
>B1066::D3		HSL CAL CHK 50ppb		8/06/93 13:30
>B1067::D3		HSL CAL CHK 20ppb		8/06/93 14:41
>B1068::D3		HSL CAL CHK 100ppB		8/06/93 15:16
>B1069::D2		HSL CAL CHK 150ppb		8/06/93 15:51
>B1070::D2		HSL CAL CHK 200ppb		8/06/93 16:23





>B1065 BFB CHK 50ng
72 NRM

File: >B1065 Scan #: 72 Retn. time: 5.10

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
35.95	1.431	49.00	4.787	69.95	1.493	81.95	1.222	103.90	.711
36.90	6.411	50.00	21.367	71.05	1.361	85.00	.882	105.10	.588
38.00	5.429	50.95	7.254	72.95	7.122	87.00	4.014	117.00	.812
39.00	3.233	55.05	1.810	74.05	17.145	87.90	4.037	118.95	2.142
40.00	1.059	55.90	2.846	75.00	50.878	91.05	1.338	132.90	.905
40.95	2.954	57.00	6.465	76.00	4.570	91.95	2.931	147.85	.595
41.95	1.145	60.95	6.496	77.00	7.107	93.05	4.447	174.00	86.304
43.05	2.745	62.05	5.413	78.00	1.106	94.00	12.961	174.95	5.583
43.95	4.501	62.95	3.913	78.90	4.393	95.00	100.000	175.95	82.863
45.05	3.936	64.90	1.021	79.95	1.539	96.00	7.726	176.95	5.553
47.00	1.005	68.00	12.226	80.85	4.168	100.05	.998	207.05	2.181
47.80	.557	69.00	12.350						

Initial Calibration Data
HSL Compounds

Case No: _____ Instrument ID: Volatile Inst B

Contractor: 21ST Century Env Calibration Date: 08/08/93

Contract No: _____

Minimum $\overline{RF}$ for SPCC is .300 Maximum % RSD for CCC is 30%

Laboratory ID:	>B1067	>B1066	>B1068	>B1069	>B1070					
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Chloromethane	.61057	.67219	.64769	.66248	.53735	.384	.62606	8.760		**
Bromomethane	.79431	.52311	.78118	.69283	.70658	.470	.69960	15.473		
Vinyl Chloride	1.19374	1.00363	1.20449	1.24479	1.27678	.408	1.18469	8.988	*	
Chloroethane	.78695	.59640	.80280	.64099	.63377	.489	.69218	13.786		
Acrolein	.03757	.03874	.03914	.04516	.04746	.624	.04161	10.571		(Conc=32.0,80.0,160
1,1,2-Trichlorotrifluoroethane	4.62140	4.68945	4.25692	4.52608	4.44526	.638	4.50782	3.730		
Trichlorofluromethane	6.70555	6.76679	6.36994	6.79480	6.73619	.639	6.67465	2.601		
Acetone	2.19119	1.79559	2.01088	2.32143	2.03818	.654	2.07146	9.585		
1,1-Dichloroethene	3.73374	3.92029	3.75883	4.09665	4.00785	.638	3.90347	4.014	*	
Carbon Disulfide	6.11012	6.60661	6.75432	6.80382	6.41168	.678	6.53731	4.335		
Methyl Tertiary Butyl Ether	-	9.89107	10.0076	8.75755	-	.778	9.55207	7.229		
Tertiary Butyl Alcohol	-	2.67979	2.35778	2.74493	-	.760	2.59416	7.991		(Conc=40.0,100.0,2(
Acrylonitrile	.94836	1.11663	1.09224	1.33356	.95278	.769	1.08871	14.444		
Methylene Chloride	2.18234	2.73995	2.57730	2.77857	2.92051	.726	2.63973	10.736		
1,2-Dichloroethene(trans)	2.96982	3.78014	3.67166	3.55119	3.03342	.773	3.40125	11.007		
1,1-Dichloroethane	4.38534	4.66407	4.64522	5.01530	5.11886	.847	4.76576	6.265		**
Vinyl Acetate	.14153	.11562	.10907	.11402	.10864	.858	.11778	11.567		
2-Butanone	2.37322	2.20198	2.10788	2.35896	2.20566	.961	2.24954	5.045		
Chloroform	5.35492	5.70491	5.53815	5.88631	6.02471	1.013	5.70180	4.685	*	
1,1,1-Trichloroethane	4.52061	4.95672	4.82919	5.07830	5.02826	1.051	4.88262	4.567		
Carbon Tetrachloride	3.42244	3.97734	3.67658	4.03469	4.08944	1.083	3.84010	7.366		
1,2-Dichloroethane-d4	2.48731	2.73655	2.53376	2.58735	2.60258	1.109	2.58951	3.630		(Conc=50.0,50.0,50.
1,2-Dichloroethane	.66320	.70670	.70821	.76042	.75891	.942	.71949	5.683		
Benzene	1.07142	1.15010	1.07825	1.16907	1.18210	.941	1.13019	4.588		
Trichloroethene	.49867	.51389	.50636	.52559	.52666	1.045	.51423	2.357		
1,2-Dichloropropane	.31688	.31701	.32830	.34013	.33674	1.082	.32781	3.300	*	
Bromodichloromethane	.65860	.66319	.70096	.74623	.75561	1.127	.70492	6.415		
2-Chloroethylvinylether	.28315	.30620	.33312	.34893	.33552	1.177	.32138	8.216		
2-Hexanone	.38477	.38223	.39845	.45786	.41853	1.384	.40837	7.637		
trans-1,3-Dichloropropene	.56432	.56923	.60501	.64841	.64155	1.205	.60570	6.474		

RF - Response Factor (Subscript is amount in UG/L)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: _____ Instrument ID: Volatile Inst B

Contractor: 21ST Century Env Calibration Date: 08/08/93

Contract No: _____

Minimum $\overline{RF}$ for SPCC is .300 Maximum % RSD for CCC is 30%

Laboratory ID:	>81067	>81066	>81068	>81069	>81070					
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Toluene-d8	.98741	.93673	1.00478	1.02831	1.02284	1.255	.99602	3.698		(Conc=50.0,50.0,50.
Toluene	1.39618	1.26197	1.30281	1.43093	1.41316	1.267	1.36101	5.454	*	
cis-1,3-Dichloropropene	.44020	.49251	.50628	.53638	.55222	.855	.50552	8.605		
1,1,2,2-Tetrachloroethane	.39300	.41639	.40662	.43762	.43000	1.170	.41673	4.289		**
1,1,2-Trichloroethane	.35389	.37780	.36792	.38439	.37623	.877	.37205	3.158		
4-Methyl-2-pentanone	.35803	.38532	.37723	.43003	.40019	.908	.39016	6.917		
Tetrachloroethene	.45449	.46911	.44898	.45653	.44902	.898	.45563	1.809		
Dibromochloromethane	.53658	.59354	.59043	.61537	.62953	.926	.59309	5.977		
Chlorobenzene	.86832	.88618	.85889	.91699	.91288	1.004	.88865	2.921		**
Ethylbenzene	1.36921	1.49370	1.50064	1.32216	1.68516	1.020	1.47417	9.577	*	
m&p-Xylenes	1.08790	1.17665	1.16806	1.32040	1.30281	1.032	1.21117	8.108		
o-Xylene	1.06291	1.11864	1.09725	1.20556	1.23122	1.084	1.14312	6.308		
Styrene	.81205	.88759	.88448	1.02498	1.01290	1.085	.92440	9.903		
Bromoform	.41866	.47089	.46777	.49957	.48283	1.109	.46794	6.464		**
Bromofluorobenzene	.72407	.73177	.74072	.75603	.75624	1.152	.74177	1.939		(Conc=50.0,50.0,50.
m-Dichlorobenzene	.66697	.72023	.70669	.67222	.73239	1.301	.69970	4.145		
p-Dichlorobenzene	.67698	.72432	.70625	.68929	.73741	1.313	.70685	3.494		
o-Dichlorobenzene	.63930	.68122	.65484	.63425	.67901	1.364	.65772	3.317		

RF - Response Factor (Subscript is amount in UG/L)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

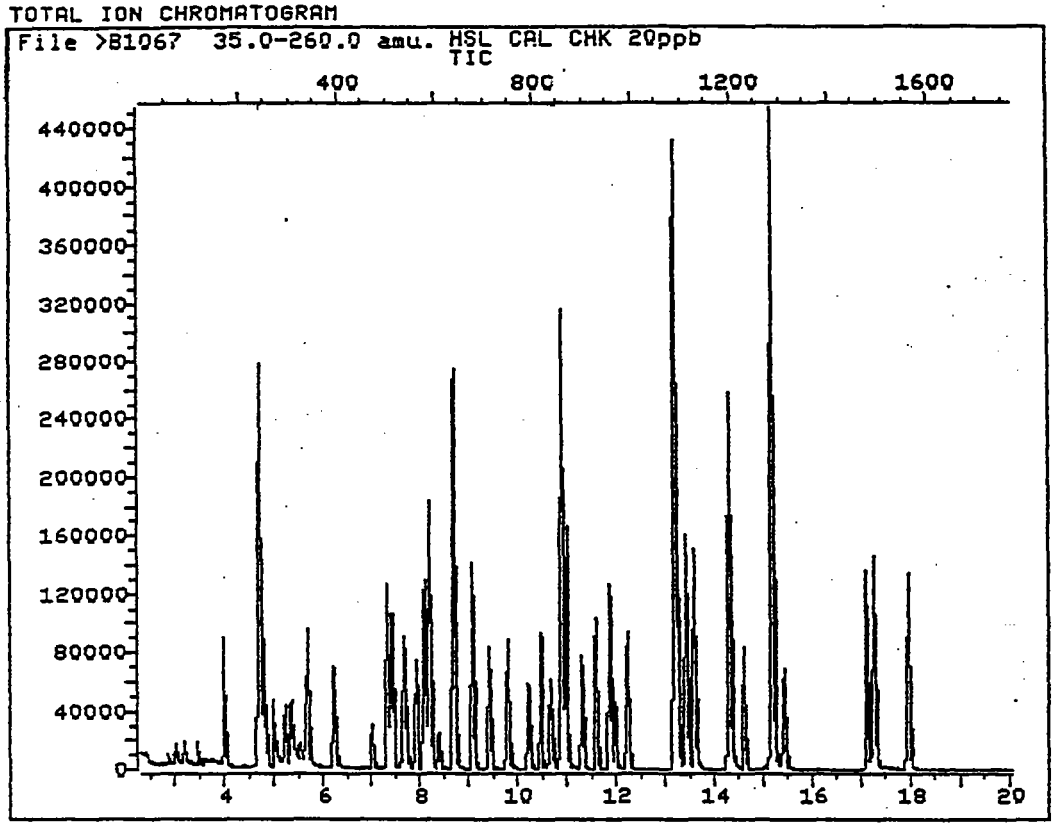
$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

00077

TOTAL ION CHROMATOGRAM

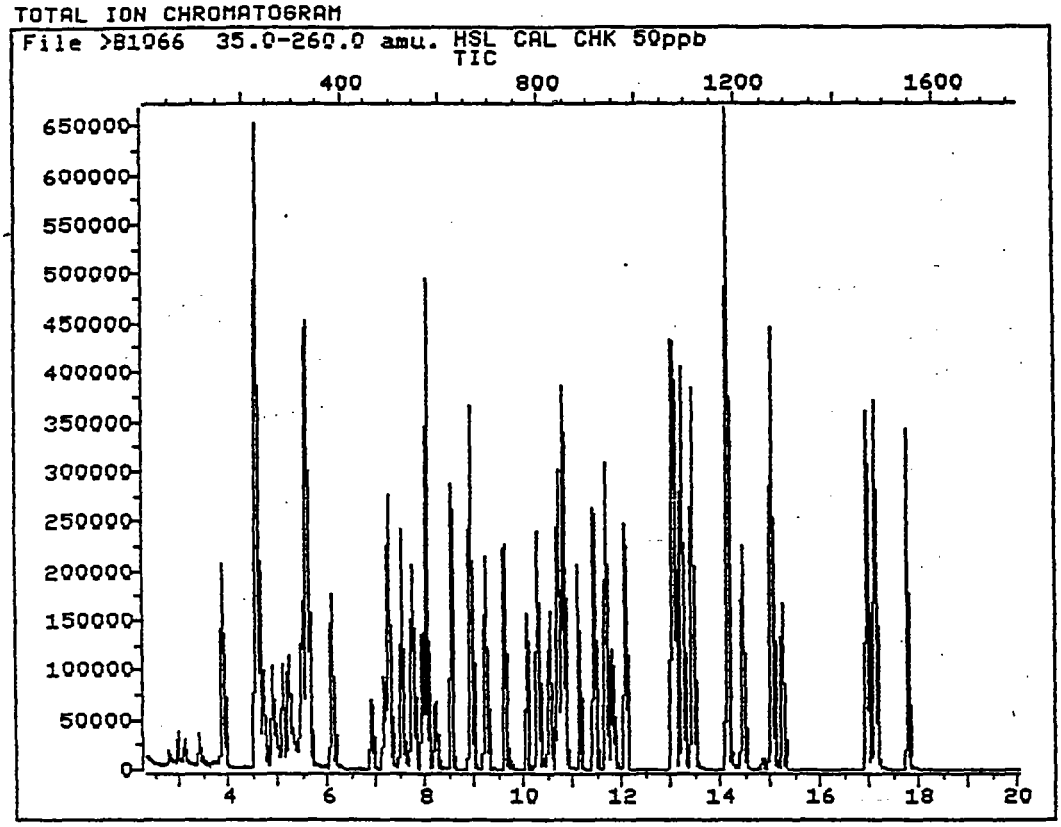


Data File: >B1067::D3 Quant Output File: ^B1067::D4
Name: HSL CAL CHK 20ppb
Misc:

Id File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930805 14:02

Operator ID: JEFF
Quant Time: 930806 15:14
Injected at: 930806 14:41

TOTAL ION CHROMATOGRAM

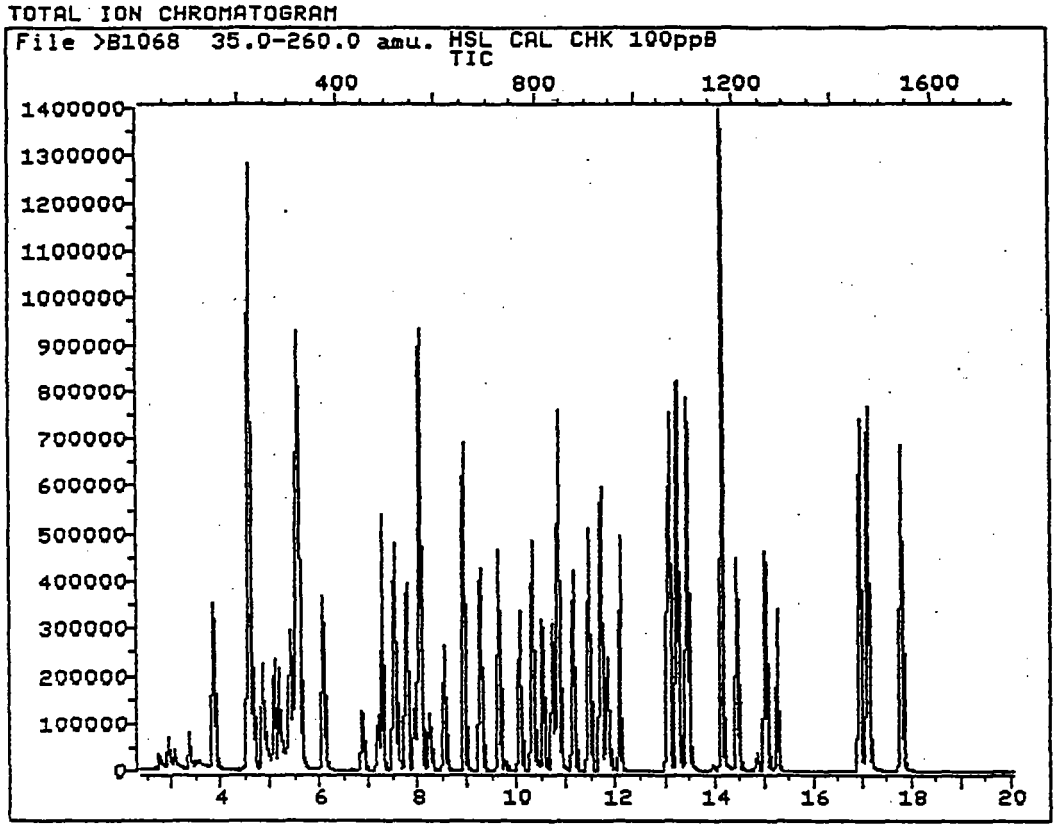


Data File: >B1066::D3 Quant Output File: ^B1066::D4
Name: HSL CAL CHK 50ppb
Misc:

Id File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930805 14:02

Operator ID: JEFF
Quant Time: 930806 13:54
Injected at: 930806 13:30

TOTAL ION CHROMATOGRAM

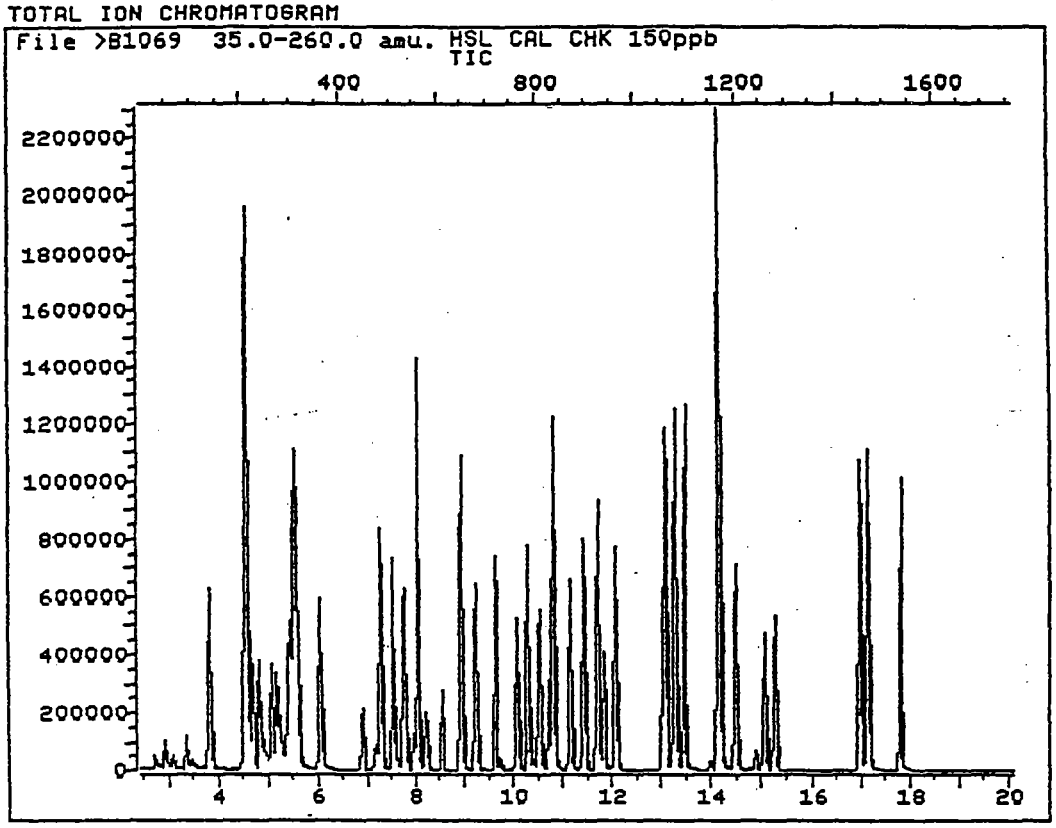


Data File: >B1068::D3 Quant Output File: ^B1068::QT
Name: HSL CAL CHK 100ppB
Misc:

Id File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930805 14:02

Operator ID: JEFF
Quant Time: 930806 16:05
Injected at: 930806 15:16

TOTAL ION CHROMATOGRAM

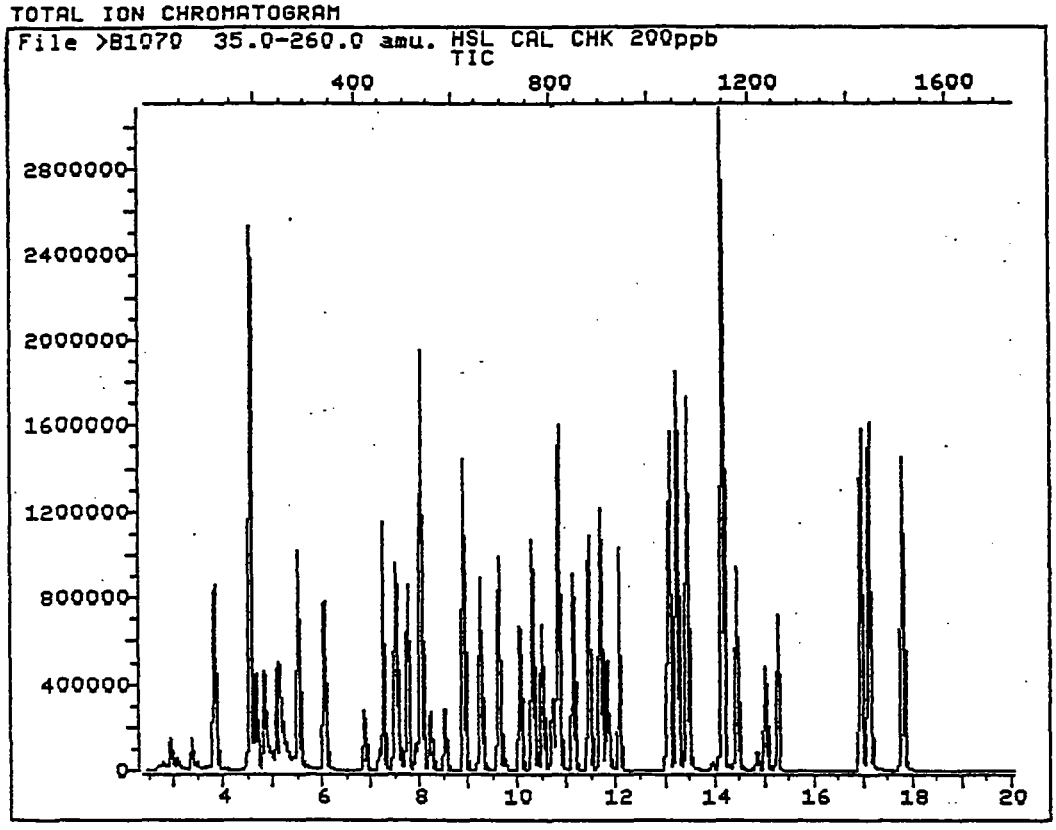


Data File: >B1069::D2 Quant Output File: ^B1069::QT
Name: HSL CAL CHK 150ppb
Misc:

Id File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930805 14:02

Operator ID: JEFF
Quant Time: 930806 16:46
Injected at: 930806 15:51

TOTAL ION CHROMATOGRAM



Data File: >B1070::D2 Quant Output File: ^B1070::QT
Name: HSL CAL CHK 200ppb
Misc:

Id File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930805 14:02

Operator ID: JEFF
Quant Time: 930806 16:52
Injected at: 930806 16:23

21st Century Environmental Inc.

GC/MS STANDARD DECAFLUOROTRIPHENYLPHOSPHINE(DFTPP) TUNE
CRITERIA FOR SEMIVOLATILES 50ng

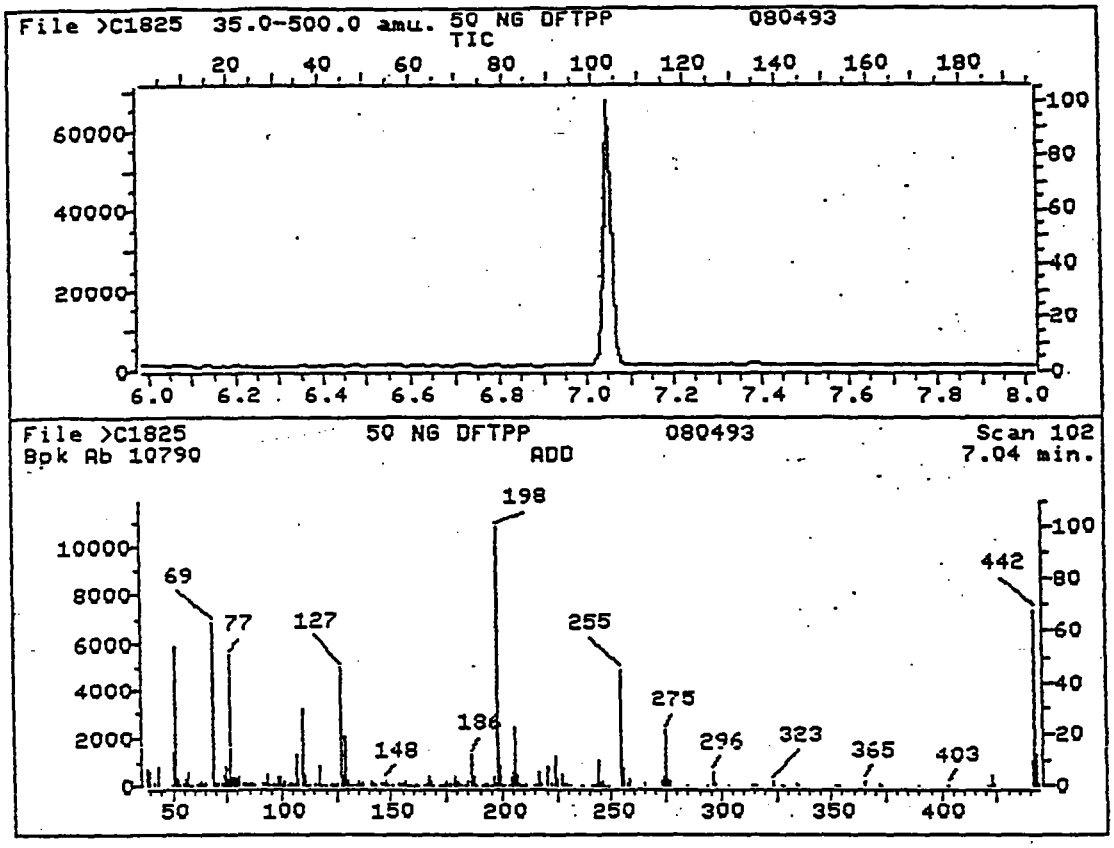
DATE AND TIME OF INJECTION: 8/04/93 10:42
INSTRUMENT ID: 5970

DATA RELEASE AUTHORIZED BY Richard Wynd

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	54 38	54.38	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	63.50	63.50	Ok
70	Less than 2% of mass 69	0.58	0.91	Ok
127	40-60% of mass 198	46.20	46.20	Ok
197	Less than 1% of mass 198	0.53	0.53	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	7.26	7.26	Ok
275	10-30% of mass 198	21.32	21.32	Ok
365	Greater than 1% of mass 198	1.40	1.40	Ok
441	0-100% of mass 443	10.00	77.57	Ok
442	Greater than 40% of mass 198	12.89	68.00	Ok
443	17-23% of mass 442	9.36	18.96	Ok

THIS PERFORMANCE AFFECTS ALL SAMPLES
STANDARDS AND BLANKS LISTED BELOW

SAMPLE ID		LAB ID		DATE TIME
>C1825::D5		50 NG DFTPP		8/04/93 10:42
>C1826::D4		50 PPM BNA STD		8/04/93 11:06
>C1827::D4		20 PPM BNA STD		8/04/93 12:43
>C1828::D4		80 PPM BNA STD		8/04/93 13:42
>C1829::D4		120 PPM BNA STD		8/04/93 14:30
>C1830::D4		160 PPM BNA STD		8/04/93 15:20
>C1831::D4		NA BLNK 8/3		8/04/93 16:10
>C1832::D4		A2937		8/04/93 17:00
>C1833::D4		A2863		8/04/93 17:49
>C1834::D4		TCLP BLNK 8/4		8/04/93 18:39
>C1835::D4		A3264 CWM		8/04/93 19:28
>C1836::D4		A3271 CWM		8/04/93 20:16
>C1837::D4		A3284 CWM		8/04/93 21:04
>C1838::D4		A3290 CWM		8/04/93 21:52



>C1825 50 NG DFTPP 080493
102 ADD NRM

File: >C1825 Scan #: 102 Retn. time: 7.04

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
38.30	.908	92.00	.658	142.60	.204	192.80	.825	255.95	6.877
39.10	6.506	93.00	4.569	142.90	.278	193.10	.176	256.95	.630
40.00	5.079	93.80	.176	146.00	.510	195.20	.185	258.05	2.437
41.20	1.196	94.20	.204	146.25	.297	196.00	3.290	264.80	.918
42.10	.176	96.05	.565	147.05	1.084	196.75	.528	273.05	1.715
43.20	1.585	96.95	.204	148.05	2.141	197.95	100.000	273.95	3.614
44.10	7.210	98.05	3.383	148.95	.408	198.85	7.257	274.95	21.316
49.05	.408	98.95	3.188	150.85	.093	199.95	.306	275.95	2.836
50.05	13.336	99.85	.278	152.95	.547	201.45	.445	276.95	1.733
51.05	54.384	101.05	2.020	153.95	.584	202.75	.445	284.95	.176
52.15	2.298	103.15	.500	155.05	1.029	203.95	3.031	293.00	.241
53.15	.213	103.95	1.205	156.05	1.789	204.95	4.949	295.90	5.209
55.15	.908	105.05	1.270	157.15	.352	206.05	21.983	296.90	.806
56.15	2.280	106.05	.426	157.95	.380	207.05	4.078	302.95	.352
57.05	5.264	107.05	12.558	158.90	.232	208.05	.658	314.00	.167
57.90	.195	108.05	2.261	159.90	.491	208.95	.269	314.90	.315
59.00	.093	110.00	29.472	160.90	1.019	210.10	.176	315.90	.139
61.10	.482	111.00	4.254	161.70	.269	211.00	.741	323.10	1.585
62.00	.565	112.10	.389	165.10	.417	214.90	.213	323.95	.241

65.10	.677	117.00	7.794	167.90	1.724	217.90	.936	333.95	1.121		
69.00	63.503	118.00	.399	168.90	.334	220.90	7.804	335.05	.232		
70.10	.575	120.00	.148	171.75	.213	222.85	1.297	351.85	.454		
71.15	.714	122.05	.510	172.85	.306	223.95	11.770	352.95	.213		
73.05	.621	122.85	1.233	173.95	.834	224.95	2.669	354.05	.287		
74.05	4.551	123.75	.612	175.05	1.464	226.95	4.384	364.90	1.798		
75.05	7.720	123.95	.158	175.95	.408	227.95	.436	372.00	.945		
76.05	2.539	124.95	.630	176.95	.741	228.95	.964	372.90	.158		
77.05	50.945	126.95	46.200	178.95	3.290	230.95	.445	390.00	.111		
78.05	3.346	128.05	3.577	179.95	2.020	235.90	.139	401.95	.195		
79.05	3.355	129.05	18.943	181.05	.964	236.90	.213	402.95	.222		
79.95	2.271	130.05	1.529	181.95	.148	240.90	.148	421.00	.204		
80.95	3.726	130.95	.297	183.95	.204	242.00	.361	422.00	.454		
82.05	.982	131.95	.130	185.00	1.807	243.00	.732	423.10	3.948		
83.20	1.047	134.00	.473	186.00	12.150	244.00	10.009	424.00	.797		
84.00	.380	135.00	1.464	187.00	2.975	245.10	1.251	441.00	10.000		
85.00	1.029	136.00	.482	188.20	.185	246.00	1.483	442.00	67.998		
85.90	1.029	136.90	.556	188.90	.482	246.80	.213	443.00	12.892		
87.10	.473	141.00	1.918	191.00	.306	249.05	.250	444.10	1.019		
91.10	.927	142.00	.769	191.90	.982	254.95	45.088				

Initial Calibration Data
HSL Compounds

Case No: _____ Instrument ID: 5970C

Contractor: 21st Century Envir Calibration Date: 09/28/93

Contract No: _____

Minimum $\overline{RF}$ for SPCC is 0.050 Maximum % RSD for CCC is 30%

Laboratory ID:	>C1827	>C1826	>C1828	>C1829	>C1830					
	RF	RF	RF	RF	RF					
Compound	20.00	50.00	80.00	120.00	160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Pyridine	.80861	.54834	.52314	.58902	.69199	.310	.63222	18.629		
n-Nitrosodimethylamine	.54355	.45870	.43689	.49692	.48524	.314	.48426	8.372		
2-Fluorophenol	.78220	.68490	.65777	.74914	.43990	.676	.66278	20.230		(Conc=100.0,100.0,100.0,1
Phenol-d5	1.02768	.98269	.96574	1.14011	.67297	.946	.95784	18.078		(Conc=100.0,100.0,100.0,1
Phenol	1.10189	1.06393	.97811	1.11360	1.05747	.950	1.06300	5.002	*	
bis(-2-Chloroethyl)Ether	.99401	.90532	.82744	.88538	.83980	.955	.89039	7.430		
2-Chlorophenol	.85823	.80080	.72229	.77529	.69551	.955	.77042	8.358		
1,3-Dichlorobenzene	.92750	.82629	.73367	.80451	.73896	.989	.80619	9.787		
1,4-Dichlorobenzene	.98358	.85455	.75367	.82401	.76846	1.005	.83685	10.952	*	
Benzyl Alcohol	.46084	.50073	.49601	.59455	.57385	1.059	.52520	10.758		
1,2-Dichlorobenzene	.90790	.82949	.73622	.80159	.74545	1.053	.80413	8.677		
2-Methylphenol	.77290	.74377	.67715	.79181	.72393	1.104	.74191	6.017		
bis(2-Chloroisopropyl)ether	1.15753	1.07474	1.03835	1.20876	1.13362	1.103	1.12260	6.001		
4-Methylphenol	.78464	.78080	.74723	.85140	.77497	1.149	.78781	4.881		(Conc=40.0,100.0,160.0,24
N-Nitroso-Di-n-propylamine	.76281	.78474	.74360	.87353	.75535	1.142	.78401	6.664	**	
Hexachloroethane	.40491	.37603	.33093	.37008	.34835	1.134	.36606	7.693		
Nitrobenzene-d5	.48907	.47810	.47263	.47552	.48190	.863	.47944	1.329		(Conc=50.0,50.0,50.0,50.0
Nitrobenzene	.49147	.46445	.46863	.46558	.45623	.867	.46927	2.820		
Isophorone	.93611	.89446	.96651	1.00471	1.01850	.917	.96406	5.250		
2-Nitrophenol	.27203	.27042	.27029	.26516	.26109	.932	.26780	1.700	*	
2,4-Dimethylphenol	.35500	.33335	.34150	.33510	.32976	.956	.33894	2.931		
Benzoic Acid	.13988	.15968	.22393	.23745	.23898	.996	.19998	23.366		
bis(-2-Chloroethoxy)Methane	.53171	.51390	.50632	.49974	.50422	.973	.51118	2.459		
2,4-Dichlorophenol	.35759	.34607	.35342	.33753	.32656	.982	.34423	3.627	*	
1,2,4-Trichlorobenzene	.38878	.37075	.35092	.33411	.32295	.995	.35350	7.562		
Naphthalene	1.18200	1.12972	1.10590	1.06361	1.01253	1.004	1.09875	5.865		
4-Chloroaniline	.47059	.45517	.49178	.48421	.45933	1.028	.47222	3.325		
Hexachlorobutadiene	.21039	.19372	.17539	.16560	.15700	1.048	.18042	11.981	*	
4-Chloro-3-methylphenol	.34786	.32951	.38329	.38634	.37386	1.136	.36417	6.752	*	
2-Methylnaphthalene	.75725	.72023	.73773	.71491	.69602	1.146	.72523	3.209		

RF - Response Factor (Subscript is amount in ug/l)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

00086

Initial Calibration Data
HSL Compounds

Case No: _____ Instrument ID: 5970C

Contractor: 21st Century Envir Calibration Date: 09/28/93

Contract No: _____

Minimum $\overline{RF}$ for SPCC is 0.050 Maximum % RSD for CCC is 30%

Laboratory ID:	>C1827	>C1826	>C1828	>C1829	>C1830					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Hexachlorocyclopentadiene	.26350	.32213	.26457	.27228	.28359	.880	.28121	8.620		**
2,4,6-Trichlorophenol	.42695	.44058	.41643	.40881	.41150	.894	.42086	3.094	*	
2,4,5-Trichlorophenol	.44068	.48107	.44963	.43389	.43905	.899	.44886	4.205		
2-Chloronaphthalene	1.36077	1.47216	1.28313	1.24975	1.27045	.915	1.32725	6.875		
2-Fluorobiphenyl	1.46250	1.59930	1.39442	1.48482	1.53149	.906	1.49451	5.127		(Conc=50.0,50.0,50.0,50.0
2-Nitroaniline	.49462	.49028	.49243	.47032	.47288	.940	.48411	2.387		
Dimethyl Phthalate	1.56761	1.47567	1.40349	1.29471	1.22646	.978	1.39359	9.815		
Acenaphthylene	2.03764	2.00863	1.85801	1.78087	1.74132	.977	1.88529	7.057		
3-Nitroaniline	.36388	.32454	.31830	.28107	.27721	1.003	.31300	11.353		
Acenaphthene	1.40348	1.36129	1.24356	1.21220	1.16646	1.005	1.27740	7.891	*	
2,4-Dinitrophenol	.11153	.15420	.17565	.16134	.18330	1.019	.15720	17.804		**
4-Nitrophenol	.20850	.21324	.22196	.20261	.22270	1.037	.21380	4.047		**
Dibenzofuran	2.00645	1.92505	1.80686	1.64961	1.63714	1.030	1.80502	9.075		
2,4-Dinitrotoluene	.40263	.39950	.37774	.32340	.33365	1.042	.36738	10.051		
2,6-Dinitrotoluene	.34698	.34914	.34251	.32926	.32197	.986	.33797	3.495		
Diethylphthalate	1.62598	1.35488	1.31411	1.13799	1.08064	1.086	1.30272	16.455		
4-Chlorophenyl-phenylether	.72007	.66595	.61647	.57193	.55425	1.087	.62574	10.900		
Fluorene	1.51091	1.40115	1.31566	1.19614	1.17184	1.081	1.31914	10.743		
4-Nitroaniline	.31183	.28086	.27392	.23668	.26452	1.096	.27356	9.943		
4,6-Dinitro-2-methylphenol	.12379	.15364	.16454	.16276	.17665	.905	.15628	12.747		
N-Nitrosodiphenylamine	.70764	.72806	.70012	.71946	.68795	.909	.70865	2.227	*	
2,4,6-Tribromophenol	.10655	.11688	.10952	.10993	.10519	.919	.10961	4.125		(Conc=100.0,100.0,100.0,1
4-Bromophenyl-phenylether	.25498	.27044	.26506	.27677	.26511	.950	.26647	3.013		
Hexachlorobenzene	.25521	.27274	.25388	.24784	.23407	.965	.25275	5.525	*	
Pentachlorophenol	.10110	.12027	.12574	.13152	.13883	.988	.12349	11.569		**
Phenanthrene	1.27138	1.23681	1.18855	1.17724	1.15330	1.003	1.20545	3.964		
Anthracene	1.21124	1.17804	1.17466	1.14495	1.12299	1.008	1.16638	2.894		
Di-n-Butylphthalate	1.59166	1.45051	1.42021	1.36892	1.47612	1.092	1.46149	5.679		
Fluoranthene	.91633	.85195	.89648	.83601	.96200	1.149	.89255	5.671	*	
Pyrene	1.85691	1.73840	1.67114	1.53214	1.42371	.886	1.64446	10.356		

RF - Response Factor (Subscript is amount in ug/l)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

0087

Initial Calibration Data
HSL Compounds

Case No: _____ Instrument ID: 5970C

Contractor: 21st Century Envir Calibration Date: 09/28/93

Contract No: _____

Minimum $\overline{RF}$ for SPCC is 0.050 Maximum % RSD for CCC is 30%

Laboratory ID:	>C1827	>C1826	>C1828	>C1829	>C1830					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Benzidine	.08223	.08894	.13647	.13516	.14509	.883	.11758	25.131		
Terphenyl-d14	1.24083	1.13543	1.12069	1.06377	1.02193	.907	1.11653	7.434		(Conc=50.0,50.0,50.0,50.0
Butylbenzylphthalate	.91113	.86244	.96209	.92036	.91784	.960	.91477	3.877		
3,3'-Dichlorobenzidine	.30457	.33806	.39119	.38094	.38650	1.001	.36025	10.448		
Benzo(a)Anthracene	1.26787	1.20168	1.27815	1.24670	1.23909	.998	1.24670	2.380		
Bis(2-Ethylhexyl)Phthalate	1.28771	1.29327	1.40034	1.35137	1.31736	1.019	1.33001	3.507		
Chrysene	1.16739	1.16493	1.21283	1.16134	1.12674	1.002	1.16664	2.627		
Di-n-octyl phthalate	2.13434	2.21505	2.36688	2.42345	2.36553	.955	2.30105	5.263	*	
Benzo(b)fluoranthene	1.27296	1.24532	1.32376	1.26752	1.24594	.974	1.27110	2.515		
Benzo(k)Fluoranthene	1.22127	1.23408	1.20228	1.19480	1.17994	.975	1.20647	1.777		
Benzo(a)Pyrene	1.15792	1.20332	1.17115	1.17749	1.16592	.996	1.17516	1.472	*	
Indeno(1,2,3-cd)Pyrene	1.10683	1.17888	1.18749	1.18260	1.14998	1.070	1.16115	2.903		
Dibenzo(a,h)Anthracene	.85374	.95321	.97343	.99246	.96040	1.072	.94665	5.708		
Benzo(g,h,i)Perylene	.98263	1.02125	1.00665	.99555	.98392	1.087	.99800	1.628		

RF - Response Factor (Subscript is amount in ug/l)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

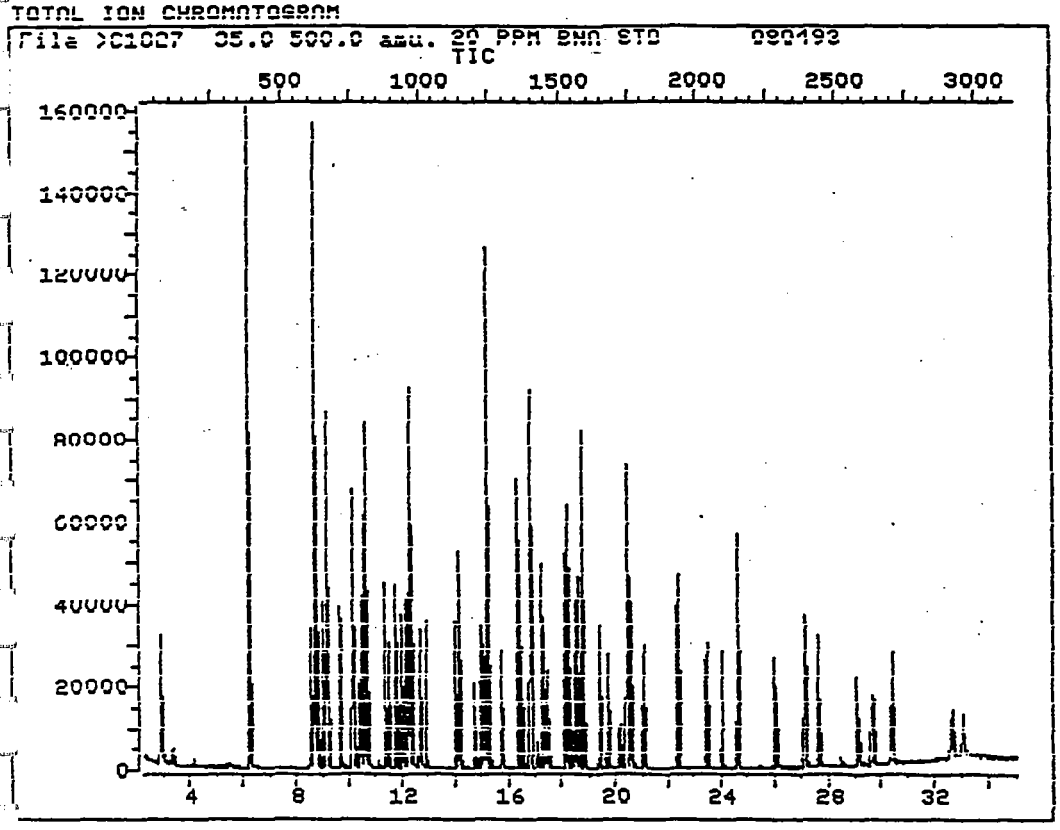
$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

00093

TOTAL ION CHROMATOGRAM

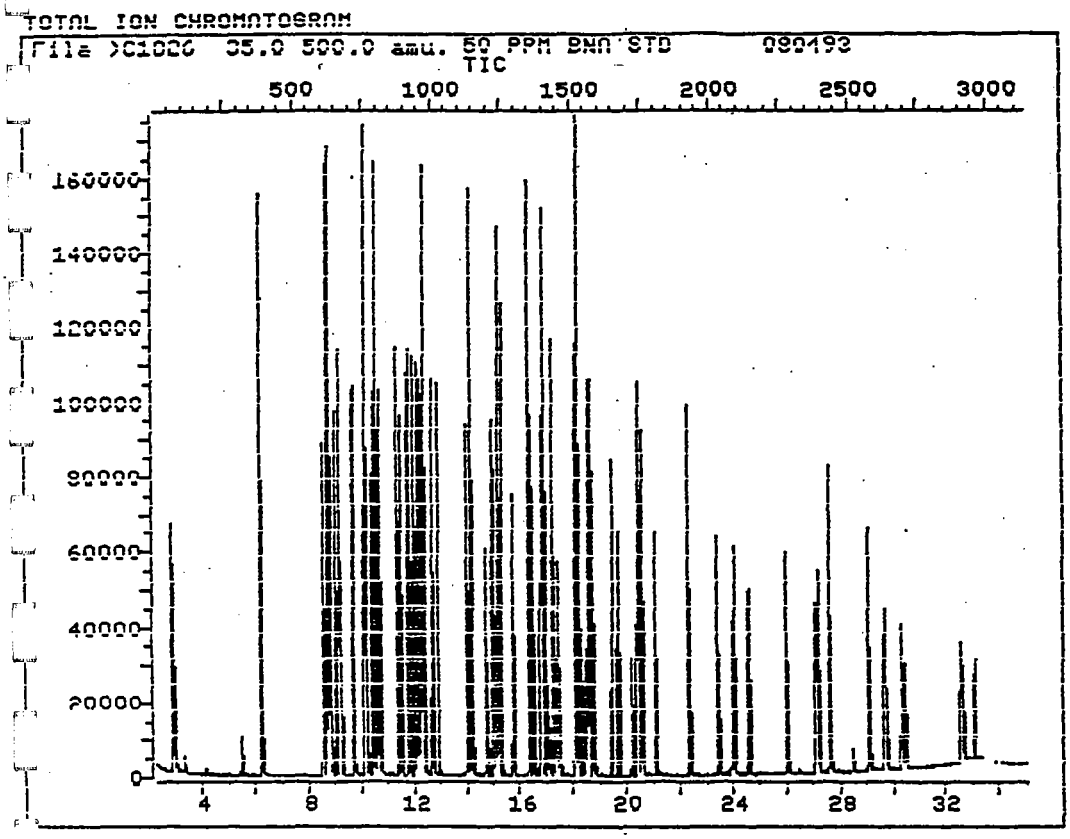


Data File: >C1827::D4 Quant Output File: ^C1827::D5
Name: 20 PPM BNA STD
Misc: 080493 BTL# 1

Id File: ID803C::D3
Title: hSL BNA STD
Last Calibration: 930803 11:21

Operator ID: JEFF
Quant Time: 930804 13:21
Injected at: 930804 12:43

TOTAL ION CHROMATOGRAM

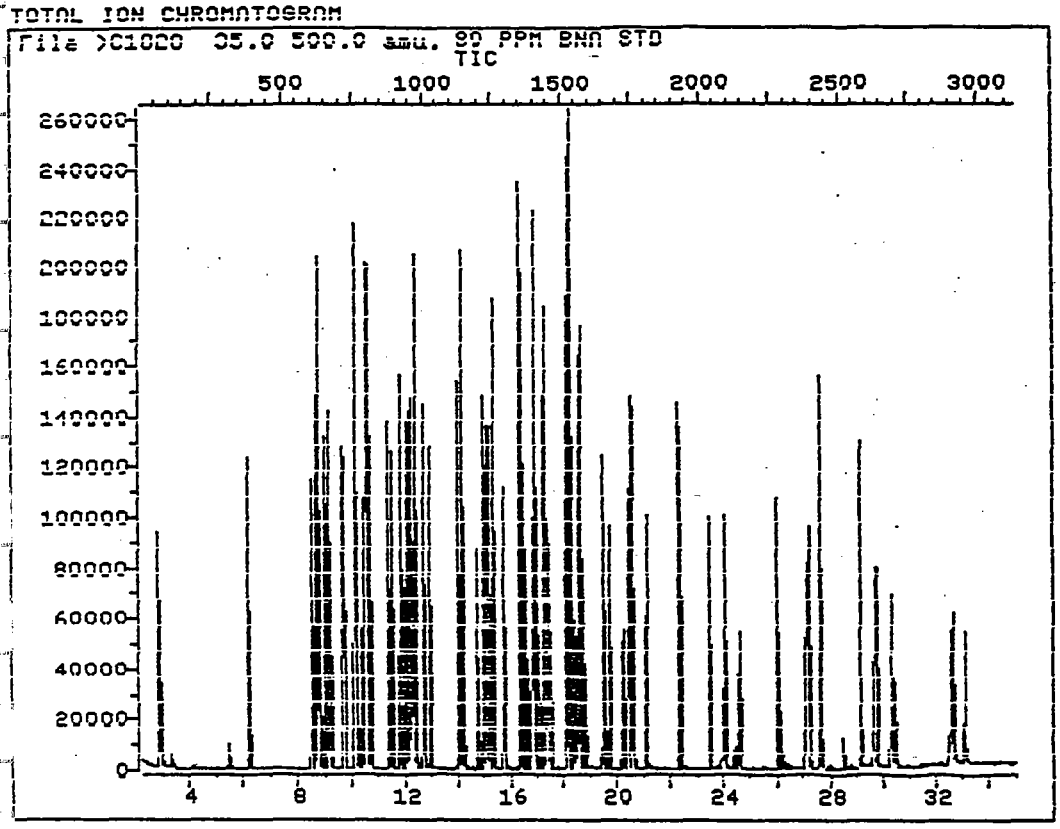


Data File: >C1826::D4 Quant Output File: ^C1826::D4
Name: 50 PPM BNA STD
Misc: 080493 BTL# 2

Id File: ID803C::D3
Title: hSL BNA STD
Last Calibration: 930803 11:21

Operator ID: JEFF
Quant Time: 930804 12:29
Injected at: 930804 11:06

TOTAL ION CHROMATOGRAM

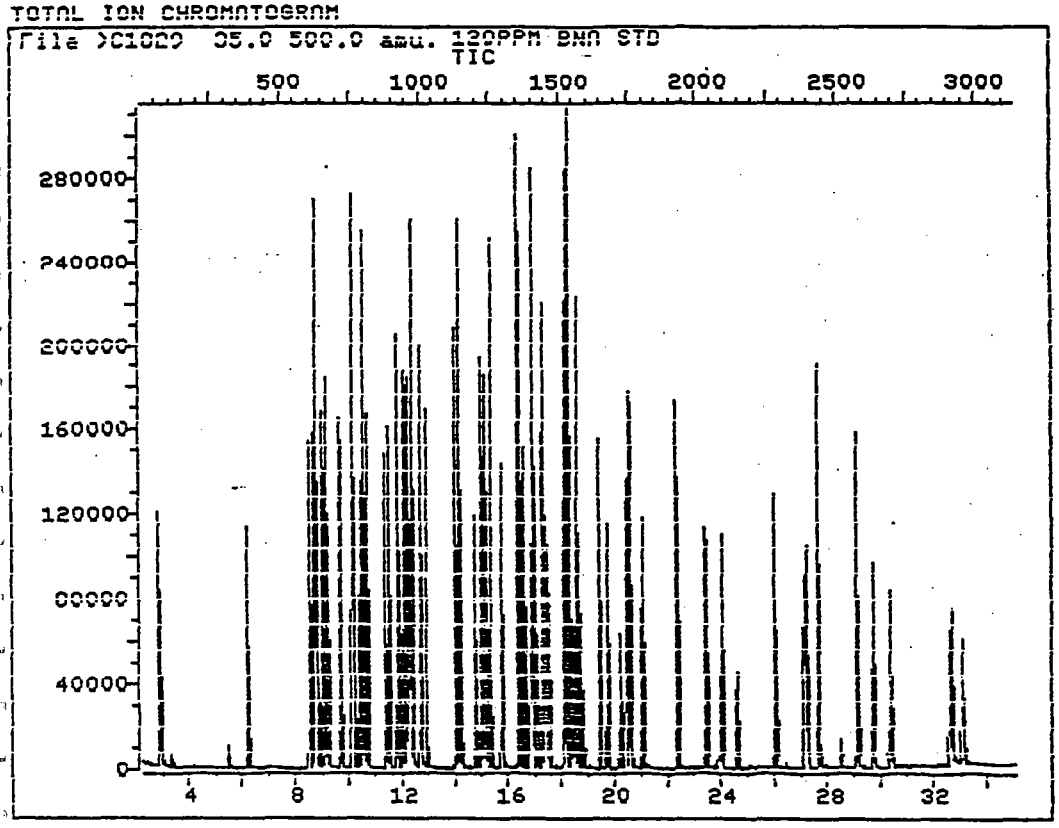


Data File: >C1828::D4 Quant Output File: ^C1828::D5
Name: 80 PPM BNA STD
Misc: BTL# 1

Id File: ID803C::D3
Title: hSL BNA STD
Last Calibration: 930803 11:21

Operator ID: JEFF
Quant Time: 930804 14:20
Injected at: 930804 13:42

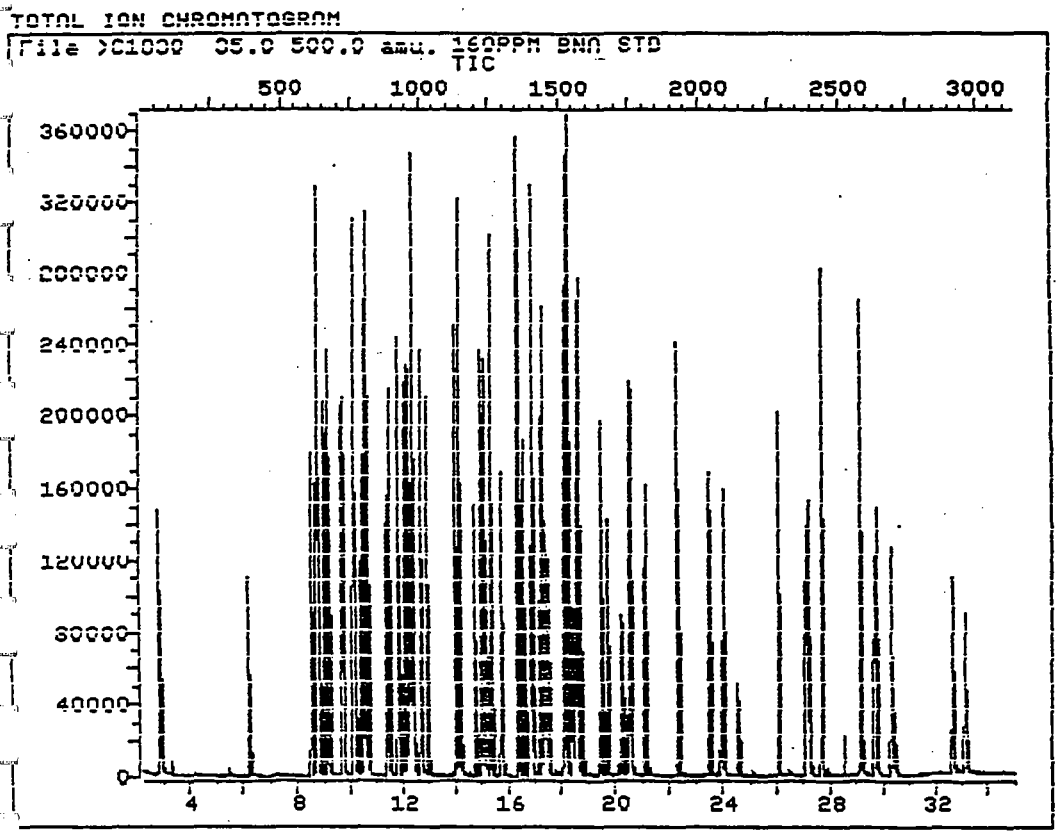
TOTAL ION CHROMATOGRAM



Data File: >C1829::D4 Quant Output File: ^C1829::D3
Name: 120PPM BNA STD
Misc: BTL# 2

Id File: ID803C::D3
Title: hSL BNA STD
Last Calibration: 930803 11:21

Operator ID: JEFF
Quant Time: 930804 15:09
Injected at: 930804 14:30



Data File: >C1830::D4 Quant Output File: ^C1830::D5
Name: 160PPM BNA STD
Misc: BTL# 3

Id File: ID803C::D3
Title: HSL BNA STD
Last Calibration: 930803 11:21

Operator ID: JEFF
Quant Time: 930804 15:58
Injected at: 930804 15:20

21st Century Environmental Inc.

GC/MS STANDARD DECAFLUOROTRIPHENYLPHOSPHINE(DFTPP) TUNE
CRITERIA FOR SEMIVOLATILES 50ng

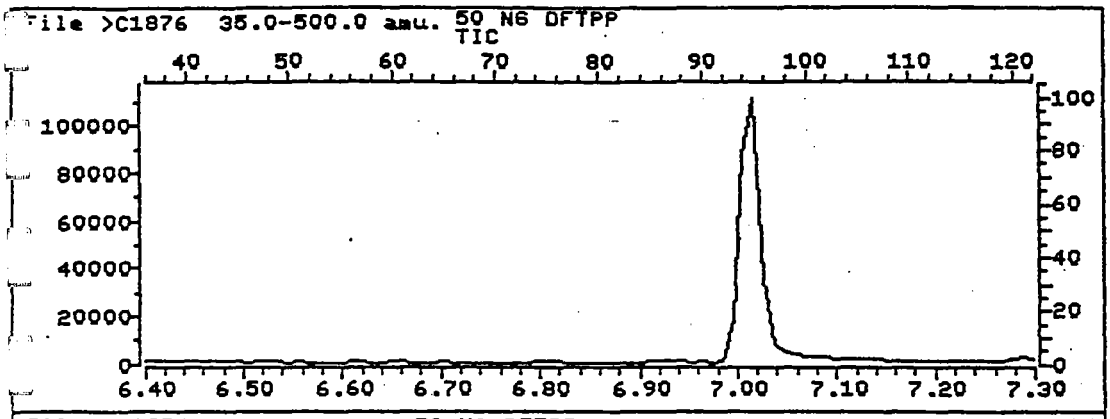
DATE AND TIME OF INJECTION: 8/11/93 11:20
INSTRUMENT ID: 5970

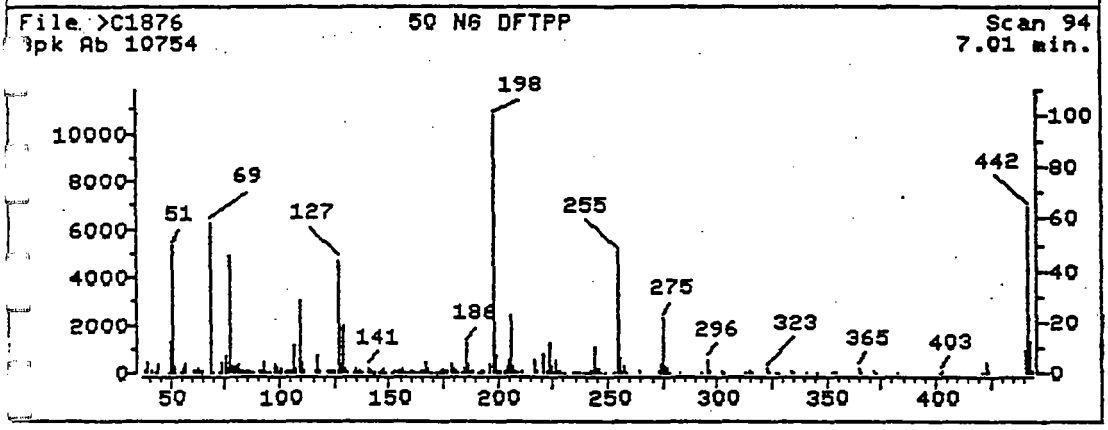
DATA RELEASE AUTHORIZED BY Richard W Lynch.

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	49.38	49.38	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	58.08	58.08	Ok
70	Less than 2% of mass 69	.35	.61	Ok
127	40-60% of mass 198	44.01	44.01	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.99	6.99	Ok
275	10-30% of mass 198	21.34	21.34	Ok
365	Greater than 1% of mass 198	1.92	1.92	Ok
441	0-100% of mass 443	9.48	74.65	Ok
442	Greater than 40% of mass 198	64.43	64.43	Ok
443	17-23% of mass 442	12.69	19.70	Ok

THIS PERFORMANCE AFFECTS ALL SAMPLES
STANDARDS AND BLANKS LISTED BELOW

SAMPLE ID	LAB ID		DATE TIME
>C1876::E4	50 NG DFTPP		8/11/93 11:20
>C1877::E4	20 PPM BNA STD		8/11/93 11:45
>C1878::E4	50 PPM BNA STD		8/11/93 12:33
>C1879::E4	80 PPM BNA STD		8/11/93 13:20
>C1880::E4	120PPM BNA STD		8/11/93 14:08
>C1881::E4	160PPM BNA STD		8/11/93 14:56
>C1882::E4	TCLP BLNK 8/11		8/11/93 15:45
>C1883::E4	A3345 CWM		8/11/93 16:33
>C1884::E4	A3351 CWM		8/11/93 17:22
>C1885::E4	NA BLK 8/8		8/11/93 18:11
>C1886::E4	AQ BLK 8/8		8/11/93 19:00
>C1887::E4	A3281 CWM 8/8		8/11/93 19:49
>C1888::E4	A3282 CWM 8/8		8/11/93 20:37
>C1889::E4	A2933 CWM		8/11/93 21:25
>C1890::E4	A2935 SJT		8/11/93 22:13
>C1891::E4	A2936 SJT		8/11/93 23:00





>C1876 50 NG DFTPP
94 NRM

File: >C1876 Scan #: 94 Retn. time: 7.01

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
36.95	.232	97.95	2.994	155.05	1.144	202.90	.530	272.95	1.311
38.05	.837	98.95	2.743	155.95	1.776	204.00	2.855	274.05	3.357
39.05	4.463	99.95	.363	157.15	.409	205.00	4.873	275.05	21.341
39.95	3.264	101.05	1.795	157.95	.428	206.00	21.983	276.05	2.948
41.15	.604	102.95	.456	159.05	.363	207.00	2.855	276.95	1.534
43.15	.456	103.95	.939	160.05	.567	207.95	.735	277.95	.205
44.05	3.171	105.05	.828	160.95	.893	208.95	.223	283.10	.177
49.15	.372	106.15	.539	161.65	.205	210.95	.855	293.05	.391
50.05	12.330	107.05	11.103	162.05	.214	216.95	5.207	295.95	5.096
51.00	49.377	107.90	2.027	163.05	.121	217.95	.735	296.95	.604
52.00	2.315	110.00	27.943	164.15	.112	220.95	7.579	303.05	.567
55.00	.418	111.00	3.971	165.00	.707	223.00	1.283	303.95	.121
56.00	1.702	112.00	.511	166.00	.763	224.00	11.307	313.80	.223
57.00	3.664	116.00	.539	166.90	4.157	225.00	2.864	315.00	.549
61.00	.604	117.00	7.067	168.00	1.692	226.00	.400	316.00	.232
62.10	.679	118.00	.567	168.90	.214	226.90	4.715	322.95	1.562
63.10	1.581	121.95	.763	170.00	.130	227.90	.642	323.95	.335
64.10	.214	123.05	1.283	172.00	.353	229.00	.995	326.85	.232
65.05	.790	123.95	.558	173.00	.484	230.10	.167	327.95	.158

73.05	.344	127.95	3.589	176.20	.530	235.10	.232	340.90	.158
74.05	3.971	128.95	18.123	176.90	.716	236.05	.242	345.90	.270
75.05	7.002	130.05	1.432	178.95	3.115	237.05	.381	352.05	.474
76.05	2.111	130.95	.270	179.95	1.776	238.95	.139	353.05	.437
77.05	45.695	133.95	.353	180.95	.995	239.95	.232	354.05	.428
78.05	2.911	135.05	1.479	182.05	.158	241.05	.242	364.90	1.916
79.00	2.799	136.00	.363	183.95	.260	241.95	.595	366.00	.205
80.00	2.241	137.00	.511	185.05	1.460	242.95	.763	372.00	.883
81.00	3.097	137.90	.139	185.95	11.568	243.95	9.913	373.00	.242
82.00	1.014	141.00	2.036	186.95	3.190	245.05	1.367	382.95	.223
83.00	.735	141.90	.846	187.95	.214	246.05	1.460	402.00	.232
85.00	.967	143.00	.446	189.05	.632	246.95	.270	403.00	.521
85.90	.772	144.00	.195	191.05	.298	248.85	.279	421.05	.437
87.00	.381	145.90	.437	192.05	1.032	252.90	.149	422.00	.344
87.90	.214	147.00	.939	193.00	.986	255.00	46.876	423.00	3.831
91.10	.707	148.00	1.739	195.90	3.106	256.00	6.156	424.00	.595
92.00	.883	149.10	.353	197.90	100.000	257.00	.465	441.05	9.476
93.00	4.277	151.25	.298	198.90	6.993	258.00	2.334	442.05	64.432
94.05	.325	151.75	.214	199.90	.549	259.00	.363	443.05	12.693
95.05	.214	152.95	.642	201.50	.679	264.95	.893	444.05	1.051
95.85	.195	154.05	.530						

Initial Calibration Data
HSL Compounds

Case No: _____ Instrument ID: 5970C _____

Contractor: 21st Century Envir Calibration Date: 08/11/93

Contract No: _____

Minimum $\overline{RF}$ for SPCC is 0.050 Maximum % RSD for CCC is 30%

Laboratory ID:	>C1877	>C1878	>C1879	>C1880	>C1881					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Pyridine	.61190	.71504	.62830	.67229	.65918	.305	.65734	6.115		
n-Nitrosodimethylamine	.51200	.47929	.49434	.50113	.48467	.309	.49429	2.634		
2-Fluorophenol	.79538	.69028	.71027	.74648	.43634	.672	.67573	20.668		(Conc=100.0,100.0,100.0,1
Phenol-d5	1.18297	1.08772	1.15756	1.22044	.70218	.947	1.07017	19.749		(Conc=100.0,100.0,100.0,1
Phenol	1.27502	1.17429	1.18821	1.17297	1.02597	.951	1.16729	7.674	*	
bis(-2-Chloroethyl)Ether	1.07848	.97181	.97349	.95365	.83108	.955	.96170	9.155		
2-Chlorophenol	.96258	.85006	.82093	.78759	.69033	.954	.82230	12.019		
1,3-Dichlorobenzene	.96633	.86046	.80592	.80959	.72393	.988	.83325	10.685		
1,4-Dichlorobenzene	.98320	.88363	.84979	.82562	.74406	1.004	.85726	10.174	*	
Benzyl Alcohol	.51046	.55593	.60376	.63206	.58461	1.060	.57737	8.066		
1,2-Dichlorobenzene	.99298	.87238	.84069	.81578	.72545	1.053	.84946	11.431		
2-Methylphenol	.92909	.85597	.84403	.82590	.71364	1.105	.83373	9.325		
bis(2-Chloroisopropyl)ether	1.31700	1.24746	1.29381	1.24088	1.18780	1.103	1.25739	3.995		
4-Methylphenol	.98750	.90269	.91782	.88192	.77992	1.151	.89397	8.398		(Conc=40.0,100.0,160.0,24
N-Nitroso-Di-n-propylamine	.97956	.96879	.94911	.86547	.65825	1.144	.88424	15.159	**	
Hexachloroethane	.43383	.38967	.37806	.37801	.34696	1.134	.38531	8.155		
Nitrobenzene-d5	.47150	.48353	.49984	.51738	.51482	.862	.49741	3.986		(Conc=50.0,50.0,50.0,50.0
Nitrobenzene	.48427	.48276	.48789	.47842	.47476	.867	.48162	1.063		
Isophorone	1.01417	1.04060	1.05313	1.05628	.96412	.917	1.02566	3.724		
2-Nitrophenol	.27828	.26843	.27257	.26536	.25856	.932	.26864	2.765	*	
2,4-Dimethylphenol	.35601	.35674	.34966	.33445	.32532	.956	.34444	4.048		
Benzoic Acid	.18836	.23150	.23212	.23677	.23353	1.001	.22446	9.036		
bis(-2-Chloroethoxy)Methane	.52728	.52506	.52810	.52765	.50967	.973	.52355	1.499		
2,4-Dichlorophenol	.36856	.35728	.35445	.33820	.32046	.983	.34779	5.388	*	
1,2,4-Trichlorobenzene	.37113	.35628	.33846	.33551	.33167	.995	.34661	4.801		
Naphthalene	1.22424	1.14904	1.09971	1.03766	.99782	1.004	1.10169	8.138		
4-Chloroaniline	.49097	.49313	.49107	.45310	.41995	1.028	.46964	6.907		
Hexachlorobutadiene	.19730	.17134	.16586	.16052	.15822	1.048	.17065	9.223	*	
4-Chloro-3-methylphenol	.40491	.41719	.40667	.35550	.32790	1.138	.38243	10.128	*	
2-Methylnaphthalene	.85301	.80972	.77739	.68471	.63819	1.147	.75260	11.821		

RF - Response Factor (Subscript is amount in ug/l)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

00097

Initial Calibration Data
HSL Compounds

Case No: _____ Instrument ID: 5970C

Contractor: 21st Century Envir Calibration Date: 08/11/93

Contract No: _____

Minimum $\overline{RF}$ for SPCC is 0.050 Maximum % RSD for CCC is 30%

Laboratory ID:	>C1877	>C1878	>C1879	>C1880	>C1881					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Hexachlorocyclopentadiene	.22687	.22552	.25397	.27477	.30467	.879	.25716	13.037		**
2,4,6-Trichlorophenol	.41786	.42332	.40890	.39252	.40240	.893	.40900	2.991	*	
2,4,5-Trichlorophenol	.43340	.44545	.44645	.41451	.41255	.898	.43047	3.789		
2-Chloronaphthalene	1.32623	1.29950	1.26357	1.25578	1.25549	.915	1.28011	2.463		
2-Fluorobiphenyl	1.39052	1.37478	1.41582	1.49219	1.60257	.906	1.45517	6.454		(Conc=50.0,50.0,50.0,50.0
2-Nitroaniline	.49737	.50430	.48388	.44407	.42065	.940	.47005	7.690		
Dimethyl Phthalate	1.68346	1.53620	1.39678	1.24001	1.19032	.978	1.40935	14.543		
Acenaphthylene	1.99289	1.96736	1.84416	1.70405	1.70693	.976	1.84308	7.467		
3-Nitroaniline	.34432	.31887	.29198	.24359	.22851	1.003	.28546	17.180		
Acenaphthene	1.40501	1.33514	1.24143	1.15324	1.13344	1.005	1.25365	9.288	*	
2,4-Dinitrophenol	.13046	.17630	.18011	.16137	.15480	1.019	.16061	12.333		**
4-Nitrophenol	.13237	.17752	.20024	.16897	.16747	1.037	.16931	14.442		**
Dibenzofuran	1.97944	1.88111	1.77378	1.60168	1.54329	1.030	1.75586	10.461		
2,4-Dinitrotoluene	.44268	.39325	.36479	.31059	.29758	1.042	.36178	16.519		
2,6-Dinitrotoluene	.37996	.37844	.34408	.30352	.29802	.986	.34080	11.534		
Diethylphthalate	1.55281	1.35209	1.23288	1.03290	.97893	1.086	1.22992	19.112		
4-Chlorophenyl-phenylether	.72956	.66729	.60111	.51544	.50321	1.087	.60332	16.108		
Fluorene	1.51333	1.42601	1.26966	1.12646	1.09926	1.081	1.28695	14.109		
4-Nitroaniline	.24124	.23826	.25722	.22105	.21793	1.097	.23514	6.823		
4,6-Dinitro-2-methylphenol	.15324	.16454	.17779	.16968	.17684	.905	.16842	5.981		
N-Nitrosodiphenylamine	.78033	.79963	.75760	.72137	.72105	.909	.75599	4.638	*	
2,4,6-Tribromophenol	.10504	.10680	.10575	.10478	.10572	.919	.10562	.744		(Conc=100.0,100.0,100.0,1
4-Bromophenyl-phenylether	.28330	.29645	.27029	.26722	.28325	.950	.28010	4.185		
Hexachlorobenzene	.26506	.26259	.23913	.23408	.23098	.964	.24637	6.584	*	
Pentachlorophenol	.10052	.11651	.13177	.13056	.12744	.988	.12136	10.806		**
Phenanthrene	1.28580	1.22282	1.17769	1.13419	1.14740	1.003	1.19358	5.177		
Anthracene	1.18593	1.17866	1.15467	1.08624	1.09563	1.008	1.14023	4.085		
Di-n-Butylphthalate	1.45311	1.30944	1.37166	1.29881	1.31771	1.092	1.35015	4.744		
Fluoranthene	.72670	.70449	.80736	.80519	.79830	1.149	.76841	6.372	*	
Pyrene	2.21231	1.90854	1.73572	1.69186	1.76829	.886	1.86334	11.338		

RF - Response Factor (Subscript is amount in ug/l)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

0102K

Initial Calibration Data
HSL Compounds

Case No: _____ Instrument ID: 5970C

Contractor: 21st Century Envir Calibration Date: 08/11/93

Contract No: _____

Minimum $\overline{RF}$ for SPCC is 0.050 Maximum % RSD for CCC is 30%

Laboratory ID:	>C1877	>C1878	>C1879	>C1880	>C1881					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Benzidine	.03820	.05775	.10430	.09905	.11238	.884	.08234	39.435		
Terphenyl-d14	1.35414	1.29665	1.11840	1.14134	1.20179	.907	1.22246	8.250		(Conc=50.0,50.0,50.0,50.0
Butylbenzylphthalate	1.01840	.98943	1.01884	1.02889	1.05707	.960	1.02253	2.375		
3,3'-Dichlorobenzidine	.31203	.34398	.37304	.38408	.40285	1.001	.36320	9.824		
Benzo(a)Anthracene	1.25429	1.23667	1.21916	1.24215	1.23976	.999	1.23841	1.023		
Bis(2-Ethylhexyl)Phthalate	1.42822	1.42430	1.41942	1.40829	1.42787	1.019	1.42162	.581		
Chrysene	1.16293	1.15551	1.13040	1.10290	1.11842	1.002	1.13403	2.214		
Di-n-octyl phthalate	2.43958	2.68199	2.68967	2.66531	2.69228	.956	2.63377	4.141	*	
Benzo(b)fluoranthene	1.23001	1.36691	1.37526	1.15823	1.18996	.974	1.26407	7.989		
Benzo(k)Fluoranthene	1.22073	1.17545	1.15780	1.27004	1.33708	.975	1.23222	5.925		
Benzo(a)Pyrene	1.13127	1.21803	1.15665	1.15563	1.15800	.996	1.16392	2.768	*	
Indeno(1,2,3-cd)Pyrene	1.06934	1.11645	1.12851	1.06320	1.05094	1.070	1.08569	3.177		
Dibenzo(a,h)Anthracene	.84850	.89663	.93470	.84714	.88621	1.072	.88264	4.141		
Benzo(g,h,i)Perylene	.96778	.93665	.96101	.91638	.90330	1.087	.93702	2.964		

RF - Response Factor (Subscript is amount in ug/l)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

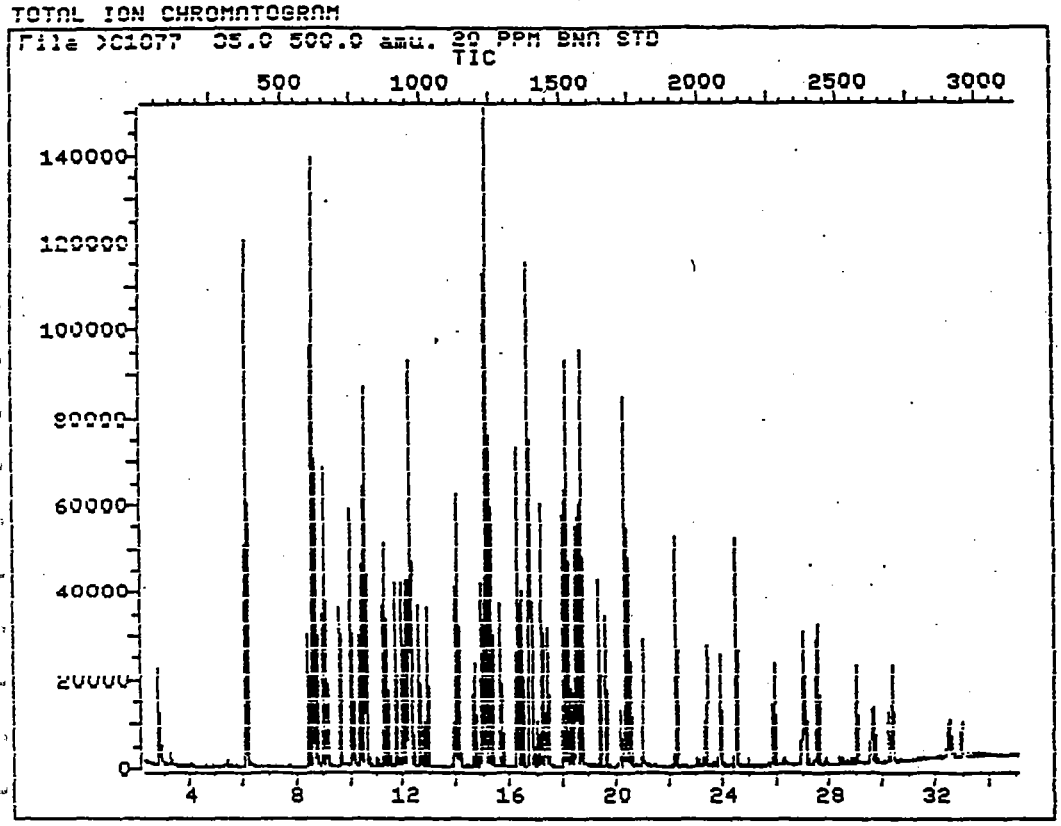
$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

00099

TOTAL ION CHROMATOGRAM

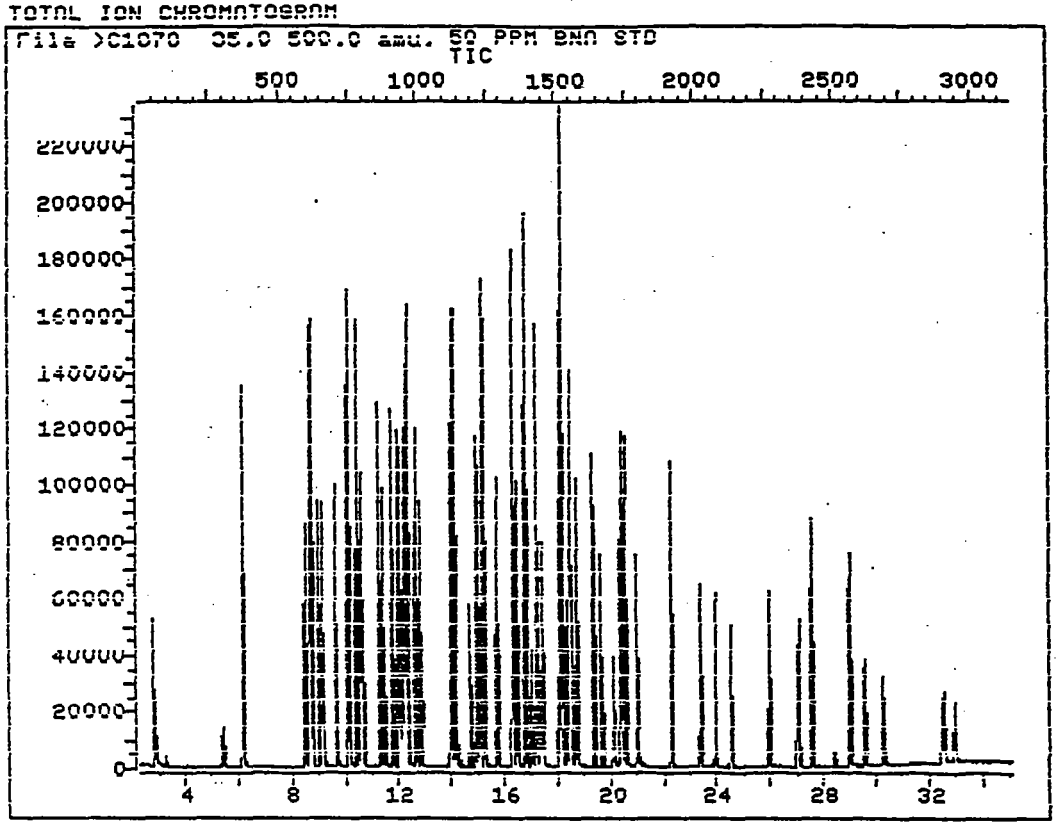


Data File: >C1877::E4 Quant Output File: ^C1877::D3
Name: 20 PPM BNA STD
Misc: BTL# 1

Id File: ID806C::D3
Title: hSL BNA STD
Last Calibration: 930806 17:09

Operator ID: JEFF
Quant Time: 930811 12:23
Injected at: 930811 11:45

TOTAL ION CHROMATOGRAM

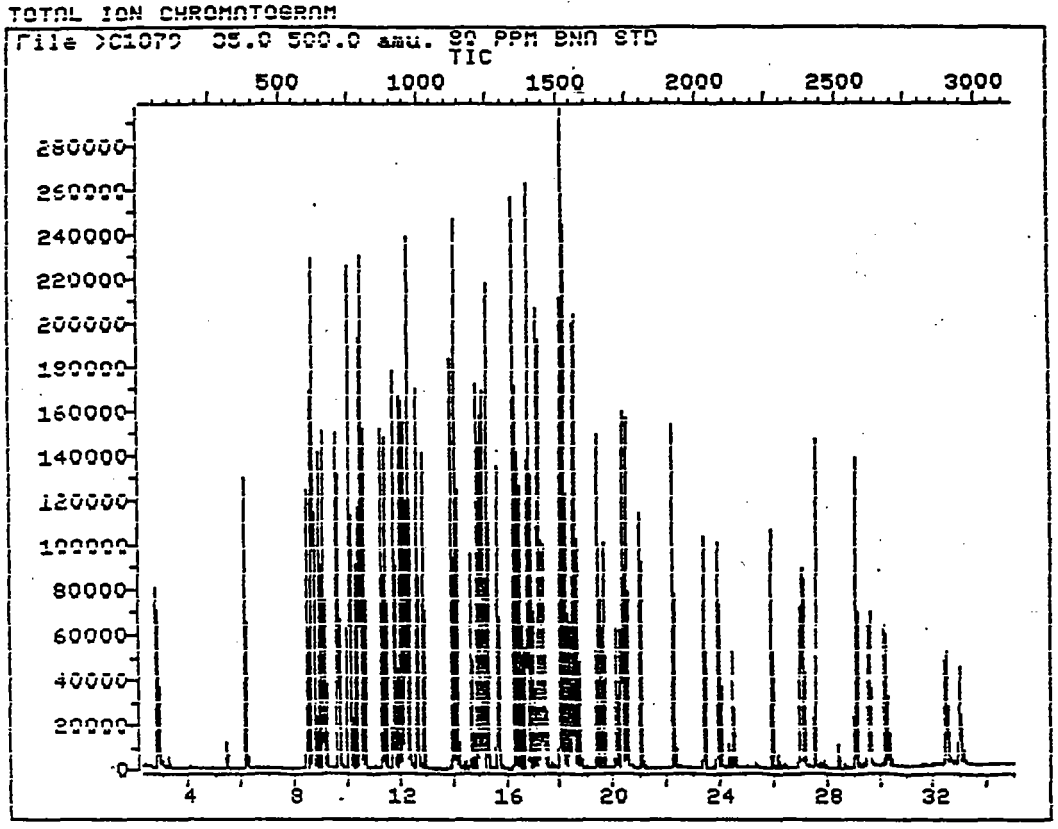


Data File: >C1878::E4 Quant Output File: ^C1878::D3
Name: 50 PPM BNA STD
Misc: BTL# 2

Id File: ID806C::D3
Title: hSL BNA STD
Last Calibration: 930806 17:09

Operator ID: JEFF
Quant Time: 930811 13:11
Injected at: 930811 12:33

TOTAL ION CHROMATOGRAM

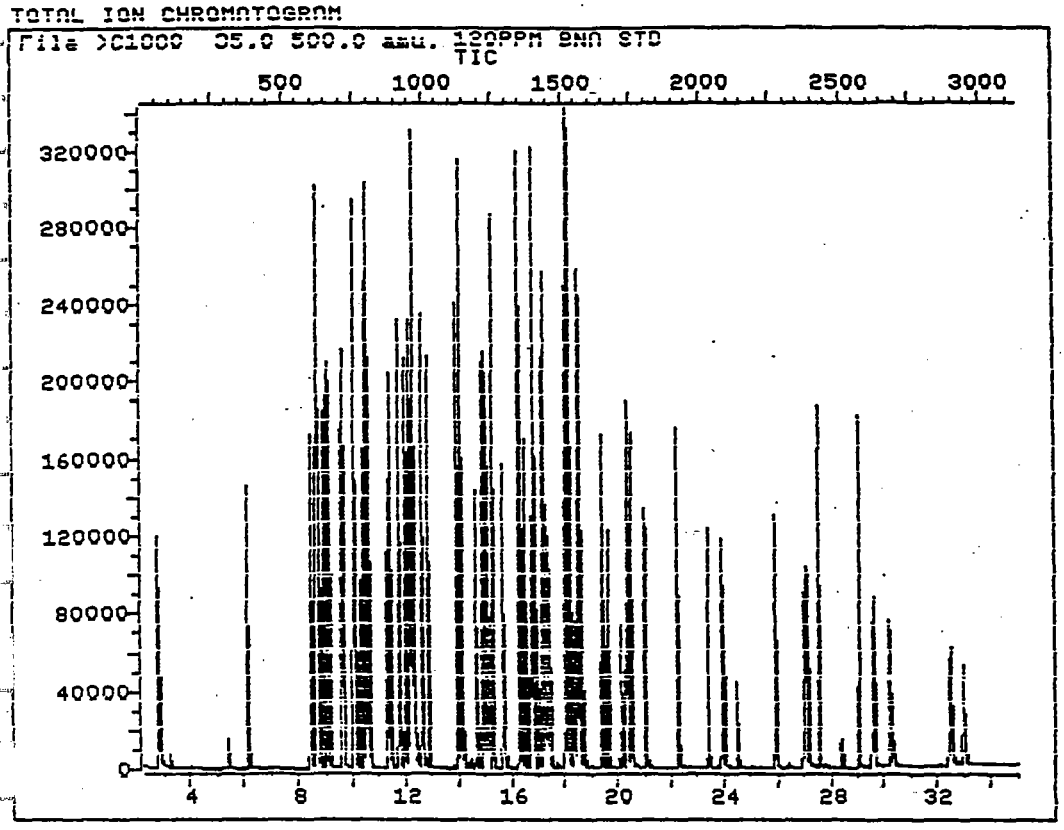


Data File: >C1879::E4 Quant Output File: ^C1879::D3
Name: 80 PPM BNA STD
Misc: BTL# 3

Id File: ID806C::D3
Title: hSL BNA STD
Last Calibration: 930806 17:09

Operator ID: JEFF
Quant Time: 930811 13:58
Injected at: 930811 13:20

TOTAL ION CHROMATOGRAM

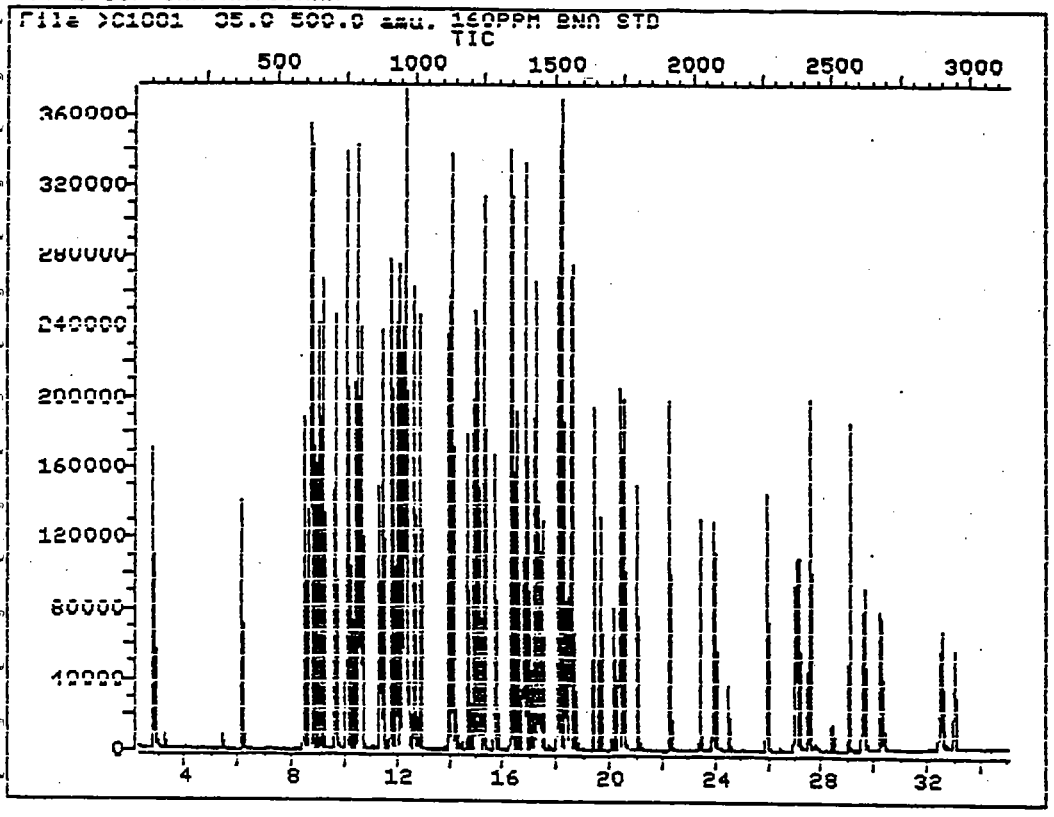


Data File: >C1880::E4 Quant Output File: ^C1880::D3
Name: 120PPM BNA STD
Misc: BTL# 4

Id File: ID806C::D3
Title: hSL BNA STD
Last Calibration: 930806 17:09

Operator ID: JEFF
Quant Time: 930811 14:46
Injected at: 930811 14:08

TOTAL ION CHROMATOGRAM



Data File: >C1881::E4
Name: 160PPM BNA STD
Misc:

Quant Output File: ^C1881::D3

BTL# 5

Id File: ID806C::D3
Title: hSL BNA STD
Last Calibration: 930806 17:09

Operator ID: JEFF
Quant Time: 930811 15:34
Injected at: 930811 14:56

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: 21st Century Environmental Inc. Contract No.:

Lab Code: Case No: SAS No.: SDG No.:

LAB ID FILE (BLANK): >B1084 DATE ANALYZED: 08/08/93

INSTRUMENT ID: B TIME ANALYZED: 18:02

Matrix: SOIL Level:(low/med) LOW Column:(pack/cap)

Sample ID: BLANK

THIS BLANK APPLIES TO THE FOLLOWING SAMPLES,MS AND MSD

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	BLANK	>B1085	08/08/93	19:07
2	A3250	>B1087	08/08/93	20:30
3	A3251	>B1088	08/08/93	20:59
4	A3249	>B1089	08/08/93	21:28
5	A3277	>B1091	08/08/93	22:25
6				
7				
8				
9				
10				
11				
12				
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23				
24				
25				

COMMENTS: _____

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER		MATRIX	Soil
SAMPLE NUMBER	BLANK	DILUTION FACTOR	1.00
CLIENT ID	080893 METHOD BLANK	QA BATCH	
DATA FILE	>81084	DATE ANALYZED	08/08/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	50	Bromodichloromethane	ND	5
Acrylonitrile	ND	50	2-Chloroethylvinylether	ND	10
Chloromethane	ND	10	2-Hexanone	ND	10
Bromomethane	ND	10	trans-1,3-Dichloropropene	ND	5
Vinyl Chloride	ND	10	Toluene	ND	5
Chloroethane	ND	10	cis-1,3-Dichloropropene	ND	5
Acetone	3.6 J	10	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethene	ND	5	1,1,2-Trichloroethane	ND	5
Carbon Disulfide	ND	10	4-Methyl-2-pentanone	ND	10
Methylene Chloride	1.5 J	5	Tetrachloroethene	ND	5
1,2-Dichloroethene(trans)	ND	5	Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5	Chlorobenzene	ND	5
Vinyl Acetate	ND	5	Ethylbenzene	ND	5
2-Butanone	ND	10	m&p-Xylenes	ND	5
Chloroform	ND	5	o-Xylene	ND	5
1,1,1-Trichloroethane	ND	5	Styrene	ND	5
Carbon Tetrachloride	ND	5	Bromoform	ND	5
1,2-Dichloroethane	ND	5	m-Dichlorobenzene	ND	5
Benzene	ND	5	p-Dichlorobenzene	ND	5
Trichloroethene	ND	5	o-Dichlorobenzene	ND	5
1,2-Dichloropropane	ND	5			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	93.2	70 - 121	OK
Toluene-d8	97.3	81 - 117	OK
Bromofluorobenzene	98.5	74 - 121	OK

Percent Solid of 100. is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BLANK

Lab Name: 21st Century Environmental Contract: N/A

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

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

Sample wt/vol: 5 (g/mL) g Lab File ID: >B1084

Level: (low/med) LOW Date Received: NA

% Moisture: NA Date Analyzed: 08/08/93

Column: DB-624 Dilution Factor: 1

Number TICs found: 0

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	No Unknowns			

FORM I VOA-TIC 1/87 Rev

00107

QUANT REPORT

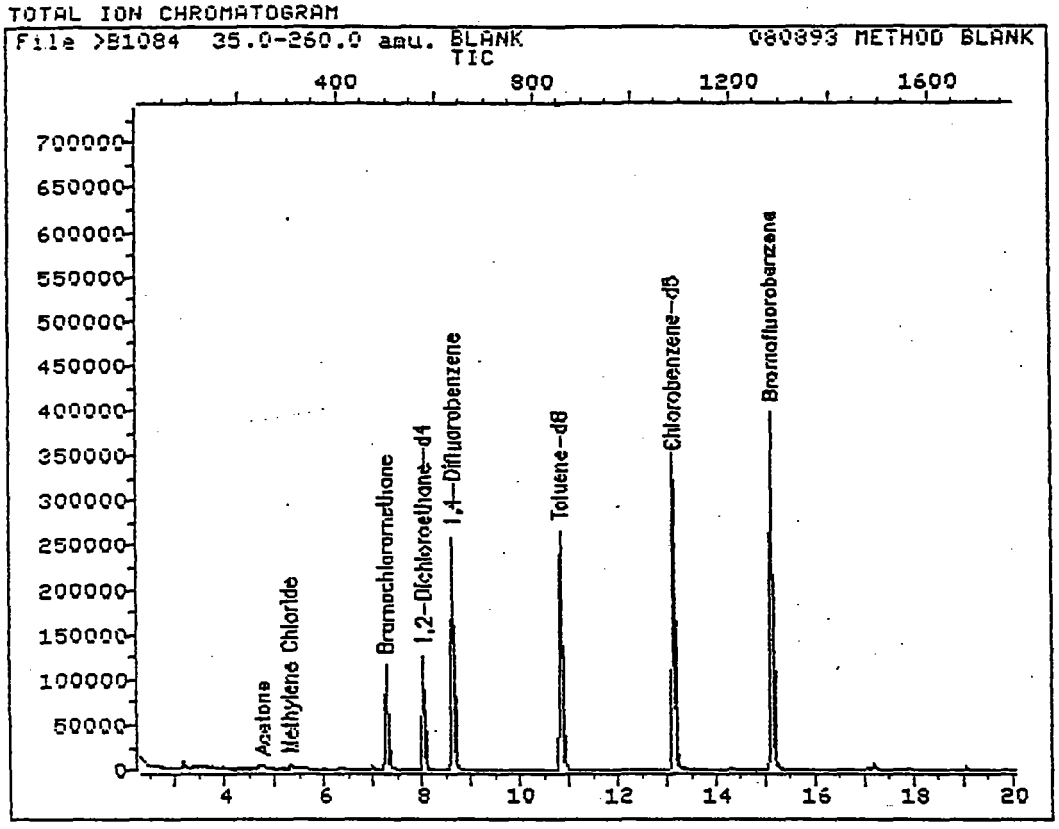
Operator ID: JEFF Quant Rev: 6 Quant Time: 930808 18:30
Output File: ^B1084::QT Injected at: 930808 18:02
Data File: >B1084::D2 Dilution Factor: 1.00000
Name: BLANK
Misc: 080893 METHOD BLANK

ID File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930808 17:44

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	7.27	494	62182	50.00	UG/L	100
9)	Acetone	4.75	243	9540	3.58	UG/L	83
15)	Methylene Chloride	5.30	298	5149	1.50	UG/L	87
23)	1,2-Dichloroethane-d4	8.04	571	161762	46.61	UG/L	100
24)	*1,4-Difluorobenzene	8.64	631	394166	50.00	UG/L	100
33)	Toluene-d8	10.82	849	357252	48.66	UG/L	100
35)	*Chlorobenzene-d5	13.13	1079	392054	50.00	UG/L	100
48)	Bromofluorobenzene	15.12	1278	281823	49.23	UG/L	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B1084::D2 Quant Output File: ^B1084::QT
Name: BLANK
Misc: 080893 METHOD BLANK

Id File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930808 17:44

Operator ID: JEFF
Quant Time: 930808 18:30
Injected at: 930808 18:02

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER		MATRIX	Soil
SAMPLE NUMBER	BLANK	DILUTION FACTOR	50.00
CLIENT ID	080893 MEOH BLANK	QA BATCH	
DATA FILE	>B1085	DATE ANALYZED	08/08/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	2500	Bromodichloromethane	ND	250
Acrylonitrile	ND	2500	2-Chloroethylvinylether	ND	500
Chloromethane	ND	500	2-Hexanone	ND	500
Bromomethane	ND	500	trans-1,3-Dichloropropene	ND	250
Vinyl Chloride	ND	500	Toluene	ND	250
Chloroethane	ND	500	cis-1,3-Dichloropropene	ND	250
Acetone	170 J	500	1,1,2,2-Tetrachloroethane	ND	250
1,1-Dichloroethene	ND	250	1,1,2-Trichloroethane	ND	250
Carbon Disulfide	ND	500	4-Methyl-2-pentanone	ND	500
Methylene Chloride	ND	250	Tetrachloroethene	ND	250
1,2-Dichloroethene(trans)	ND	250	Dibromochloromethane	ND	250
1,1-Dichloroethane	ND	250	Chlorobenzene	ND	250
Vinyl Acetate	ND	250	Ethylbenzene	ND	250
2-Butanone	ND	500	m&p-Xylenes	ND	250
Chloroform	ND	250	o-Xylene	ND	250
1,1,1-Trichloroethane	ND	250	Styrene	ND	250
Carbon Tetrachloride	ND	250	Bromoform	ND	250
1,2-Dichloroethane	ND	250	m-Dichlorobenzene	ND	250
Benzene	ND	250	p-Dichlorobenzene	ND	250
Trichloroethene	ND	250	o-Dichlorobenzene	ND	250
1,2-Dichloropropane	ND	250			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	91.0	70 - 121	OK
Toluene-d8	105	81 - 117	OK
Bromofluorobenzene	100	74 - 121	OK

Percent Solid of 100. is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BLANK

Lab Name: 21st Century Environmental Contract: N/A

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

Matrix: (soil/water) SOIL Lab Sample ID: MEOH BLANK

Sample wt/vol: .1 (g/mL) g Lab File ID: >B1085

Level: (low/med) LOW Date Received: NA

% Moisture: NA Date Analyzed: 08/08/93

Column: DB-624 Dilution Factor: 50

Number TICs found: 0

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	No Unknowns			

FORM I VOA-TIC 1/87 Rev.

QUANT REPORT

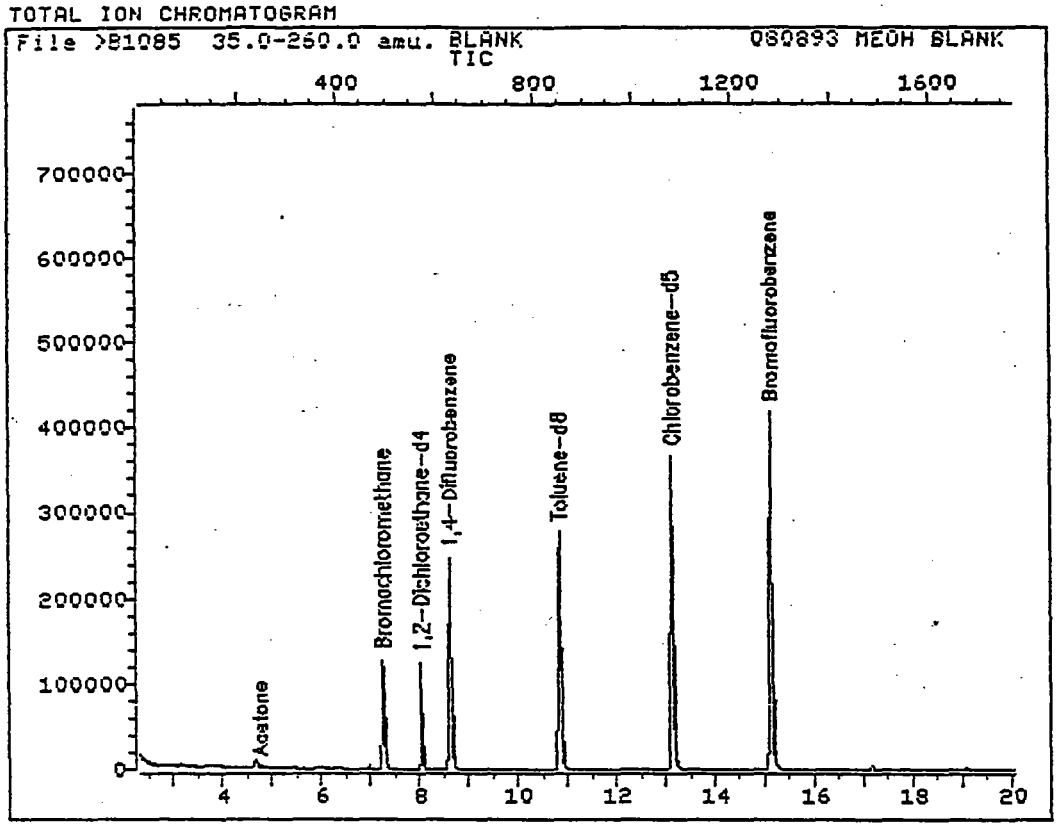
Operator ID: JEFF Quant Rev: 6 Quant Time: 930808 19:36
Output File: ^B1085::QT Injected at: 930808 19:07
Data File: >B1085::D2 Dilution Factor: 1.00000
Name: BLANK
Misc: 080893 MEOH BLANK

ID File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930808 17:44

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	7.25	492	64070	50.00	UG/L	100
9)	Acetone	4.75	243	9337	3.40	UG/L	85
23)	1,2-Dichloroethane-d4	8.03	570	162711	45.50	UG/L	100
24)	*1,4-Difluorobenzene	8.63	630	373010	50.00	UG/L	100
33)	Toluene-d8	10.83	849	364955	52.53	UG/L	100
35)	*Chlorobenzene-d5	13.13	1079	395205	50.00	UG/L	100
48)	Bromofluorobenzene	15.12	1278	289697	50.21	UG/L	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B1085::D2 Quant Output File: ^B1085::QT
Name: BLANK
Misc: 080893 MEOH BLANK

Id File: ID0401::SC
Title: USEPA 624 VOLATILES
Last Calibration: 930808 17:44

Operator ID: JEFF
Quant Time: 930808 19:36
Injected at: 930808 19:07

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: 21st Century Environmental Contract No.:

Lab Code: Case No: SAS No.: SDG No.:

LAB ID FILE (BLANK): >C1831 DATE ANALYZED: 08/04/93

INSTRUMENT ID: C TIME ANALYZED: 16:10

Matrix: SOIL Level:(low/med) LOW Column:(pack/cap)

Date Extracted: 08/03/93 Extraction:(Sepf/Cont/Sonc) SONC

Sample ID: NA BLNK

THIS BLANK APPLIES TO THE FOLLOWING SAMPLES,MS AND MSD

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	A3249 1:	>C1963	08/19/93	19:11
2				
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5				
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COMMENTS:

21st Century Environmental Inc.
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH, NJ	MATRIX	Soil
SAMPLE NUMBER	NA BLNK 8/3	DILUTION FACTOR	1.00
CLIENT ID	BLDG 8003	QA BATCH	
DATA FILE	>C1831	DATE ANALYZED	08/04/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
N-Nitrosodimethylamine	ND	330	2,6-Dinitrotoluene	ND	330
bis(-2-Chloroethyl)Ether	ND	330	Diethylphthalate	ND	330
1,3-Dichlorobenzene	ND	330	4-Chlorophenyl-phenylether	ND	330
1,4-Dichlorobenzene	ND	330	Fluorene	ND	330
Benzyl Alcohol	ND	330	4-Nitroaniline	ND	1600
1,2-Dichlorobenzene	ND	330	N-Nitrosodiphenylamine	ND	330
bis(2-chloroisopropyl)Ether	ND	330	4-Bromophenyl-phenylether	ND	330
N-Nitroso-Di-n-Propylamine	ND	330	Hexachlorobenzene	ND	330
Hexachloroethane	ND	330	Phenanthrene	ND	330
Nitrobenzene	ND	330	Anthracene	ND	330
Isophorone	ND	330	Di-n-Butylphthalate	ND	330
Benzoic Acid	ND	1600	Fluoranthene	ND	330
bis(-2-Chloroethoxy)Methane	ND	330	Pyrene	ND	330
1,2,4-Trichlorobenzene	ND	330	Butylbenzylphthalate	ND	330
Naphthalene	ND	330	3,3'-Dichlorobenzidine	ND	660
4-Chloroaniline	ND	330	Benzo(a)Anthracene	ND	330
Hexachlorobutadiene	ND	330	Bis(2-Ethylhexyl)Phthalate	ND	330
2-Methylnaphthalene	ND	330	Chrysene	ND	330
Hexachlorocyclopentadiene	ND	330	Di-n-Octyl Phthalate	ND	330
2-Chloronaphthalene	ND	330	Benzo(b)Fluoranthene	ND	330
2-Nitroaniline	ND	1600	Benzo(k)Fluoranthene	ND	330
Dimethyl Phthalate	ND	330	Benzo(a)Pyrene	ND	330
Acenaphthylene	ND	330	Indeno(1,2,3-cd)Pyrene	ND	330
3-Nitroaniline	ND	1600	Dibenzo(a,h)Anthracene	ND	330
Acenaphthene	ND	330	Benzo(g,h,i)Perylene	ND	330
Dibenzofuran	ND	330	Benzidine	ND	660
2,4-Dinitrotoluene	ND	330			

Percent Solid of 100. is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

E1

EPA SAMPLE NUMBER

semi-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

NA BLK

Client: US Army Ft. Monmouth, NJ

Comments: Bldg 8003

Matrix: (soil/water) SOIL

Lab Sample ID: NA BLK

Sample wt/vol: 30 (g/mL) GM

Lab File ID: >C1831

Level: LOW

Date Received: NA

% Moisture: 100

Date Analyzed 08/04/93

Extraction: (Sepf/Cont/Sonc) SONC

Date Extracted 08/03/93

GPC (Y or N): N

Column: DB-5

Dilution Factor: 1

Number TICs Found 4

CONCENTRATION UNITS
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	UNKNOWN	18.66	170
2	UNKNOWN	19.03	170
3	UNKNOWN	19.47	330
4	UNKNOWN	20.64	170

QUANT REPORT

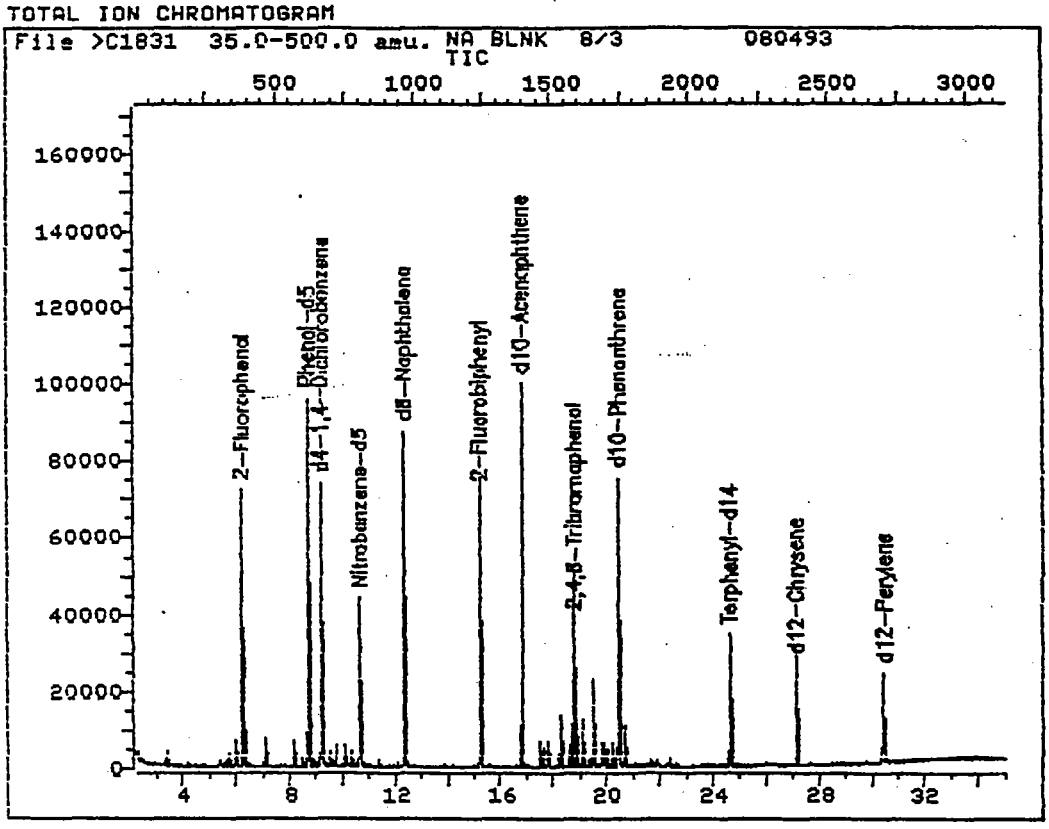
Operator ID: JEFF Quant Rev: 6 Quant Time: 930927 13:58
Output File: ^C1831::QT Injected at: 930804 16:10
Data File: >C1831::E4 Dilution Factor: 1.00000
Name: NA BLNK 8/3
Misc: 080493 BTL# 1

ID File: ID804C::E4
Title: hSL BNA STD
Last Calibration: 930804 16:41

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.17	660	36627	40.00	UG/L	96
4)	2-Fluorophenol	6.21	377	37083	61.10	UG/L	98
5)	Phenol-d5	8.66	612	57569	65.64	UG/L	81
8)	*d8-Naphthalene	12.33	963	80303	40.00	UG/L	86
19)	Nitrobenzene-d5	10.64	801	27130	28.19	UG/L	88
3)	*d10-Acenaphthene	16.77	1389	45813	40.00	UG/L	91
8)	2-Fluorobiphenyl	15.17	1236	49635	29.00	UG/L	93
53)	*d10-Phenanthrene	20.42	1739	63574	40.00	UG/L	99
56)	2,4,6-Tribromophenol	18.76	1580	7306	41.94	UG/L	91
4)	*d12-Chrysene	27.09	2378	25656	40.00	UG/L	97
67)	Terphenyl-d14	24.59	2138	25860	36.11	UG/L	92
73)	*d12-Perylene	30.44	2699	22387	40.00	UG/L	94

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >C1831::E4 Quant Output File: ^C1831::QT
Name: NA BLNK 8/3
Misc: 080493 BTL# 1

Id File: ID804C::E4
Title: hSL BNA STD
Last Calibration: 930804 16:41

Operator ID: JEFF
Quant Time: 930927 13:58
Injected at: 930804 16:10

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: 21st Century Environmental Contract No.:

Lab Code: Case No: SAS No.: SDG No.:

LAB ID FILE (BLANK): >C1954 DATE ANALYZED: 08/19/93

INSTRUMENT ID: C TIME ANALYZED: 11:33

Matrix: WATER Level:(low/med) LOW Column:(pack/cap)

Date Extracted: 08/03/93 Extraction:(Sepf/Cont/Sonc) SEPF

Sample ID: AQ BLNK 8

THIS BLANK APPLIES TO THE FOLLOWING SAMPLES,MS AND MSD

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	A3251 FT	>C1940	08/18/93	16:55
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COMMENTS: _____

21st Century Environmental Inc.
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH, NJ	MATRIX	Water
SAMPLE NUMBER	AQ BLNK 8/3	DILUTION FACTOR	1.00
CLIENT ID	BLDG 8003	QA BATCH	
DATA FILE	>C1954	DATE ANALYZED	08/19/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
N-Nitrosodimethylamine	ND	10	Acenaphthene	ND	10
Phenol	ND	10	2,4-Dinitrophenol	ND	50
bis(-2-Chloroethyl)Ether	ND	10	4-Nitrophenol	ND	50
2-Cholorophenol	ND	10	Dibenzofuran	ND	10
1,3-Dichlorobenzene	ND	10	2,4-Dinitrotoluene	ND	10
1,4-Dichlorobenzene	ND	10	2,6-Dinitrotoluene	ND	10
Benzyl Alcohol	ND	10	Diethylphthalate	ND	10
1,2-Dichlorobenzene	ND	10	4-Chlorophenyl-phenylether	ND	10
2-Methylphenol	ND	10	Fluorene	ND	10
bis(2-chloroisopropyl)Ether	ND	10	4-Nitroaniline	ND	50
4-Methylphenol	ND	10	4,6-Dinitro-2-Methylphenol	ND	50
N-Nitroso-Di-n-Propylamine	ND	10	N-Nitrosodiphenylamine	ND	10
Hexachloroethane	ND	10	4-Bromophenyl-phenylether	ND	10
Nitrobenzene	ND	10	Hexachlorobenzene	ND	10
Isophorone	ND	10	Pentachlorophenol	ND	50
2-Nitrophenol	ND	10	Phenanthrene	ND	10
2,4-Dimethylphenol	ND	10	Anthracene	ND	10
Benzoic Acid	ND	50	Di-n-Butylphthalate	ND	10
bis(-2-Chloroethoxy)Methane	ND	10	Fluoranthene	ND	10
2,4-Dichlorophenol	ND	10	Pyrene	ND	10
1,2,4-Trichlorobenzene	ND	10	Butylbenzylphthalate	ND	10
Naphthalene	ND	10	3,3'-Dichlorobenzidine	ND	20
4-Chloroaniline	ND	10	Benzo(a)Anthracene	ND	10
Hexachlorobutadiene	ND	10	Bis(2-Ethylhexyl)Phthalate	17	10
4-Chloro-3-Methylphenol	ND	10	Chrysene	ND	10
2-Methylnaphthalene	ND	10	Di-n-Octyl Phthalate	ND	10
Hexachlorocyclopentadiene	ND	10	Benzo(b)Fluoranthene	ND	10
2,4,6-Trichlorophenol	ND	10	Benzo(k)Fluoranthene	ND	10
2,4,5-Trichlorophenol	ND	50	Benzo(a)Pyrene	ND	10
2-Chloronaphthalene	ND	10	Indeno(1,2,3-cd)Pyrene	ND	10
2-Nitroaniline	ND	50	Dibenzo(a,h)Anthracene	ND	10
Dimethyl Phthalate	ND	10	Benzo(g,h,i)Perylene	ND	10
Acenaphthylene	ND	10	Benzidine	ND	20
3-Nitroaniline	ND	50			

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

E1

EPA SAMPLE NUMBER

semi-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

AQ BLK

Client: US Army, Ft. Monmouth, NJ

Comments: Bldg 8003

Matrix: (soil/water) WATER

Lab Sample ID: AQ BLK

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: >C1954

Level: LOW

Date Received: NA

% Moisture: 100

Date Analyzed 08/19/93

Extraction: (Sepf/Cont/Sonc) SEPF

Date Extracted 08/03/93

GPC (Y or N): N

Column: DB-5

Dilution Factor: 1

Number TICs Found 9

CONCENTRATION UNITS
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST CONC
1		UNKNOWN	18.19	5
2		UNKNOWN	18.60	8
3		UNKNOWN	18.73	8
4		UNKNOWN	18.98	9
5		UNKNOWN	19.42	17
6		UNKNOWN	19.71	5
7		UNKNOWN	19.77	4
8		UNKNOWN	20.16	5
9		UNKNOWN	20.59	8

QUANT REPORT

Operator ID: JEFF Quant Rev: 6 Quant Time: 930819 12:11
Output File: ^C1954::E4 Injected at: 930819 11:33
Data File: >C1954::DA Dilution Factor: 1.00000
Name: AQ BLNK 8/3
Misc: BTL# 1

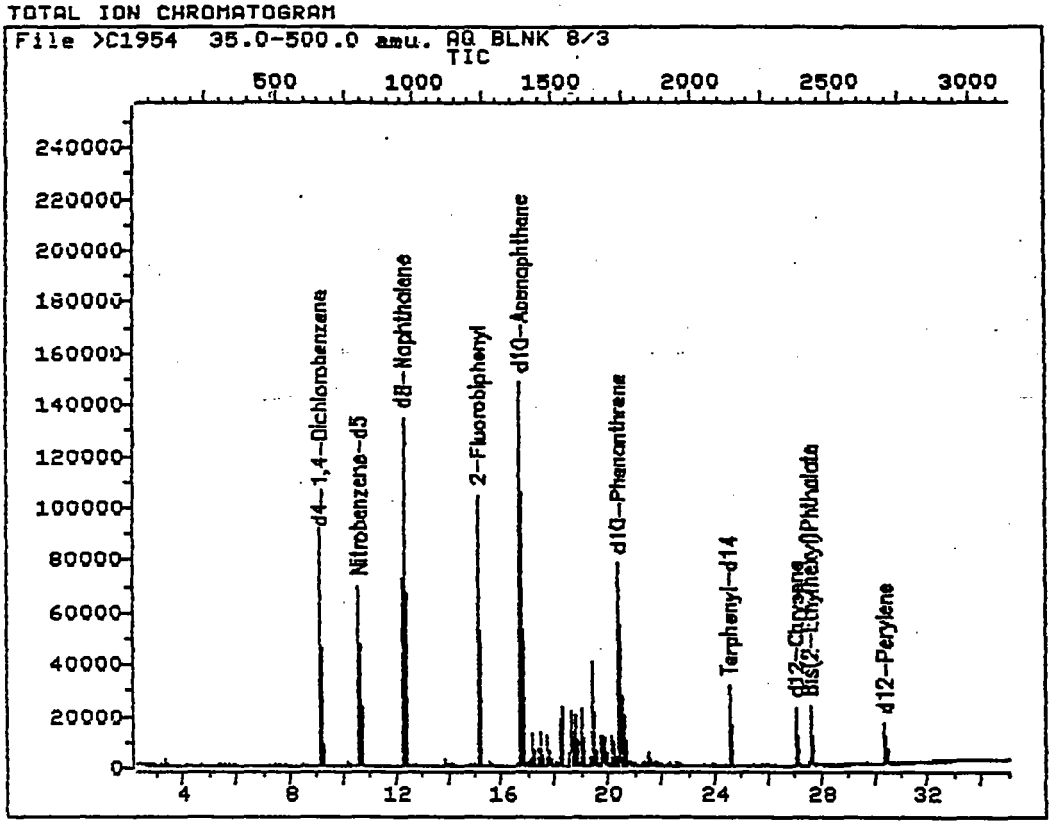
ID File: ID819C::D3
Title: hSL BNA STD
Last Calibration: 930819 11:42

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.11	656	43931	40.00	UG/L	94
18)	*d8-Naphthalene	12.28	960	117244	40.00	UG/L	85
9)	Nitrobenzene-d5	10.59	798	41967	29.00	UG/L	91
33)	*d10-Acenaphthene	16.72	1386	69576	40.00	UG/L	93
38)	2-Fluorobiphenyl	15.14	1234	65843	24.02	UG/L	93
53)	*d10-Phenanthrene	20.38	1736	64878	40.00	UG/L	98
4)	*d12-Chrysene	27.04	2375	19489	40.00	UG/L	94
67)	Terphenyl-d14	24.53	2134	24355	39.28	UG/L	91
71)	Bis(2-Ethylhexyl)Phthalate	27.57	2425	11654	16.82	UG/L	91
3)	*d12-Perylene	30.37	2694	16545	40.00	UG/L	96

* Compound is ISTD

00122

TOTAL ION CHROMATOGRAM



Data File: >C1954 Quant Output File: ^C1954::E4
Name: AQ BLNK 8/3
Misc: BTL# 1

Id File: ID819C::D3
Title: hSL BNA STD
Last Calibration: 930819 11:42

Operator ID: JEFF
Quant Time: 930819 12:11
Injected at: 930819 11:33

00122