DEC 1994

THIRD QUARTER 1994 PROGRESS REPORT
L.E. CARPENTER SITE
WHARTON, NEW JERSEY

1 December 1994

Work Order No.: 06720-018-001

Prepared on behalf of

L.E. CARPENTER AND COMPANY

For the

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

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SECTION 1.0

INTRODUCTION AND SCOPE

This report presents the measurements and results of the third quarterly groundwater sampling event for 1994 at the L.E Carpenter site in Wharton, New Jersey. The report also provides a summary of project related events which occurred during the period August through October.

Activities related to the operation and maintenance of the passive recovery system and the quarterly sampling event were performed during this quarter (August through October). These activities include the bi-monthly maintenance of the passive recovery system, one synoptic round of water level and product thickness measurements from the monitoring point network, collection of five groundwater samples (third quarter sampling event), and generation of this report.

In addition to these activities, WESTON submitted the Draft Workplan for Phase I ROD Implementation, L.E. Carpenter and Company, Wharton, New Jersey (Workplan) to NJDEP in 19 August 1994. Included in this document was a tentative schedule for activities, a cost estimate, a Quality Assurance Project Plan (QAPP), a list of the required applicable permits, and a Health & Safety Plan (HASP).

The Workplan specifically addresses two issues at the site. These issues are the Phase I Soil Hot Spot Remedial Action Plan, and the Groundwater Remedial Design Data Acquisition and Well-field Upgrade. The Phase I Soil Hot Spot Remedial Action Plan encompasses the excavation and disposal of inorganic soil hot spots, excavation and disposal of the waste disposal area wastes, excavation and consolidation of organic soil hot spots, and excavation and disposal of the PCB area's impacted soils. The Groundwater Remedial Design Data Acquisition and Wellfield Upgrade details tasks which are required for the design of the groundwater pump and treat system identified in the Record of Decision (ROD).

Activities conducted in September focused on permit acquisition and waste characterization. On 1 September 1994, a Freshwater Wetlands Permit Application and a Stream Encroachment Permit Application (which included a Soil Erosion and Sedimentation Control Plan) were submitted to the NJDEP in order to secure the necessary permits for performing the excavation activities described in the Workplan. On 14 September 1994, WESTON collected three waste characterization samples from inorganic hot spot soils. The samples were collected in a manner consistent with the Workplan's QAPP. The sample analyses are being used to obtain pre-approval from permitted disposal facilities prior to actually commencing excavation. On 13 October 1994, WESTON submitted a revised Workplan to address several technical issues raised by the NJDEP during their review of the Draft Workplan.

1.1 GROUNDWATER ACTIVITIES

On 23 September 1994 WESTON personnel performed the quarterly sampling of groundwater monitoring wells MW-4, MW-14S, MW-15S, MW-22, and MW-25 at the L.E. Carpenter site. Due to weather condition, water level and product thickness measurements were not collected on 23 September. As a result, quarterly groundwater levels and product thickness measurements were collected on 4 October 1994. All groundwater samples collected were analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX).

1.2 GROUNDWATER LEVEL MEASUREMENT

Water level and product thickness measurements were obtained using an oil/water interface probe or an electronic water level indicator at all of the wells and well points at the site. Water level measurements were also collected at eight (8) staff gauges and at the RP-1 measurement point on the concrete wall adjacent to the Rockaway River. Surface water elevations collected at the staff gauges and RP-1 were determined by measuring the vertical distance between the surveyed top of the staff gauge or paint mark, and the water surface.

1.3 GROUNDWATER SAMPLING

Groundwater monitoring wells MW-4, MW-14S, MW-15S, MW-22, and MW-25 were sampled on 23 September 1994. Samples were analyzed for BTEX (U.S. EPA Method 602). Dedicated well wizard bladder pumps were utilized to purge a minimum of three well volumes prior to sampling MW-4, MW-14S, MW-15S, MW-22, and MW-25.

All samples were placed into 40 milliliter glass vials containing a sufficient volume of hydrochloric acid to obtain a sample pH of two or less. After collection, the samples were immediately placed in a designated sample cooler and preserved at four degrees centigrade.

All samples were shipped to WESTON Analyticals in Lionville, Pennsylvania via overnight courier following chain of custody procedures. WESTON Analyticals performed the BTEX analysis on all samples.

1.4 PRODUCT RECOVERY

During this quarter, the entire product recovery system was inspected on a bi-monthly basis. All components of this system were found to be in good operational condition. During the quarter approximately 100 gallons of product was recovered.

In addition to the operation of the passive product recovery system, product was removed by manual bailing from well points WP-A1, WP-A4, WP-B6, WP-A8, WP-A4, and MW-11S. All products was containerized in the storage tank located adjacent to the recovery system shed positioned in the middle of the site.

SECTION 2.0

ANALYTICAL RESULTS

2.1 GROUNDWATER ELEVATION DATA

Groundwater elevation data for the 4 October 1994 measurement event is presented in Table 1 in Appendix A. Equipotential maps for the shallow, intermediate and deep aquifer zones are presented in Appendix B. Water table depression caused by the presence of the Light Non-Aqueous Phase Liquid (LNAPL) was corrected for using the method presented in previous quarterly reports (WESTON, April 1992).

2.2 BTEX ANALYTICAL RESULTS

Analytical results for groundwater sample collected from MW-4, MW-14S, MW-15S, MW-22, and MW-25 are presented in Appendix C. The data are summarized in Table 2-1. Benzene and toluene were detected in MW-4 at a concentration of 1.3 micrograms per liter (ug/l) and 3.3 ug/l, respectively. Ethylbenzene was detected in MW-4 and MW-22 at concentrations of 3.8 ug/l and 140 ug/l, respectively. Xylenes (total) were detected in MW-4 and MW-22 at concentrations of 5.5 ug/l and 530 ug/l, respectively. No BTEX parameters were detected in MW-14S and MW-15S.

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TABLE 2-1

SUMMARY OF BTEX ANALYTICAL RESULTS
THIRD QUARTER 1994
L.E. CARPENTER SITE, WHARTON, NEW JERSEY

Parameter	Concentration (ug/l)				
	MW-4	MW-14S	MW-15S	MW-22	MW-25
Benzene	1.3	1.0 u	1.0 u	20 u	1.0 u
Toluene	3.3	1.0 u	1.0 u	20 u	1.0 u
Ethylbenzene	3.8	1.0 u	1.0 u	140	1.0 u
Xylenes (total)	5.5	1.0 u	1.0 u	530	57
Total BTEX	13.9	ND	ND	670	57

Note: u denotes analyzed, not detected.
ND denotes not detected.

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SECTION 3.0

DISCUSSION

3.1 GROUNDWATER ELEVATION MEASUREMENT

Groundwater levels and product measurements were collected from each monitoring well, well point, and stream gauge on 4 October 1994. Appendix A presents the water level and product thickness data. Equipotential maps of the shallow, intermediate, and deep aquifer zones are presented in Appendix B on Figures 1, 2, and 3; respectively.

Corrected water level elevations were compared to findings from the 1 July 1994 measurement event (second quarter 1994). At all monitoring points, except MW-25 and DC-P3, there is a decrease in corrected water level elevations. At MW-25 and DC-P3, there is a measured increase in corrected water level elevations of 1.67 feet and 0.05 feet; respectively. The range of the downward fluctuations in corrected water level elevations ranged between 0.02 feet at DC-P2 to 2.54 feet at WP-C2.

Equipotential maps of the shallow, intermediate, and deep aquifer zones were constructed based on the results of the 4 October 1994 measurement event and are presented in Appendix B. The equipotential maps generated from the third quarter 1994 data were compared to equipotential maps constructed during earlier quarters.

In general, the third quarter equipotential maps indicate that the shallow and intermediate aquifer zone's groundwater flow directions are similar with the previous quarters. Groundwater flow direction in the deep aquifer is not similar to any of the previous quarters. With the data acquired during this quarter and utilizing the points MW-11D, MW-14D, MW-17D, and MW-18D, groundwater flow appears to be emanating from MW-11D and flowing radially outward. Due to the fact that the suggested direction of groundwater flow significantly varies from previous measurement events, it may be concluded that erroneous field measurements were made. The next quarter's data will be evaluated to identify if a new trend in groundwater flow direction is present in the deep aquifer zone.

3.2 PRODUCT DELINEATION ACTIVITIES

Product delineation was performed by measuring for LNAPL at each monitoring point. At each location where product was encountered, its thickness was measured with an oil/water interface probe to one hundredth (0.01) of a foot. In exception, at location MW-12S, where difficulty measuring product thickness was encountered during earlier quarters due to the physical properties of the product, a transparent bailer was used to identify the pressure and thickness of

LNAPL. Appendix A provides the product thickness measurements. Figure 4 in Appendix B provides an isopach map presenting product thickness.

At the twenty-four (24) monitoring points where product was detected, its thickness ranged from a sheen at two (2) monitoring points to 4.54 feet at WP-A8. Increases and decreases of product thicknesses were noted at different monitoring points as compared to second quarter 1994 measurements. At monitoring points RW-02, CW-2, and WP-A8, the product thicknesses remained the same at thicknesses of 0.02 feet, a sheen, and 4.54 feet; respectively.

As compared to second quarter measurements, an increase in LNAPL thickness was noted in eleven (11) monitoring points. These monitoring points and their respective increases in LNAPL thickness from the second quarter 1994 measurement event are: MW-10 (0.39 feet), RW-1 (0.01 feet), CW-1 (0.06 feet), CW-3 (0.04 feet), WP-A2 (0.39 feet), WP-A7 (1.33 feet), WP-A9 (2.00 feet), WP-B3 (0.92 feet), WP-B5 (0.45 feet), WP-B7 (0.20 feet), and WP-B9 (1.78 feet).

A decrease in product thickness was noted in ten (10) monitoring points when compared to second quarter data. These monitoring points include: MW-1, (0.82 feet), MW-3 (0.03 feet), MW-6 (0.11 feet), MW-11S (2.15 feet), MW-12S, (0.20 feet), WP-A1 (1.10 feet). WP-A4 (0.19 feet), WP-A6 (1.51 feet), WP-B1 (0.33 feet), and WP-B4 (2.08 feet).

3.3 SUMMARY

Total BTEX concentrations were compared to analytical data from second quarter 1994. Data from MW-15S were compared to the last sampling event during which this well was sampled, (first quarter 1994). At MW-14S and MW-15S, no BTEX constituents were detected during either sampling event. At MW-4, total BTEX concentrations increased from 1.4 ug/l to 13.9 ug/l. Benzene, toluene, and xylene, which were not detected during the second quarter sampling event, were detected at concentrations of 1.3 ug/l, 3.3 ug/l, and 5.5 ug/l; respectively. In MW-4, the concentration of ethylbenzene increased from 1.4 ug/l to 3.8 ug/l. Total BTEX concentrations in MW-22 decreased from 1050 ug/l to 670 ug/l. At MW-25, total BTEX concentrations increased from not detected to 57 ug/l. Xylenes (total) were the only compound detected in MW-25 during the third quarter 1994. Analytical data for the third quarter 1994 are presented in 2-1. A summary of analytical data collected since the fourth quarter of 1993, is presented in Table 3-3. A summary of analytical results are graphically presented in Appendix D.

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TABLE 3-1
COMPARISON OF MONITORING WELL DATA SINCE FOURTH QUARTER 1993
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All results in micrograms per liter (ug/l)

	4thQ93	1stQ94	2ndQ94	3rdQ94
MW-4				
Benzene	1.0 u	1.0 u	1.0 u	1.3
Toluene	1.0 u	1.0 u	1.0 u	3.3
Ethylbenzene	1.0 BRL	1.0 u	1.4	3.8
Xylenes (total)	2.0 BRL	2.0 u	1.0 u	5.5
Total BTEX	ND/BRL	ND	1.4	13.9
MW-14S				
Benzene	1.0 BRL	1.0 u	1.0 u	1.0 u
Toluene	1.0 BRL	1.0 u	1.0 u	1.0 u
Ethylbenzene	86	1.0 u	1.0 u	1.0 u
Xylenes (total)	360	2.0 u	1.0 u	1.0 u
Total BTEX	446	ND	ND	ND
MW-22				
Benzene	1.0 BRL	1.0 u	1.0 u	20 u
Toluene	1.0 BRL	1.0 u	1.0 u	20 u
Ethylbenzene	290	150	270	140
Xylenes (total)	1200	590	780	530
Total BTEX	1490	740	1050	670
MW-25				
Benzene	1.0 BRL	1.0 u	1.0 u	1.0 u
Toluene	1.0 u	1.0 u	1.0 u	1.0 u
Ethylbenzene	1.0 u	1.0 u	1.0 u	1.0 u
Xylenes (total)	260	1.0 u	1.0 u	57
Total BTEX	260	ND	ND	57
MW-15S				
Benzene	na	1.0 u	na	1.0 u
Toluene	na	1.0 u	na	1.0 u
Ethylbenzene	na	1.0 u	na	1.0 u
Xylenes (total)	na	2.0 u	na	1.0 u
Total BTEX	na	ND	na	ND

Notes:

na - Not analyzed.
ND - Not detected.
BRL - Below reporting limits.
u - Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

APPENDIX A

WATER LEVEL AND PRODUCT THICKNESS DATA

TABLE 1
WATER LEVEL/PRODUCT THICKNESS MEASUREMENT DATA
THIRD QUARTER 1994
L.E. CARPENTER SITE
WHARTON, NEW JERSEY

MONITORING POINT DESIGNATION	MEASURING POINT ELEVATION (FT. MSL)	DEPTH TO PRODUCT (FT)	APPARENT PRODUCT THICKNESS (FT)	STATIC DEPTH TO WATER (FT)	CORRECTED DEPTH TO WATER (FT)	CORRECTED WATER LEVEL ELEVATION (FT MSL)
MW-1	639.18	14.72	0.46	15.18	14.78	624.40
MW-2	633.57	NONE	NONE	9.56	9.56	624.01
MW-3	632.56	8.49	0.16	8.65	8.51	624.05
MW-4	632.50	NONE	NONE	8.55	8.55	623.95
MW-5	632.42	NONE	NONE	7.91	7.91	624.51
MW-6	632.77	9.16	0.24	9.40	9.19	623.58
MW-7	630.68	NONE	NONE	6.45	6.45	624.23
MW-8	630.56	NONE	NONE	5.13	5.13	625.43
MW-9	631.69	NONE	NONE	7.01	7.01	624.68
MW-10	631.52	9.63	0.39	10.02	9.68	621.84
MW-11S	632.96	8.98	3.54	12.52	9.48	623.48
MW-11I	632.82	NONE	NONE	8.90	8.90	623.92
MW-11D	632.42	NONE	NONE	6.42	6.42	626.00
MW-12S	633.18	NONE	SHEEN	6.18	6.18	627.00
MW-12I	633.06	NONE	NONE	9.22	9.22	623.84
MW-13S	631.23	NONE	NONE	6.83	6.83	624.40
MW-13I	630.66	NONE	NONE	6.87	6.87	623.79
MW-14S	628.41	NONE	NONE	4.91	4.91	623.50
MW-14I	628.23	NONE	NONE	4.60	4.60	623.63
MW-14D	628.53	NONE	NONE	2.64	2.64	625.89
MW-15S	636.77	NONE	NONE	12.57	12.57	624.20
MW-15I	636.66	NONE	NONE	12.46	12.46	624.20
MW-16S	634.47	NONE	NONE	9.76	9.76	624.71
MW-16I	634.96	NONE	NONE	10.30	10.30	624.66
MW-17S	634.79	NONE	NONE	10.49	10.49	624.30
MW-17D	634.86	NONE	NONE	10.56	10.56	624.30
MW-18S	631.26	NONE	NONE	6.92	6.92	624.34
MW-18I	631.04	NONE	NONE	6.68	6.68	624.36
MW-18D	630.77	NONE	NONE	5.41	5.41	625.36
MW-19	638.88	NONE	NONE	13.73	13.73	625.15
MW-20	636.77	NONE	NONE	11.90	11.90	624.87
MW-21	628.80	NONE	NONE	5.38	5.38	623.42
MW-22	628.74	NONE	NONE	5.11	5.11	623.63
MW-23	630.64	NONE	NONE	4.10	4.10	626.54
MW-24	629.03	NONE	NONE	3.14	3.14	625.89
MW-25	627.33	NONE	NONE	3.88	3.88	623.45
RW-1	637.38	13.18	0.01	13.19	13.18	624.20
RW-2	631.68	7.88	0.02	7.90	7.88	623.80
RW-3	631.99	NONE	NONE	8.08	8.08	623.91
CW-1	NOT SURVEYED	10.46	0.06	10.52	10.47	NOT SURVEYED
CW-2	NOT SURVEYED	NONE	SHEEN	10.94	10.94	NOT SURVEYED
CW-3	NOT SURVEYED	9.52	0.04	9.56	9.53	NOT SURVEYED
GEI-1I	630.78	NONE	NONE	6.38	6.38	624.40
GEI-2S	637.67	NONE	NONE	12.60	12.60	625.07
GEI-2I	638.20	NONE	NONE	12.76	12.76	625.44
GEI-3I	639.85	NONE	NONE	15.03	15.03	624.82

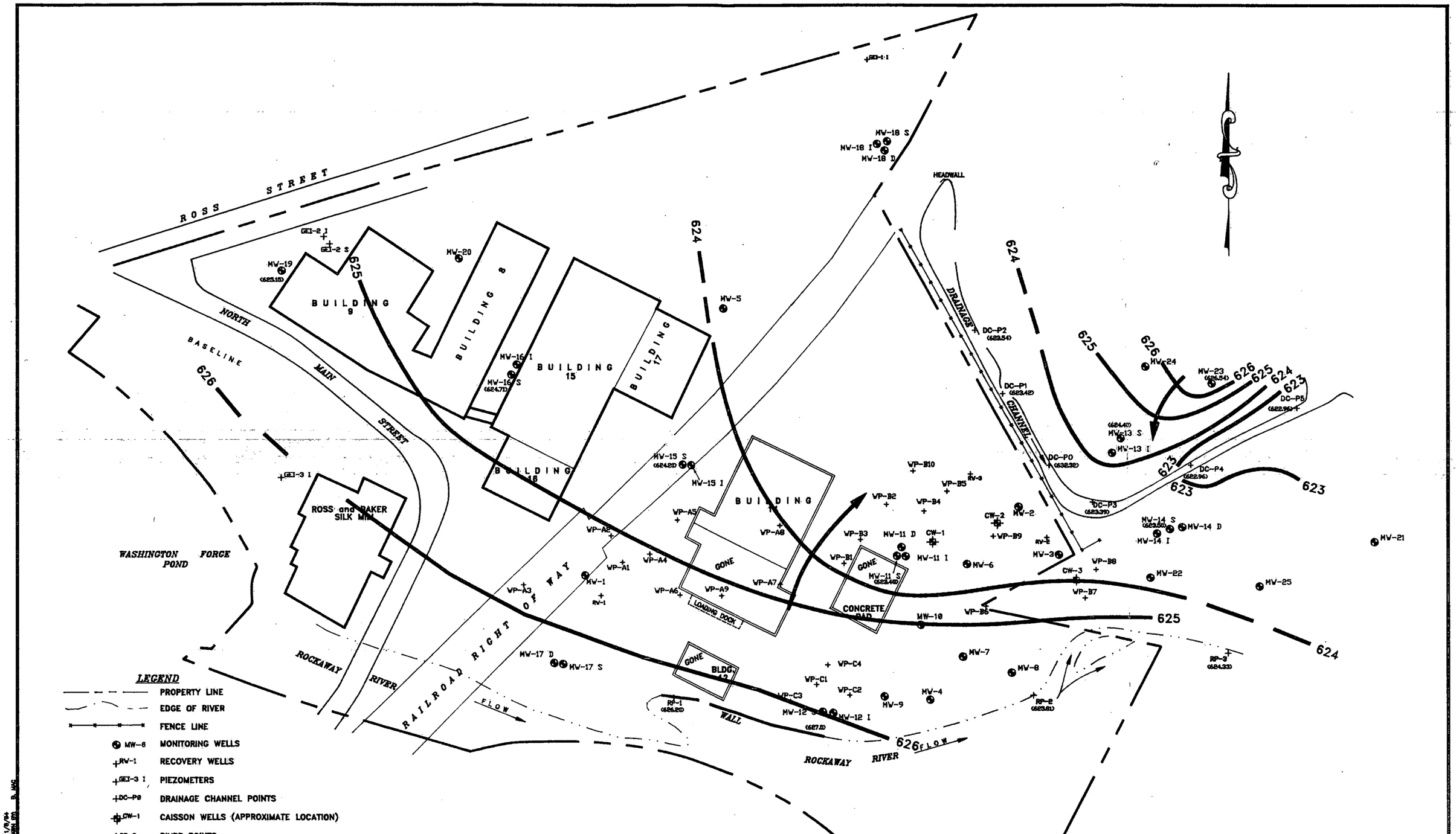
TABLE 1
WATER LEVEL/PRODUCT THICKNESS MEASUREMENT DATA
THIRD QUARTER 1994
L.E. CARPENTER SITE
WHARTON, NEW JERSEY

MONITORING POINT DESIGNATION	MEASURING POINT ELEVATION (FT. MSL)	DEPTH TO PRODUCT (FT)	APPARENT PRODUCT THICKNESS (FT)	STATIC DEPTH TO WATER (FT)	CORRECTED DEPTH TO WATER (FT)	CORRECTED WATER LEVEL ELEVATION (FT MSL)
WP-A1	635.81	11.48	0.60	12.08	11.56	624.25
WP-A2	639.20	14.98	0.46	15.44	15.04	624.16
WP-A3	635.56	NONE	NONE	11.20	11.20	624.36
WP-A4	635.10	10.72	2.18	12.90	11.03	624.07
WP-A5	637.85	NONE	NONE	13.66	13.66	624.19
WP-A6	637.28	13.04	1.44	14.48	13.24	624.04
WP-A7	634.88	10.77	1.33	12.10	10.96	623.92
WP-A8	637.56	13.26	4.54	17.80	13.90	623.66
WP-A9	639.45	15.26	2.00	17.26	15.54	623.91
WP-B1	633.65	8.82	0.01	8.83	8.82	624.83
WP-B2	632.25	NONE	NONE	8.21	8.21	624.04
WP-B3	633.33	9.18	0.92	10.10	9.31	624.02
WP-B4	631.92	7.7	2.40	10.10	8.04	623.88
WP-B5	632.11	8.00	1.80	9.80	8.25	623.86
WP-B6	631.86	NONE	NONE	7.18	7.18	624.68
WP-B7	629.49	5.54	0.44	5.98	5.60	623.89
WP-B8	629.29	NONE	NONE	5.58	5.58	623.71
WP-B9	632.37	8.42	1.78	10.20	8.67	623.70
WP-B10	632.63	NONE	NONE	8.64	8.64	623.99
WP-C1	634.44	NONE	NONE	10.46	10.46	623.98
WP-C2	634.46	NONE	NONE	9.02	9.02	625.44
WP-C3	632.64	NONE	NONE	8.32	8.32	624.32
WP-C4	634.59	NONE	NONE	10.58	10.58	624.01
DC-P0	625.73	NONE	NONE	2.41	2.41	623.32
DC-P1	625.26	NONE	NONE	1.84	1.84	623.42
DC-P2	626.79	NONE	NONE	3.25	3.25	623.54
DC-P3	625.22	NONE	NONE	1.83	1.83	623.39
DC-P4	625.10	NONE	NONE	2.14	2.14	622.96
DC-P5	625.16	NONE	NONE	2.20	2.20	622.96
RP-01	629.65	NONE	NONE	3.45	3.45	626.20
RP-02	627.75	NONE	NONE	1.94	1.94	625.81
RP-03	627.11	NONE	NONE	2.78	2.78	624.33

NOTE:
ASSUMES A PRODUCT SPECIFIC GRAVITY OF 0.86.
WATER LEVEL AND PRODUCT THICKNESSES WERE MEASURED ON 4 OCTOBER 1994.

APPENDIX B

EQUIPOTENTIAL AND PRODUCT THICKNESS ISOPACH MAPS



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PROJECT NAME: THIRD QUARTER 1994 PROGRESS REPORT

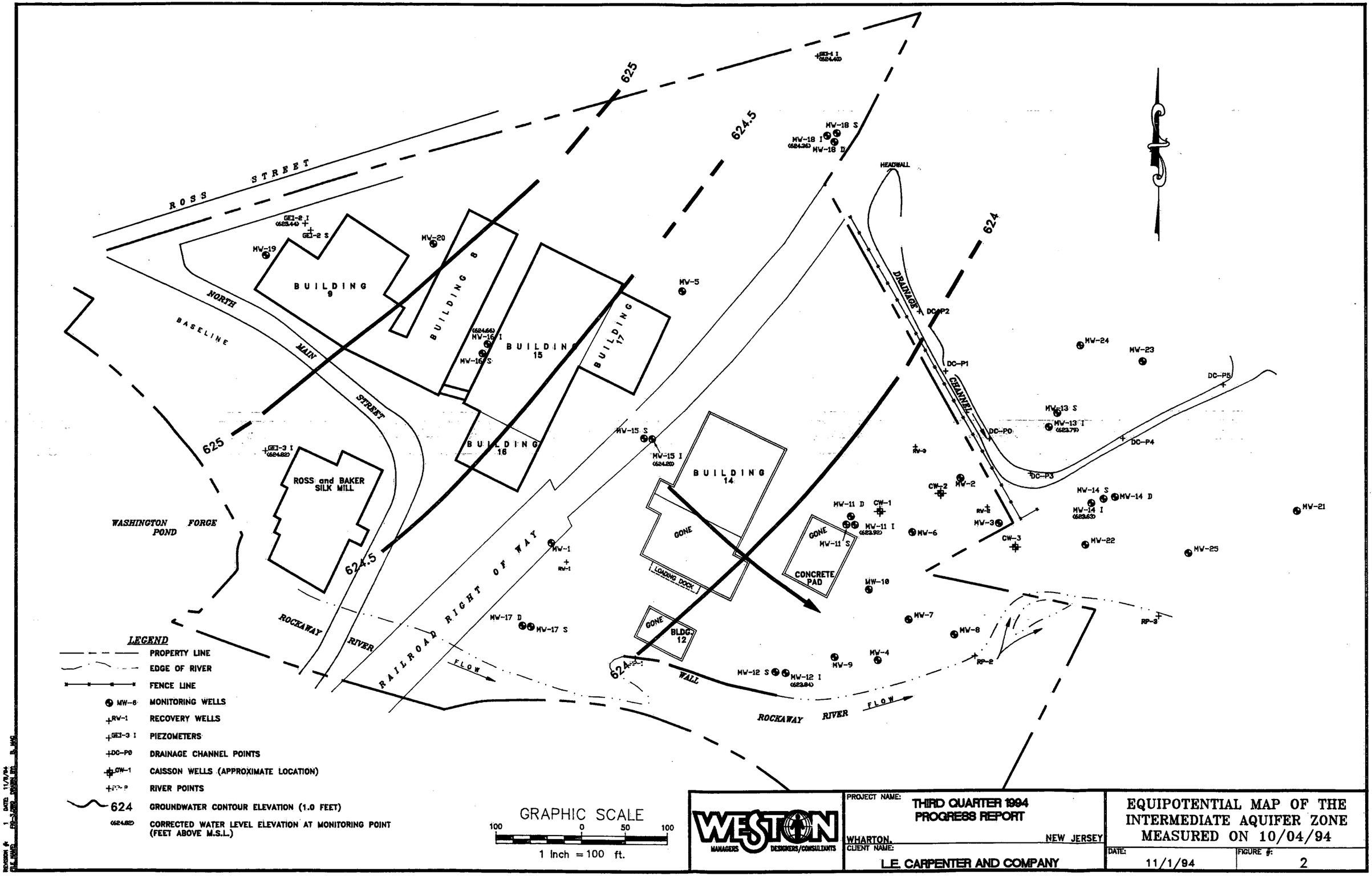
WHARTON, NEW JERSEY

CLIENT NAME: L.E. CARPENTER AND COMPANY

EQUIPOTENTIAL MAP OF THE SHALLOW AQUIFER ZONE MEASURED ON 10/04/94

DATE: 11/1/94

FIGURE #: 1



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PROJECT NAME: THIRD QUARTER 1994 PROGRESS REPORT

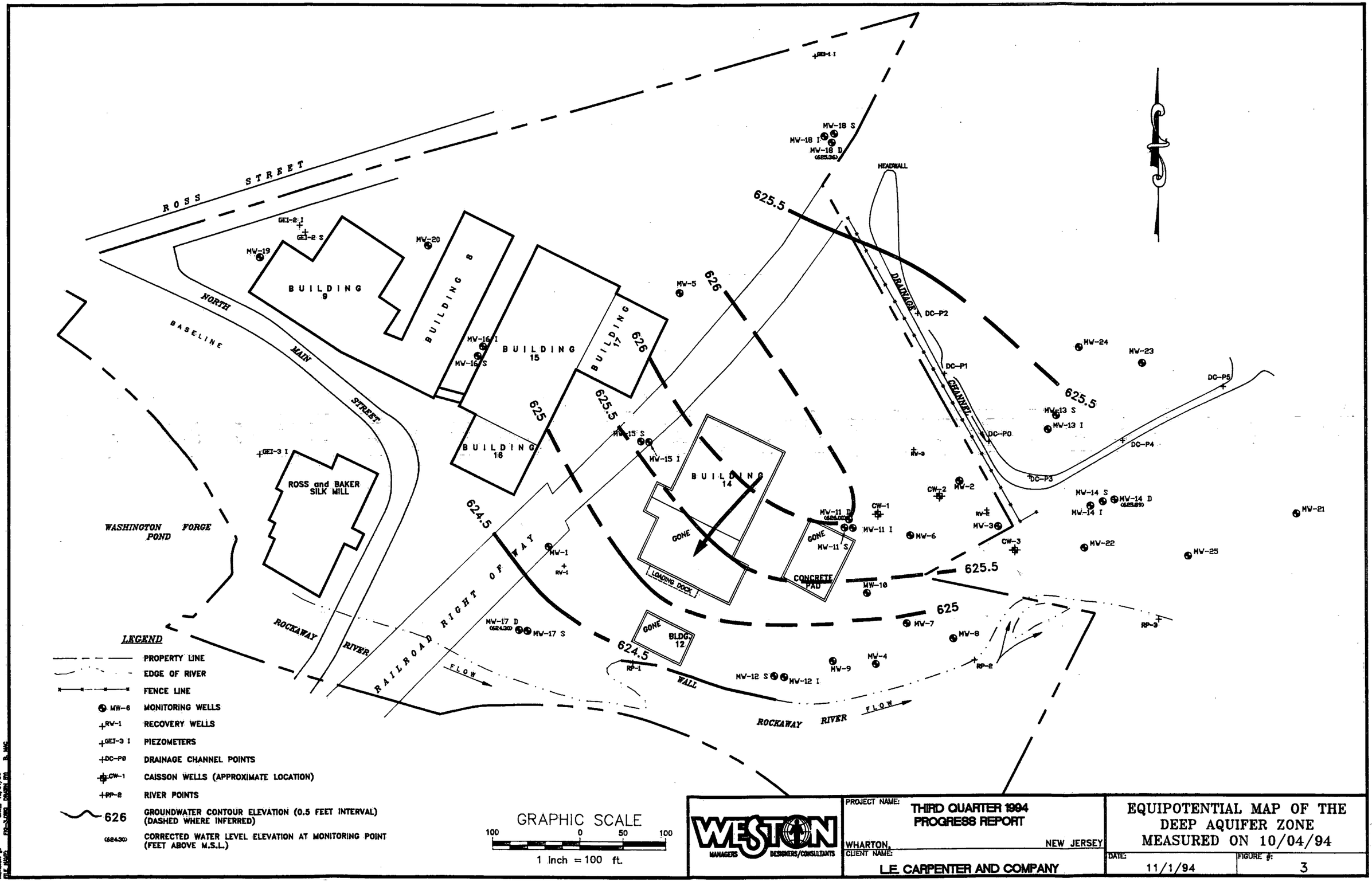
WHARTON, NEW JERSEY

CLIENT NAME: L.E. CARPENTER AND COMPANY

EQUIPOTENTIAL MAP OF THE INTERMEDIATE AQUIFER ZONE MEASURED ON 10/04/94

DATE: 11/1/94

FIGURE #: 2



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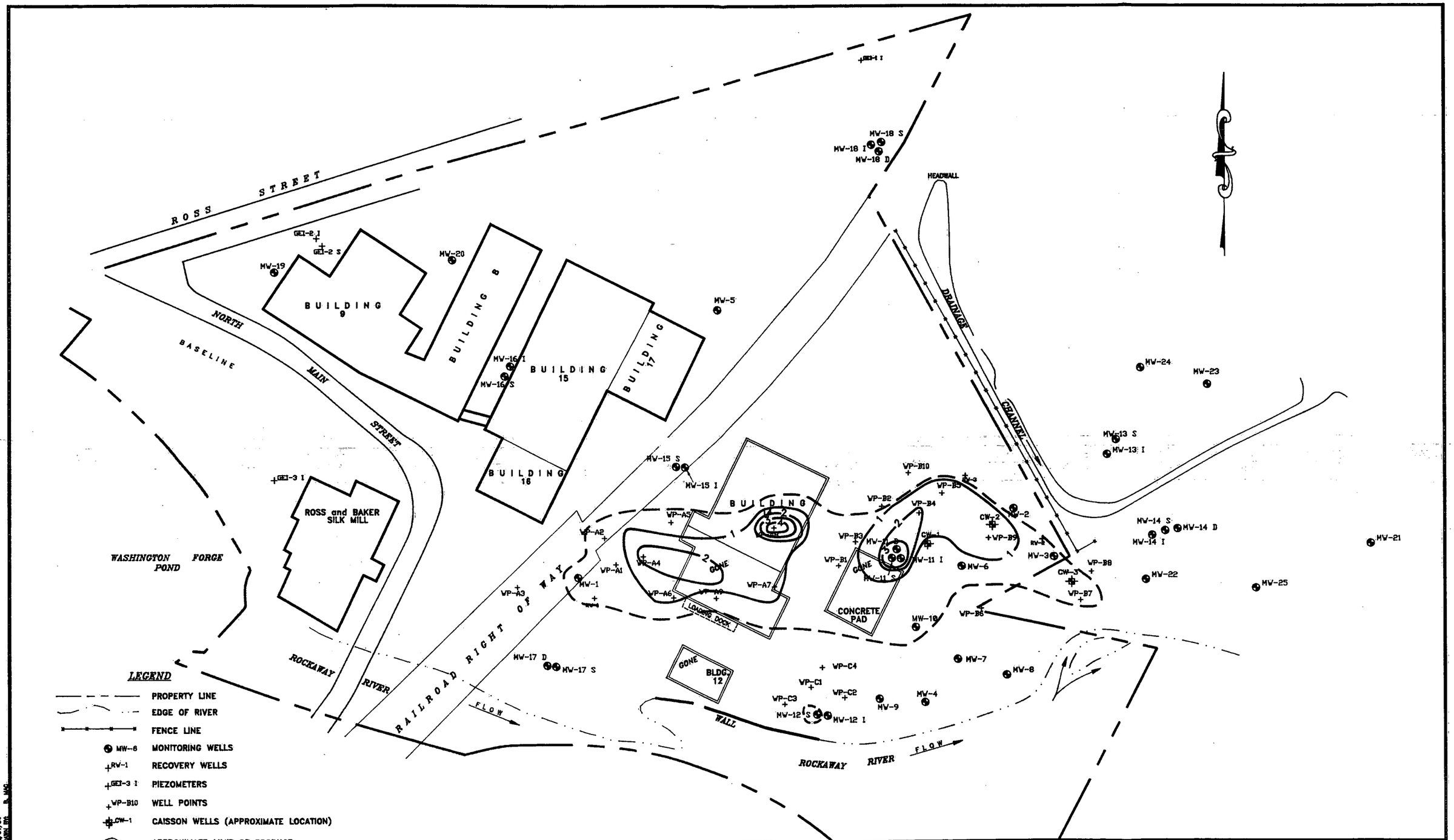
WHARTON, NEW JERSEY
CLIENT NAME: L.E. CARPENTER AND COMPANY

EQUIPOTENTIAL MAP OF THE DEEP AQUIFER ZONE MEASURED ON 10/04/94

DATE: 11/1/94
FIGURE #: 3



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PROJECT NAME: THIRD QUARTER 1994 PROGRESS REPORT

WHARTON, NEW JERSEY

CLIENT NAME: L.E. CARPENTER AND COMPANY

ISOPACH MAP OF PRODUCT THICKNESS MEASURED ON 10/04/94

DATE: 11/1/94

FIGURE #: 4

REVISION #:
FILE NAME: FIG-3.DWG DRAWN BY: B. MAC
DATED: 12/01/94

APPENDIX C

BTEX ANALYTICAL RESULTS

GC VOLATILES: COMPLETE SDG FILE (CSF) INVENTORY SHEET

LABORATORY NAME:	Roy F. Weston, Inc., Analytics Division
CITY/STATE:	Lionville, PA
CASE/SDG NO.:	94092373
CLIENT NAME:	LE Carpenter
WORK ORDER NO.:	06720-018-001-0003-00 (0602)
METHOD BASED ON:	0602

All documents in the Client's copy of the complete SDG file must be legible, clearly labeled, paginated, single-sided original documents; or of sufficient copy quality to be reproducible to fourth generation copies. (Purge file documents, e.g., original-copy chain-of-custody, etc. assembled per specific contract request only.)

CLIENT: LE Carpenter SDG No.: 94092373		Page Nos		Check (initials/date)	
		From	To	Lab	Client
1	Cover Page (Lab Chron)	0001	0002	MT 10/26/94	
2	Table of Contents (Document Inventory Sheet)	0003	0003	↓	
3	Case Narrative w/ control limits	0004	0006	↓	
4	Shipping, Receiving, and Custody Records • Lab Chain of Custody/Work Request • Client Custody Reports/Packing Lists • Airbills	0007	0008	MT 10/26/94 N/A ↓	
5	GC Volatiles Sample QC/Data Summary • Data Summary (LIMS Summary Report) • Surrogate Recovery Summary • Matrix Spike/Matrix Spike Duplicate Recovery Summary • Blank Spike Recovery Summary	0009	0014	10/24/94 ↓	
6	Sample Data, for each Sample: • Target Compound Results - Organic Analysis Data Sheet (Form I) • Chromatogram/Quant Report, 1° column • Chromatogram/Quant Report, 2° column confirmation	0015	0033	10/24/94 ↓ NA	
7	Calibration Standard Data	0034	0058		
	1° Column Standards Data Initial Calibration (ICAL): • Compound/Concentration/Curve Summary • Retention Time Window Summary • Chromatograms/Quant Reports ICAL Second Source Calibration Verification (ICV): • Summary Form • Chromatograms/Quant Reports			10/24/94 ↓	
	Daily Analytical Sequence (Run Log, 1° Column) Daily Calibration Verification (DCV): • Summary Form • Chromatograms/Quant Reports Continuing Calibration Verification (CCV): • Summary Form • Chromatograms/Quant Reports			10/24/94 ↓	

CLIENT: LE Carpenter SDG No.: 9409L373		Page Nos From	 To	Check (initials/date) Lab	 Client
	2° Column Standards Data				
	Initial Calibration (ICAL): • Compound/Concentration/Curve Summary • Retention Time Window Summary • Chromatograms/Quant Reports			NA	
	ICAL Second Source Calibration Verification (ICV): • Summary Form • Chromatograms/Quant Reports			NA	
	Daily Analytical Sequence (Run Log, 2° Column)			NA	
	Daily Calibration Verification (DCV): • Summary Form • Chromatograms/Quant Reports			↓	
	Continuing Calibration Verification (CCV): • Summary Form • Chromatograms/Quant Reports			↓	
8	Raw QC Data: Blank and Matrix Spike Data	0059	0071		
	Blank Data	0060	0062		
	• Target Compound Results Form			[illegible] 10/24/94	
	• Chromatogram/Quant Report, 1° column			↓	
	• Chromatogram/Quant Report, 2° column confirmation			NA	
	Blank Spike (in some instances, will be same data presented in standards section for CCV)	0063	0065		
	• Target Compound Results Form			[illegible] 10/24/94	
	• Chromatogram/Quant Report, 1° column			↓	
	Matrix Spike/Matrix Spike Duplicate	0066	0071		
	• Target Compound Results Form			[illegible] 10/24/94	
	• Chromatogram/Quant Report, 1° column			↓	
9	Analysis Logbook Pages	0072	0074	[illegible] 10/24/94	
10	Standards Preparation Records	0075	0080		
	• Surrogate and Target Analyte Spike Solutions			[illegible] 10/24/94	
	• Calibration Standards			[illegible] 10/24/94	
11	Preparation Logs	0081	0082		
	• Sample Prep Records			[illegible] 10/26/94	
	• Screening Records (Logs, Chromatograms)			N/A	
	• % Moisture and/or % Solids Records			↓	
12	Other/Miscellaneous	0083	0084		
	• MDL / IDL Table (circle one)			N/A	
				↓	

COMMENTS: Inserted connected pages - 0002, 0005, 0010, 0011, 0014, 0025, 0028 + 0082 [illegible] 11/3/94

Checked by: (Laboratory)	[signature] Signature	Mary M Ziegler / Data Report Coord 10 Printed Name/Title	10-26-94 Date
Checked by: (Client)	Signature	Printed Name/Title	Date

I. Cover Page (Lab Chron)

Roy F. Weston, Inc. - Lionville Laboratory
602 ANALYTICAL DATA PACKAGE FOR
LE CARPENTER

DATE RECEIVED: 09/24/94 RFW LOT # :9409L373

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MW-25	001	W	94LV0568	09/23/94	N/A	09/29/94
MW-25	001 MS	W	94LV0568	09/23/94	N/A	09/29/94
MW-25	001 MSD	W	94LV0568	09/23/94	N/A	09/30/94
MW-22	002	W	94LV0568	09/23/94	N/A	09/30/94
MW-14S	003	W	94LV0568	09/23/94	N/A	09/29/94
MW-4	004	W	94LV0568	09/23/94	N/A	09/30/94
MW-15S	005	W	94LV0568	09/23/94	N/A	09/29/94
TB-923	006	W	94LV0568	09/23/94	N/A	09/29/94

LAB QC:

TBLKHH	MB1	W	94LV0568	N/A	N/A	09/29/94
TBLKHH	MB1 BS	W	94LV0568	N/A	N/A	09/29/94

mt
11/3/94

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GC Volatiles

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mmz\pas\10-93\table.gcv

III. Case Narrative

ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: LE CARPENTER
RFW #: 9409L373

W.O. #: 06720-018-001-0003-00
Date Received: 09-24-94

GC VOLATILE

The set of samples consisted of six (6) water samples collected on 09-23-94.

The samples were analyzed according to criteria set forth in Method 602 for Selected Aromatic Volatile Organic target compounds on 09-29,30-94.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All samples were packaged and stored as specified in the method protocol.

2. All samples were analyzed within fourteen (14) days of collection, which met holding time criteria.

3. All surrogate recoveries were within laboratory control limits.

4. All blank spike recoveries were within laboratory control limits.

5. All matrix spike recoveries were within laboratory control limits.

6. Sample MW-22 required a 20-fold dilution because it contained high levels of target compounds.

7. The linearity criteria for the initial calibration were met for all analytes with a coefficient of determination (r^2) greater than or equal to 0.992. A minimum five-point linear regression analysis was performed over the concentration range of 1 ug/L to 50 ug/L.

8. All analytes in the Daily Calibration Verification (DCV) and Continuing Calibration Verification (CCV) standards met the continuing calibration criteria versus Initial Calibration during analyses.

J. Peter Hershey, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

11.04.94
Date

0005 mr 11/3/94

sma/gcv/09-373vo.cn

GLOSSARY OF GC VOA DATA

DATA QUALIFIERS

Spreadsheet and Form 1 qualifiers:

U	=	Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
B	=	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
E	=	Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
D or NA	=	Identifies that a compound was diluted below reporting limit, or was reported in another analysis.
I	=	Interference.

Quantitation Report qualifiers:

>RTW	=	Indicates compound is outside a retention time window. This can be used at analyst discretion.
<RL	=	The calculated amount of compound is less than the reporting limit.
NT	=	The compound is either not a target compound for the client, or not a target compound for the detector.

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample numbers to indicate that results are from a diluted analysis.
DF	=	Dilution Factor.
NR	=	Not Required / Not Reported.
SP or Z	=	Indicates Spiked Compound.
NS	=	Not Spiked
C#	=	Confirmation analysis (if # > 1, then it is a confirmation dilution).

IV. Lab Chain of Custody/Work Request

WESTON Analytics Use Only
9409L373

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: LE Carpenter
Est. Final Proj. Sampling Date: 9/23/94
Work Order #: 06720-018-001-0003-00
Project Contact/Phone #: Bob Burns / 908-417-5800
AD Project Manager: Mike Young
QC: CLP Del: CLP TAT: Standard
Date Rec'd: 9-24-94 Date Due: 10/24/94
Account #: LECARP-CLP

Refrigerator #																			
#/Type Container	Liquid											2							
	Solid																		
Volume	Liquid											40 ml							
	Solid																		
Preservatives												HCl							
ANALYSES REQUESTED →		ORGANIC												INORG					
		VOA	BNA	Pest/PCB	Herb	BTEX						Metal	CN						
		WESTON Analytics Use Only																	
						0602													

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	MW-25	X	X	Water	9/23/94	11:10					4								
002	MW-22			"		11:45					2								
003	MW-14S			"		10:20					2								
004	MW-4			"		12:40					2								
005	MW-15S			"		13:20					2								
006	TB-923			"	9/23/94	9:30					2								

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

- Analyze Using Method 602
Full Deliverable

Temp: 6.6°C

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
9/23/94 John Fix	Fed Ex		
Fed Ex	B. [illegible]	9-24-94	10:30 am

Relinquished by	Received by	Date	Time

WESTON Analytics Use Only

Samples were:
1) Shipped X or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-7/91 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# ___ 381-596a

V. GC Volatiles Sample QC/Data Summary

Roy F. Weston, Inc. - Lionville Laboratory
Purgeable Aromatics by GC, Method 602

RFW Batch Number: 9409L373 Client: LE CARPENTER Work Order: 06720018001 Page: 1 Report Date: 11/03/94 12:07

	Cust ID:	MW-25	MW-25	MW-25	MW-22	MW-14S	MW-4
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	20.0	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
aaa-trifluorotoluene		100 %	100 %	92 %	99 %	105 %	86 %
Benzene		1.0 U	100 %	97 %	20 U	1.0 U	1.3
Toluene		1.0 U	97 %	93 %	20 U	1.0 U	3.3
Xylenes (total)		57	61	62	530	1.0 U	5.5
Ethylbenzene		1.0 U	90 %	86 %	140	1.0 U	3.8

	Cust ID:	MW-15S	TB-923	TBLKHH	TBLKHH BS
Sample Information	RFW#:	005	006	94LV0568-MB1	94LV0568-MB1
	Matrix:	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L
aaa-trifluorotoluene		98 %	101 %	73 %	89 %
Benzene		1.0 U	1.0 U	1.0 U	101 %
Toluene		1.0 U	1.0 U	1.0 U	96 %
Xylenes (total)		1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene		1.0 U	1.0 U	1.0 U	92 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

0010

WATER VOLATILE SURROGATE RECOVERY

Lab Name: Roy F. Weston, Inc. Contract: 6720-18-01

Case No.: LE CARPENTER

RFW Lot No.: 9409L373

	CLIENT SAMPLE NO.	S1 (TFT) #	S2 ( ) #	S3 ( ) #	OTHER	TOT OUT
01	MW-25	100				0
02	MW-25MS	100				0
03	MW-25MSD	92				0
04	MW-22	99				0
05	MW-14S	105				0
06	MW-4	86				0
07	MW-15S	98				0
08	TB-923	101				0
09	TBLKHHLV0568-MB1	73				0
10	TBLKHHLV0568-MB1 BS	89				0

QC LIMITS

S1 (TFT) = aaa-trifluorotoluene (70-130)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogates diluted out

0011 11/3/94

3A

WATER VOLATILE MATRIX SPIKE RECOVERY

Lab Name: Roy F. Weston, Inc. Contract: 6720-18-01

Case No.: LE CARPENTER RFW Lot No.: 9409L373

MATRIX Spike - Sample No.: TBLKHHLV0568-MB1 Level:(low/med) LOW

COMPOUND	SPIKE ADDED UG/L	SAMPLE CONCENTRATION UG/L	MS CONCENTRATION UG/L	MS % REC #	QC LIMITS REC
Benzene	10.0	0	10.1	101	70 -130
Toluene	10.0	0	9.59	96	70 -130
Ethylbenzene	10.0	0	9.18	92	70 -130

Column to be used to flag recovery value with an asterisk
* Values outside of QC limits

Spike Recovery: 0 out of 3 outside limits

COMMENTS:

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Roy F. Weston, Inc. Contract: 6720-18-01

Case No.: LE CARPENTER RFW Lot No.: 9409L373-001

MATRIX Spike - Sample No.: MW-25 Level:(low/med) LOW

COMPOUND	SPIKE ADDED UG/L	SAMPLE CONCENTRATION UG/L	MS CONCENTRATION UG/L	MS % REC #	QC LIMITS REC
Benzene	10.0	0	10.0	100	70 -130
Toluene	10.0	0	9.71	97	70 -130
Ethylbenzene	10.0	0	9.02	90	70 -130

COMPOUND	SPIKE ADDED UG/L	MSD CONCENTRATION UG/L	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC
Benzene	10.0	9.68	97	3	20	70 -130
Toluene	10.0	9.25	93	4	20	70 -130
Ethylbenzene	10.0	8.56	86	4	20	70 -130

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 3 outside limits
Spike Recovery: 0 out of 6 outside limits

COMMENTS:

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: Roy F. Weston, Inc. Contract: 6720-18-01

Case No.: LE CARPENTER

Lab File ID: RAW2:IT440542 Lab Sample ID: 94LV0568-MB1

Date Analyzed: 09/29/94 Time Analyzed: 1709

Matrix:(Soil/Water) WATER Level:(low/med) LOW

Instrument ID: 20

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

bmt 11/3/94

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	MW-25	9409L373-001	09/29/94	22:05
02	MW-25MS	9409L373-001S	09/29/94	23:04
03	MW-25MSD	9409L373-001T	09/30/94	00:03
04	MW-22	9409L373-002	09/30/94	02:01
05	MW-14S	9409L373-003	09/29/94	21:06
06	MW-4	9409L373-004	09/30/94	01:03
07	MW-15S	9409L373-005	09/29/94	20:06
08	TB-923	9409L373-006	09/29/94	19:08
09	TBLKHHLV0568-MB1 BS	94LV0568-MB1S	09/29/94	18:08

COMMENTS:

0014 bmt 11/3/94

VI. Sample Data, for each Sample

GC VOLATILES SHEET

CLIENT SAMPLE NO.

MW-25

Lab Name: Roy F. Weston, Inc. Work Order: 06720018001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9409L373-001

Sample wt/vol: 10.0 (g/mL) ML

Lab File ID: IT440646

Level: (low/med) LOW

Date Received: 09/24/94

% Moisture: not dec. _____

Date Analyzed: 09/29/94

Column: (pack/cap) CAP

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
1330-20-7	Xylenes (total)	57	
100-41-4	Ethylbenzene	1.0	U

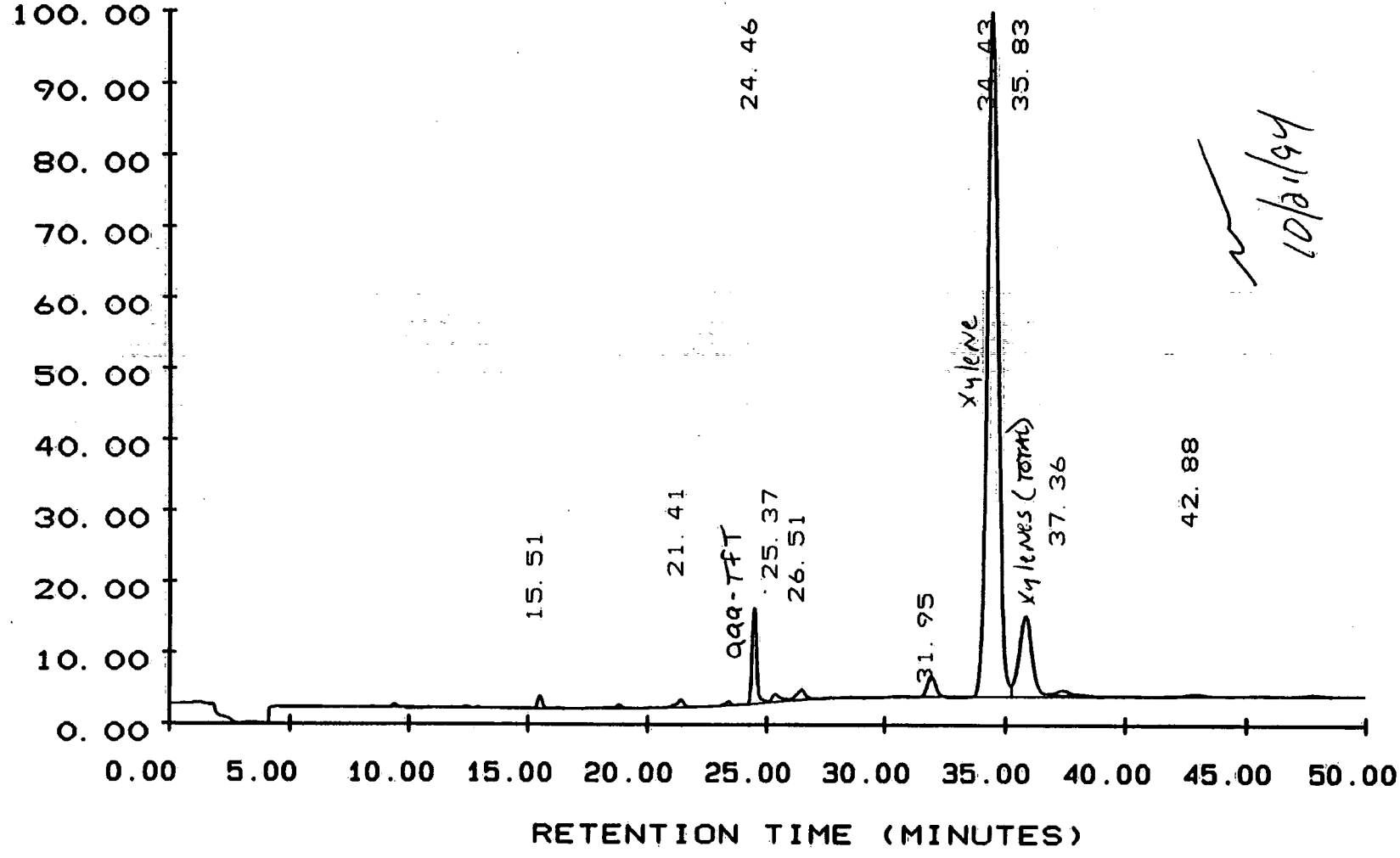
12/88 Rev.

9409L373-001

SAMPLE NO. : 09299420 . 14 INSTRUMENT: 20

TEST NO. : DATE TIME: 09/29/94 22:05:12

METHOD NO. : 20 / BTEX PAGE NO. : 01



10/21/94

Y MAXIMUM: 30128. START TIME: 0.00

Y MINIMUM: 6453. END TIME: 50.00

0017

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 13:30:08

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09299420 .14 INST:20 VIAL:F0 SEQ NUMBER:014
TEST : 0602 DATE-TIME INJECTED : 09/29/94 22:05:12
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/21/94 13:30:08
METHOD: 20 / BTEX REV #: 00014 ANALYST: JAR SAMP RATE: 0.78
CLIENT ID: MW-25 SAMPLE VOL: 10.0ML
CLIENT: LE CARPENTER COLUMN TYPE: 1% SP1000
LAB ID: 9409L373-001 RAW FILE: RAW2:IT440646
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
COLUMN ID: PID CAL ID : TEMP:L050394.20/25

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
007	54167	4106	T	15.511			
				18.678	M	BENZENE	
013	56887	2571	V	21.407			
016	425857	31625	T	24.459	M	aaa-TRIFLUOROTOLUENE	9.982
017	75087	2662	T	25.371	M	TOLUENE	~~0.847~~ < RL
018	91920	3424		26.515			
				28.823	M	ETHYLBENZENE	
022	182556	6795	T	31.947			
024	7033871	227370	T	34.430	M	XYLENE	48.927 } 56.991
025	1073139	26800	T	35.831	M	XYLENE (TOTAL)	8.064 }
026	74586	1530	ST	37.363			
028	54336	886	T	42.878			

10/21/94

GC VOLATILES SHEET

CLIENT SAMPLE NO.

MW-22

Lab Name: Roy F. Weston, Inc. Work Order: 06720018001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9409L373-002

Sample wt/vol: 10.0 (g/mL) ML

Lab File ID: IU440723

Level: (low/med) LOW

Date Received: 09/24/94

% Moisture: not dec. _____

Date Analyzed: 09/30/94

Column: (pack/cap) CAP

Dilution Factor: 20.0

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

CAS NO.	COMPOUND		
71-43-2	Benzene	20	U
108-88-3	Toluene	20	U
1330-20-7	Xylenes (total)	530	
100-41-4	Ethylbenzene	140	

12/88 Rev.

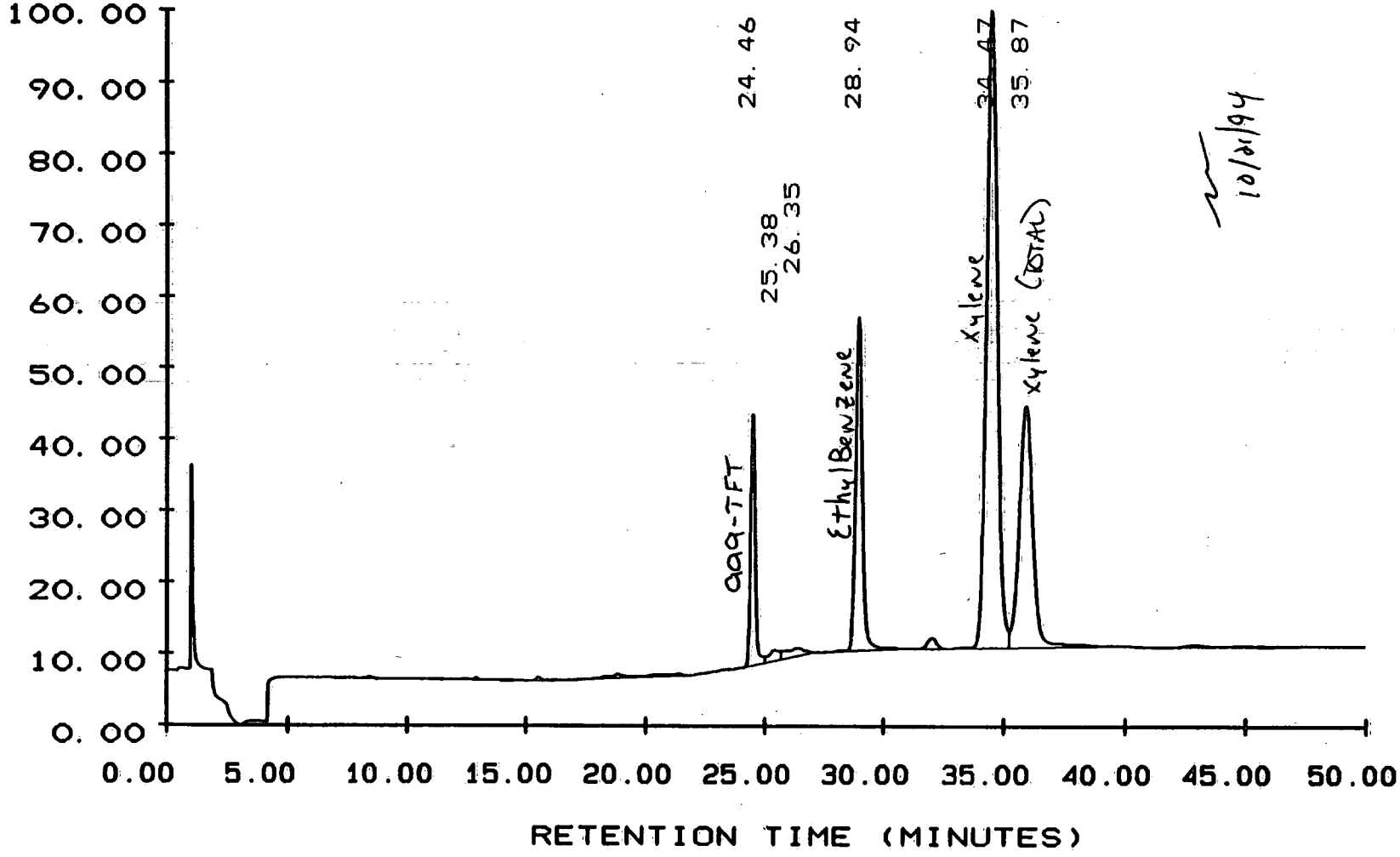
9409L373-002

SAMPLE NO. : 09299420 . 18 INSTRUMENT: 20

TEST NO. : DATE TIME: 09/30/94 02:01:21

METHOD NO. : 20 / BTEX PAGE NO. : 01

0020



Y MAXIMUM: 15562. START TIME: 0.00

Y MINIMUM: 6409. END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 13:34:15

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09299420 .18 INST:20 VIAL:F0 SEQ NUMBER:018
TEST : 0602 DATE-TIME INJECTED : 09/30/94 02:01:21
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/21/94 13:34:15
METHOD: 20 / BTEX REV #: 00014 ANALYST: JAR SAMP RATE: 0.78
CLIENT ID: MW-22 SAMPLE VOL: 10.0ML
CLIENT: LE CARPENTER COLUMN TYPE: 1% SP1000
LAB ID: 9409L373-002 RAW FILE: RAW2:IU440723
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 20.0000
COLUMN ID: PID CAL ID : TEMP:L050394.20/25

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
				18.678	M	BENZENE	
012	424373	31923	T	24.464	M	aaa-TRIFLUOROTOLUENE	198.944
013	44938	1403	T	25.380	M	TOLUENE	~~12.474~~ <RL
014	63156	1013		26.347			
015	864418	42590	T	28.942	M	ETHYLBENZENE	140.936
018	2562323	81601	T	34.470	M	XYLENE	356.359 } 533.48
019	1179507	30933	T	35.866	M	XYLENE (TOTAL)	177.121 }

10/21/94

0021

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 13:29:26

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09299420 .13 INST:20 VIAL:F0 SEQ NUMBER:013
TEST : 0602 DATE-TIME INJECTED : 09/29/94 21:06:13
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/21/94 13:29:26
METHOD: 20 / BTEX REV #: 00014 ANALYST: JAR SAMP RATE: 0.78
CLIENT ID: MW-14S SAMPLE VOL: 10.0ML
CLIENT: LE CARPENTER COLUMN TYPE: 1% SP1000
LAB ID: 9409L373-003 RAW FILE: RAW2:IT440623
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
COLUMN ID: PID CAL ID : TEMP:L050394.20/25

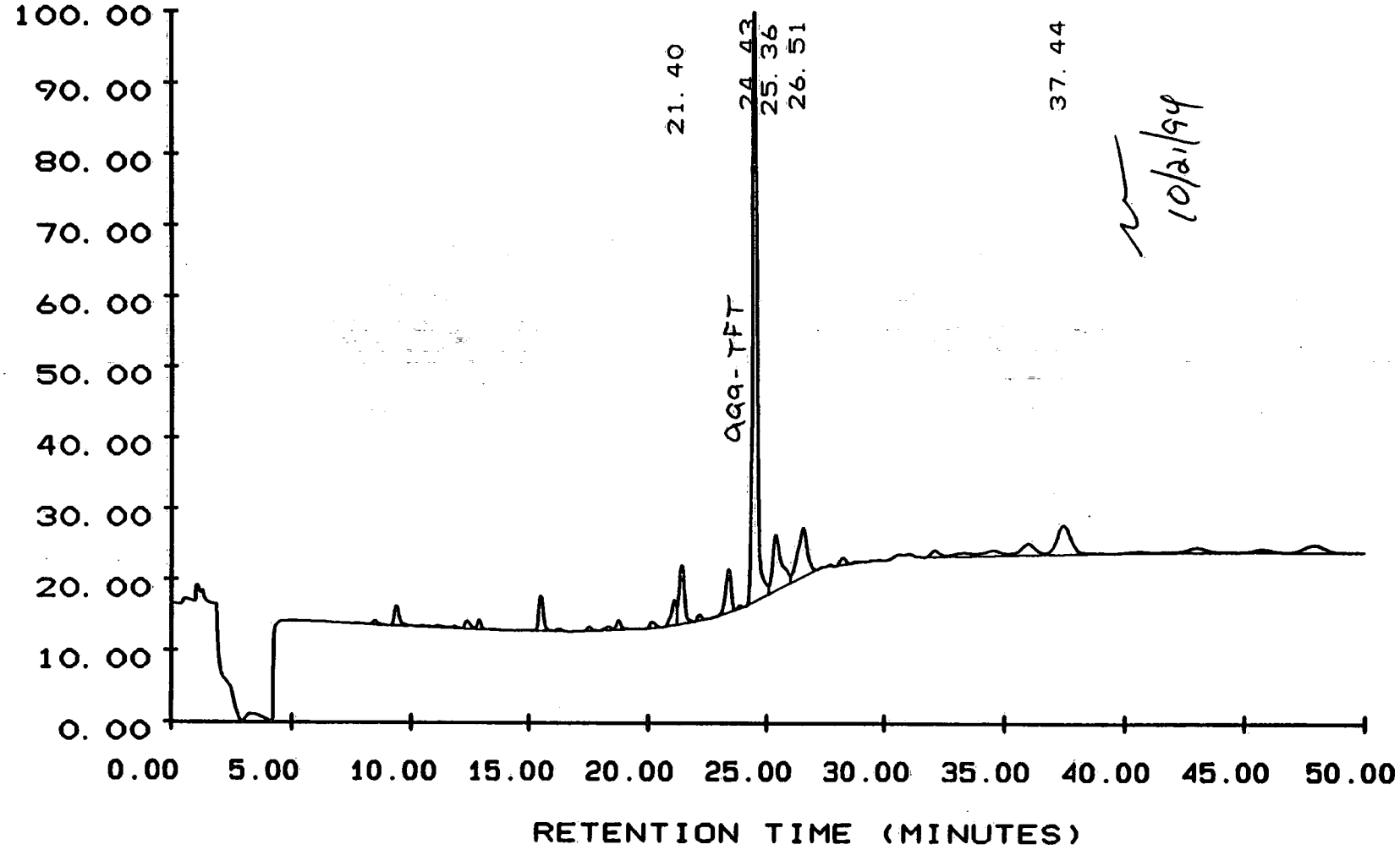
PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
				18.678	M	BENZENE	
015	48617	3285	V	21.395			
019	449634	33248	T	24.435	M	aaa-TRIFLUOROTOLUENE	10.548
020	85058	3176	T	25.356	M	TOLUENE	~~0.920~~ < RL
021	79590	2750		26.513			
				28.823	M	ETHYLBENZENE	
				34.330	M	XYLENE	
				35.530	M	XYLENE (TOTAL)	
029	71479	1656		37.436			

9409L373-003

SAMPLE NO. : 09299420 . 13
TEST NO. :
METHOD NO. : 20 / BTEX

INSTRUMENT: 20
DATE TIME: 09/29/94 21:06:13
PAGE NO. : 01

0023



10/21/94

Y MAXIMUM: 10463.
Y MINIMUM: 6442.

START TIME: 0.00
END TIME: 50.00

GC VOLATILES SHEET

CLIENT SAMPLE NO.

MW-14S

Lab Name: Roy F. Weston, Inc. Work Order: 06720018001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9409L373-003

Sample wt/vol: 10.0 (g/mL) ML

Lab File ID: IT440623

Level: (low/med) LOW

Date Received: 09/24/94

% Moisture: not dec. _____

Date Analyzed: 09/29/94

Column: (pack/cap) CAP

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
1330-20-7	Xylenes (total)	1.0	U
100-41-4	Ethylbenzene	1.0	U

12/88 Rev.

GC VOLATILES SHEET

CLIENT SAMPLE NO.

MW-4

Lab Name: Roy F. Weston, Inc. Work Order: 06720018001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9409L373-004

Sample wt/vol: 10.0 (g/mL) ML

Lab File ID: IU440703

Level: (low/med) LOW

Date Received: 09/24/94

% Moisture: not dec. _____

Date Analyzed: 09/30/94

Column: (pack/cap) CAP

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
71-43-2	Benzene	1.3	
108-88-3	Toluene	3.3	
1330-20-7	Xylenes (total)	5.5	
100-41-4	Ethylbenzene	3.8	

12/88 Rev.

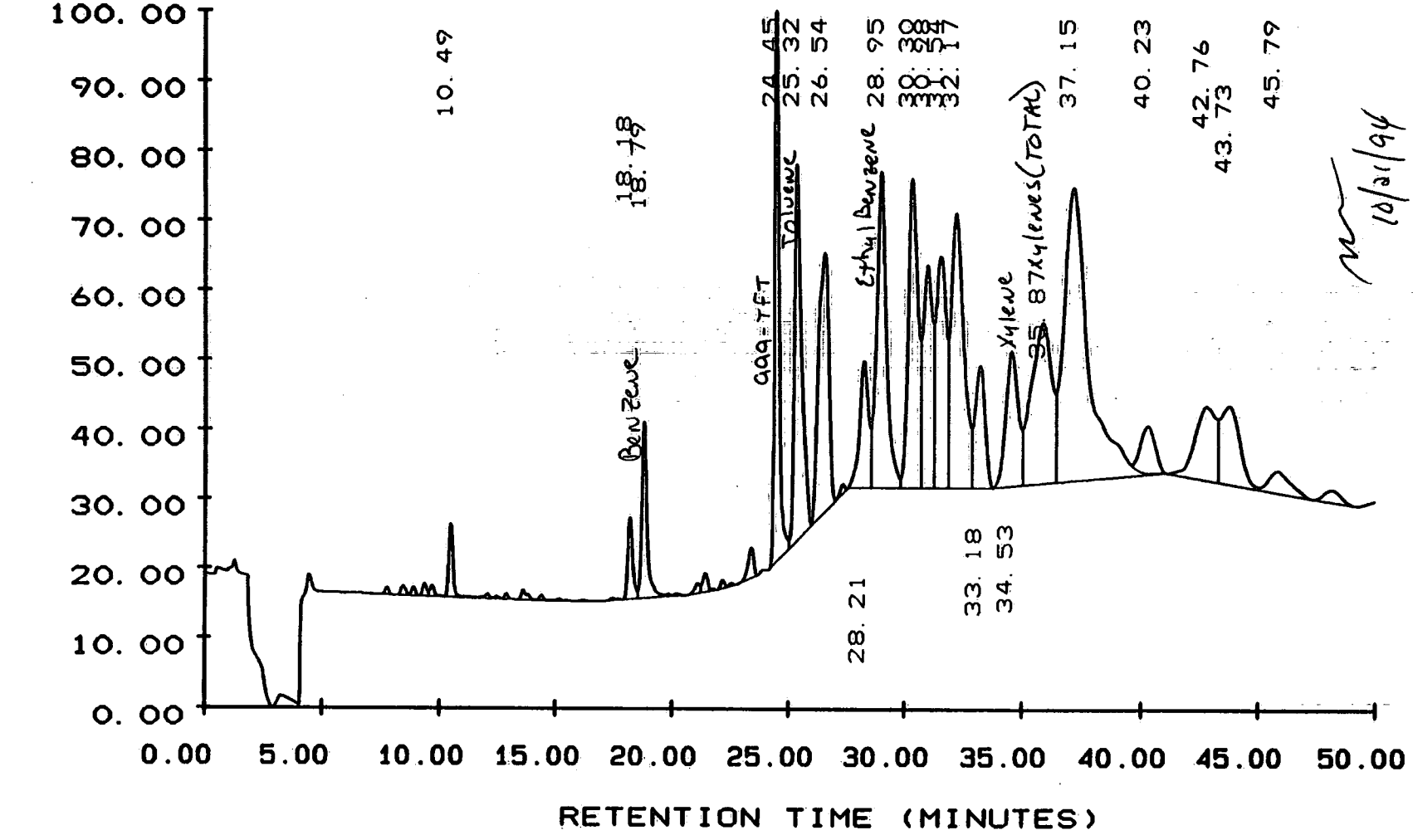
0025

hmt 11/3/94

9409L373-004

SAMPLE NO. : 09299420 . 17
TEST NO. :
METHOD NO. : 20 / BTEX

INSTRUMENT: 20
DATE TIME: 09/30/94 01:02:17
PAGE NO. : 01



Y MAXIMUM: 9927.
Y MINIMUM: 6444.

START TIME: 0.00
END TIME: 50.00

10/21/94

0026

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 15:38:55

PROCESSED BY METHOD DEVELOPMENT
MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09299420 .17 INST:20 VIAL:F0 SEQ NUMBER:017
TEST : 0602 DATE-TIME INJECTED : 09/30/94 01:02:17
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/21/94 15:38:55
METHOD: 20 / BTEX REV #: 00014 ANALYST: HOCKERM SAMP RATE: 0.78
CLIENT ID: MW-~~156~~-4 MT 11/15/94 SAMPLE VOL: 10.0ML
CLIENT: LE CARPENTER COLUMN TYPE: 1% SP1000
LAB ID: 9409L373-004 RAW FILE: RAW2:IU440703
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
COLUMN ID: PID CAL ID : TEMP:L050394.20/25

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
006	44045	3650	T	10.488			
015	59221	4076	T	18.182			
016	137163	8780	T	18.789		BENZENE	1.281
023	366457	27356	T	24.449		aaa-TRIFLUOROTOLUENE	8.570
024	401394	18766	T	25.320		TOLUENE	3.260
025	397630	12934	V	26.535			
027	170513	6371	T	28.208			
028	459345	15822	T	28.952		ETHYLBENZENE	3.806
029	464213	15473	T	30.304			
030	315449	11155	T	30.975			
031	348399	11614	T	31.536			
032	504505	13760	T	32.173			
033	180770	6134	V	33.181			
034	253662	6770	T	34.531		XYLENE	1.757 } 5.457
035	487221	8048	T	35.872		XYLENE (TOTAL)	3.700 }
036	1050887	14677	T	37.146			
037	103253	2354		40.228			
038	231724	3685	T	42.759			
039	221393	3909	T	43.726			
040	73390	1108	V	45.790			

GC VOLATILES SHEET

CLIENT SAMPLE NO.

MW-15S

Lab Name: Roy F. Weston, Inc. Work Order: 06720018001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9409L373-005

Sample wt/vol: 10.0 (g/mL) ML

Lab File ID: IT440606

Level: (low/med) LOW

Date Received: 09/24/94

% Moisture: not dec. _____

Date Analyzed: 09/29/94

Column: (pack/cap) CAP

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
1330-20-7	Xylenes (total)	1.0	U
100-41-4	Ethylbenzene	1.0	U

12/88 Rev.

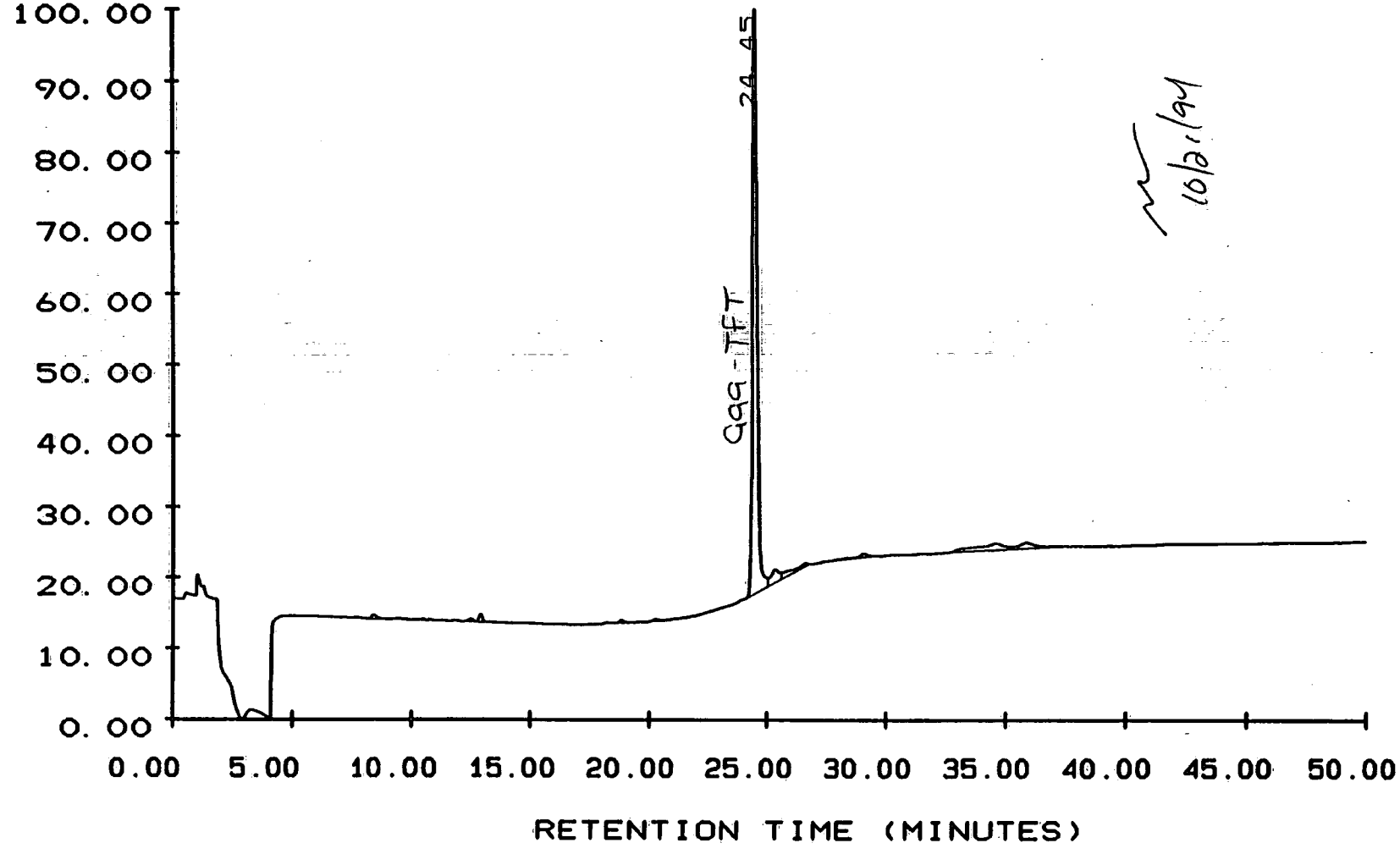
0028 11/3/94

9409L373-005

SAMPLE NO. : 09299420 .12 INSTRUMENT: 20

TEST NO. : DATE TIME: 09/29/94 20:06:56

METHOD NO. : 20 / BTEX PAGE NO. : 01



10/3/94

Y MAXIMUM: 10308. START TIME: 0.00

Y MINIMUM: 6452. END TIME: 50.00

0029

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 13:28:43

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09299420 .12 INST:20 VIAL:F0 SEQ NUMBER:012
TEST : 0602 DATE-TIME INJECTED : 09/29/94 20:06:56
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/21/94 13:28:43
METHOD: 20 / BTEX REV #: 00014 ANALYST: JAR SAMP RATE: 0.78
CLIENT ID: ~~TB-923~~ MW-15S MT 11/3/94 SAMPLE VOL: 10.0ML
CLIENT: LE CARPENTER COLUMN TYPE: 1% SP1000
LAB ID: 9409L373-005 RAW FILE: RAW2:IT440606
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
COLUMN ID: PID CAL ID : TEMP:L050394.20/25

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
				18.678	M	BENZENE	
009	418806	31571	T	24.453	M	aaa-TRIFLUOROTOLUENE	9.815
				25.201	M	TOLUENE	
				28.823	M	ETHYLBENZENE	
				34.330	M	XYLENE	
				35.530	M	XYLENE (TOTAL)	

10/21/94

CLIENT SAMPLE NO.

TB-923

GC VOLATILES SHEET

Lab Name: Roy F. Weston, Inc. Work Order: 06720018001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9409L373-006

Sample wt/vol: 10.0 (g/mL) ML

Lab File ID: IT440586

Level: (low/med) LOW

Date Received: 09/24/94

% Moisture: not dec. _____

Date Analyzed: 09/29/94

Column: (pack/cap) CAP

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
1330-20-7	Xylenes (total)	1.0	U
100-41-4	Ethylbenzene	1.0	U

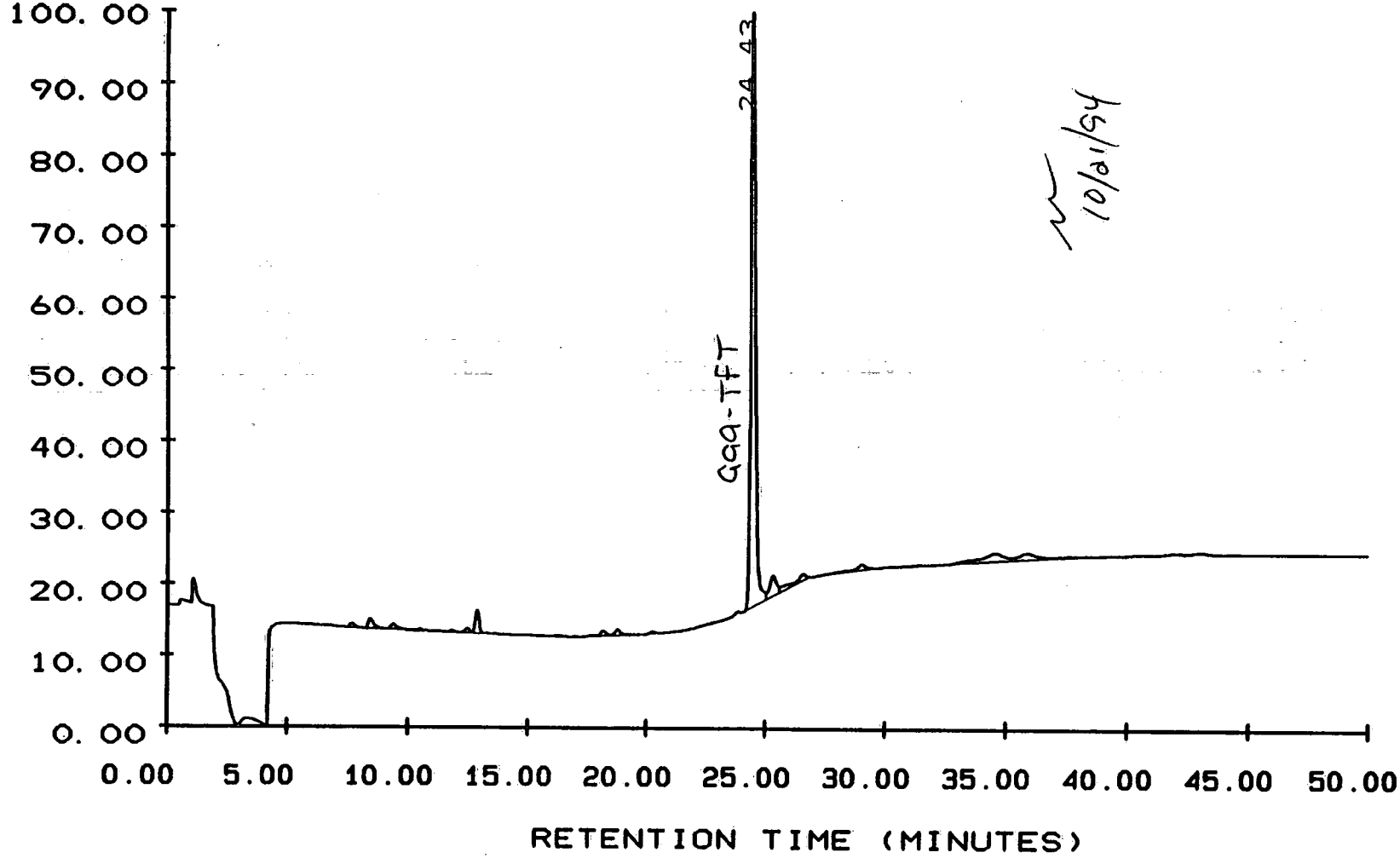
12/88 Rev.

9409L373-006

SAMPLE NO. : 09299420 . 11
TEST NO. :
METHOD NO. : 20 / BTEX

INSTRUMENT: 20
DATE TIME: 09/29/94 19:08:04
PAGE NO. : 01

0032



10/01/94

Y MAXIMUM: 10391.
Y MINIMUM: 6437.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 13:27:32

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09299420 .11 INST:20 VIAL:F0 SEQ NUMBER:011
TEST : 0602 DATE-TIME INJECTED : 09/29/94 19:08:04
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/21/94 13:27:32
METHOD: 20 / BTEX REV #: 00014 ANALYST: JAR SAMP RATE: 0.78
CLIENT ID: TB-923 mt 11/3/94 SAMPLE VOL: 10.0ML
CLIENT: LE CARPENTER COLUMN TYPE: 1% SP1000
LAB ID: 9409L373-006 RAW FILE: RAW2:IT440586
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
COLUMN ID: PID CAL ID : TEMP:L050394.20/25

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
				18.678	M	BENZENE	
012	431298	32662	T	24.434	M	aaa-TRIFLUOROTOLUENE	10.112
				25.201	M	TOLUENE	
				28.823	M	ETHYLBENZENE	
				34.330	M	XYLENE	
				35.530	M	XYLENE (TOTAL)	

10/21/94

VII. Calibration Standard Data

Addendum
Multilevel Calibration Method Report

Calibration curve statistics are presented on the Multilevel Calibration Method report. This report includes the type of calibration performed, the file reference (i.e., 06209411.06) of the calibration standards used, the slope and intercept of the curve for each analyte, and the curve fit statistics. The column labeled as "CORR COEFF" presents the coefficient of determination (r^2) for each analyte. Our laboratory acceptance criteria are based on the correlation coefficient (r) being at least 0.996. Therefore, the minimum acceptable value for "CORR COEFF" (r^2) on the Multilevel Calibration Method report is 0.992.

FORM6GC

WESTON ANALYTICS - LIONVILLE LABORATORY

GC VOLATILES - ICAL PREPARATION AND DATA CHECKLIST

INITIAL CALIBRATION CURVE (ICAL)
INSTRUMENT #: 20 Column ID: 1% SP 1000
GC Conditions: 45°C for 3min; 8°C/min to 220°C
Detectors:
FID (Flame Ionization Detector) PID (Photoionization Detector)
HECD (Hall Electrolytic Conductivity Detector)

Analyte list included in ICAL (EPA or SW846 Method #):

EPA :	601	602	501	502.2	503	504
SW846:	8010	8020		8021	8030	8015

ICAL QC EVALUATION FOR LIMS METHOD# BTEX composed of individual methods _____/_____/_____/_____.
ICAL Range (ug/L): 1 to 50
Standard ID#'s: 3053-61-04; 3053-53-08
Curve generated using peak height / peak area
Linearity Criteria met for all analytes [CORR COEFF(r^2) > 0.992]. Y or N

If N then list non-compliant analytes:

Number of points used to generate the curve: 5

Second source ICAL concentration verification (ICV);
Source: Supelco Standard ID: 3053-50-05
Within QC Limits: Y or N
If N then list non-compliant analytes:

Sample Calculation:

Based upon COEFFICIENTS section of MULTILEVEL CALBRATION METHOD sheet.
i.e.

PEAK NAME	a	b	COEFFICIENTS c	d
BENZENE			8.594E-04	-1.677E+01

where c = slope of .0008549, d = y intercept of -16.77
Using y = mx + b will yield the concentration "y" of the analyte, whereas;
m = c ; x = area or height of analyte (from quantitation report);
and b = d

(1) Unit Leader Review: [signature] Date: 10/24/94

Roy F. Weston, Inc. - Lionville Laboratory DISPLAY

001 - METHOD NUMBER : BTEX
002 - METHOD TITLE : 10.0ML,1% SP1000,PID
003 - ENTERED BY : George Jarvis
004 - DATE-TIME ENTERED : 09/30/94 13:53:42
005 - MODIFIED BY : Matt Hocker
006 - DATE-TIME MODIFIED : 10/21/94 11:51:32
007 - # TIMES MODIFIED : 012
008 - CALIBRATION SMP : 05039420.04
009 - # TIMES CALIBRATED : 2
010 - CALIBRATION DATE : 05/04/94
011 - USER PROGRAMS : USER:MULTIV10
012 - PURGE : TOP
013 - TEST :

DATA COLLECTION PARAMETERS

014 - END COLLECTION TIME : 50.00 015 - SAMPLING RATE : 8

TIMED EVENTS

TIME	EVENT	VALUE	DESCRIPTION

DATA ANALYSIS PARAMETERS

016 - BASELINE SENSITIVITY : 50.00 017 - AREA SENSITIVITY : 50
018 - REJECTION MINIMUM : 40000
019 - CALCULATION TYPE : E 020 - PEAK AREA HEIGHT : A

021 - PEAK MATCH WINDOW : 0.040 022 - % MATCH WINDOW : 1.5

023 - RF UPDATE : N 024 - RET TIME UPDATE : Y
025 - UNKNOWN RF TREATMENT : 0.00000
026 - RRT DISPLAY UNITS : MINUTES 027 - CONCENTRATION UNITS : PPB

TIMED EVENTS

	TIME	EVENT	VALUE	DESCRIPTION
028 -	0.100	PKDET	OFF	DISABLE PEAK DETECTION
029 -	7.000	PKDET	ON	ENABLE PEAK DETECTION
030 -	8.000	SKIM	ON	
031 -	27.500	BASE	A	
032 -	31.000	BASE	A	

REFERENCE PEAKS

033 - UNRETAINED PK RT : 0.000
034 - % REF RT WINDOW : 10.0

REF PK NO.	REF PK RT	END TIME	REF PK REL VALUE

COMPONENT TABLE

	NAME	GROUP	RET TIME	CAL WT	RESP FACT
035 -	BENZENE	M	18.678	20.0000	1.000000
036 -	aaa-TRIFLUOROTOLUENE	M	24.370	20.0000	1.000000
037 -	TOLUENE	M	25.201	20.0000	1.000000

038 - ETHYLBENZENE	M	28.823	20.0000	1.000000
039 - XYLENE	M	34.330	20.0000	1.000000
040 - XYLENE (TOTAL)	M	35.530	20.0000	1.000000

GROUP NAME TABLE

GROUP NAME	GROUP NUMBER

REPORT PARAMETERS

041 - REPORT PARAMETERS :
042 - PLOTTER :

043 - START-TIME	: 0.00	044 - END TIME	: 50.00
045 - %Y MINIMUM	: 0.00	046 - %Y MAXIMUM	: 100.00

MULTILEVEL CALIBRATION METHOD BTEX 10/21/94 13:18:17
1ST ORDER EXTERNAL STANDARD CALIBRATION USING PEAK AREA

TEST:

LEVEL	REPLICATE 1	REPLICATE 2	REPLICATE 3
A	09299420.01		
B	09299420.02		
C	09299420.03		
D	09299420.04		
E	09299420.05		

PEAK NAME	COEFFICIENTS a	b	c	d	SD OF FIT	CORR COEFF
BENZENE			7.506E-06	2.516E-01	0.40436	0.99968
aaa-TRIFLUOROTOLUENE			2.378E-05	-1.444E-01	0.21456	0.99991
TOLUENE			7.395E-06	2.914E-01	0.49857	0.99951
ETHYLBENZENE			8.001E-06	1.306E-01	0.43415	0.99963
XYLENE			6.957E-06	-8.122E-03	0.46128	0.99958
XYLENE (TOTAL)			7.448E-06	7.110E-02	0.82967	0.99966

Roy F. Weston, Inc. - Lionville Laboratory

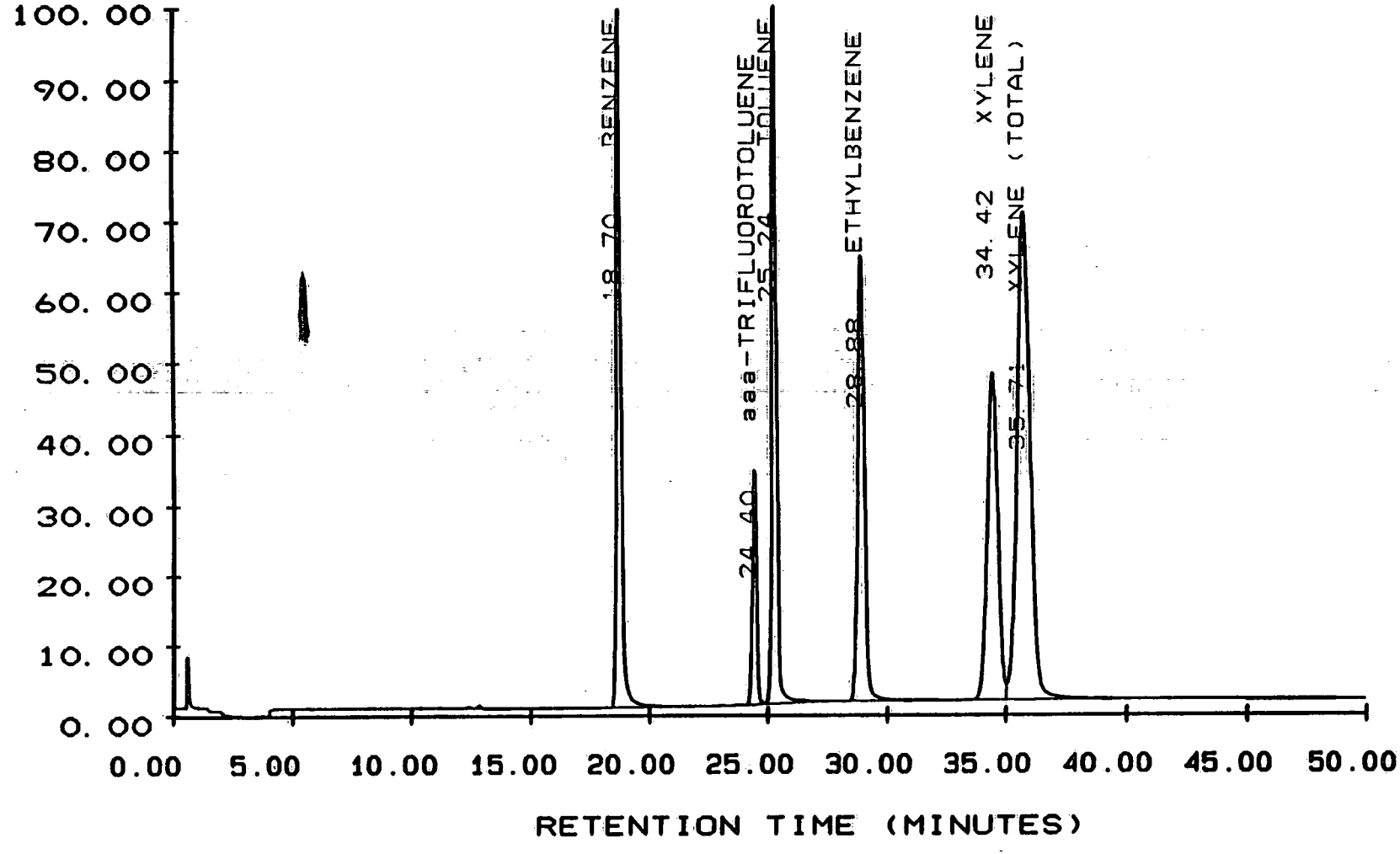
METHOD NUMBER	: BTEX
METHOD TITLE	: 10.0ML,1% SP1000,P
USER PROGRAMS	: USER:MULTIV10
ORDER OF FIT	: 1
NUMBER OF LEVELS	: 5
REPORT PARAMETERS	:
NO.OF TIMES MODIFIED	: 2
NO.OF TIMES CALIBRAT	: 6

#	COMPONENT NAME	LEVEL A	LEVEL B	LEVEL C	LEVEL D	LEVEL E
1	BENZENE	50.0000	20.0000	10.0000	5.0000	1.0000
2	aaa-TRIFLUOROTOLUENE	50.0000	20.0000	10.0000	5.0000	1.0000
3	TOLUENE	50.0000	20.0000	10.0000	5.0000	1.0000
4	ETHYLBENZENE	50.0000	20.0000	10.0000	5.0000	1.0000
5	XYLENE	50.0000	20.0000	10.0000	5.0000	1.0000
6	XYLENE (TOTAL)	100.0000	40.0000	20.0000	10.0000	2.0000

STD BTEX 50

SAMPLE NO. : 09299420 .01
TEST NO. :
METHOD NO. : 20 / BTEX

INSTRUMENT: 20
DATE TIME: 09/29/94 09:16:59
PAGE NO. : 01



Y MAXIMUM: 57861.
Y MINIMUM: 6498.

START TIME: 0.00
END TIME: 50.00

0041

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 13:18:52

MULTILEVEL EXTERNAL STANDARD

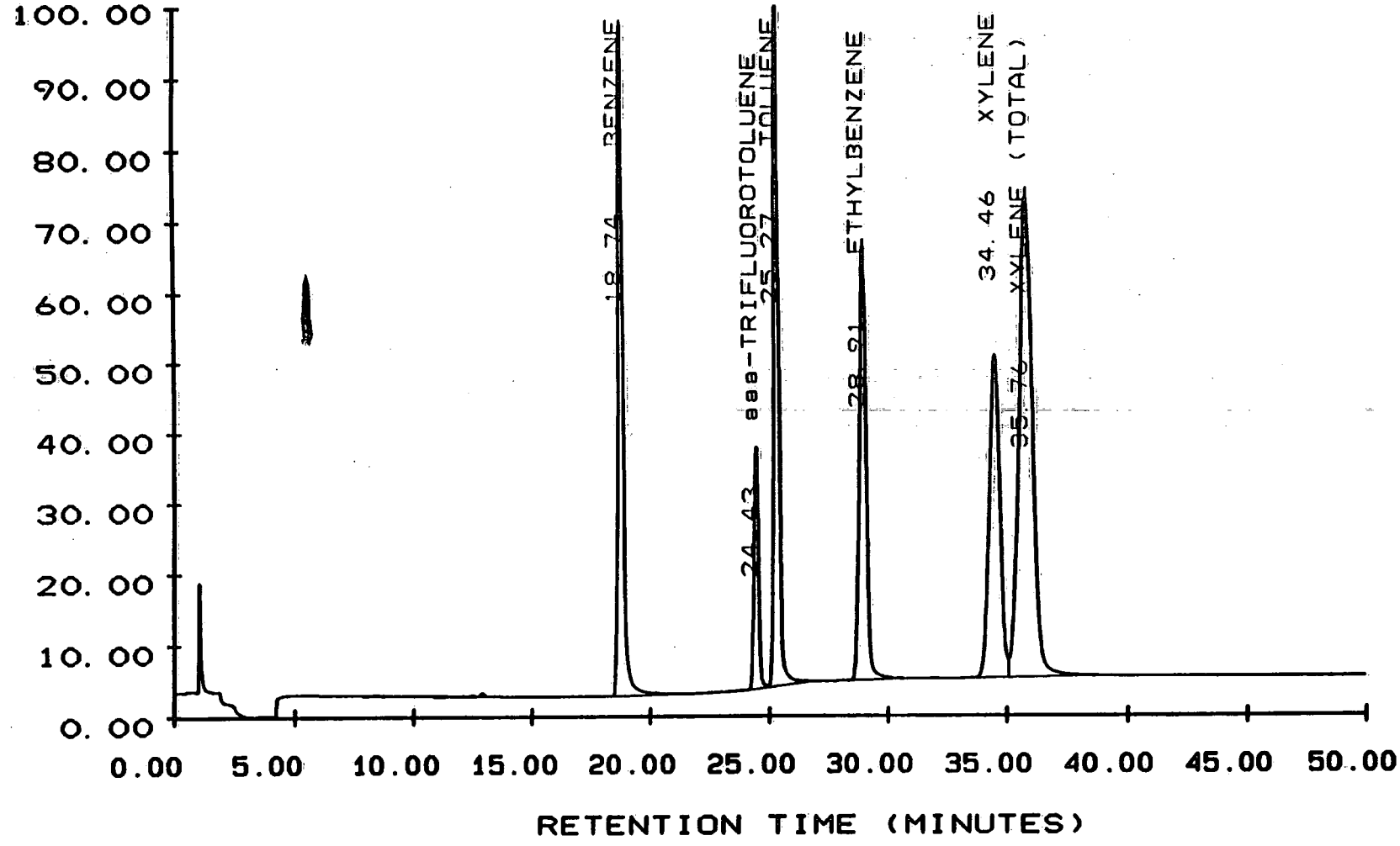
SAMPLE: 09299420 .01 INST:20 VIAL:F0 SEQ NUMBER:001
TEST : DATE-TIME INJECTED : 09/29/94 09:16:59
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/21/94 13:18:52
METHOD: 20 / BTEX REV #: 00014 ANALYST: JAR SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 10.0ML
CLIENT: COLUMN TYPE: 1% SP1000
LAB ID: STD BTEX 50 RAW FILE: RAW2:IT440354
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
COLUMN ID: PID CAL ID : TEMP:L050394.20/25

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
011	6655745	502803		18.695	M	BENZENE	50.210
013	2110811	169828	T	24.402	M	aaa-TRIFLUOROTOLUENE	50.051
014	6756333	502917	T	25.238	M	TOLUENE	50.254
016	6260429	322360		28.880	M	ETHYLBENZENE	50.220
018	7220621	237124	T	34.422	M	XYLENE	50.226
019	13472283	353659		35.715	M	XYLENE (TOTAL)	100.413

STD BTEX 20

SAMPLE NO. : 09299420 .02
TEST NO. :
METHOD NO. : 20 / BTEX

INSTRUMENT: 20
DATE TIME: 09/29/94 10:16:10
PAGE NO. : 01



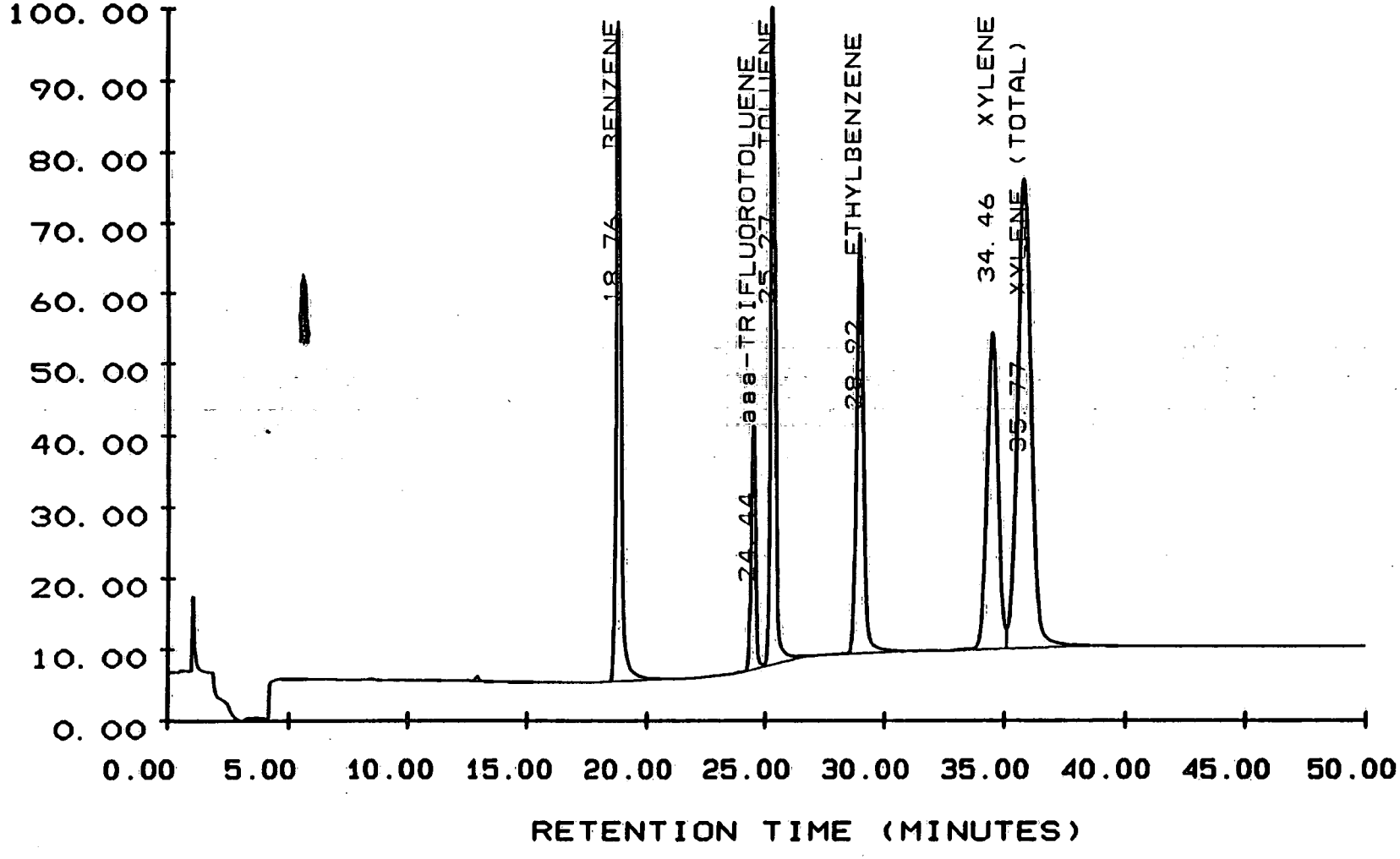
Y MAXIMUM: 26217.
Y MINIMUM: 6414.

START TIME: 0.00
END TIME: 50.00

STD BTEX 10

SAMPLE NO. : 09299420 .03
TEST NO. :
METHOD NO. : 20 / BTEX

INSTRUMENT: 20
DATE TIME: 09/29/94 11:15:13
PAGE NO. : 01



Y MAXIMUM: 16373.
Y MINIMUM: 6430.

START TIME: 0.00
END TIME: 50.00

0045

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 13:19:38

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09299420 .02 INST:20 VIAL:F0 SEQ NUMBER:002
TEST : DATE-TIME INJECTED : 09/29/94 10:16:10
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/21/94 13:19:38
METHOD: 20 / BTEX REV #: 00014 ANALYST: JAR SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 10.0ML
CLIENT: COLUMN TYPE: 1% SP1000
LAB ID: STD BTEX 20 RAW FILE: RAW2:IT440382
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
COLUMN ID: PID CAL ID : TEMP:L050394.20/25

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
009	2564729	186396		18.737	M	BENZENE	19.502
010	838558	66920	T	24.433	M	aaa-TRIFLUOROTOLUENE	19.797
011	2584751	188997		25.268	M	TOLUENE	19.406
012	2419955	121398		28.911	M	ETHYLBENZENE	19.493
014	2807965	90464	T	34.459	M	XYLENE	19.527
015	5245261	134494		35.763	M	XYLENE (TOTAL)	39.138

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 13:20:17

MULTILEVEL EXTERNAL STANDARD

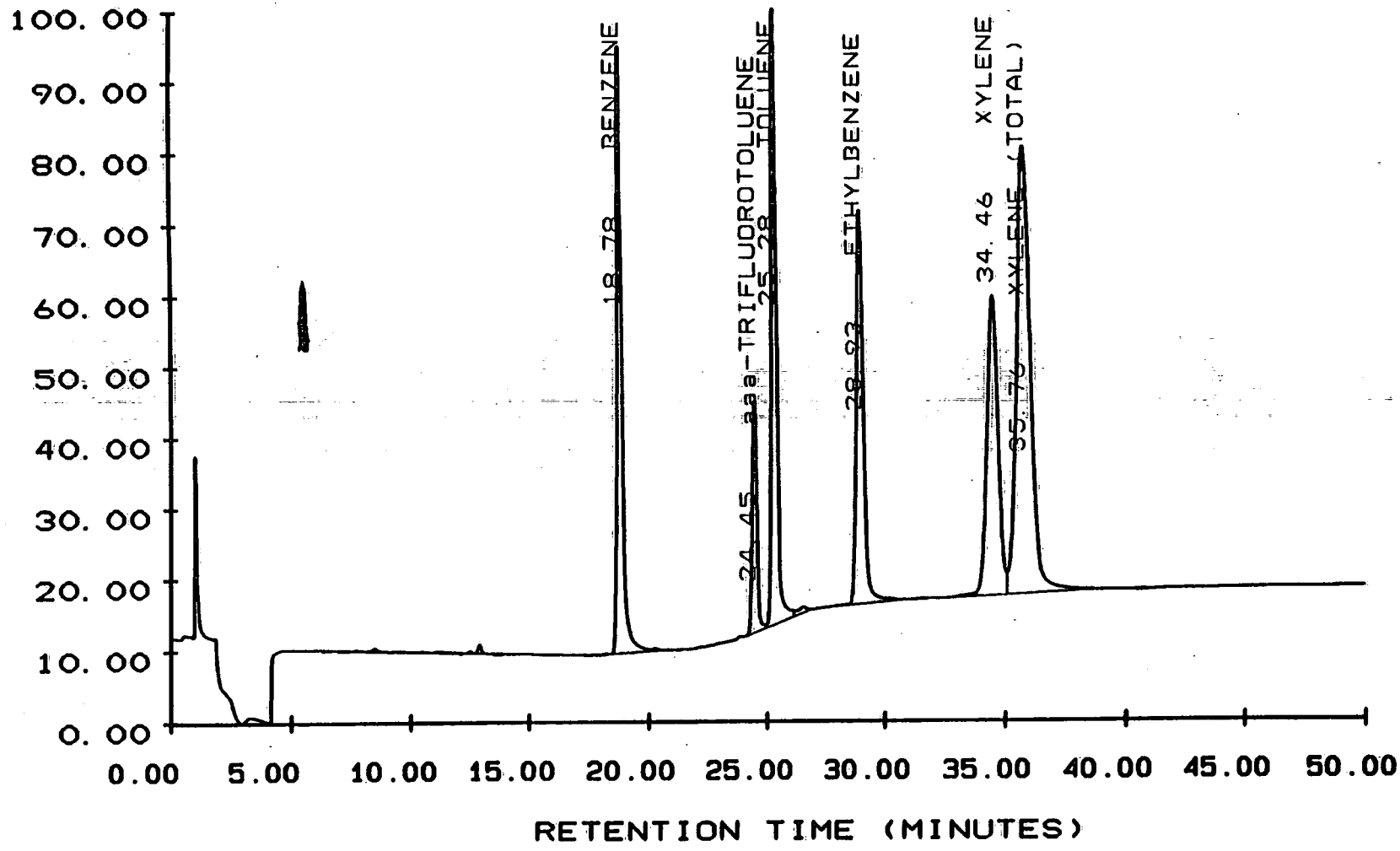
SAMPLE: 09299420 .03 INST:20 VIAL:F0 SEQ NUMBER:003
TEST : DATE-TIME INJECTED : 09/29/94 11:15:13
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/21/94 13:20:17
METHOD: 20 / BTEX REV #: 00014 ANALYST: JAR SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 10.0ML
CLIENT: COLUMN TYPE: 1% SP1000
LAB ID: STD BTEX 10 RAW FILE: RAW2:IT440407
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
COLUMN ID: PID CAL ID : TEMP:L050394.20/25

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
006	1267519	90626		18.763	M	BENZENE	9.766
007	425092	33705	T	24.439	M	aaa-TRIFLUOROTOLUENE	9.964
008	1270079	91286	T	25.273	M	TOLUENE	9.684
010	1197927	58667		28.918	M	ETHYLBENZENE	9.715
012	1386139	44052	T	34.461	M	XYLENE	9.635
013	2587905	65613		35.767	M	XYLENE (TOTAL)	19.346

STD BTEX 5

SAMPLE NO. : 09299420 .04
TEST NO. :
METHOD NO. : 20 / BTEX

INSTRUMENT: 20
DATE TIME: 09/29/94 12:14:15
PAGE NO. : 01



Y MAXIMUM: 11919.
Y MINIMUM: 6461.

START TIME: 0.00
END TIME: 50.00

0047

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 13:21:07

MULTILEVEL EXTERNAL STANDARD

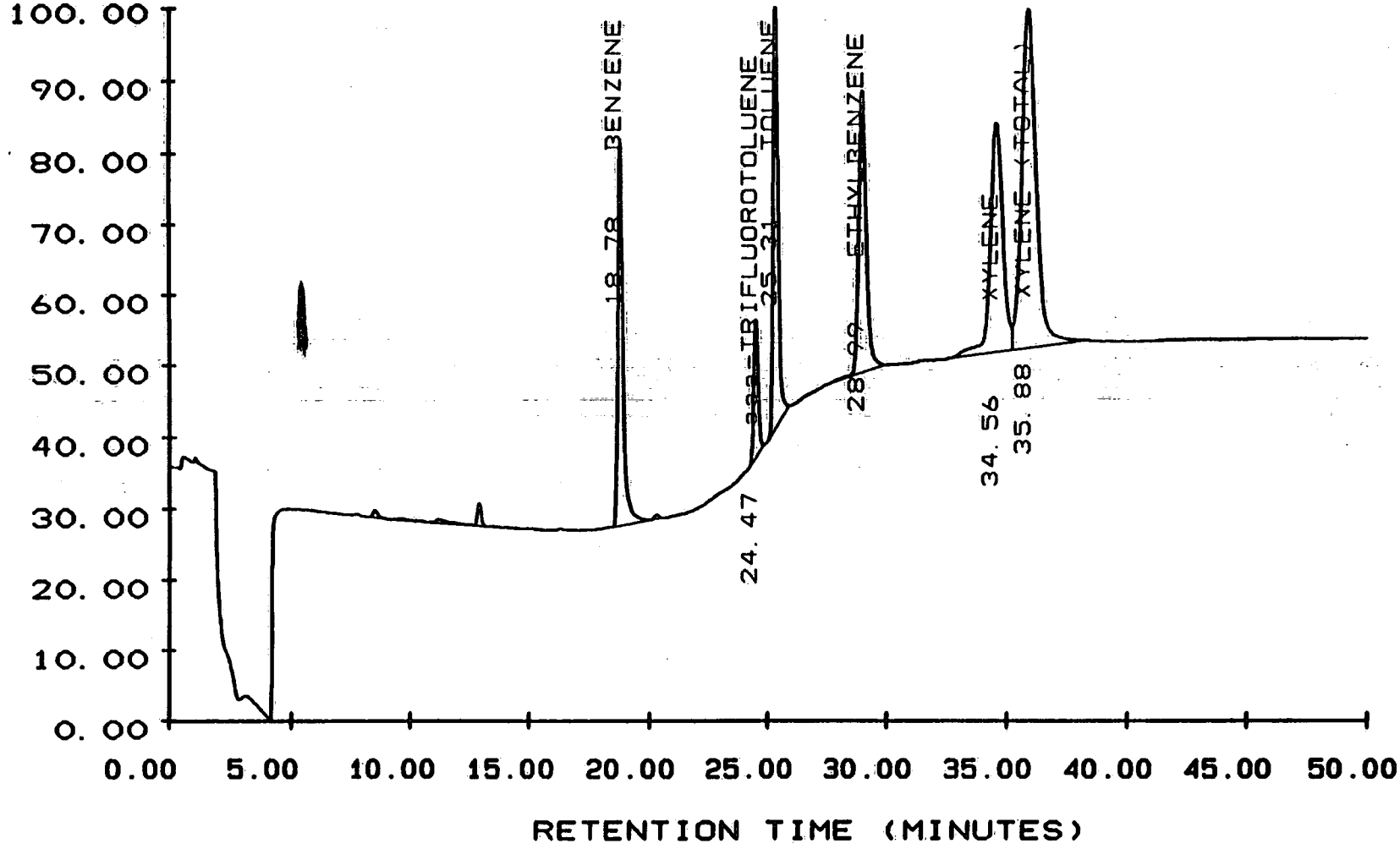
SAMPLE: 09299420 .04 INST:20 VIAL:F0 SEQ NUMBER:004
TEST :
COLLECTION TIME : 49.93
METHOD: 20 / BTEX REV #: 00014
CLIENT ID:
CLIENT:
LAB ID: STD BTEX 5
SAMPLE WT : % MOISTURE :
COLUMN ID: PID

DATE-TIME INJECTED : 09/29/94 12:14:15
DATE-TIME PROCESSED : 10/21/94 13:21:07
ANALYST: JAR SAMP RATE: 0.78
SAMPLE VOL: 10.0ML
COLUMN TYPE: 1% SP1000
RAW FILE: RAW2:IT440427
DILUTION FACTOR : 1.0000
CAL ID : TEMP:L050394.20/25

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
008	659139	46318	T	18.779	M	BENZENE	5.199
010	228309	17673	T	24.448	M	aaa-TRIFLUOROTOLUENE	5.285
011	671594	47079	T	25.283	M	TOLUENE	5.258
013	633101	30233		28.929	M	ETHYLBENZENE	5.196
015	743258	23093	T	34.460	M	XYLENE	5.163
016	1377011	34322		35.765	M	XYLENE (TOTAL)	10.327

STD BTEX 1

SAMPLE NO. : 09299420 .05 INSTRUMENT: 20
TEST NO. : DATE TIME: 09/29/94 13:13:23
METHOD NO. : 20 / BTEX PAGE NO. : 01



Y MAXIMUM: 8286. START TIME: 0.00
Y MINIMUM: 6450. END TIME: 50.00

0049

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 13:22:13

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09299420 .05 INST:20 VIAL:F0 SEQ NUMBER:005
TEST : DATE-TIME INJECTED : 09/29/94 13:13:23
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/21/94 13:22:13
METHOD: 20 / BTEX REV #: 00014 ANALYST: JAR SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 10.0ML
CLIENT: COLUMN TYPE: 1% SP1000
LAB ID: STD BTEX 1 RAW FILE: RAW2:IT440449
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
COLUMN ID: PID CAL ID : TEMP:L050394.20/25

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
005	142767	9775	V	18.784	M	BENZENE	1.323
007	43552	3485	V	24.473	M	aaa-TRIFLUOROTOLUENE	0.891
008	150101	10742		25.313	M	TOLUENE	1.401
009	155430	7254		28.989	M	ETHYLBENZENE	1.374
010	209835	5926	T	34.560	M	XYLENE	1.452
011	364403	8695		35.878	M	XYLENE (TOTAL)	2.785

FORM7GC

GC Volatiles Continuing Calibration

RFW: 9409L373
Work Order Number: 06720-018-001-0
Client Name: LE CARPENTER
Date of Init. Calibration: 09/29/94

Instrument Number: 20
Column Used: 1% SP1000
Matrix: WATER
True Concentration: 10 (ppb)

MIX NO.	GC SAMPLE ID	DESCRIPTION	DATE/TIME ANALYZED
1	09299420.07	STD ICV	09/29/94 15:11:45

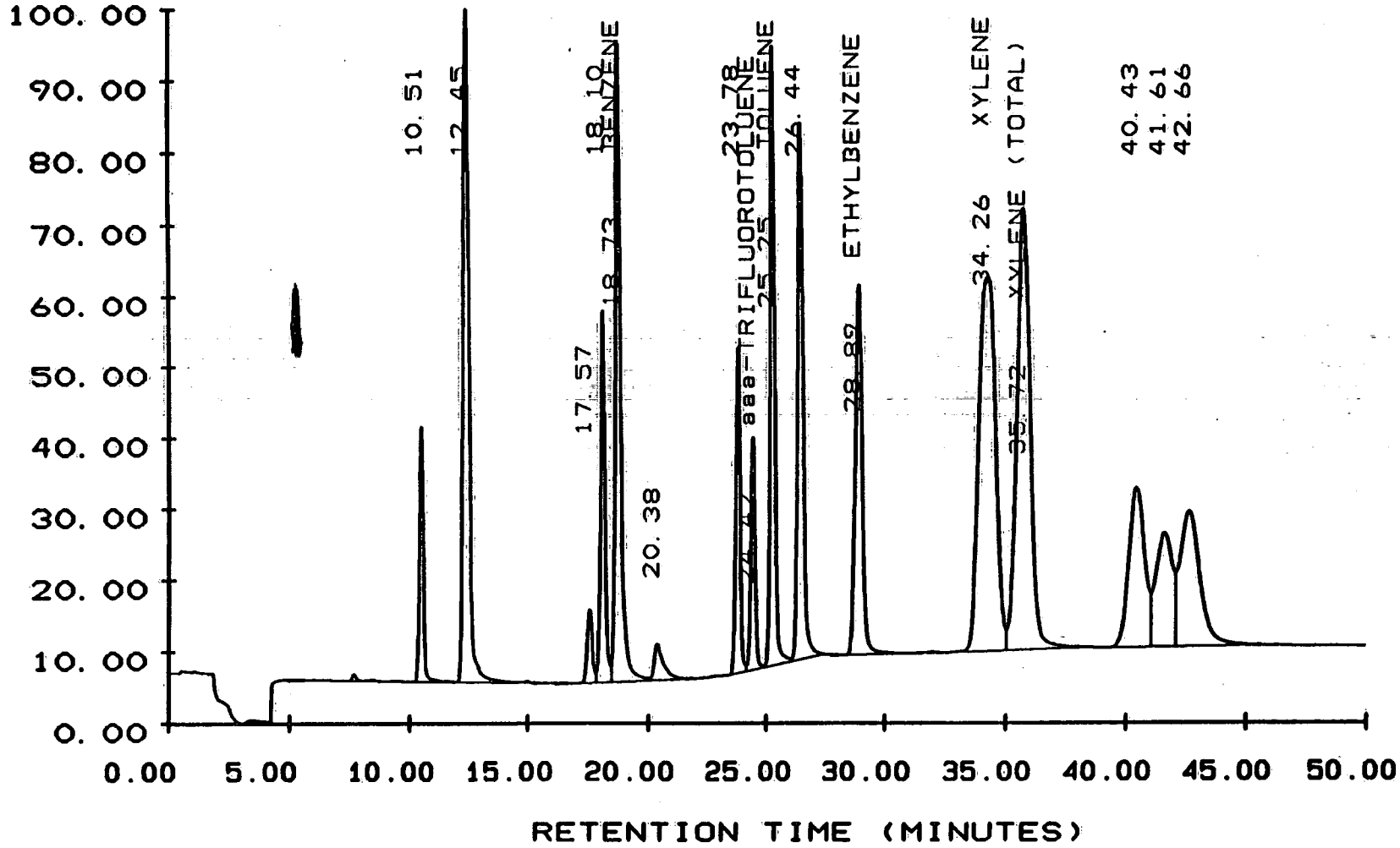
COMPOUND NAME	MIX	RT#	RT WINDOW	CON(ppb)	% REC	QC LIMITS(ppb)	QC LIMITS(%
Benzene	01	18.731	18.65-18.81	9.70	97.1	8.0 - 12.0	80.0 - 120.
Toluene	01	25.246	25.17-25.32	8.51	85.2	8.0 - 12.0	80.0 - 120.
Xylenes (total)	01	34.260	34.07-34.46	16.99	85.0	16.0 - 24.0	80.0 - 120.
Ethylbenzene	01	28.892	28.82-28.97	8.19	81.9	8.0 - 12.0	80.0 - 120.

* - outside QC limits NR - not reported
* - outside QC limits NR - not reported

STD ICV

SAMPLE NO. : 09299420 .07
TEST NO. :
METHOD NO. : 20 / BTEX

INSTRUMENT: 20
DATE TIME: 09/29/94 15:11:45
PAGE NO. : 01



Y MAXIMUM: 16117.
Y MINIMUM: 6426.

START TIME: 0.00
END TIME: 50.00

0052

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 13:23:38

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09299420 .07 INST:20 VIAL:F0 SEQ NUMBER:007
TEST : DATE-TIME INJECTED : 09/29/94 15:11:45
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/21/94 13:23:38
METHOD: 20 / BTEX REV #: 00014 ANALYST: JAR SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 10.0ML
CLIENT: COLUMN TYPE: 1% SP1000
LAB ID: STD ICV RAW FILE: RAW2:IT440494
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
COLUMN ID: PID CAL ID : TEMP:L050394.20/25

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
003	395845	34333	T	10.506			
004	1542011	90908	T	12.447			
006	145512	9899	T	17.573			
007	640071	50391	T	18.102			
008	1259947	86168	T	18.731	M	BENZENE	9.709
009	134030	4900	V	20.375			
010	540393	44001	T	23.782			
011	397148	31403	T	24.416	M	aaa-TRIFLUOROTOLUENE	9.300
012	1112591	83726	T	25.246	M	TOLUENE	8.519
013	1156783	72708		26.441			
014	1007302	50392		28.892	M	ETHYLBENZENE	8.190
016	2443677	51065	T	34.260	M	XYLENE	16.993
017	2310785	60106		35.721	M	XYLENE (TOTAL)	17.282
018	1007311	21605	T	40.435			
019	737689	15375	T	41.607			
020	1071885	18310		42.657			

FORM7GC

GC Volatiles Continuing Calibration

RFW: 9409L373
Work Order Number: 06720-018-001-0
Client Name: LE CARPENTER
Date of Init. Calibration: 09/29/94

Instrument Number: 20
Column Used: 1% SP1000
Matrix: WATER
True Concentration: 10 (ppb)

MIX NO.	GC SAMPLE ID	DESCRIPTION	DATE/TIME ANALYZED
1	09299420.08	STD DCV BTEX	09/29/94 16:10:50
2	09299420.20	STD CCV BTEX	09/30/94 03:59:53

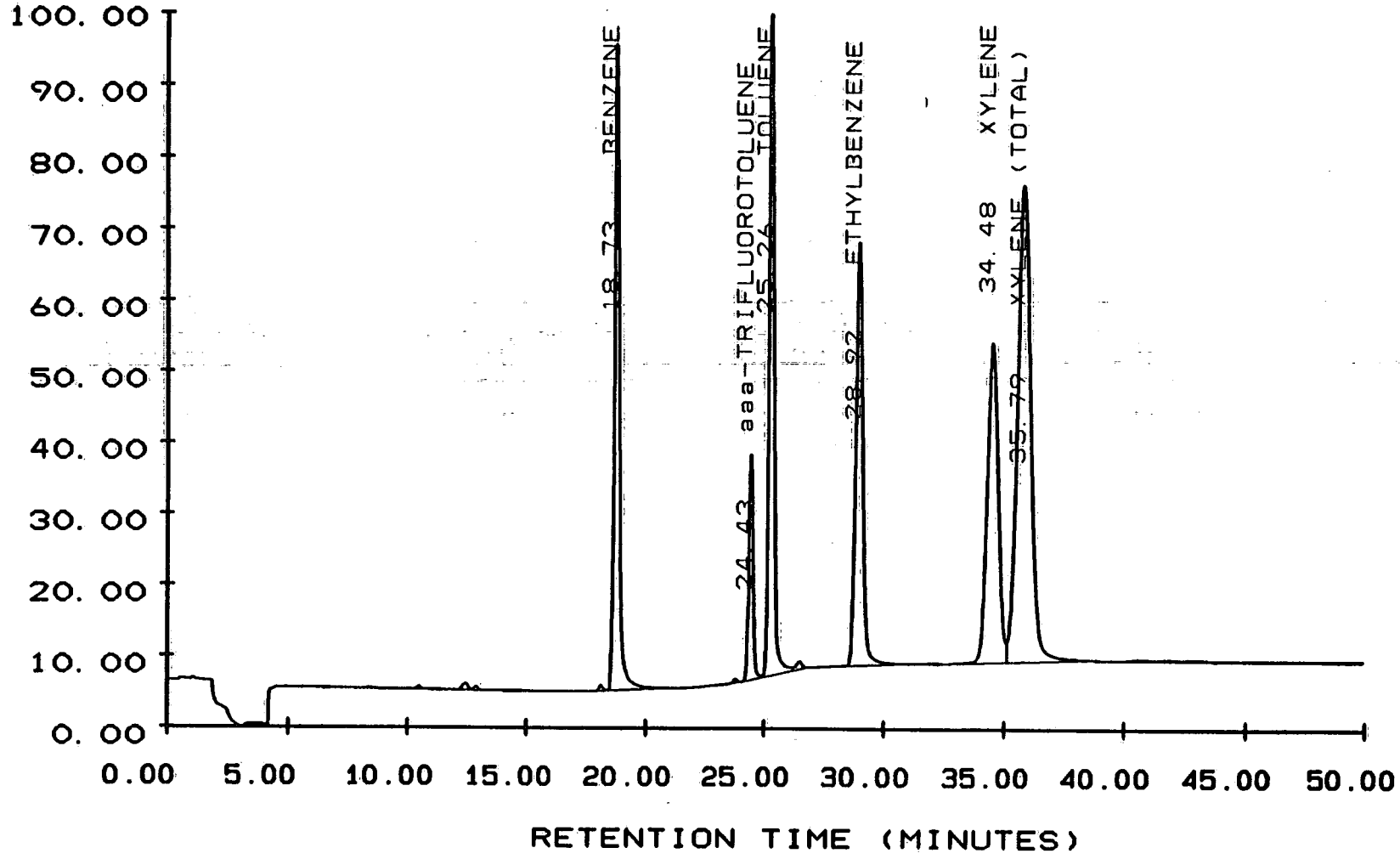
COMPOUND NAME	MIX	RT#	RT WINDOW	CON(ppb)	% REC	QC LIMITS(ppb)	QC LIMITS(%)
Benzene	01	18.731	18.65-18.81	10.21	102.1	8.0 - 12.0	80.0 - 120.0
Benzene	02	18.732	18.65-18.81	9.82	98.3	8.0 - 12.0	80.0 - 120.0
Toluene	01	25.264	25.19-25.34	10.22	102.2	8.0 - 12.0	80.0 - 120.0
Toluene	02	25.256	25.18-25.33	9.89	98.9	8.0 - 12.0	80.0 - 120.0
Xylenes (total)	01	34.482	34.29-34.68	9.52	95.2	8.0 - 12.0	80.0 - 120.0
Xylenes (total)	02	34.455	34.26-34.65	10.43	104.3	8.0 - 12.0	80.0 - 120.0
Ethylbenzene	01	28.921	28.84-29.00	10.29	102.9	8.0 - 12.0	80.0 - 120.0
Ethylbenzene	02	28.906	28.83-28.98	9.47	94.8	8.0 - 12.0	80.0 - 120.0

* - outside QC limits NR - not reported

STD DCV BTEX

SAMPLE NO. : 09299420 .08
TEST NO. :
METHOD NO. : 20 / BTEX

INSTRUMENT: 20
DATE TIME: 09/29/94 16:10:50
PAGE NO. : 01



Y MAXIMUM: 16911.
Y MINIMUM: 6420.

START TIME: 0.00
END TIME: 50.00

0055

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 13:24:39

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09299420 .08 INST:20 VIAL:F0 SEQ NUMBER:008
TEST : 0600 DATE-TIME INJECTED : 09/29/94 16:10:50
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/21/94 13:24:39
METHOD: 20 / BTEX REV #: 00014 ANALYST: JAR SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 10.0ML
CLIENT: COLUMN TYPE: 1% SP1000
LAB ID: STD DCV BTEX RAW FILE: RAW2:IT440520
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
COLUMN ID: PID CAL ID : TEMP:L050394.20/25

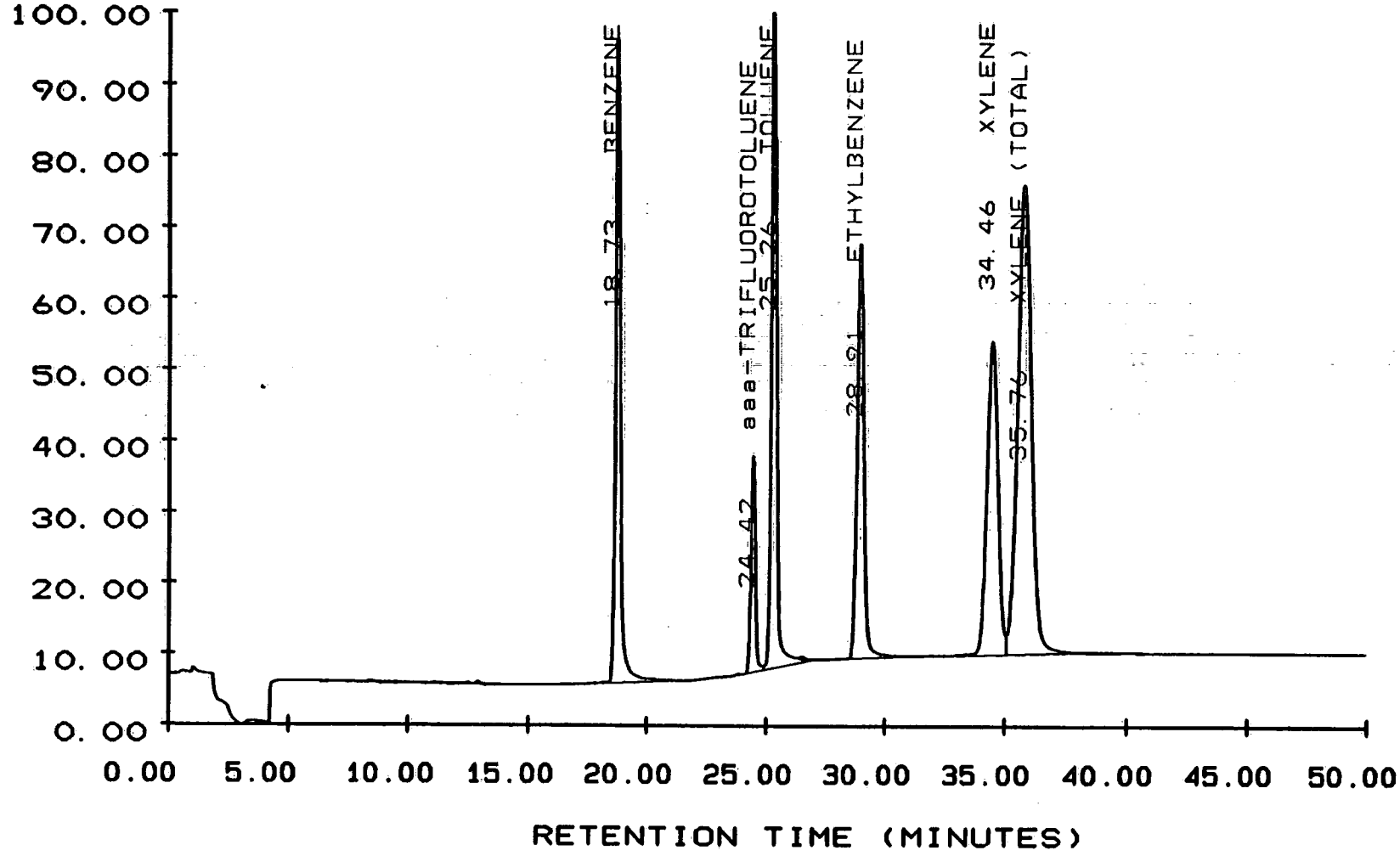
PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
008	1327241	94401		18.731	M	BENZENE	10.214
010	418496	32997	T	24.428	M	aaa-TRIFLUOROTOLUENE	9.807
011	1343263	96747	T	25.264	M	TOLUENE	10.225
013	1269979	62345		28.921	M	ETHYLBENZENE	10.292
015	1500199	47203	T	34.482	M	XYLENE	10.429
016	2765479	70175		35.793	M	XYLENE (TOTAL)	20.668

10/21/94

STD CCV BTEX

SAMPLE NO. : 09299420 .20
TEST NO. :
METHOD NO. : 20 / BTEX

INSTRUMENT: 20
DATE TIME: 09/30/94 03:59:53
PAGE NO. : 01



Y MAXIMUM: 16272.
Y MINIMUM: 6404.

START TIME: 0.00
END TIME: 50.00

0057

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 13:35:46

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09299420 .20 INST:20 VIAL:F0 SEQ NUMBER:020
TEST : 0602 DATE-TIME INJECTED : 09/30/94 03:59:53
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/21/94 13:35:46
METHOD: 20 / BTEX REV #: 00014 ANALYST: JAR SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 10.0ML
CLIENT: COLUMN TYPE: 1% SP1000
LAB ID: STD CCV BTEX RAW FILE: RAW2:IU440763
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
COLUMN ID: PID CAL ID : TEMP:L050394.20/25

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
006	1275905	88778	V	18.732	M	BENZENE	9.829
007	378648	29809	T	24.420	M	aaa-TRIFLUOROTOLUENE	8.860
008	1298211	90306	T	25.256	M	TOLUENE	9.892
010	1168435	57460		28.906	M	ETHYLBENZENE	9.479
012	1370121	43481	T	34.455	M	XYLENE	9.524
013	2551617	65125		35.761	M	XYLENE (TOTAL)	19.076

10/21/94

VIII. Raw QC Data: Blank and Matrix Spike Data

GC VOLATILES SHEET

CLIENT SAMPLE NO.

TBLKHH

Lab Name: Roy F. Weston, Inc. Work Order: 06720018001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 94LV0568-MB1

Sample wt/vol: 10.0 (g/mL) ML

Lab File ID: IT440542

Level: (low/med) LOW

Date Received: 09/29/94

% Moisture: not dec. _____

Date Analyzed: 09/29/94

Column: (pack/cap) CAP

Dilution Factor: 1.00

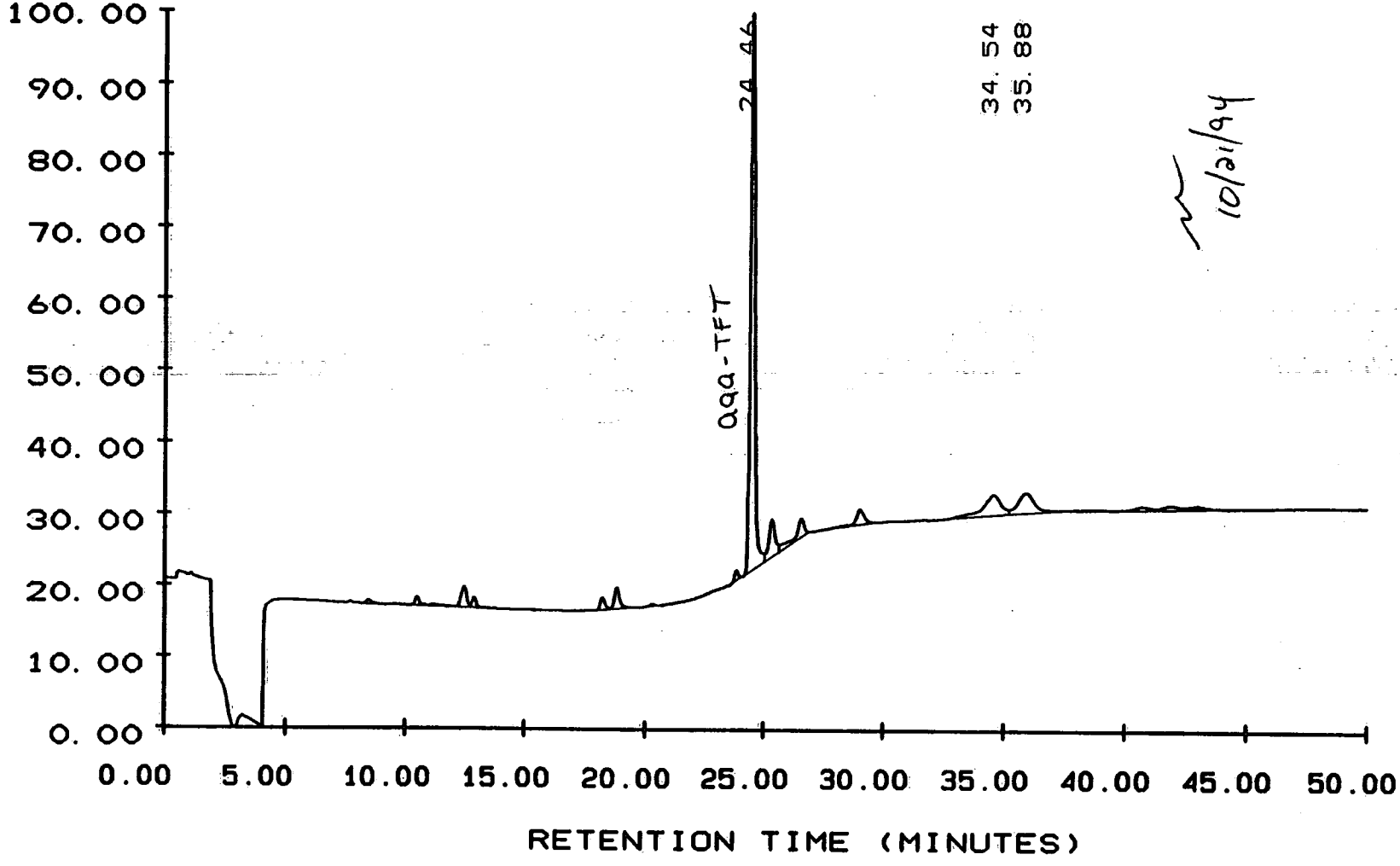
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	
71-43-2	Benzene	1.0	U
108-88-3	Toluene	1.0	U
1330-20-7	Xylenes (total)	1.0	U
100-41-4	Ethylbenzene	1.0	U

12/88 Rev.

94LV0568-MB1

SAMPLE NO. : 09299420 .09
TEST NO. :
METHOD NO. : 20 / BTEX

INSTRUMENT: 20
DATE TIME: 09/29/94 17:09:38
PAGE NO. : 01



10/21/94

Y MAXIMUM: 9518.
Y MINIMUM: 6473.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 13:25:35

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09299420 .09 INST:20 VIAL:F0 SEQ NUMBER:009
TEST : 0602 DATE-TIME INJECTED : 09/29/94 17:09:38
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/21/94 13:25:35
METHOD: 20 / BTEX REV #: 00014 ANALYST: JAR SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 10.0ML
CLIENT: COLUMN TYPE: 1% SP1000
LAB ID: 94LV0568-MB1 RAW FILE: RAW2:IT440542
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
COLUMN ID: PID CAL ID : TEMP:L050394.20/25

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
				18.678	M	BENZENE	
011	311704	23564	T	24.458	M	aaa-TRIFLUOROTOLUENE	7.268
				25.201	M	TOLUENE	
				28.823	M	ETHYLBENZENE	
015	48592	873	T	34.537	M	XYLENE	~~0.330~~ CRL
016	40778	856		35.883	M	XYLENE (TOTAL)	~~0.375~~ CRL

10/21/94

GC VOLATILES SHEET

CLIENT SAMPLE NO.

TBLKHHMS

Lab Name: Roy F. Weston, Inc. Work Order: 06720018001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 94LV0568-MB1 BS

Sample wt/vol: 10.0 (g/mL) ML

Lab File ID: IT440568

Level: (low/med) LOW

Date Received: 09/29/94

% Moisture: not dec. _____

Date Analyzed: 09/29/94

Column: (pack/cap) CAP

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
71-43-2	Benzene	1.0	SP
108-88-3	Toluene		SP
1330-20-7	Xylenes (total)		U
100-41-4	Ethylbenzene		SP

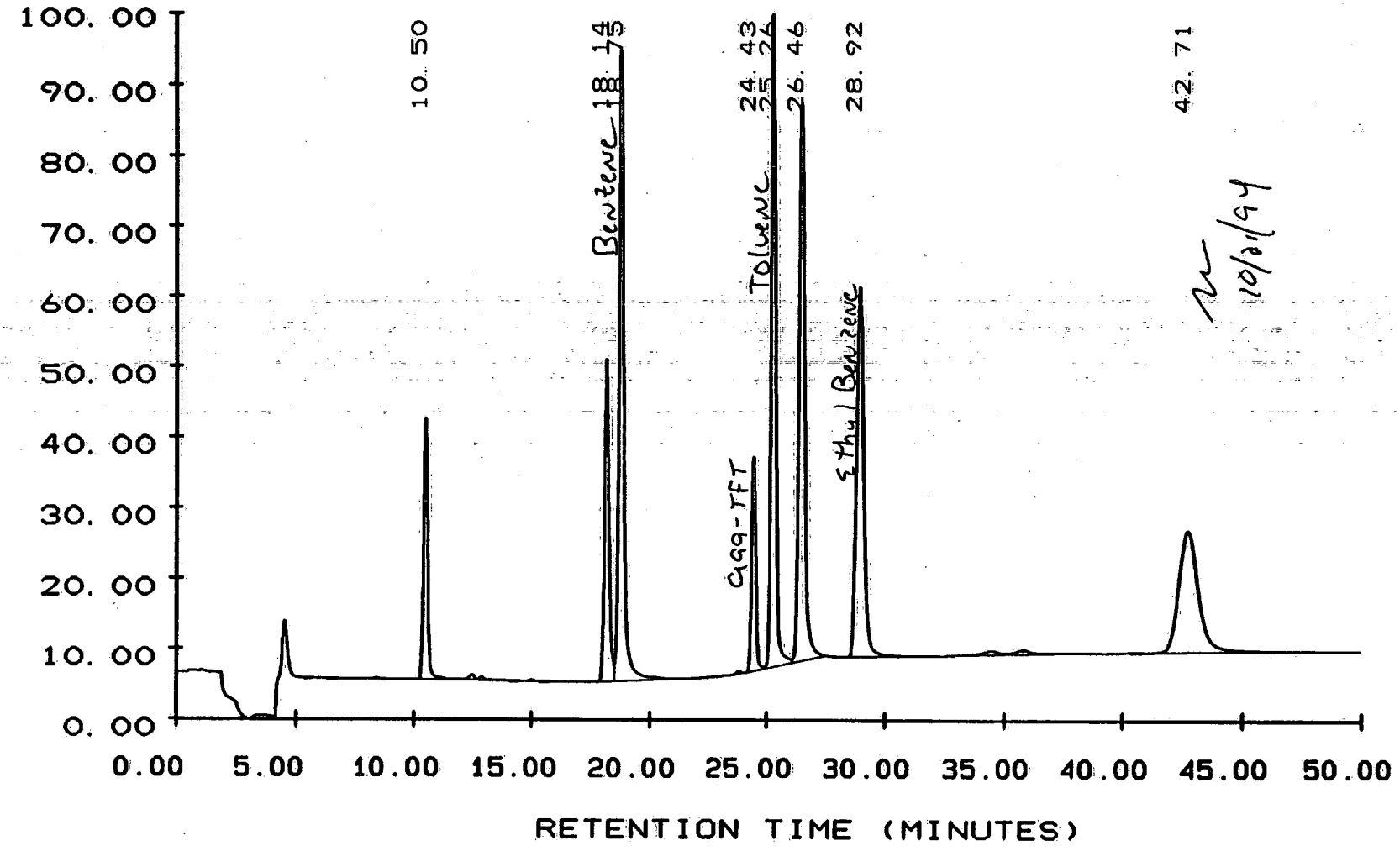
SP: SPIKE COMPOUND

12/88 Rev.

94LV0568-MB1S

SAMPLE NO. : 09299420 . 10
TEST NO. :
METHOD NO. : 20 / BTEX

INSTRUMENT: 20
DATE TIME: 09/29/94 18:08:47
PAGE NO. : 01



Y MAXIMUM: 16646.
Y MINIMUM: 6432.

START TIME: 0.00
END TIME: 50.00

00064

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 13:26:33

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09299420 .10 INST:20 VIAL:F0 SEQ NUMBER:010
TEST : 0602 DATE-TIME INJECTED : 09/29/94 18:08:47
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/21/94 13:26:33
METHOD: 20 / BTEX REV #: 00014 ANALYST: JAR SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 10.0ML
CLIENT: COLUMN TYPE: 1% SP1000
LAB ID: 94LV0568-MB1MS RAW FILE: RAW2:IT440568
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
COLUMN ID: PID CAL ID : TEMP:L050394.20/25

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
003	437686	37514	T	10.501			
007	617027	46430	T	18.137			
008	1308685	90923		18.754	M	BENZENE	10.075
010	380938	30732	T	24.433	M	aaa-TRIFLUOROTOLUENE	8.914
011	1257155	94016	T	25.262	M	TOLUENE	9.588
012	1298403	80509		26.456			
013	1131461	53555		28.919	M	ETHYLBENZENE	9.183
				34.330	M	XYLENE	
				35.530	M	XYLENE (TOTAL)	
017	997914	17577		42.712			

10/21/94

GC VOLATILES SHEET

CLIENT SAMPLE NO.

MW-25MS

Lab Name: Roy F. Weston, Inc. Work Order: 06720018001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9409L373-001 MS

Sample wt/vol: 10.0 (g/mL) ML

Lab File ID: IT440669

Level: (low/med) LOW

Date Received: 09/24/94

% Moisture: not dec. _____

Date Analyzed: 09/29/94

Column: (pack/cap) CAP

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
71-43-2	Benzene	61	SP
108-88-3	Toluene		SP
1330-20-7	Xylenes (total)		
100-41-4	Ethylbenzene		SP

SP: SPIKE COMPOUND

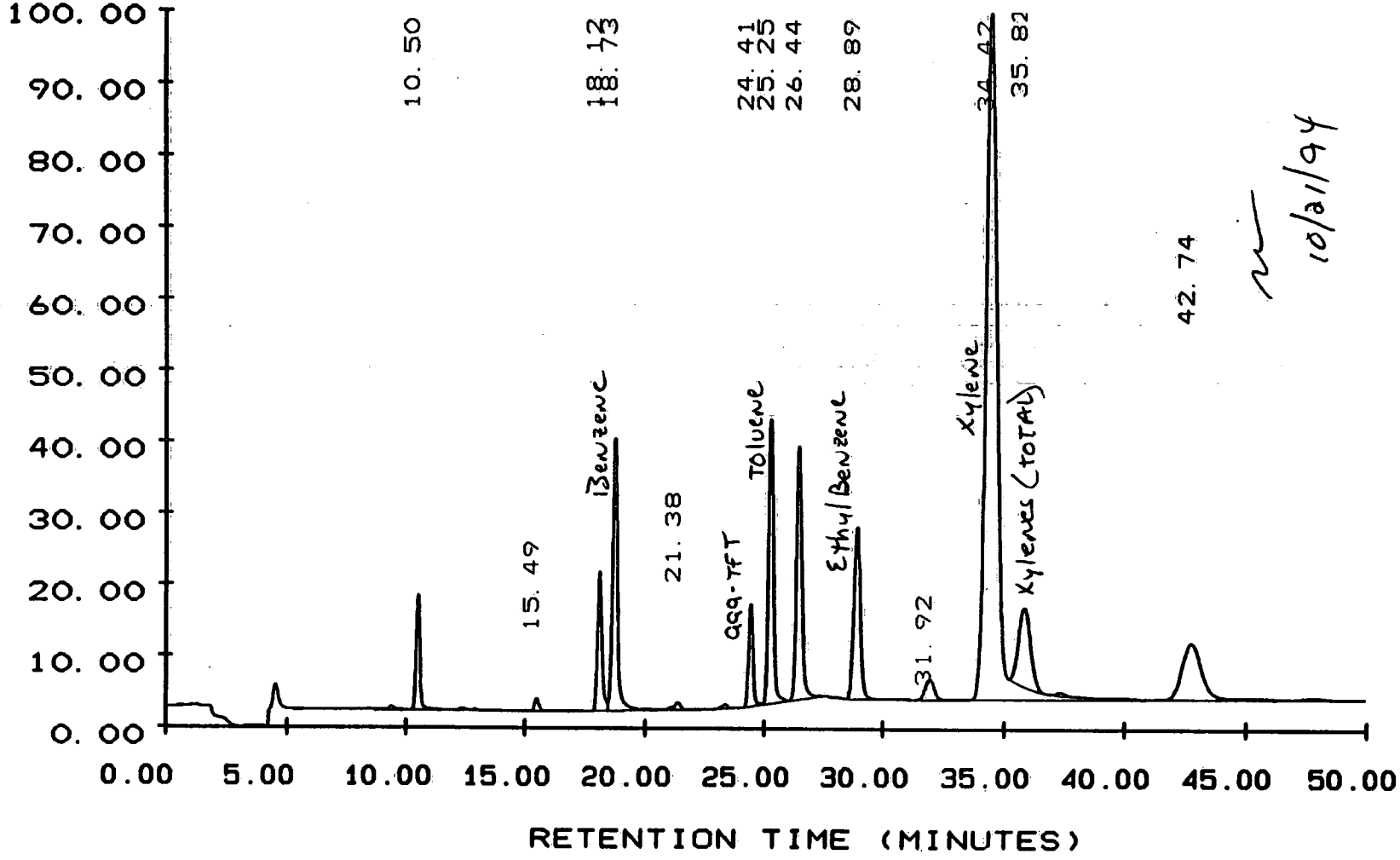
12/88 Rev.

9409L373-001S

SAMPLE NO. : 09299420 . 15
TEST NO. :
METHOD NO. : 20 / BTEX

INSTRUMENT: 20
DATE TIME: 09/29/94 23:04:27
PAGE NO. : 01

0067



10/21/94

Y MAXIMUM: 30474.
Y MINIMUM: 6414.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 13:31:00

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09299420 .15 INST:20 VIAL:F0 SEQ NUMBER:015
TEST : 0602-S DATE-TIME INJECTED : 09/29/94 23:04:27
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/21/94 13:31:00
METHOD: 20 / BTEX REV #: 00014 ANALYST: JAR SAMP RATE: 0.78
CLIENT ID: MW-25 SAMPLE VOL: 10.0ML
CLIENT: LE CARPENTER COLUMN TYPE: 1% SP1000
LAB ID: 9409L373-001MS RAW FILE: RAW2:IT440669
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
COLUMN ID: PID CAL ID : TEMP:L050394.20/25

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
004	444263	38221	T	10.501			
008	55419	4252	T	15.493			
011	617890	46509	T	18.115			
012	1299967	91210	T	18.733	M	BENZENE	10.009
014	58713	2595	V	21.381			
017	427697	33986	T	24.414	M	aaa-TRIFLUOROTOLUENE	10.026
018	1273583	95146	T	25.246	M	TOLUENE	9.710
019	1347117	84864		26.438			
020	1111645	57675	V	28.887	M	ETHYLBENZENE	9.025
022	178615	6821	V	31.924			
023	7828971	230719	T	34.417	M	XYLENE	54.458 } 61.361
024	917336	26619	ST	35.819	M	XYLENE (TOTAL)	6.903 }
026	1108095	19037	T	42.742			

GC VOLATILES SHEET

CLIENT SAMPLE NO.

MW-25MSD

Lab Name: Roy F. Weston, Inc. Work Order: 06720018001

Client: LE CARPENTER

Matrix: WATER

Lab Sample ID: 9409L373-001 MSD

Sample wt/vol: 10.0 (g/mL) ML

Lab File ID: IT440685

Level: (low/med) LOW

Date Received: 09/24/94

% Moisture: not dec. ____

Date Analyzed: 09/30/94

Column: (pack/cap) CAP

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
71-43-2	Benzene	62	SP
108-88-3	Toluene		SP
1330-20-7	Xylenes (total)		
100-41-4	Ethylbenzene		SP

SP: SPIKE COMPOUND

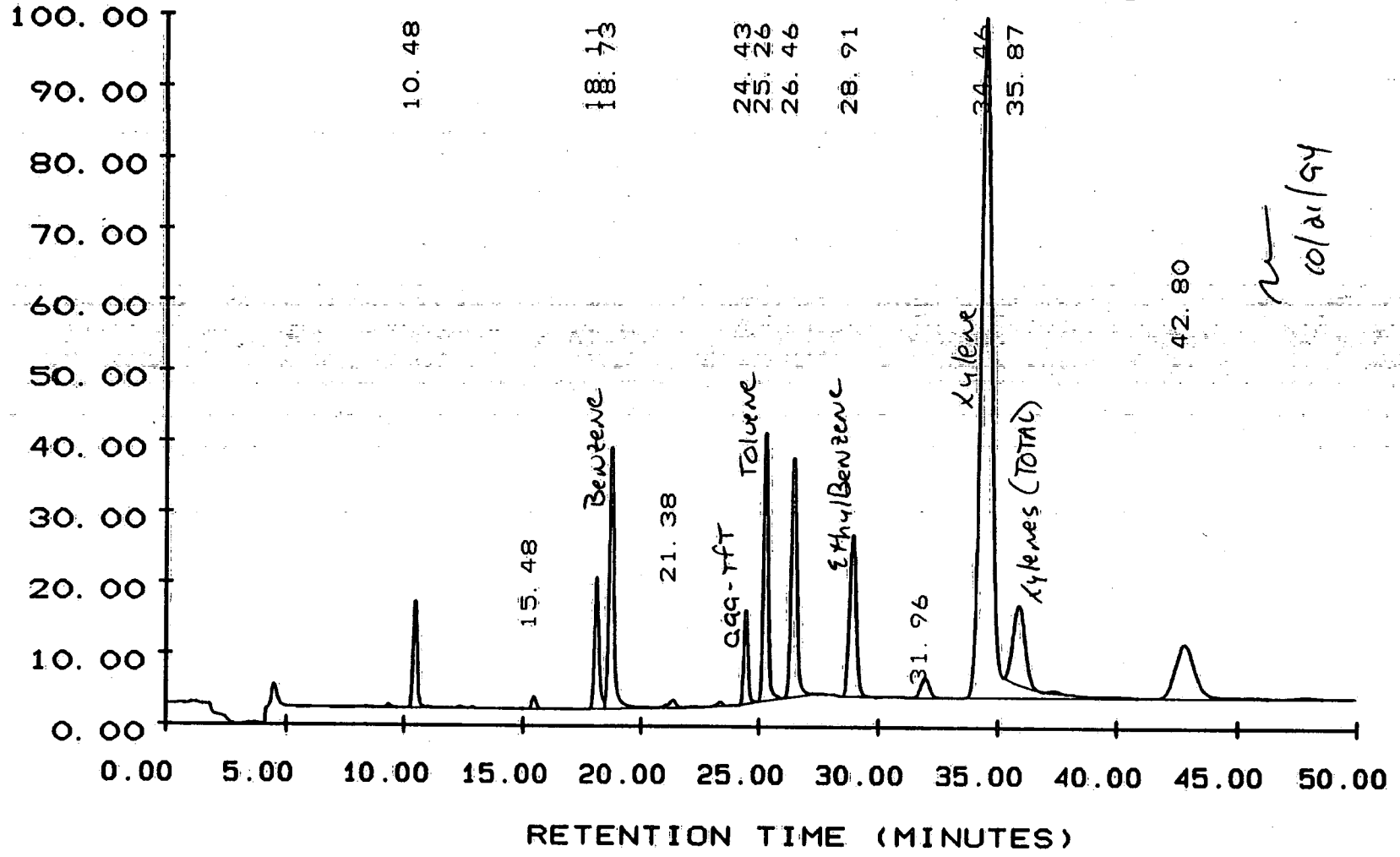
12/88 Rev.

9409L373-001T

SAMPLE NO. : 09299420 . 16
TEST NO. :
METHOD NO. : 20 / BTEX

INSTRUMENT: 20
DATE TIME: 09/30/94 00:03:23
PAGE NO. : 01

0070



10/21/94

Y MAXIMUM: 30420.
Y MINIMUM: 6409.

START TIME: 0.00
END TIME: 50.00

Roy F. Weston, Inc. - Lionville Laboratory 10/21/94 13:32:03

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 09299420 .16 INST:20 VIAL:F0 SEQ NUMBER:016
TEST : 0602-T DATE-TIME INJECTED : 09/30/94 00:03:23
COLLECTION TIME : 49.93 DATE-TIME PROCESSED : 10/21/94 13:32:03
METHOD: 20 / BTEX REV #: 00014 ANALYST: JAR SAMP RATE: 0.78
CLIENT ID: MW-25 SAMPLE VOL: 10.0ML
CLIENT: LE CARPENTER COLUMN TYPE: 1% SP1000
LAB ID: 9409L373-001MSD RAW FILE: RAW2:IT440685
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
COLUMN ID: PID CAL ID : TEMP:L050394.20/25

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	AREA CONC PPB
004	416970	35710	T	10.477			
008	55723	4239	T	15.481			
011	590666	44178	T	18.113			
012	1256181	87899	T	18.732	M	BENZENE	9.680
014	60014	2633	V	21.385			
017	392755	31193	V	24.427	M	aaa-TRIFLUOROTOLUENE	9.195
018	1211803	90134	T	25.260	M	TOLUENE	9.253
019	1281853	80610		26.455			
020	1053469	54547	V	28.912	M	ETHYLBENZENE	8.559
022	178880	6804	V	31.957			
023	7858389	230112	T	34.458	M	XYLENE	54.663 } 61.631
024	926005	26751	ST	35.865	M	XYLENE (TOTAL)	6.968 }
027	1068743	18246	T	42.800			

10/21/94

IX. Analysis Logbook Pages

WESTON®

GC VOA ANALYSIS LOG: 94 (YEAR)

0073

INSTRUMENT #: 19/20
DETECTOR: HALL PID
CALIB. DATE: IN Progress

COLUMN TYPE: 1% SP1000 CARBOPACK
COLUMN SERIAL #: —
TEMP OR TEMP PROGRAM: 45°C for 3min; 8°C/min to 200°C

LOGBOOK #: 4156
ANALYST: [illegible]
METHOD: 501.1 502.2 601 602 8010 8020

ANALYSIS DATE	ANALYSIS TIME	RUN NO	STATION NO	RFW SAMPLE NUMBER	CLAS ID #	DILUTION FACTOR	COMMENTS
9/30/94	0103	17	5	94091373-004	09299420/19 .17		
↓	0201	18	6	↓ -002	↓ .18		
↓	0300	19	7	STD CCV BTEX @ 10ppb	↓ .19		
↓	0359	20	8	STD CCV BTEX @ 10ppb	↓ .20		3053-61-04 ok

[illegible] 10/19/94

RFW # 21-21-022/C-02/92

REVIEWED BY/DATE: DKC 10/24/94

PAGE #

WESTON®

GC VOA ANALYSIS LOG: 94 (YEAR)

INSTRUMENT #: GC-5 19/20
DETECTOR: HALL PID
CALIB. DATE: IN PROGRESS

COLUMN TYPE: 1% SP1000 CARBOPACK
COLUMN SERIAL #: —
TEMP OR TEMP PROGRAM: 45°C for 3min; 8°C/min to 200°C

LOGBOOK #: 4156
ANALYST: [illegible]
METHOD: 501.1 502.2 601 602 8010 8020

ANALYSIS DATE	ANALYSIS TIME	RUN NO	STATION NO	RFW SAMPLE NUMBER	CLAS ID #	DILUTION FACTOR	COMMENTS
9/29/94	0916	1	5	STD BTEX 50 ppb	092994 20/19.01		3053-61-04; 3053-53-08
	1016	2	6	20	.02		
	1115	3	7	10	.03		
	1214	4	8	5	.04		
	1313	5	9	1	.05		
	1412	6	10	.5	.06		
	1511	7	11	STD ICV	.07		3053-50-05
	1610	8	12	STD DCV BTEX @ 10ppb	.08		3053-61-04
	1709	9	13	94LV0568-MB1	.09		
	1808	10	14	-MB1s	.10		3053-53-03
	1908	11	15	9409L373-006	.11		
	2006	12	16	-005	.12		
	2106	13	1	-003	.13		
	2205	14	2	-001	.14		
	2304	15	3	-001s	.15		3053-53-03
9/30/94	0003	16	4	-001T	.16		

RFW # 21-21-022/C-02/92

REVIEWED BY/DATE: DKC 10/24/94

X. Standards Preparation Records

Project No.

TITLE GC/VOA Standard Prep

Book No. 3053

From Page No.

#	Compound Std # ID	Lot # Supplier	ug/ml init conc	Density	ul vol inject	ml Final Vol	Solvent Supplier Lot #	ug/ml final conc	exp date	comments
01	1,2 DCB	Chem Serv # 110-65A	neat	1.306	50	6.35	Baxter B&J #BG833	10,000 LKD 6/18/94	12/18/94	
02	ethylbenzene	Chem Serv # 105-111B	neat	.869	100	8.69	meoH	10,000 LKD 6/18/94	12/18/94	
03	o-xylene	Chem Serv # 110-63B	neat	.880	100	8.80		10,000 LKD 6/18/94	12/18/94	
04	m-xylene	Chem Serv # 105-109B	neat	.864	100	8.64		10,000 6/18/94 LKD	12/18/94	
05	p-xylene	Chem Serv VOID 6/20/94 LKD	neat	.861	100	8.61 ~~7.17~~ LKD 6/20/94		20,000 ~~6/18/94~~ ~~6/18/94~~	12/18/94 6/20/94 LKD	
06	1,4 DCB	Chem Serv	solid neat	solid	.1426g	7.13		20000 ~~6/18/94~~ LKD 6/20/94	~~12/18/94~~ 12/20/94	
07	ACETONE	SUPELCO LA39898	2,000	~~1000~~ NA	1000 µl	10 ml	BAXTER B&J BG833	200 µg/ml	EXP: 12/18/94	
	~~ETHYBN~~	~~3053-49-02~~	10,000		200 µl					
	o-XYLENE	-03								
	m-XYLENE									
	1,2-DCB									
	~~1,4-DCB~~	~~-06~~	~~20,000~~		~~100 µl~~					
08	OCCIDENTAL STOCK	3053-49-07	~~1000~~		~~100 µl~~	10	BAXTER B&J BG833	10 µg/ml	EXP: 12/18/94	
08	ACETONE	3053-49-07	200		500	10 ml	BAXTER		PREP: 6/20/94	
09	ACETONE	SUPELCO LA39898	2000	—	50	10	BG833	10 µg/ml	EXP: 12/18/94	
	1,4-DCB	3053-49-06	20000	—	5	10	B&J BAXTER		PREP: 6/21/94	
10	BCM	3053-38-01	10,000	—	100	10	BG833 B&J BAXTER	100 µg/ml	EXP: 9/18/94 ~~10/14~~ ~~10/23/94~~ 6/23/94	
601/602 SURR	~~ooo~~-TFT	3053-44-05	10,000	—	100	10			PREP: 6/23/94 MRB	
11 601/602 SURR	601/602 SURR STOCK	3053-49-10	100	—	1 ml	10	BG833 B&J BAXTER	10 µg/ml	EXP: 10 µl ~~10/15/94~~ ~~6/23/94~~ 6/23/94	
									PREP: 6/23/94	

VOID ALL BUT ACETONE ADD 6/21/94

PREP 6/20/94

Page No.

Witnessed & Understood by me, DK Cromer

Date 9/19/~~93~~ 94 DKC 9/19/94

Invented by

Recorded by

Date 7 6

TITLE GCVOA STANDARD PREP

Project No.

Book No. 3053

From Page No.

#	Compound STD #ID	LOT # SUPPLIER	µg/ml INIT CONC	DENSITY	µl VOL INJECT	ml FINAL VOL	SOLVENT SUPPLIER LOT #	µg/ml FINAL CONC.	EXP. DATE	COMMENTS
01	1,3-DCB	CHEM-SERV 102-147B	NEAT	1.288	50	6.44	MeOH BAXTER B&J #B6833	10,000	12/29/94	
DCB STOCK								PREP:	6/29/94	
02	1,3-DCB	3053-50-01	10,000	—	10	10	MeOH BAXTER B&J #B6833	10 µg/ml	12/29/94	
1,4-DCB	1,4-DCB	3053-49-06	20,000	—	5	10				
								PREP:	6/29/94	
3	Gasoline Refinery Grade	ACDrich lot 034H0554-1	20,000	—	100µl	10	MeOH Baxter B0409	200µg/ml	exp 1/1/95	
							prep	7/1/94		
4	1112TCA	3053-48-05	10,000	—	10µl	10	B&J MeOH B6409	10µg/ml	exp 12/16/94	
							prep:	7/12/94		
5	Custommix2	Supelco lot # LA41047	200µg/ml	NA	500µl	10ml	Baxter MeOH B6833	10µg/ml	exp 9/12/94	
							prep:	pol 7/12/94		
06	60%/602 Surr	3053-49-10	100µg/ml	NA	1ml	10ml	Baxter MeOH B6833	10µg/ml	exp 9/18/94	
							prep	pol 7/12/94		
07	Cus mix 1	3053-48-01	10µg/ml	na	1ml	10ml	Baxter MeOH BG409	1µg/ml	exp 7/13/95 LKD 7/15/94	
08	Cus mix 2	3053-43-07	10µg/ml	na	1ml	10ml	Baxter MeOH BG409	1µg/ml	exp 7/13/95 LKD 7/15/94	
09	mix C	3053-48-03	10µg/ml	na	1ml	10ml	Baxter MeOH BG409	1µg/ml	exp 9/13/94 LKD 7/15/94	

To Page No.

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Date 9/19/94

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Date 77

TLE GC VOA STD Prep.

Project No.

Book No. 3053

From Page No. #	Compound STD #	lot # Supplier	Init conc ug/ml	Density	Vol Inj ul	Final Vol ml	Solvent Supplier lot #	Final conc ug/ml	exp Date comments
01	Fluorobenzene	3053-38-02	10,000	—	10 ul	10 ml	Baxter MeOH	10 ug/ml	exp 9/18/94
USRC Surr	Bromochloromethane	3053-38-01	10,000	—	10 ul	10 ml	lot BG833	Prep: [illegible] 8/11/94	
02	CUSTOM MIX 1	Supelco LA43363	200	—	1000	20	BAXTER		
0612	CUSTOM MIX 2	LA43367	200	—	1000		MeOH	10 µg/ml	EXP: 10/11/94
MIX	FREON-113	LA 28946	1000	—	200		lot BG833		
	CIS-1,2-DCE	SIGMA 72H59881	2000	—	100			Prep: 8/11/94 [illegible]	
03	CSPIKE (13713)	Suppelco lot# LA41044 (opposite page)	200	—	1 ml	20 ml	Baxter lot# BG833	10 ug/ml	Exp. 10/11/94
								Prep: [illegible] 8/11/94	
04	aaa TRIFLUOROTOLUENE	CHEMSERV 92-57B	NEAT ~~100~~ [illegible] 8/12/94	1.189	100	11.89	BAXTER LOT BG833	10,000	exp: 2/12/94 95 [illegible]
								Prep: 8/12/94	
05	BROMOCHLOROMETHANE	CHEMSERV 87-58A	NEAT	1.934	50	19.67 [illegible] 8/12/94	"	10,000	exp: 2/12/95
								prep: 8/12/94	
06	aaa-Trifluorotoluene	3053-53-04	10,000	—	1 ml	10 ml	Baxter MeOH lot BG833	1,000	exp: 2/12/95
	Bromochloromethane (601/602 surr)	3053-53-05	↓	—	↓			prep: 8/12/94	
07	601/602 Surr	3053-53-06	1,000	—	100 ul	10 ml	Baxter MeOH lot BG833	10 ug/ml	exp 2/12/95
								Prep 8/12/94	
08	601/602 Surr	3053-53-06	1,000	—	100 ul	10 ml	Baxter MeOH lot BG833	10 ug/ml	exp 2/12/95
								Prep 8/12/94	
09	MIX C	Supelco lot# LA40635 (opposite page)	200	—	500 ul	10 ml	Baxter MeOH lot BG833	10 ug/ml	exp 10/12/94
								Prep: 8/12/94	
10	MIX C	Supelco lot# LA40635 (opposite page)	200	—	500 ul	10 ml	Baxter MeOH lot BG833	10 ug/ml	exp 10/12/94
								Prep 8/12/94	
11	PURGEABLE C ICV (+ DCDFM TCFM)	VARIAN LOT: 119	200	—	1000	20 ml	BAXTER MeOH LOT BG833	10 µg/ml	EXP: 10/12/94
								Prep 8/12/94 [illegible]	

To Page No.

Witnessed & Understood by me, D Kirk Cromer

Date 9/19/94

Invented by

Recorded by

Date 11 78

TITLE GCVOA STD PREP

Project No.

Book No. 3053

FINAL CONC µg/ml

From Page No.

#	STD ID	SUPPLIER	LOT #	EXP DATE	INIT CONC µg/ml	DENSITY	INJ. VOLUME µl	FINAL VOLUME mL	SOLVENT & SUPPLIER	LOT # SOLVENT	PREP DATE & ANALYT INIT.	EXP DATE
01	111 TRICHLOROETHANE	CHEMSERV	A70-15-1	4/95	NEAT	1.338	50	6.69	B&J METHANOL	B6833	8/19/94 10,000	2/19/95
02	1122 TETRACHLOROETHANE	CHEMSERV	124-7B	1/97	NEAT	1.593	50	7.97				
03	11 DICHLOROETHENE	CHEMSERV	127-139B	6/97	NEAT	1.213 ~~1.176~~	50 ~~50~~	6.05 ~~5.90~~ 8/19/94				
04	12 DICHLOROETHANE	CHEMSERV	A70-31-1	4/95	NEAT	1.257	50	6.29				
05	BENZENE	CHEMSERV	A70-29	1/97	NEAT	0.874	100	8.74				
06	P-XYLENE	CHEMSERV	119-79A	10/98	NEAT	0.861	100	8.61				
07	BROMODICHLOROMETHANE	CHEMSERV	116-2B	8/96	NEAT	1.980	50	9.90				
08	BROMOFORM	CHEMSERV	121-64A	1/97	NEAT	2.850	25	7.13				
09	CHLOROBENZENE	CHEMSERV	A70-5-1	3/97	NEAT	1.107	100	11.07				
10	trans-1,2-DICHLOROETHENE	CHEMSERV	132-11A	12/95	NEAT	1.257	50	6.30				
11	TRICHLOROETHENE	CHEMSERVE	124-110A	3/98	NEAT	1.465	50	7.33				
12	TETRACHLOROETHENE	CHEMSERVE	110-63A	7/97	NEAT	1.623	50	8.12				
13	ETHYL BENZENE	CHEMSERVE	128-86B	5/99	NEAT	0.869	100	8.69				
14	TOLUENE	CHEMSERV	A70-9-1	3/97	NEAT	0.866	100	8.66				
15	IODOMETHANE	GOPELID	LA39198	10/95	NEAT	2.279	25	5.67				
16	VINYLACETATE	SUPELCO	LA37944	10/95	NEAT	0.932	100	9.32	B&J MeOH	B6833	10,000 [illegible]	2/19/95
17	BCM	LAB	3053-38-01	9/18/94	10000	\	100	10	B&J MeOH	B6833	8/25/94 [illegible]	9/18/94
[illegible]	FLUOROBN2	LAB	3053-38-02	9/18/94	10000		100	10	"		[illegible]	
18	TSURR ST4	LAB	3053-56-17	9/18/94	100	\	1000	10	B&J MeOH	B6833	10 [illegible] 8/25/94	9/18/94

To Page No.

Witnessed & Understood by me, D Kirk Cromer

Date 9/19/94

Invented by

Recorded by

Date 0079

Project No._____

TLE_____ Book No. 3053

From Page No.___

#	Std ID	Supplier	Lot #	Stock exp Date	initial conc ug/ml	Deposit	Vol initial ml	final Vol ml	final conc ug/ml	Solvent Supplier #	prep Date Analyst	exp Date comments
01	1,2-DCE Surr 1000	lab	3053-60-06	2/12/95	10 ug/ml	DA	1000 ug/ml	10 ml	1 ug/ml	Baxter BG409	pal 9/26/94	exp 2/12/95 45 pal
02	CMIX1	Supelco	LA43363	Amp	200	NA	1000	20 ml	10 ug/ml	Baxter	—	
0612 MIX	CMIX2	Supelco	LA43367		200		1000			BG833	9/27/94	exp: 11/27/94
	freon-113	Supelco	LA21816		1000		200					
	cis-1,2-DCE	SIGMA	72H5988 1	9/96	2000		100					
03	BENZENE	LAB	3053-56-05	2/19/95	10000	NA	100	10 ml		BAXTER		exp: 12/18/94
BTEX STOCK	ETHYLBENZENE		56-13	2/19/95	10,000					MeOH		
	TOLUENE		56-14	2/19/95	10,000				100 ug/ml	BG833	9/28/94	
	M-XYLENE		49-04	12/18/94	10,000							
	p-XYLENE		56-05	2/19/95	10,000							
	O-XYLENE		49-03	12/18/94	10,000							
04	BTEX STOCK	LAB	3053-61-03	12/18/94	100	—	1000	10	10 ug/ml	BAXTER BG833	9/28/94	exp: 12/18/94
05	Chlorobenzene	lab	3053-58-07	5/1/95	10000	/	10 ml	10 ml	10 ug/ml	Baxter BG833	10/5/94 pal	12/5/94 pal
VOC SUR	Bromochloromethane	lab	3053-53-05	2/12/95	10,000		10 ml	10 ml	10 ug/ml			
06	1,4-DFB Surr Stock	lab	3053-53-06	2/12/95	1000	/	10 ml	10 ml	10 ug/ml	Baxter BG833	10/5/94 pal	12/5/94 pal
07	Freon 113 STOCK	lab Supelco LA21816	Supelco LA21816	Amp	1000 ug/ml	/	100 ml	10 ml	10 ug/ml	Baxter BG833	10/5/94 pal	12/5/94 pal
08	VOA MIX 1	SUPELCO	LA42385	4/95	2000	/	50 µl	10 ml	10 ug/ml	B+J BAXTER BG833 MeOH	10/6/94 MAB	12/6/94 EXP:
09	VOA MIX 6	SUPELCO	LA42578	4/95	2000	/	50 µl	10 ml	10 ug/ml	B+J BAXTER BG833 MeOH	10/6/94 MAB	EXP: 12/6/94

To Page No.___

Witnessed & Understood by me, D Kirk Garner

Date 10/13/94

Invented by

Recorded by

Date 0080

XI. Preparation Logs

Roy F. Weston, Inc. Lionville, Lab.

SAMPLE PREP RECORD

Sheet no.: 1

Extract. Date: 09/29/94 Extraction Batch No: 94LV0568 Analyst: MJ Method: N/A

Test: O602 Cleanup Date: Analyst: Client: LE CARPENTER

LIMS Report Date: 11/03/94 Solvent: Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
9409L373-	LE CARPENTER										
001	MW-25	2	10.0	1.0		10		1.0	N	0.0	1.0
001 -S	MW-25	2	10.0	1.0	1.0	10		1.0	N	0.0	1.0
001 -T	MW-25	2	10.0	1.0	1.0	10		1.0	N	0.0	1.0
002	MW-22	2	10.0	20.0		10		1.0	N	0.0	1.0
003	MW-14S	2	10.0	1.0		10		1.0	N	0.0	1.0
004	MW-4	2	10.0	1.0		10		1.0	N	0.0	1.0
005	MW-15S	2	10.0	1.0		10		1.0	N	0.0	1.0
006	TB-923	2	10.0	1.0		10		1.0	N	0.0	1.0
94LV0568-MB1	TBLKHH	7	10.0	1.0		10		1.0	N	0.0	1.0
94LV0568-MB1 -S	TBLKHH	7	10.0	1.0	1.0	10		1.0	N	0.0	1.0

Comments:
Surrogate:
Spike:

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer

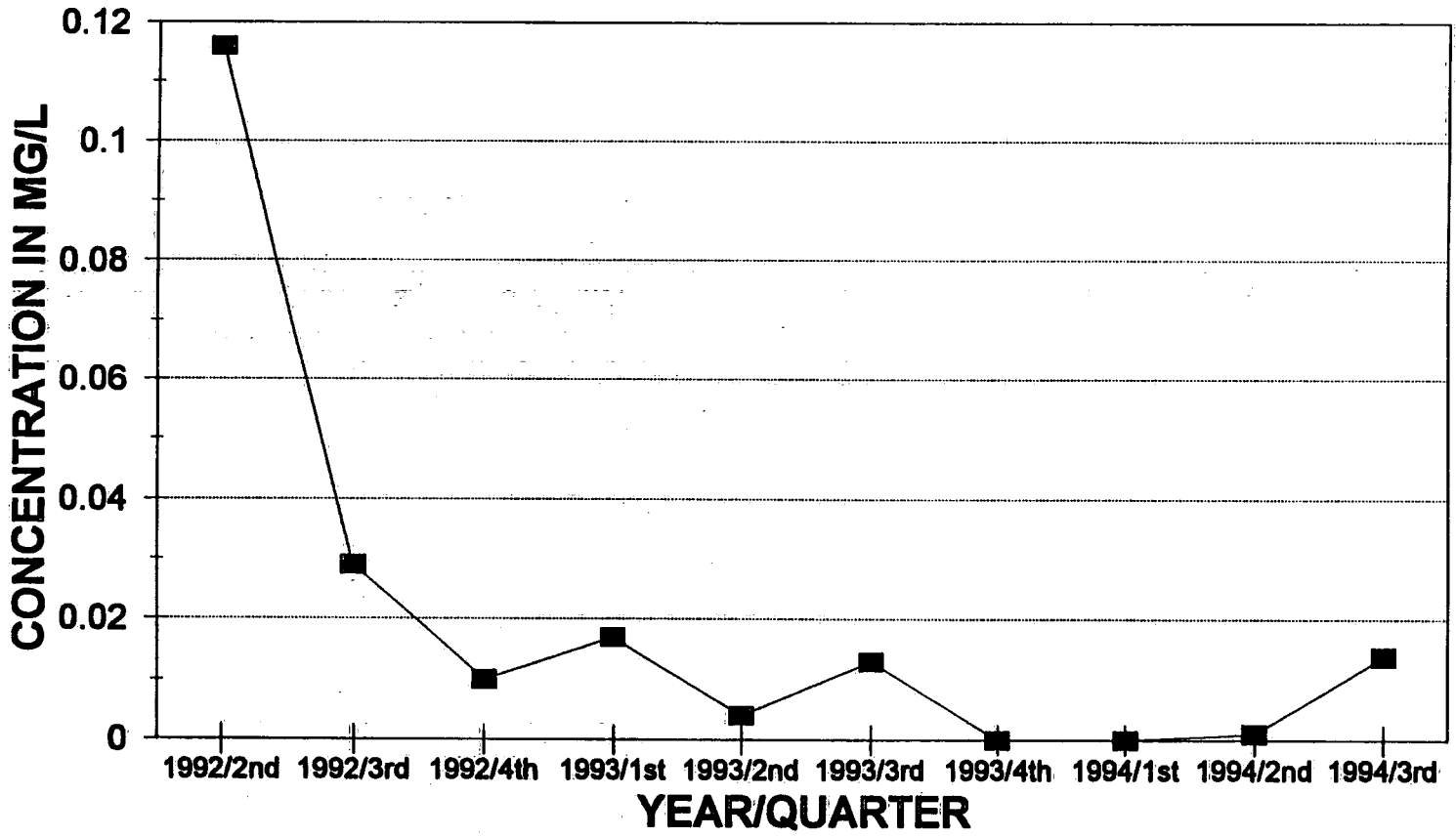
mt 11/3/94

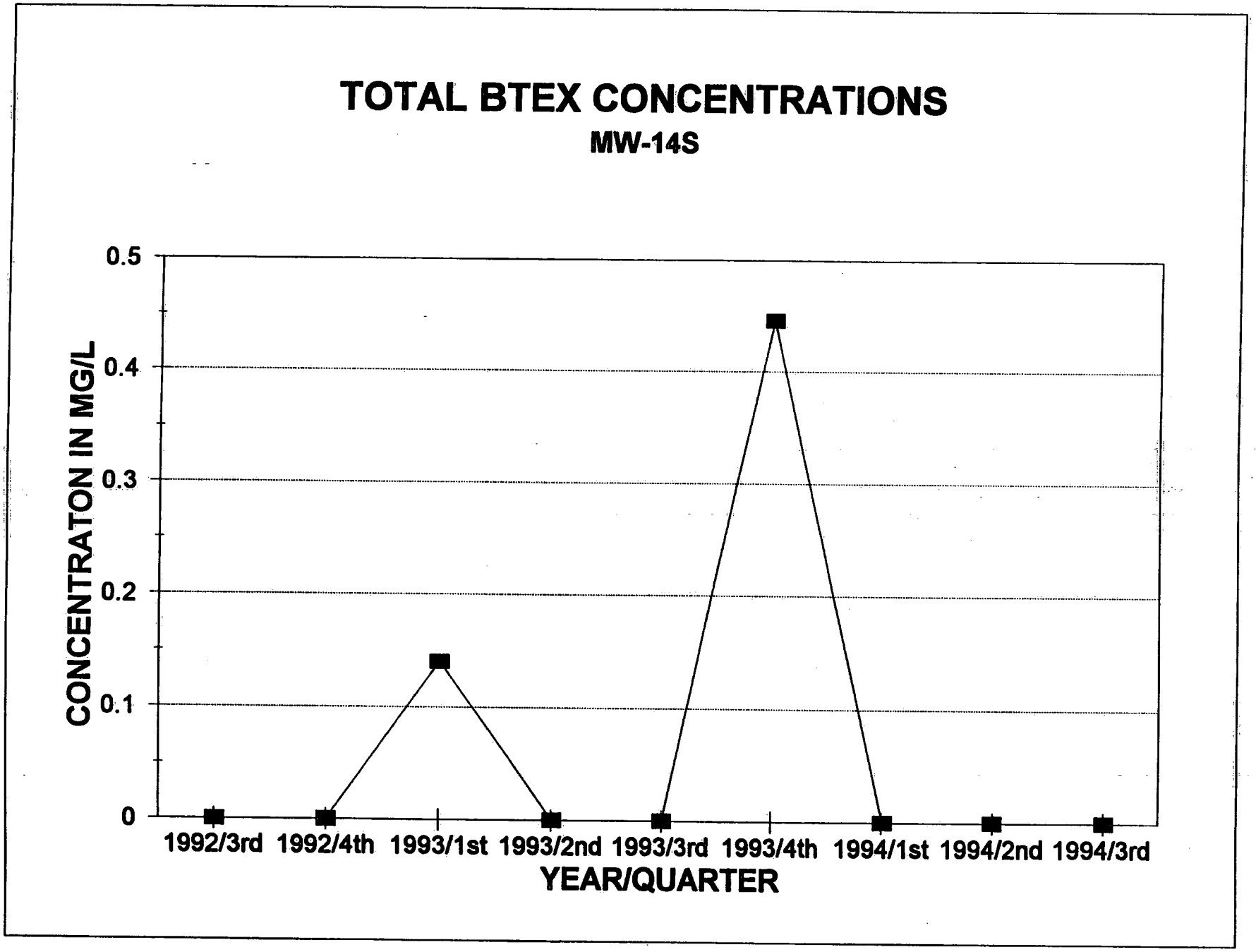
0082

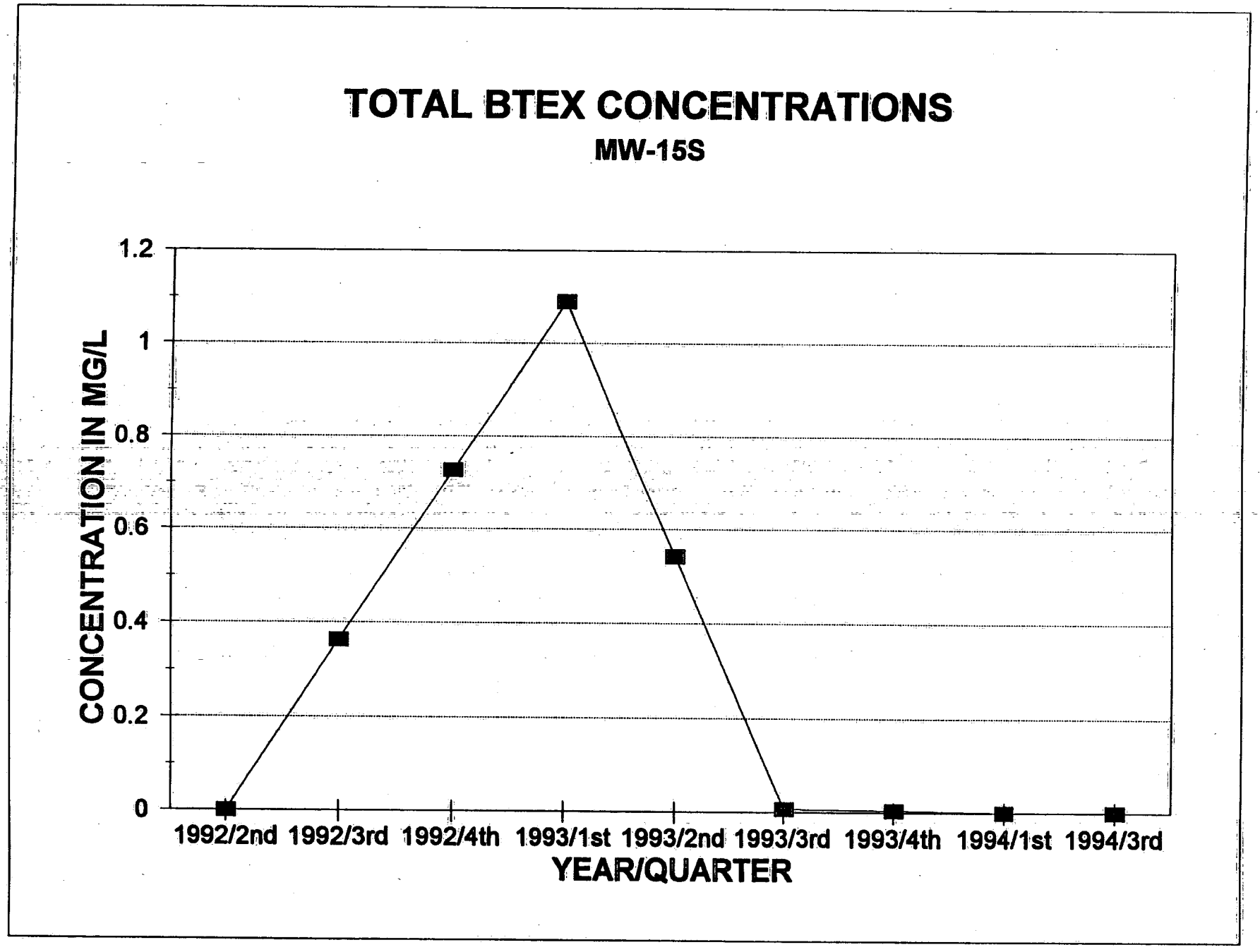
XII. Other/Miscellaneous

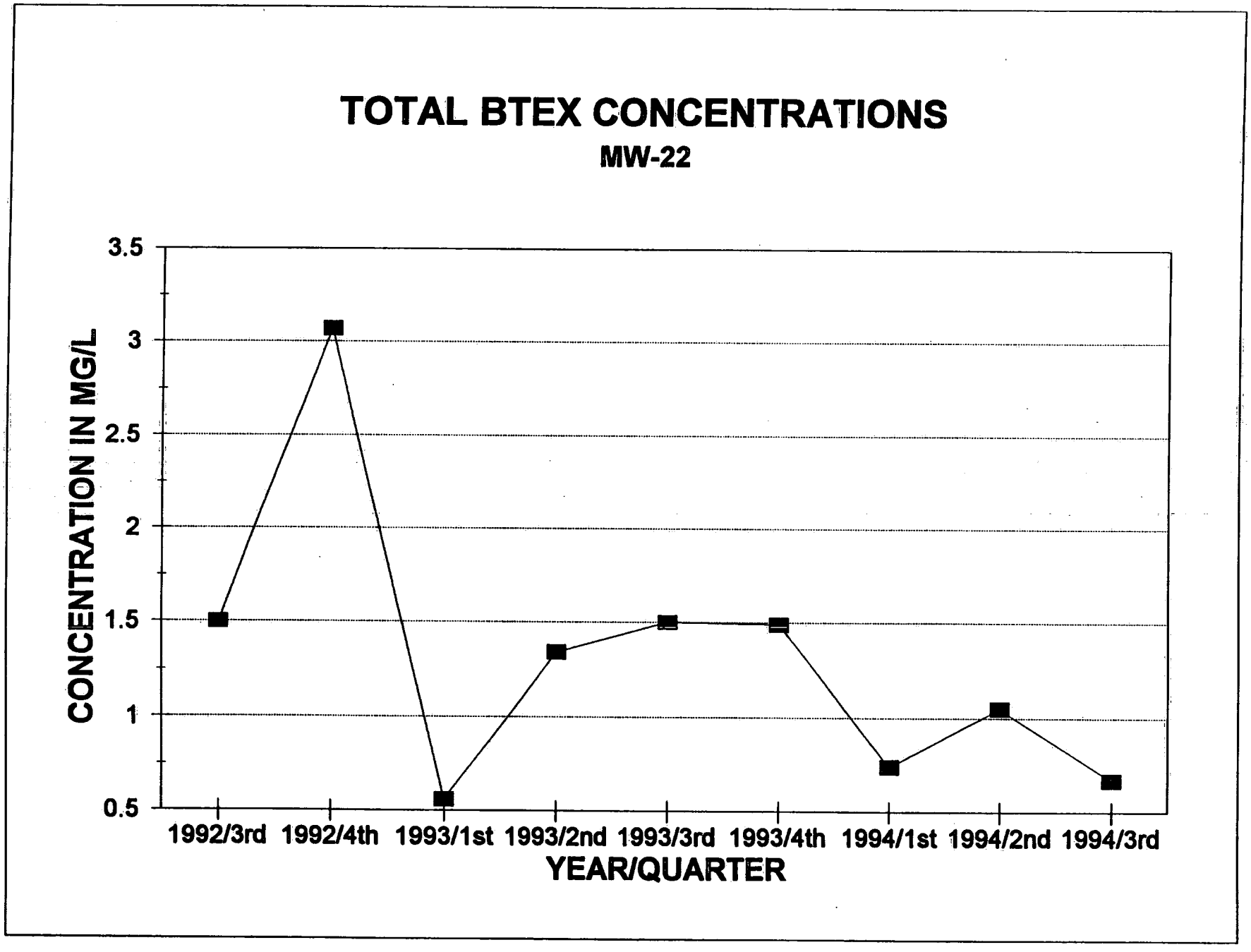
End of Data Package

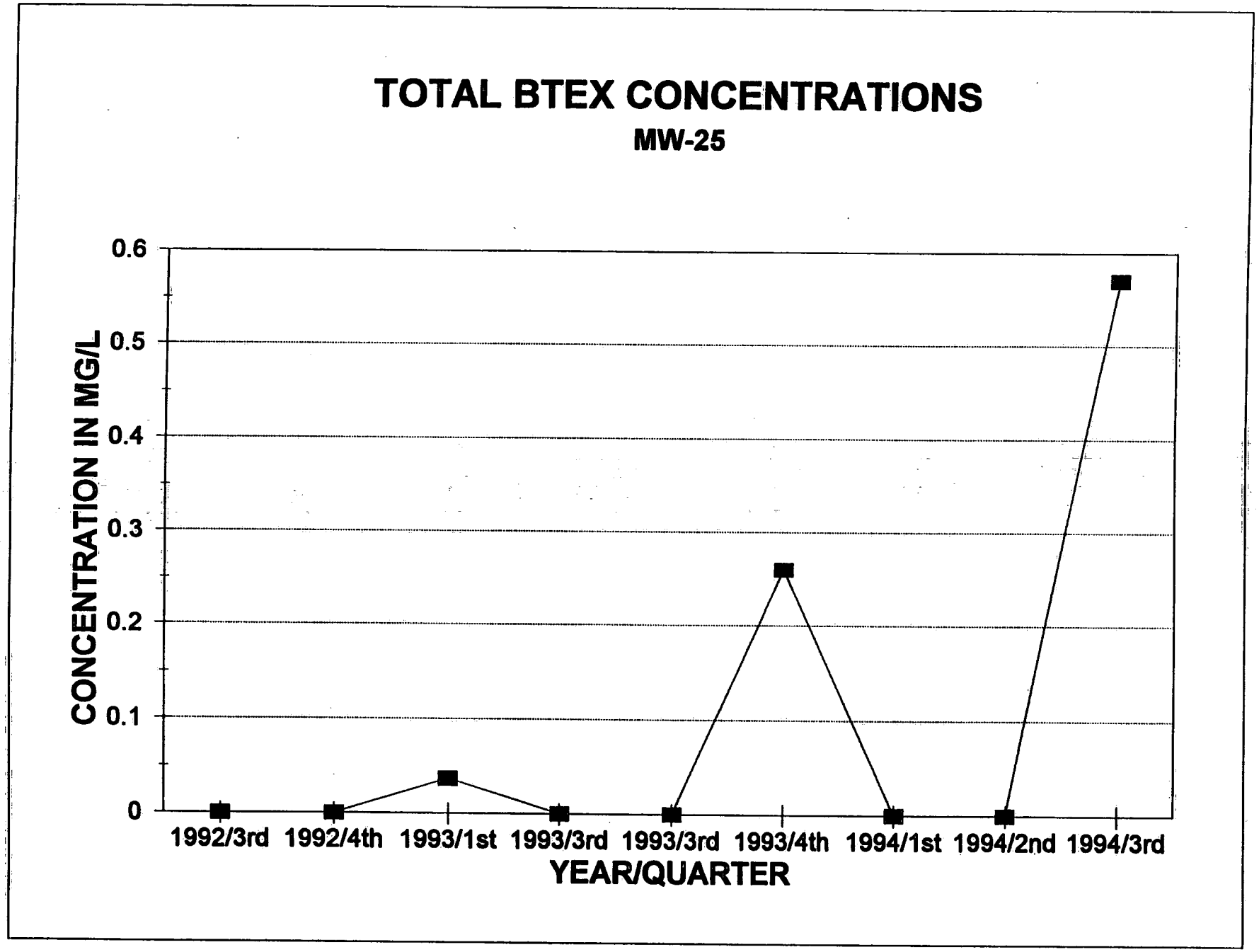
APPENDIX D
SUMMARY OF ANALYTICAL RESULTS


TOTAL BTEX CONCENTRATIONS
MW-4
CONCENTRATION IN MG/L
0.12
0.1
0.08
0.06
0.04
0.02
0
1992/2nd
1992/3rd
1992/4th
1993/1st
1993/2nd
1993/3rd
1993/4th
1994/1st
1994/2nd
1994/3rd
YEAR/QUARTER


TOTAL BTEX CONCENTRATIONS
MW-14S
CONCENTRATON IN MG/L
0.5
0.4
0.3
0.2
0.1
0
1992/3rd
1992/4th
1993/1st
1993/2nd
1993/3rd
1993/4th
1994/1st
1994/2nd
1994/3rd
YEAR/QUARTER


TOTAL BTEX CONCENTRATIONS
MW-15S
CONCENTRATION IN MG/L
1.2
1
0.8
0.6
0.4
0.2
0
1992/2nd
1992/3rd
1992/4th
1993/1st
1993/2nd
1993/3rd
1993/4th
1994/1st
1994/3rd
YEAR/QUARTER


TOTAL BTEX CONCENTRATIONS
MW-22
CONCENTRATION IN MG/L
3.5
3
2.5
2
1.5
1
0.5
1992/3rd
1992/4th
1993/1st
1993/2nd
1993/3rd
1993/4th
1994/1st
1994/2nd
1994/3rd
YEAR/QUARTER


TOTAL BTEX CONCENTRATIONS
MW-25
CONCENTRATION IN MG/L
0.6
0.5
0.4
0.3
0.2
0.1
0
1992/3rd
1992/4th
1993/1st
1993/3rd
1993/3rd
1993/4th
1994/1st
1994/2nd
1994/3rd
YEAR/QUARTER