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November 13, 1991

Mr. David Shepard
State of Vermont
Agency of Natural resources
Department of Environmental Conservation
103 South Main Street, West Building
Waterbury, Vermont 05671-0404

Enclosed is the report on the Supplemental Hydrogeologic Investigation performed at Stanley Tools, Eagle Square Plant Shaftsbury, Vermont. If you have any further questions, please feel free to contact me at (203) 827-3892. I feel it would be appropriate to schedule a meeting after you have had a chance to review this report.

J Erasmus

James Erasmus
The Stanley Works

Enclosure

CC: B. Bemben
J. Biddick
D. Kuhnke
J. Casciare

ENSR

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ENSR Doc. No: 21-RWN-474
ENSR Ref. No: 6303-029-400

December 3, 1991

Mr. David Shepard
Hazardous Sites Management Section
Agency of Natural Resources
103 South Main Street, West Building
Waterbury, VT 05676

RE: Stanley Tools, Eagle Square Plant, Shaftsbury, VT

Dear David:

In response to your request of Jim Erasmus of The Stanley Works, please find enclosed an enlarged copy of the Figure 2-1 and Figure 2-2 from ENSR's October 1991 Report on the investigation at the subject facility.

Should there be any other questions or concerns, please do not hesitate to contact me at (508) 635-9500.

Sincerely,

Robert Nicoloro
Senior Project Manager

RWN/

cc: J. Erasmus
J. Casiare (w/o enclosures)

The Stanley Works

New Britain, Connecticut

Supplemental Hydrogeologic Investigation
Stanley Tools, Eagle Square Plant, Shaftsbury, Vermont

ENSR Consulting and Engineering

October 1991

Document Number 6303-029-400

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1.0 INTRODUCTION

1.1 Site Background

The Stanley Tools Eagle Square Plant is located on Route 67 in the Town of Shaftsbury in southwestern Vermont. The Eagle Square Plant has been engaged in the manufacture of carpenter tools at its present location since 1817. Two types of wastes were generated at the plant. One waste stream consists of metals from plating and finishing operations, including at one time or another nickel, copper and zinc. Both nickel and copper were plated and rinses from these operations were discharged to lagoons for settling before final discharge to Paran Creek. The zinc in the waste stream came from a burnishing operation during which zinc dyecasts were put through a tumbling operation for burr removal. The rinse from this procedure first went through a flocculation tank, then a settling tank and finally was discharged to a lagoon. The second waste stream consists of material from painting operations, including paint stripping rinse and wet spray booth effluent.

Waste disposal practices prior to the 1960's are largely unknown. The first documented reference to onsite disposal practices was the construction in 1958 of an onsite lagoon for containing plating waste. A second settling lagoon, in series with the first, was added in 1971. Two more lagoons were added in 1972 for a total of four in use at that time.

In addition, there were apparently two sets of sludge beds. Stanley management is only aware of one set, located west of Paran Creek, which was used for paint and plating wastes. This sludge bed was probably filled in around 1975. It appears that another sludge bed existed on the east side of the creek, near lagoons 1 and 2. This bed appears to have been in use at least by 1968 with its date of closure unknown but probably by the mid 1970's.

Over the years the lagoons have gradually been closed out and filled in. There is not an exact date for closure of the plating waste lagoons 1 and 2 but it was prior to 1979. Lagoon 3, the former paint waste lagoon, was closed in 1982, filled in with clay and capped with topsoil. The sites of these former lagoons are all currently revegetated with grass. Lagoon 4, the cooling lagoon, is still in use.

1.2 Previous Investigation

A Preliminary Assessment of the site was conducted by the State of Vermont Agency of Natural Resources (VT ANR) in June, 1987. A Site Investigation was conducted by IT Corporation in

December, 1988. The investigation included the installation of three observation wells, four soil borings, and soil and groundwater analyses. The results of this investigation indicated that low levels of volatile and semivolatile organic compounds were present in the groundwater downgradient of the former lagoons. No contamination was detected in stream and sediment samples collected from Paran Creek. As a result of this investigation, the VT ANR asked Stanley to conduct additional work at the site to further delineate the extent of the groundwater contamination and to determine if groundwater contamination was migrating off site.

1.3 Supplemental Hydrogeologic Investigation

Based on the request from the VT ANR and a review of the Preliminary Assessment, ENSR Consulting and Engineering (ENSR) prepared a draft work plan for the supplemental hydrogeologic investigation. This draft work plan was submitted to the VT ANR, letter dated May 17, 1991, and discussed during a meeting on May 23, 1991. VT ANR comments were incorporated in the final work plan which was submitted to the VT ANR on June 6, 1991.

The objectives of the supplemental hydrogeologic investigation as described in the work plan were:

- to better define the groundwater flow direction at the site as well as around the areas of the identified former and currently operational solid waste management units;
- to delineate the extent of contamination in groundwater downgradient of four current or former waste management units;
- to determine if contamination in groundwater downgradient of the waste management units is migrating off site; and if so,
- to characterize contaminant concentrations in groundwater at the discharge points; and
- to assess rates of migration of groundwater contaminants off the site.

2.0 FIELD INVESTIGATION

ENSR personnel conducted five days of field work at the Stanley Tools Eagle Square Plant (June 17-21, 1991) to collect the physical and analytical data necessary for further characterization of the site hydrogeology and water quality. Specifically, ENSR personnel conducted the following tasks:

- supervised the installation of 10 microwells around the former and currently operational waste management units;
- installed 24 minipiezometers along Paran Creek;
- conducted one round of water level measurements of all observation wells, microwells, minipiezometers and Paran Creek;
- performed slug tests at two of the previously existing observation wells;
- collected groundwater samples from the microwells and minipiezometers for field analysis of volatile organic compounds (VOC) using a portable gas chromatograph; and
- collected groundwater samples from the previously existing observation wells and two microwells for priority pollutant VOC, semi-volatile organic compounds (SVOC), metals, total petroleum hydrocarbons (TPH) and percent dissolved solids (TDS).

The remainder of Section 2.0 is devoted to brief descriptions of how these data were collected and tabulations of the raw data. The results of these data analyses and interpretations are presented in Section 3.0.

2.1 Microwell and Minipiezometer Installation

On June 19-21, 1991, ten microwells were installed by Pine and Swallow Associates of Groton, MA, under the supervision of ENSR personnel. The microwells consisted of a 0.5-inch diameter steam cleaned steel pipe which was cut with a double row of 0.015 diameter 2-inch long vertical slots. The 2-inch long slots are separated by one-half inch and extend five to ten feet. The pipe was driven into the ground using a vibratory electric hammer attached to a telescoping boom which was mounted on an all terrain vehicle. The well pipe ranges from 10 to 20 feet in length, depending on the depth of the microwell. Sections of pipe were joined by welding.

The presence of boulders or cobbles at several locations impeded the advancement of the microwell pipe, however, all ten installations were completed. Upon reaching their completion depth the microwells were purged and groundwater samples were collected for volatile organic

compound (VOC) analysis in the field with a Photovac gas chromatograph. Table 2-1 presents the details of the microwell installation.

A total of 24 minipiezometers were installed on site by ENSR personnel. The minipiezometers were installed using a slide hammer to drive 1 1/2" diameter stainless steel casing into the river bed. Extremely rocky and bouldery conditions were encountered which limited the depth to which the minipiezometers could be driven. Table 2-2 presents the details of the minipiezometer installation. The minipiezometers were purged using a centrifugal pump and groundwater samples were collected. These samples were analyzed for volatile organic compounds in the field using a Photovac gas chromatograph.

Figure 2-1 shows the surveyed locations of the microwells, minipiezometers and the previously installed observation wells at the Eagle Square Plant.

2.2 Field Screening Analysis of Groundwater

During the week of June 17 to 21, 1991, water samples were collected from the observation wells (OW), minipiezometers (MP), and microwells (MCW). Samples were analyzed in the field using a Photovac Model 10S50 portable field gas chromatograph (GC). The data obtained from the field screening of the groundwater samples are summarized in Table 2-3 and 2-4. Chromatograms are included in Appendix A.

The field GC was calibrated with a mixed standard consisting of ethylbenzene and the three isomers of xylene (ortho-, meta-, and para-xylene). Under field conditions it was noted that the GC had trouble resolving the peaks for these four compounds; i.e., the peaks for ethylbenzene, m- and p-xylene tended to elute off the column very close together. The standard therefore showed two peaks: one large peak representing ethylbenzene, m- and p-xylene, and a second (separate) smaller peak representing o-xylene. The flow rate of the carrier gas was decreased from 10 cc/min to 6 cc/min for later samples, in order to achieve better compound resolution. The data are presented on two data tables for ease of sample comparison.

Compounds in samples were identified and quantified by comparison with the stored retention time and peak area data for compounds in the standard. Due to the fact that the GC could not completely resolve the peaks, the compound identification (i.e. ethylbenzene vs xylenes) provided by the GC on the basis of retention time is considered tentative. Peak areas of unidentified compounds are reported by the GC in units of volt-seconds.

Unidentified compounds detected by the GC are not necessarily priority pollutant volatile organic compounds. Samples from MCW-6 and MCW-9, which showed large unidentified peaks were

TABLE 2-1

Microwell Installation Details

Microwell No.	Completion Depth (Feet)[1]	Screen Interval (Feet)[1]	Depth to Groundwater June 21, 1991[2]
MCW-1	15.5	10.4 - 15.4	3.69
MCW-2	14.0	3.9 - 13.9	3.60
MCW-3	11.1	1.0 - 11.0	2.69
MCW-4	10.6	0.5 - 10.5	4.0
MCW-5	13.8	3.7 - 13.7	5.86
MCW-6	11.0	0.9 - 10.9	5.95
MCW-7	14.9	4.8 - 14.8	5.67
MCW-8	14.2	4.1 - 14.1	7.32
MCW-9	7.4	2.3 - 7.3	4.62
MCW-10	12.2	2.1 - 12.1	3.62

[1] Measured from existing grade.

[2] Measured from the top of the microwell pipe.

TABLE 2-2

Minipiezometer Installation Details

Minipiezometer No.	Completion Depth (Inches)[1]	Screen Interval (Inches)	Stream Depth (Inches)[2]
MP-1	7	1 - 7	9
MP-2	30.5	22.5 - 30.5	4.5
MP-3	24[3]	16 - 24[3]	14.3[3]
MP-4	24	16 - 24	7
MP-5	22	14 - 22	11
MP-6	31	23 - 31	12
MP-7	29	21 - 29	14
MP-8	36	28 - 36	5
MP-9	17	9 - 17	27
MP-10	18	10 - 18	17
MP-11	22	14 - 22	15
MP-12	26	18 - 26	0[4]
MP-13	24	16 - 24	17
MP-14	26	18 - 26	13
MP-15	29	21 - 29	10
MP-16	17	9 - 17	12
MP-17	26	18 - 26	5.5

[1] Measured from sediment surface.

[2] Measured from the top of the minipiezometer.

[3] Estimated depth not recorded.

[4] On bank at creek level.

TABLE 2-2 (Cont'd)

Minipiezometer Installation Details

Minipiezometer No.	Completion Depth (Inches)[1]	Screen Interval (Inches)	Stream Depth (Inches)[2]
MP-18	28	20 - 28	7
MP-19	22.5	14.5 - 22.5	10
MP-20	40	32 - 40	9
MP-21	23	15 - 23	9
MP-22	29	21 - 29	6.5
MP-23	25	17 - 25	10
MP-24	24	16 - 24	7

[1] Measured from sediment surface.

[2] Measured from the top of the minipiezometer.

[3] Estimated depth not recorded.

[4] On bank at creek level.

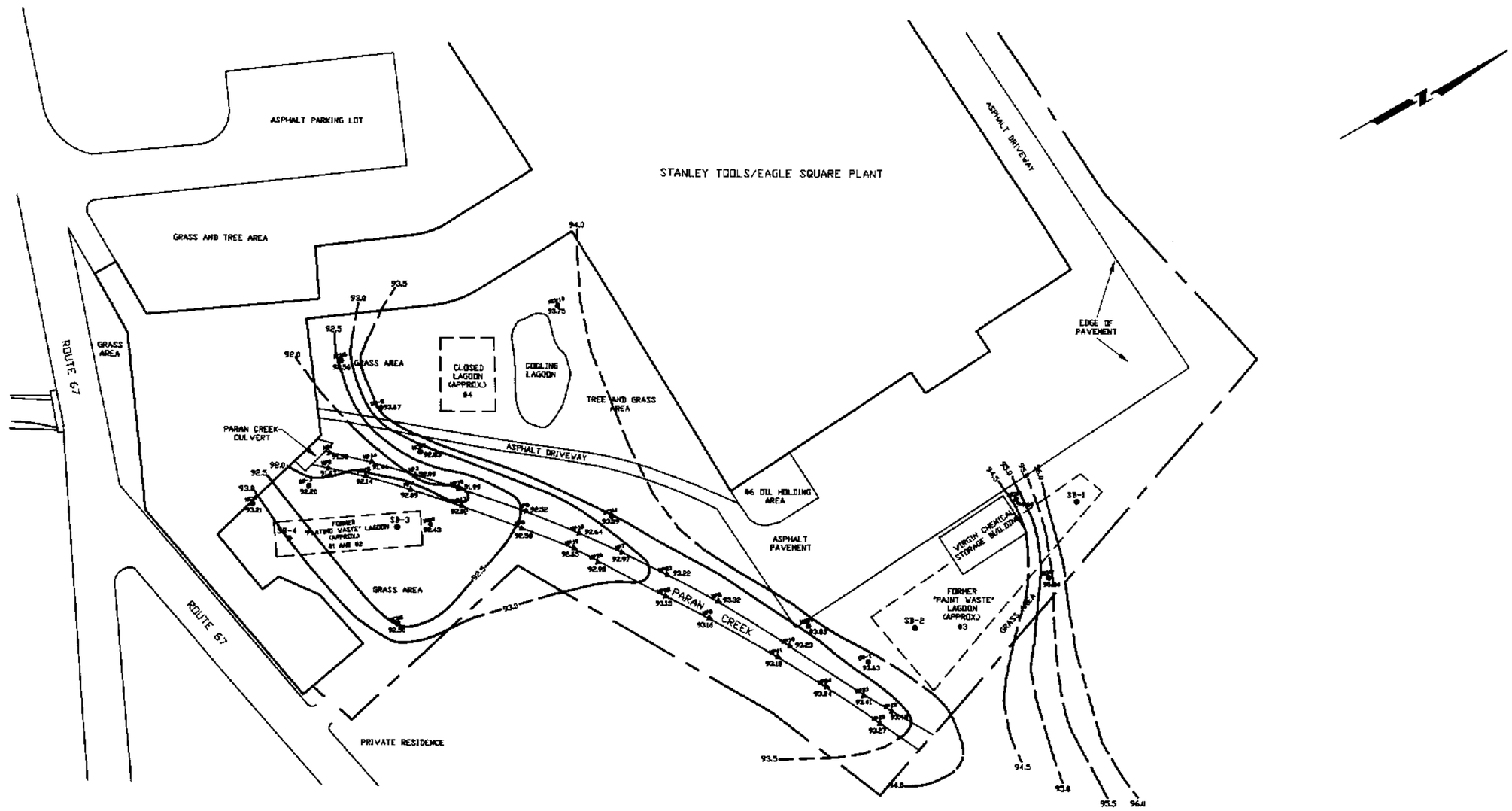


FIGURE 2-1

LEGEND

- MICROWELLS
- MINI-PIEZOMETERS
- OBSERVATION WELLS
- SOIL BORING
- 93.5 EQUIPOTENTIAL LINE (DASHED WHERE INFERRED) CONTOUR ELEVATION=0.5'

SCALE IN FEET

0 80 160

ENSR

ENSR CONSULTING & ENGINEERING

GROUND WATER TABLE MAP
STANLEY TOOLS EAGLE
SQUARE, VT

DRAWN BY:	DATE:	PROJECT NO.
K.P.B.	8/23/91	6303

630304B

TABLE 2-3

FIELD SCREENING RESULTS
STANLEY TOOLS FACILITY
SHAFTSBURY, VT

	RESULTS IN PPB		UNIDENTIFIED SIGNIFICANT PEAKS*														COMMENTS
	ETHYL-BENZENE	TOTAL XYLENES	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	
SAMPLE ID																	
FLOW RATE = 10 cc/min																	
MCW-1			19.4	4.1	22	2.1	28.3	1.3									
MCW-2			18.2	0.25	20.6	0.13											
MCW-3			17.4	0.78	20.2	0.12											
MCW-4			18.1	0.38	20.6	0.16											
MCW-5	1	3	19.3	5.1	33.2	1.1	132	0.83									
MP-1							128	0.56									
MP-3	2.13	5.8	17.5	0.22			128	1.1	244	1.0	430	7.3	504	23.5			
MP-5			18.2	0.40	20.5	0.16	128	3.3	467	6.8							
MP-7			18.3	0.33	20.6	0.19	128	1.5									
MP-8			18.7	0.74	21.1	0.28	129	3.6									
MP-16			18.6	0.29	20.9	0.15	128	2.2									
MP-18			18.3	0.20			128	1.6									
OW-1	89	20			20.5	9.8	107	3.3	165	3.1							
OW-2		1088	19.9	36.8	85.6	6.4	127	4.8	145	4	196	18.8	233	38.8	275	20.4	Many large peaks. Run at gain=5; GC results multiplied by 4 to normalize results to gain=20.
(cont'd)			290	29.6	491	1388	619	264									
OW-3							51.9	0.25									

* RT = RETENTION TIME
AREA = PEAK AREA IN VOLT-SECONDS
NOTE: COMPOUND ID IS TENTATIVE ONLY.
ALL RESULTS HAVE BEEN NORMALIZED TO GAIN=20 AND INJECTION VOLUME=250μl.
FIELD GC USED: PHOTOVAC MODEL 10S50 PORTABLE GAS CHROMATOGRAPH
MCW = MICROWELL
MP = MINI-PIEZOMETER
OW = OBSERVATION WELL

TABLE 2-4

FIELD SCREENING RESULTS
STANLEY TOOLS FACILITY
SHAFTSBURY, VT

	RESULTS IN PPB		UNIDENTIFIED SIGNIFICANT PEAKS*														COMMENTS
	ETHYL-BENZENE	TOTAL XYLENES	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	
SAMPLE ID																	
FLOW RATE = 6 cc/min																	
MCW-6			28.7	22.5													
MCW-7			28														
MCW-8			27	3.3	31	1.4	41	0.64									
MCW-9			29	33.7	154	3.1	238	3.2	273	3.4	377	13.2	425	8.9	580	31.8	Several heavier, late eluting compounds
MCW-10			26	0.38	53	0.26											
MP-2			26.3	4.4	204	1.1											
MP-4																	
MP-6			27.5	0.95	204	3.6											
MP-9			27.7	0.23	204	2											
MP-10			27.7	0.29	204	1.5											
MP-11			26.5	0.73	204	2.1											
MP-12			27.4	0.25	204	0.77											
MP-13					204	1.1											
MP-15					203	0.65											
MP-17					204	1.2											
MP-19					199	2.2											
MP-20			27	0.36	200	3.5											
MP-21			27	0.37	198	1.2											
MP-22			27	0.32	200	2.5											
MP-23			27	0.72	137	1.5	200	2.2									
MP-24			26	4.2	30.2	4.4	54	2.1	94	2.2	200	5.3					
OW-1		36	27	18.4	157	5											125μl inj. GC results mult. by 2 to be equivalent to 250μl inj.
OW-2		45.5	28	72	157	7.5	242	8	379	35.5							50μl inj. GC results mult. by 5 to be equivalent to 250μl inj.
OW-1 (new sample)		12.6	26	13.6	154	0.57	239	0.84									125μl inj. GC results mult. by 2 to be equivalent to 250μl inj.
OW-2 (new sample)		20.2	29	70.6	154	11	239	9.2	274	9.8	374	26.8	542	19.2	582	44.6	125μl inj. GC results mult. by 2 to be equivalent to 250μl inj.

* RT = RETENTION TIME
AREA = PEAK AREA IN VOLT-SECONDS
NOTE: COMPOUND ID IS TENTATIVE ONLY.
ALL RESULTS HAVE BEEN NORMALIZED TO GAIN=20 AND INJECTION VOLUME=250μl.
FIELD GC USED: PHOTOVAC MODEL 10S50 PORTABLE GAS CHROMATOGRAPH
MCW = MICROWELL
MP = MINI-PIEZOMETER
OW = OBSERVATION WELL

sent to the Aquatec laboratory for analysis. No priority pollutant compounds were detected in these samples. Several light hydrocarbons were detected by the laboratory but these compounds were not identified. The unidentified peaks may represent natural organic decay products in the groundwater.

2.3 Groundwater Sampling for Laboratory Analysis

Groundwater samples were collected for laboratory analysis from previously installed observation wells, OW-1, OW-2, and OW-3 and from two microwells, MCW-6 and MCW-9. The groundwater sample collection records for these samples are included as Appendix B. Appendix C contains the original laboratory data. The wells were hand purged using teflon bailers. OW-1 was bailed dry after removal of only one well volume. The well was sampled for VOC after having been allowed to recharge throughout the day. The well was then allowed to recharge again and samples for the remaining analyses were collected on the subsequent day. Well OW-3 was also bailed dry after the removal of only one volume. The teflon bailer then jammed in the well and could not be dislodged. On June 18, 1991, the well had recharged to a level high enough to allow sampling with another bailer. Samples were collected from the well at this time.

The samples submitted for metals analysis were filtered in the field prior to being preserved with nitric acid. The field blank collected for metals analysis was not filtered prior to preservation with nitric acid. Samples collected for volatile organics (VOCs), semivolatile organics (SVOCs), total petroleum hydrocarbons (TPH), and total suspended solids analyses were preserved by chilling. Table 2-5 indicates the compounds which were detected by the laboratory in ground water samples. Results of laboratory analyses reported by IT Corporation, obtained during their study conducted in January 1989, are presented in Tables 2-6, 2-7, and 2-8.

2.4 Stream Flow Gauging

Stream flow gauging of Paran Creek was performed at four locations, two upstream and two downstream of the site. Bouldery conditions at the locations chosen for Transects 1 and 2 made accurate measurement of flow rates difficult. Transects 3 and 4 were located in areas with smoother bottom conditions. The data for Transects 3 and 4 was used to draw the stream profile and to calculate stream discharge. Transect locations are shown on Figure 2-1. Profiles of the creek were made at these locations and flow velocity was measured at various depths using a Marsh McBirney Model 201 Portable Water Current Meter. These data were used to calculate the discharge of the stream. The data for transects 3 and 4, and calculations of the flow rate, are presented in Appendix D.

TABLE 2-5
COMPOUNDS DETECTED IN
GROUNDWATER BY LABORATORY ANALYSES

STANLEY TOOLS, VERMONT
6303-029-400

VOLATILE ORGANIC COMPOUNDS
by Method 8240
SAMPLED 6/91
RESULTS IN $\mu g/l$ (ppb)

FIELD ID:	MCW-6	MCW-9	OW-1	OW-2	OW-2- dup	OW-3	Trip Blk	Field Blk	VWQS
METHYLENE CHLORIDE	2 JB	2 JB			4 JB	1 JB	2 JB	2 JB	5
ACETONE	11 B	8 JB				5 JB	2 JB	2 JB	*
ETHYLBENZENE									680
TOTAL XYLENES			150	6	5				400

B - FOUND IN METHOD BLANK
J - BELOW DETECTION LIMIT; ESTIMATED VALUE
MCW - MICROWELL
OW - OBSERVATION WELL
VWQS - VERMONT WATER QUALITY STANDARDS
* - VWQS DOES NOT EXIST
Note: Only those compounds detected in at least one sample have been listed.

SEMI-VOLATILE ORGANIC COMPOUNDS
by Method 8270
SAMPLED 6/91
RESULTS IN $\mu g/l$ (ppb)

FIELD ID:	OW-1	OW-2	Field Blk	VWQS
NAPHTHALENE	6 J	47	10 U	*
2-METHYLNAPHTHALENE		35	10 U	*

U - NOT DETECTED
VWQS - VERMONT WATER QUALITY STANDARDS
* - VWQS DOES NOT EXIST
Note: Only those compounds detected in at least one sample have been listed.

TABLE 2-5 (Cont'd)
COMPOUNDS DETECTED IN GROUNDWATER BY LABORATORY ANALYSES

METALS
SAMPLED 6/91
RESULTS IN mg/l (ppm)
Note: Samples were field filtered to remove sediment.

	FIELD ID:	FB	OW-1	OW-2	OW-3
Antimony		ND	ND	ND	ND
Arsenic		ND	0.017	0.015	ND
Beryllium		ND	ND	ND	ND
Cadmium		ND	ND	ND	ND
Chromium		ND	ND	ND	ND
Copper		ND	ND	ND	ND
Lead		ND	ND	ND	ND
Mercury		ND	ND	ND	ND
Nickel		ND	0.059	ND	ND
Selenium		ND	ND	ND	ND
Thallium		ND	ND	ND	ND
Zinc		ND	ND	ND	ND
Silver		ND	ND	ND	ND

ND - Not Detected

	FIELD ID:	FB	OW-1	OW-2	OW-3
TOTAL PETROLEUM HYDROCARBONS (mg/l)		NA	NA	22.3	0.78
TOTAL DISSOLVED SOLIDS (mg/l)				740	229

TABLE 2-6

Stanley Works/Shaftsbury, VT
IT Corporation 1989 Preliminary Investigation Soil Data Summary

Parameter	SB-1	SB-2	SB-3	SB-4	OW-2
pH	8.2	8.3	7.7	8.1	--
Cyanide (ppm)					
Total	--	--	8.1	54.0	--
Amenable	--	--	1.6	BDL	--
EP TOX (ppm)					
Arsenic	BDL	BDL	BDL	BDL	--
Barium	BDL	BDL	BDL	3.9	--
Cadmium	BDL	BDL	BDL	0.03	--
Chromium	BDL	BDL	BDL	BDL	--
Lead	BDL	0.31	BDL	BDL	--
Mercury	BDL	BDL	BDL	BDL	--
Selenium	BDL	BDL	BDL	BDL	--
Silver	BDL	BDL	BDL	BDL	--
EPA 8240 (ppb)					
Benzene	ND	ND	ND	ND	ND
Toluene	ND	12	ND	ND	ND
Ethylbenzene	ND	1100	ND	ND	ND
Xylenes	ND	4200	8	15	ND
Methylcyclohexane	ND	100	ND	200	BDL
Acetone	BDL	BDL	95	BDL	BDL
Carbon Disulfide	ND	16	ND	ND	ND
2-Butanone	ND	ND	21	ND	ND

TABLE 2-6 (Cont'd)

Stanley Works/Shaftsbury, VT
IT Corporation 1989 preliminary Investigation Soil Data Summary

Parameter	SB-1	SB-2	SB-3	SB-4	OW-2
EPA 8270 (ppb)					
Flouranthene	BDL	510	ND	360	--
Naphthalene	ND	380	ND	ND	--
Phenanthrene	BDL	470	ND	420	--
Pyrene	BDL	600	BDL	380	--
bis(2-ethylhexyl)phthalate	1400	1800	ND	ND	--

Notes: ND = None Detected
BDL = Below Detection Limits
-- = Not Analyzed for that Parameter

TABLE 2-7

Soil Sample Screening for Volatile Organic Compounds IT Corporation 1989 Preliminary Investigation Soil Data Summary

Sample #	Depth (ft)	VOCs (ppm)
SB1/SS1	0 - 2	11.0
SB1/SS2	2 - 4	210.0
SB1/SS3	4 - 6	210.0
SB1/SS4	6 - 8	110.0
SB2/SS1	0 - 2	14.0
SB2/SS2	2 - 4	13.0
SB2/SS3	4 - 6	440.0
SB2/SS4	6 - 8	460.0
SB3/SS1	0 - 2	ND
SB3/SS2	2 - 4	ND
SB3/SS3	4 - 6	1.0
SB3/SS4	6 - 8	0.5
SB4/SS1	0 - 2	0.1
SB4/SS2	2 - 4	ND
SB4/SS3	4 - 6	4.0
SB4/SS4	6 - 8	1.0

Notes: ND = None Detected

TABLE 2-7 (Cont'd)

Soil Sample Screening for Volatile Organic Compounds IT Corporation 1989 Preliminary Investigation Soil Data Summary

Sample #	Depth (ft)	VOCs (ppm)
OW1/SS1	5 - 7	ND
OW2/SS1	5 - 7	730.0
OW2/SS2	10 - 12	520.0
OW2/SS3	15	260.0
OW3/SS1	5 - 7	0.1
OW3/SS2	10 - 12	0.5
OW3/SS3	15	0.1

Notes: ND = None Detected

TABLE 2-8

Stanley Works/Shaftsbury, VT
IT Corporation 1989 Preliminary Investigation
Groundwater Data Summary

Parameter	OW-1	OW-2	OW-3	Creek	Creek Sediments	Vermont Water Quality Standards (µg/l)
pH	7.8	6.8	11.5	8.1	8.2	
Cyanide (ppm)						
Total	--	--	0.03	--	--	154.0
Amenable	--	--	BDL	--	--	
Total Metals (ppm)						
Arsenic	--	0.04	0.04	BDL	BDL*	50
Barium	--	0.34	0.67	BDL	BDL*	1.0
Cadmium	--	BDL	0.02	BDL	BDL*	5.0
Chromium	--	0.04	0.20	BDL	BDL*	50
Lead	--	0.106	0.191	BDL	BDL*	20
Mercury	--	BDL	0.0005	BDL	BDL*	2.0
Selenium	--	BDL	BDL	BDL	BDL*	10.0**
Silver	--	BDL	BDL	BDL	BDL*	50.0
EPA 624 (ppb)						
Benzene	BDL	ND	ND	ND	--	5.0
Toluene	BDL	BDL	ND	ND	--	2.42
Ethylbenzene	ND	12	ND	ND	--	680
Xylenes	77	95	ND	ND	--	400

TABLE 2-8 (Cont'd)

Stanley Works/Shaftsbury, VT
IT Corporation 1989 Preliminary Investigation
Groundwater Data Summary

Parameter	OW-1	OW-2	OW-3	Creek	Creek Sediments	Vermont Water Quality Standards (µg/l)
EPA 625 (ppb)						
Naphthalene	ND	51	ND	–	ND	–
2-Methyl-naphthalene	ND	39	ND	–	ND	–

Notes:
ND = None Detected
BDL = Below Detection Limit
– = Not Analyzed for that Parameter
* = EP Toxicity Analytical Results
** = Federal MCL Standard

2.5 Water Level Measurements

One round of water level measurements was taken during the week of June 21, 1991. Monitoring points included on-site observation wells, microwells and minipiezometers. Recorded water level measurements, tabulated in Table 2-9, were used to generate a water table map, Figure 2-2.

2.6 Slug Tests

ENSR personnel conducted rising head slug tests at two of the three previously existing observation wells. Water was displaced from its static level in the well by instantaneously withdrawing a PVC slug. Recovery of the water table to its static level was recorded using a Hermit 1000C electronic data logger and a five pounds per square inch pressure transducer. The data logger was started concurrent with the removal of the slug from the observation well.

Water level data collected from the slug tests at observation wells OW-1 and OW-2 were analyzed with standard techniques described by Bouwer and Rice (1976). Summary sheets of the slug tests analyses are presented in Appendix D. Estimates of hydraulic conductivity obtained from the analyses of the slug test data are reported in Section 3.0.

TABLE 2-9

Water Level Data
Stanley Tools, Shaftsbury, VT
6/21/91 - 6/28/91

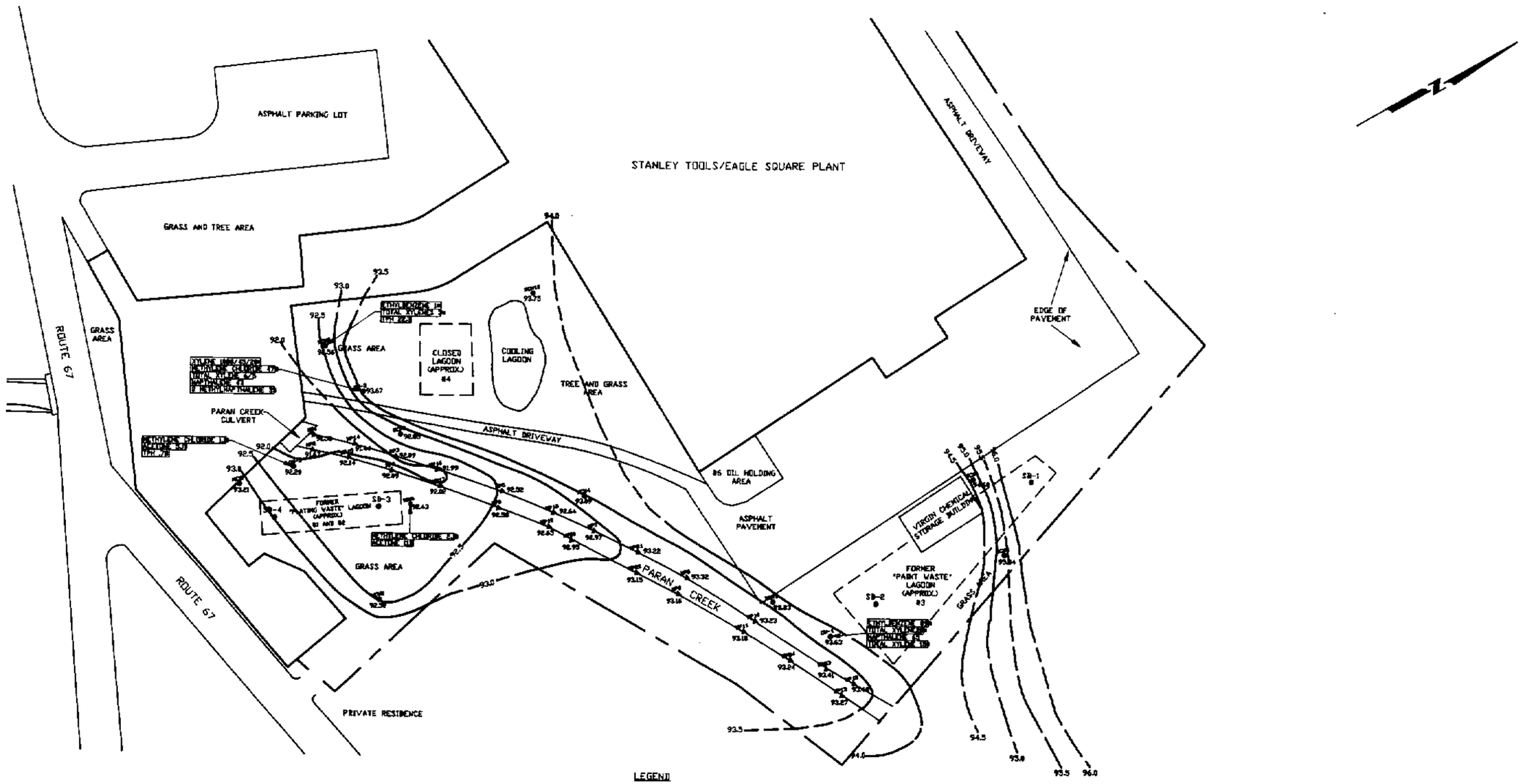
Name	Elevation (feet)	Depth to Water (feet)	Elevation of Water Table
MCW-1	97.73	3.90	93.83
MCW-2	98.94	3.60	95.34
MCW-3	97.29	2.69	94.60
MCW-4	97.09	4.00	93.09
MCW-5	98.42	5.86	92.56
MCW-6	98.38	5.95	92.43
MCW-7	98.88	5.67	93.21
MCW-8	99.82	7.32	92.50
MCW-9	97.47	4.62	92.85
MCW-10	97.37	3.62	93.75
MP-1	94.03	2.45	91.53
MP-2	94.69	3.02	91.67
MP-3	94.07	1.98	92.09
MP-4	94.62	2.53	92.09
MP-5	94.41	1.89	92.52
MP-6	94.69	2.11	92.58
MP-7	95.82	2.85	92.97
MP-8	96.24	2.92	93.32
MP-9	95.18	2.02	93.16
MP-10	95.86	2.63	93.23

TABLE 2-9 (Cont'd)

Water Level Data
Stanley Tools, Shaftsbury, VT
6/21/91 - 6/28/91

Name	Elevation (feet)	Depth to Water (feet)	Elevation of Water Table
MP-11	95.75	2.57	93.18
MP-12	96.51	3.03	93.48
MP-13	95.58	2.31	93.27
MP-14	94.23	2.79	91.44
MP-15	94.34	2.20	92.14
MP-16	94.23	2.24	91.99
MP-17	94.43	2.41	92.02
MP-18	95.00	2.36	92.64
MP-19	95.04	2.39	92.65
MP-20	95.26	2.31	92.95
MP-21	95.35	2.13	93.22
MP-22	95.62	2.47	93.15
MP-23	94.72	1.31	93.41
MP-24	95.38	2.14	93.24
OW-1	99.08	5.45	93.63
OW-2	99.17	5.50	93.67
OW-3	99.43	7.23	92.20

Elevation given in feet.
Reference point is an assumed datum of 100.00.
Elevation measured from:
- Top of Pipe - Microwells (MCW)
- Top of PVC - Observation Wells (OW)
- Top of Stake - Miniplezometers (MP)



LEGEND

- ● MICROWELLS
- ▲ MINI-PIEZOMETERS
- ● OBSERVATION WELLS
- ● SOIL BORING
- —93.5— EQUIPOTENTIAL LINE (DASHED WHERE INFERRED) CONTOUR ELEVATION=0.5'
- J = ESTIMATED VALUE DUE TO LOW CONCENTRATION
- B = DETECTED IN BLANK
- LABORATORY ANALYSIS UNITS ug/l
- 6/5 = RESULTS FOR MULTIPLE ANALYSIS
- * = ANALYSIS PERFORMED IN FIELD USING PHOTOVAC GAS CHROMATOGRAPH (ppb)

SCALE IN FEET

0 80 160

FIGURE 2-2

ENSR

ENSR CONSULTING & ENGINEERING

GROUNDWATER ANALYSIS RESULTS
STANLEY TOOLS EAGLE
SQUARE, VT

DRAWN BY:	DATE:	PROJECT NO.
K.P.B.	8/23/91	6303

630303B

sent to the Aquatec laboratory for analysis. No priority pollutant compounds were detected in these samples. Several light hydrocarbons were detected by the laboratory but these compounds were not identified. The unidentified peaks may represent natural organic decay products in the groundwater.

2.3 Groundwater Sampling for Laboratory Analysis

Groundwater samples were collected for laboratory analysis from previously installed observation wells, OW-1, OW-2, and OW-3 and from two microwells, MCW-6 and MCW-9. The groundwater sample collection records for these samples are included as Appendix B. Appendix C contains the original laboratory data. The wells were hand purged using teflon bailers. OW-1 was bailed dry after removal of only one well volume. The well was sampled for VOC after having been allowed to recharge throughout the day. The well was then allowed to recharge again and samples for the remaining analyses were collected on the subsequent day. Well OW-3 was also bailed dry after the removal of only one volume. The teflon bailer then jammed in the well and could not be dislodged. On June 18, 1991, the well had recharged to a level high enough to allow sampling with another bailer. Samples were collected from the well at this time.

The samples submitted for metals analysis were filtered in the field prior to being preserved with nitric acid. The field blank collected for metals analysis was not filtered prior to preservation with nitric acid. Samples collected for volatile organics (VOCs), semivolatile organics (SVOCs), total petroleum hydrocarbons (TPH), and total suspended solids analyses were preserved by chilling. Table 2-5 indicates the compounds which were detected by the laboratory in ground water samples. Results of laboratory analyses reported by IT Corporation, obtained during their study conducted in January 1989, are presented in Tables 2-6, 2-7, and 2-8.

2.4 Stream Flow Gauging

Stream flow gauging of Paran Creek was performed at four locations, two upstream and two downstream of the site. Bouldery conditions at the locations chosen for Transects 1 and 2 made accurate measurement of flow rates difficult. Transects 3 and 4 were located in areas with smoother bottom conditions. The data for Transects 3 and 4 was used to draw the stream profile and to calculate stream discharge. Transect locations are shown on Figure 2-1. Profiles of the creek were made at these locations and flow velocity was measured at various depths using a Marsh McBirney Model 201 Portable Water Current Meter. These data were used to calculate the discharge of the stream. The data for transects 3 and 4, and calculations of the flow rate, are presented in Appendix D.

TABLE 2-5
COMPOUNDS DETECTED IN
GROUNDWATER BY LABORATORY ANALYSES

STANLEY TOOLS, VERMONT
6303-029-400

VOLATILE ORGANIC COMPOUNDS
by Method 8240
SAMPLED 6/91
RESULTS IN μg/l (ppb)

FIELD ID:	MCW-6	MCW-9	OW-1	OW-2	OW-2- dup	OW-3	Trip Blk	Field Blk	VWQS
METHYLENE CHLORIDE	2 JB	2 JB			4 JB	1 JB	2 JB	2 JB	5
ACETONE	11 B	8 JB				5 JB	2 JB	2 JB	*
ETHYLBENZENE									680
TOTAL XYLENES			150	6	5				400

B - FOUND IN METHOD BLANK
J - BELOW DETECTION LIMIT; ESTIMATED VALUE
MCW - MICROWELL
OW - OBSERVATION WELL
VWQS - VERMONT WATER QUALITY STANDARDS
* - VWQS DOES NOT EXIST
Note: Only those compounds detected in at least one sample have been listed.

SEMI-VOLATILE ORGANIC COMPOUNDS
by Method 8270
SAMPLED 6/91
RESULTS IN μg/l (ppb)

FIELD ID:	OW-1	OW-2	Field Blk	VWQS
NAPHTHALENE	6 J	47	10 U	*
2-METHYLNAPHTHALENE		35	10 U	*

U - NOT DETECTED
VWQS - VERMONT WATER QUALITY STANDARDS
* - VWQS DOES NOT EXIST
Note: Only those compounds detected in at least one sample have been listed.

TABLE 2-5 (Cont'd)
COMPOUNDS DETECTED IN
GROUNDWATER BY LABORATORY ANALYSES

METALS
SAMPLED 6/91
RESULTS IN mg/l (ppm)
Note: Samples were field filtered to remove sediment.

FIELD ID:	FB	OW-1	OW-2	OW-3
Antimony	ND	ND	ND	ND
Arsenic	ND	0.017	0.015	ND
Beryllium	ND	ND	ND	ND
Cadmium	ND	ND	ND	ND
Chromium	ND	ND	ND	ND
Copper	ND	ND	ND	ND
Lead	ND	ND	ND	ND
Mercury	ND	ND	ND	ND
Nickel	ND	0.059	ND	ND
Selenium	ND	ND	ND	ND
Thallium	ND	ND	ND	ND
Zinc	ND	ND	ND	ND
Silver	ND	ND	ND	ND

ND - Not Detected

FIELD ID:	FB	OW-1	OW-2	OW-3
TOTAL PETROLEUM HYDROCARBONS (mg/l)	NA	NA	22.3	0.78
TOTAL DISSOLVED SOLIDS (mg/l)			740	229

TABLE 2-6

Stanley Works/Shaftsbury, VT
IT Corporation 1989 Preliminary Investigation Soil Data Summary

Parameter	SB-1	SB-2	SB-3	SB-4	OW-2
pH	8.2	8.3	7.7	8.1	--
Cyanide (ppm)					
Total	--	--	8.1	54.0	--
Amenable	--	--	1.6	BDL	--
EP TOX (ppm)					
Arsenic	BDL	BDL	BDL	BDL	--
Barium	BDL	BDL	BDL	3.9	--
Cadmium	BDL	BDL	BDL	0.03	--
Chromium	BDL	BDL	BDL	BDL	--
Lead	BDL	0.31	BDL	BDL	--
Mercury	BDL	BDL	BDL	BDL	--
Selenium	BDL	BDL	BDL	BDL	--
Silver	BDL	BDL	BDL	BDL	--
EPA 8240 (ppb)					
Benzene	ND	ND	ND	ND	ND
Toluene	ND	12	ND	ND	ND
Ethylbenzene	ND	1100	ND	ND	ND
Xylenes	ND	4200	8	15	ND
Methylcyclohexane	ND	100	ND	200	BDL
Acetone	BDL	BDL	95	BDL	BDL
Carbon Disulfide	ND	16	ND	ND	ND
2-Butanone	ND	ND	21	ND	ND

TABLE 2-6 (Cont'd)

Stanley Works/Shaftsbury, VT
IT Corporation 1989 preliminary Investigation Soil Data Summary

Parameter	SB-1	SB-2	SB-3	SB-4	OW-2
EPA 8270 (ppb)					
Flouranthene	BDL	510	ND	360	--
Naphthalene	ND	380	ND	ND	--
Phenanthrene	BDL	470	ND	420	--
Pyrene	BDL	600	BDL	380	--
bis(2-ethylhexyl)phthalate	1400	1800	ND	ND	--

Notes: ND = None Detected
BDL = Below Detection Limits
-- = Not Analyzed for that Parameter

TABLE 2-7

Soil Sample Screening for Volatile Organic Compounds IT Corporation 1989 Preliminary Investigation Soil Data Summary

Sample #	Depth (ft)	VOCs (ppm)
SB1/SS1	0 - 2	11.0
SB1/SS2	2 - 4	210.0
SB1/SS3	4 - 6	210.0
SB1/SS4	6 - 8	110.0
SB2/SS1	0 - 2	14.0
SB2/SS2	2 - 4	13.0
SB2/SS3	4 - 6	440.0
SB2/SS4	6 - 8	460.0
SB3/SS1	0 - 2	ND
SB3/SS2	2 - 4	ND
SB3/SS3	4 - 6	1.0
SB3/SS4	6 - 8	0.5
SB4/SS1	0 - 2	0.1
SB4/SS2	2 - 4	ND
SB4/SS3	4 - 6	4.0
SB4/SS4	6 - 8	1.0

Notes: ND = None Detected

TABLE 2-7 (Cont'd)

Soil Sample Screening for Volatile Organic Compounds IT Corporation 1989 Preliminary Investigation Soil Data Summary

Sample #	Depth (ft)	VOCs (ppm)
OW1/SS1	5 - 7	ND
OW2/SS1	5 - 7	730.0
OW2/SS2	10 - 12	520.0
OW2/SS3	15	260.0
OW3/SS1	5 - 7	0.1
OW3/SS2	10 - 12	0.5
OW3/SS3	15	0.1

Notes: ND = None Detected

TABLE 2-8

Stanley Works/Shaftsbury, VT
IT Corporation 1989 Preliminary Investigation
Groundwater Data Summary

Parameter	OW-1	OW-2	OW-3	Creek	Creek Sediments	Vermont Water Quality Standards (µg/l)
pH	7.8	6.8	11.5	8.1	8.2	
Cyanide (ppm)						
Total	–	–	0.03	–	–	154.0
Amenable	–	–	BDL	–	–	
Total Metals (ppm)						
Arsenic	–	0.04	0.04	BDL	BDL*	50
Barium	–	0.34	0.67	BDL	BDL*	1.0
Cadmium	–	BDL	0.02	BDL	BDL*	5.0
Chromium	–	0.04	0.20	BDL	BDL*	50
Lead	–	0.106	0.191	BDL	BDL*	20
Mercury	–	BDL	0.0005	BDL	BDL*	2.0
Selenium	–	BDL	BDL	BDL	BDL*	10.0**
Silver	–	BDL	BDL	BDL	BDL*	50.0
EPA 624 (ppb)						
Benzene	BDL	ND	ND	ND	–	5.0
Toluene	BDL	BDL	ND	ND	–	2.42
Ethylbenzene	ND	12	ND	ND	–	680
Xylenes	77	95	ND	ND	–	400

TABLE 2-8 (Cont'd)

Stanley Works/Shaftsbury, VT
IT Corporation 1989 Preliminary Investigation
Groundwater Data Summary

Parameter	OW-1	OW-2	OW-3	Creek	Creek Sediments	Vermont Water Quality Standards (µg/l)
EPA 625 (ppb)						
Naphthalene	ND	51	ND	–	ND	–
2-Methyl-naphthalene	ND	39	ND	–	ND	–

Notes:
ND = None Detected
BDL = Below Detection Limit
– = Not Analyzed for that Parameter
* = EP Toxicity Analytical Results
** = Federal MCL Standard

2.5 Water Level Measurements

One round of water level measurements was taken during the week of June 21, 1991. Monitoring points included on-site observation wells, microwells and minipiezometers. Recorded water level measurements, tabulated in Table 2-9, were used to generate a water table map, Figure 2-2.

2.6 Slug Tests

ENSR personnel conducted rising head slug tests at two of the three previously existing observation wells. Water was displaced from its static level in the well by instantaneously withdrawing a PVC slug. Recovery of the water table to its static level was recorded using a Hermit 1000C electronic data logger and a five pounds per square inch pressure transducer. The data logger was started concurrent with the removal of the slug from the observation well.

Water level data collected from the slug tests at observation wells OW-1 and OW-2 were analyzed with standard techniques described by Bouwer and Rice (1976). Summary sheets of the slug tests analyses are presented in Appendix D. Estimates of hydraulic conductivity obtained from the analyses of the slug test data are reported in Section 3.0.

TABLE 2-9

Water Level Data
Stanley Tools, Shaftsbury, VT
6/21/91 - 6/28/91

Name	Elevation (feet)	Depth to Water (feet)	Elevation of Water Table
MCW-1	97.73	3.90	93.83
MCW-2	98.94	3.60	95.34
MCW-3	97.29	2.69	94.60
MCW-4	97.09	4.00	93.09
MCW-5	98.42	5.86	92.56
MCW-6	98.38	5.95	92.43
MCW-7	98.88	5.67	93.21
MCW-8	99.82	7.32	92.50
MCW-9	97.47	4.62	92.85
MCW-10	97.37	3.62	93.75
MP-1	94.03	2.45	91.53
MP-2	94.69	3.02	91.67
MP-3	94.07	1.98	92.09
MP-4	94.62	2.53	92.09
MP-5	94.41	1.89	92.52
MP-6	94.69	2.11	92.58
MP-7	95.82	2.85	92.97
MP-8	96.24	2.92	93.32
MP-9	95.18	2.02	93.16
MP-10	95.86	2.63	93.23

TABLE 2-9 (Cont'd)

Water Level Data
Stanley Tools, Shaftsbury, VT
6/21/91 - 6/28/91

Name	Elevation (feet)	Depth to Water (feet)	Elevation of Water Table
MP-11	95.75	2.57	93.18
MP-12	96.51	3.03	93.48
MP-13	95.58	2.31	93.27
MP-14	94.23	2.79	91.44
MP-15	94.34	2.20	92.14
MP-16	94.23	2.24	91.99
MP-17	94.43	2.41	92.02
MP-18	95.00	2.36	92.64
MP-19	95.04	2.39	92.65
MP-20	95.26	2.31	92.95
MP-21	95.35	2.13	93.22
MP-22	95.62	2.47	93.15
MP-23	94.72	1.31	93.41
MP-24	95.38	2.14	93.24
OW-1	99.08	5.45	93.63
OW-2	99.17	5.50	93.67
OW-3	99.43	7.23	92.20

Elevation given in feet.
Reference point is an assumed datum of 100.00.
Elevation measured from:
Top of Pipe - Microwells (MCW)
Top of PVC - Observation Wells (OW)
Top of Stake - Miniplezometers (MP)

3.0 INTERPRETATION

3.1 Site Geology

The Eagle Square Plant is situated on the Paran Creek valley floor. The valley floor is generally underlain by a thick sequence of coarse-grained stratified glacial drift which overlies the Clarendun Springs or Winooski Dolomites (MacFayden, 1956). Water wells of up to 90 feet in depth have been drilled in the general vicinity of the plant without encountering bedrock (Hodges, 1966).

Soil types mapped within the study area consist of udisaments and udorthemis. Udisaments are young sandy soils which form in glacial outwash while udorthemis is man-made land or fill. Another soil mapped within the study area, just upstream of the site, is the Pootatuck, fine sandy loam which forms in flood plain alluvium consisting of fine sand and silt.

Four shallow borings and three shallow observation wells were advanced by the IT Corporation in 1988. The four borings were advanced in two former waste lagoons.

Well and boring locations are detailed on Figure 2-1. Table 3-1 summarizes the depth and well construction details of the borings and wells, respectively.

Figure 3-1 shows a fence diagram generated using IT Corporation boring and well logs. As is illustrated in Figure 3-1, the study area is generally underlain by interbedded brown green, grey and black fine sand and silt with rock fragments, pebbles, and in lesser amounts, cobbles and clay. Soil discoloration and other observations made during the advancement of the borings indicate, however, that the site is underlain by fill which is a mixture of the previously existing soil types. Borings for OW-1 and OW-3 encountered auger refusal on boulders at 8 and 12 feet, respectively. The presence of boulders at these observation well locations is consistent with the observations made at some microwell installation locations where pipe advancement was difficult. The fill depths in the area range from 7 to 11 feet. Tan clay and silt was encountered in SB-2, SB-4 and OW-2 at depths of 7, 7 and 11 feet, respectively. This clay and silt likely represents natural floodplain alluvium which overlies the coarse grained stratified glacial drift.

3.2 Site Hydrogeology

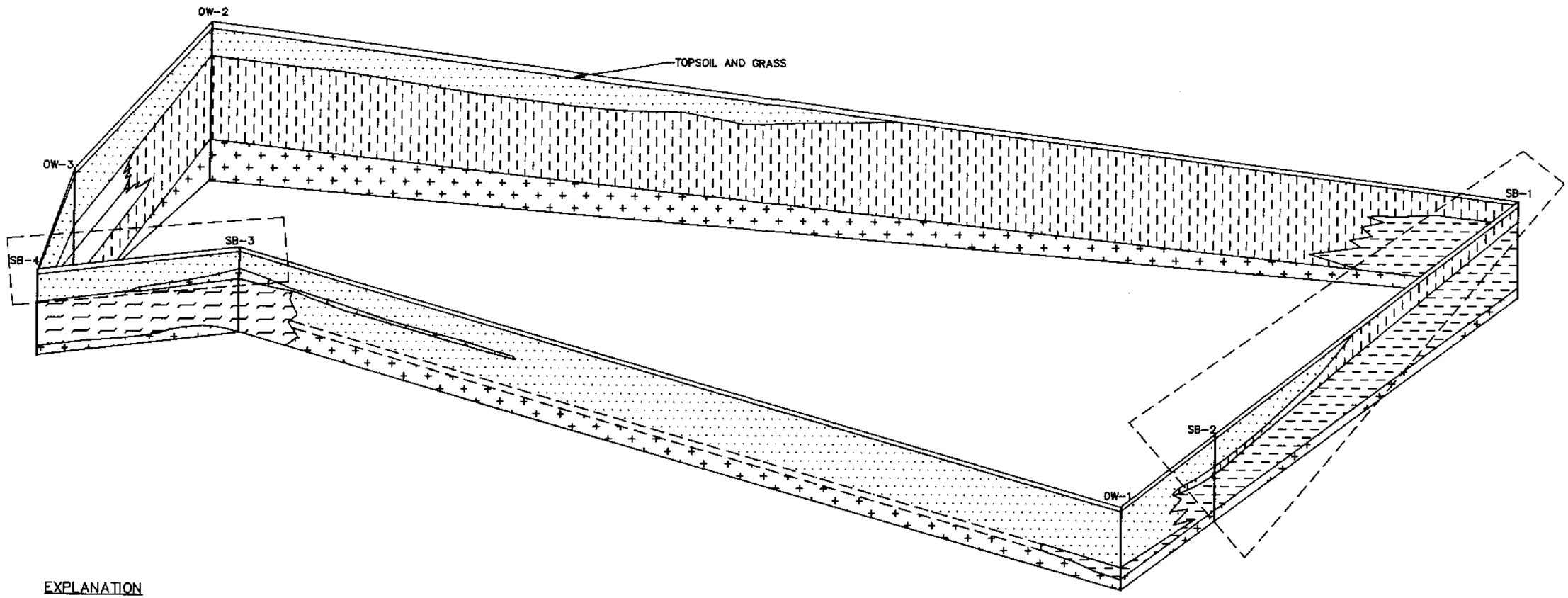
Section 3.2 discusses groundwater flow direction across the site and the influence of Paran Creek on this groundwater flow regime, evaluates the results of the slug test analyses, and

TABLE 3-1

Summary of Boring Depths and Well Construction*

Well/Boring # Location	Depth Below Surface	Top of Screen Depth	Bottom of Screen Depth	Depth to Natural Soil
OW-1 20' South of Paint Waste Lagoon	8	2	8	Not encountered
OW-2 44' South of Closed Lagoon	15	5	15	11
OW-3 24' Northwest of Plating Waste Lagoon	12	2	12	Not encountered
SB1 Paint Waste Lagoon	9	None	None	8
SB2 Paint Waste Lagoon	8	None	None	7
SB3 Plating Waste Lagoon	8	None	None	Not encountered
SB4 plating Waste Lagoon	8	None	None	7

*All units are in feet.



EXPLANATION

- TAN SILT AND CLAY
- BROWN TO TAN SAND AND SILT
- GRAY/BROWN SILT, SOME CLAY, ROCK FRAGMENTS
- BLACK/GRAY SLUDGE MATERIAL, SOME SAND AND CLAY
- INTERBEDDED SAND AND SILT, SOME CLAY
- LOCATION OF FORMER WASTE LAGOONS

10'

10'

FIGURE 3-1
FENCE DIAGRAM
STANLEY TOOLS-EAGLE
SQUARE PLANT, VT

630301B

ENSR

presents calculated values for groundwater seepage velocity, groundwater and surface water discharge and flux values.

Hydraulic Conductivity Estimates

Observation wells OW-1 and OW-2 were slug tested to obtain estimates of hydraulic conductivity. Estimates of hydraulic conductivity were made using the Bouwer and Rice method (1976). The estimate for each observation well is presented in Table 3-2 (Summary of Hydraulic Conductivity Estimates). The geometric average of the hydraulic conductivity estimates from these piezometers was 3.07 $x10^{-2}$ centimeters per second (cm/sec) (87.02 feet per day (ft/day)). The geometric average was used because hydraulic conductivity is a log-normally distributed parameter. The average of the hydraulic conductivity estimates were approximately two orders-of-magnitude larger than might have been expected for the silty sand and clayey silt in which the observation wells were screened but are consistent with the rapid recovery of water levels during testing. The higher than expected hydraulic conductivities may be due to the fact that the wells are screened in fill material which is more loosely packed than the native material, hence, it is more permeable than would be supposed from the lithologic descriptions recorded in the boring logs. The higher than expected estimates of hydraulic conductivity have been utilized in the calculations for the remainder of this report because their use provides a high side conservative estimate of the contaminated groundwater contribution to Paran Creek. Summary sheets of the slug test data and hydraulic conductivity calculations are presented in Appendix E.

Groundwater Flow

Regionally, groundwater flows to the southwest through glacial material deposited within the breached nose of an anticline. The hydraulic gradients directed toward Paran Creek indicate a good hydraulic connection between shallow groundwater flow and Paran Creek. Groundwater flow converges on the creek from both the northwest and southeast.

In the area of the former plating waste lagoon, groundwater flows to the north-northwest and discharges directly to Paran Creek. Groundwater in the area of the former paint waste lagoon flows south, discharging directly to Paran Creek. The groundwater contours shown in Figure 2-2 indicate that groundwater flows radially to the south from the closed lagoon area. Groundwater from this area discharges to Paran Creek or flows south subparallel to the creek, crossing the property line to the south.

The water table over the central portion of the site is relatively flat, becoming steeper in the vicinity of MCW-2 and MCW-3 and along the southwestern-most reach of the creek. Hydraulic gradients northwest of the creek range from 0.057 foot per foot (ft/ft) in the vicinity of MCW-9,

TABLE 3-2
Stanley Works Eagle Square, VT
Summary of Hydraulic Conductivity Estimates.

Well #	Analysis Type	Hydraulic Conductivity Estimate (cm/s)	Head Condition	Average * Hydraulic Conductivity (cm/s)	Generalized Geologic Strata and Depth of Sreened Interval (ft below ground surface)
OW-1	B-R	2.80E-02	R	3.07E-02	m. sand and silt, rock fragments 2-8
OW-2	B-R	3.36E-02	R		silt - silt and clay, 5-15

*

B-R Determined by Bouwer and Rice (1976) Method
R Rising head test
m. medium

to 0.018 ft/ft adjacent to the eastern site boundary. Hydraulic gradients southeast of the creek range from 0.020 ft/ft near OW-3 to 0.014 ft/ft near MCW-8. With these hydraulic gradients and an average hydraulic conductivity of 3.07×10^{-2} cm/sec and an assumed porosity of 0.30, groundwater flow velocity from the northwest ranges from 1.91×10^{3} to 6.03×10^{3} feet per year (ft/year), while groundwater flow velocity from the southeast ranges from approximately 1.48×10^{3} to 2.12×10^{3} ft/year.

Surface Water Flow

The geometry and patterns of flow within the shallow flow system from the groundwater to the creek are well contained. The flow rate calculated for Paran Creek was 8.01 cubic feet per second (cfs) at downgradient transect 3 and 7.97 cfs at upgradient transect 4. The difference in flow rate represents the contribution of groundwater flow to this reach of Paran Creek, 0.04 cfs or 26,000 gallons per day (gpd).

Groundwater Discharge to Surface Water

Stream tube or flow net calculations were used to estimate the ground water discharge to Paran Creek occurring within the study area (a line approximately 1,100 feet long, extending between OW-2 and OW-3 and the eastern property boundary. These calculations are presented in Appendix F. Total groundwater discharge from the northwest side of the stream was calculated to be about 18,500 gallons per day per foot (gpd/foot) of vertical saturated thickness. A groundwater discharge of about 5,000 gpd/foot of vertical saturated thickness was calculated for the southern half of the southeastern side of the creek reach. There is insufficient data to calculate the groundwater discharge for the northern half of the southeastern side of the creek, but assuming uniform hydrogeologic conditions, the total discharge from the southeastern side of the creek would be 10,000 gpd/foot of vertical saturated thickness. The total groundwater discharge to Paran Creek at the site is 28,500 gpd/foot of vertical saturated thickness.

The stream flow gauging was used as a check of the stream tube calculations of groundwater discharge to Paran Creek. The stream tube calculation showed a total groundwater discharge to Paran Creek of 28,500 gpd/ft of vertical saturated thickness. The transects of the creek showed an average vertical saturated thickness of about one foot, so the groundwater discharge to the creek was calculated as about 28,500 gpd. Comparison of flow at the upstream transect, 7.97 cubic feet per second (cfs), to the downstream transect, 8.01 cfs, shows an increase in flow in the creek of 0.04 cfs or about 26,000 gpd. The 26,000 gpd calculated from the change in flow in the creek compares favorably to the 28,500 gpd calculated from the stream tube analysis of groundwater discharge to the creek. The differences in these two volumes reflects the degree of accuracy in these calculations.

3.3 Groundwater Contamination at the Site

The field screening data show that groundwater in the area downgradient of the closed lagoon (adjacent to the cooling lagoon) is contaminated with low levels of VOCs. Ethylbenzene and xylenes detections by the field GC were limited to locations MCW-5, MP-3, OW-1 and OW-2. Contaminant levels were found to be highest nearest the lagoon at OW-2, and to be much lower at MCW-5 and MP-3 (Figure 2-1). MP-3 is located at the edge of Paran Creek, downgradient of the closed lagoon and OW-2. MCW-5 is located south of the closed lagoon. MP-3 was the only minipiezometer (out of 24 along both sides of the creek) which showed any significant contamination.

Groundwater from wells OW-1 and OW-2 was analyzed three times on the field GC. The first analysis was done with a carrier gas flow rate of 10 cc/min, then the same sample was run again later in the day at a flow rate of 6 cc/min. Differences noted in the results between the first and second analysis were expected, due to the fact that the flow rate was changed, which affects peak identification, and also that the samples had been sitting in the van on a hot day after the septum in the vial had already been punctured. Due to the unreliability of these results, new samples were collected from these wells on a different day and a third analysis was performed. The third analysis for OW-1 and OW-2 is thought to be the most reliable and therefore the best to consider in relation to the other field GC results.

Near the former paint waste lagoon, ethylbenzene and xylenes were detected in OW-1, screened 2 to 8 feet, but were not detected in MCW-1, located west of OW-1 and screened deeper, 11 to 16 feet. These results indicate that the contamination around OW-1 is confined to relatively shallow depths and does not appear to be migrating downward into the aquifer. It is likely that the shallow contamination in the area downgradient of the former paint waste lagoon is discharging to the creek via groundwater.

The contribution of dissolved metals in groundwater to Paran Creek was not considered in the following discussion because preliminary and supplemental investigation results showed metals concentrations in groundwater to be below the water quality standards for the State of VT. Table 2-8 presents the IT preliminary investigation laboratory analyses and VT water quality standards for the compounds identified. As no Vermont standard for selenium exists, the federal Maximum Concentration Level (MCL) is presented in this table.

Table 2-5 presents laboratory results for volatile and semivolatile analyses performed in June 1991, and existing Vermont water quality standards. Volatile organic compounds detected in submitted samples included methylene chloride, acetone, ethylbenzene and xylenes. Methylene chloride and acetone, found in associated method blanks as well as in analyzed samples, are

common laboratory contaminants and likely not present in site groundwater. Naphthalene and 2-methylnaphthalene were detected at OW-2 during both the Preliminary Investigation (Table 2-8) and the Supplemental Investigation (Table 2-5). According to the analytical data presented in Tables 2-5 and 2-8, concentrations of volatile and semivolatile organics in site groundwater have not changed appreciably since the commencement of the Preliminary Investigation in 1989. Xylene concentrations have increased at OW-1 (77 to 150 ppb), but decreased at OW-2 (95 to 6 ppb). Ethylbenzene concentrations have either fallen or remained below the limits of detection. Naphthalene concentrations increased slightly at OW-1, but decreased slightly at OW-2. 2-methylnaphthalene remained below the limits of detection at OW-1 and decreased slightly at OW-2. Historically, no VOC or SVOC compound concentrations have exceeded established VT water quality standards defining action level concentrations for groundwater.

Loading of Paran Creek by Dissolved Constituents in Groundwater

The configuration of the groundwater table indicates that only some of the groundwater discharged to Paran Creek along the reach of the stream spanning the site is likely to contain contaminants. In order to determine loading of contaminated groundwater to Paran Creek, it was assumed that flow tubes in areas between the former lagoons are uncontaminated (as is indicated by laboratory results), while any flow tubes crossing through some portion of a lagoon would contribute contaminant concentrations equivalent to concentrations in groundwater samples collected from the vicinity of the lagoons. For the purposes of presenting a worst case scenario, a hydraulic conductivity of 3.07×10^{-2} was used to calculate a maximum value for groundwater to stream discharge. Summation of discharges from lagoon area flow tubes yields discharge rates of:

- 0.003 cfs - from the paint waste lagoon area
- 0.009 cfs - from the closed waste lagoon area
- 0.006 cfs - from the plating waste lagoons area

This yields a total discharge rate of contaminated groundwater to surface water of 0.018 cfs/foot of saturated thickness.

Based on flow net calculations in Appendix D, it is estimated that 1 foot of saturated thickness is contributing contaminated groundwater from all the flow tubes which emanate from the lagoon areas. In addition, it has been noted that the water table elevation in the lagoon areas is 1 foot above the bottom of the lagoons. The total discharge rate of contaminated groundwater to surface water is therefore 0.018 cfs. The stream flow rate (7.97 cfs) divided by the total discharge rate of contaminated groundwater to surface water (0.018 cfs) yields a dilution factor

of 443. In other words, the marginally contaminated groundwater reaching Paran Creek is diluted by a factor of 443. This dilution factor ensures that migration of contamination offsite is negligible.

4.0 SUMMARY AND CONCLUSIONS

4.1 Geology and Hydrogeology

The site is generally underlain fill comprised of interbedded brown green grey and black fine sand and silt, with granitic rock fragments, cobbles and boulders. This fill material ranges from 7 to 11 feet in depth and is underlain by natural floodplain alluvium and stratified glacial drift deposits. Depth to bedrock in the vicinity of the site is believed to be in excess of 90 feet.

Across the site, depth to the water table ranges from approximately 1.3 to 7.3 feet below grade. Hydraulic gradients directed toward Paran Creek indicate a good hydraulic connection between shallow groundwater flow and Paran Creek. Groundwater flow converges on the creek from both the northwest and the southeast. Hydraulic conductivity is estimated to be approximately 3.07 x 10^{-2} cm/sec. Hydraulic gradients northwest of the creek range from 0.057 to 0.018 ft/ft. Hydraulic gradients southeast of the creek range from 0.020 to 0.014 ft/ft. Groundwater flow velocity from the northwest ranges from 1.91 x 10^3 to 6.03 x 10^3 ft/yr, while groundwater flow velocity from the southeast ranges from approximately 1.48 x 10^3 to 2.12 x 10^3 ft/yr.

Surface water enters the reach of Paran Creek flowing through the site at a rate of 7.97 cfs. The surface water flow rate at the downstream end of the site increased by approximately 0.04 cfs, or 26,000 gpd, due to groundwater flow into the creek.

4.2 Nature and Extent of Contamination

Results of the Supplemental Investigation at the Stanley Tools Eagle Square Plant confirm that the property has been subject to a release of volatile and semivolatile organic compounds, most likely the result of waste material leaching from the former lagoons. Volatile organic compounds detected include ethylbenzene and xylenes (MCW-5, MP-3, OW-1 and OW-2). Semivolatile organic compounds detected include naphthalene and 2-methylnaphthalene (OW-2). Volatile organic compound concentrations in groundwater range from 1 to 6 ppb, while semivolatile organic compound concentrations historically range from 35 to 51 ppb. The VOC, SVOC and metal compounds detected in sampled groundwater do not exceed existing Vermont water quality standards. Shallow contaminated groundwater from the site discharges to Paran Creek. The contaminated groundwater entering the creek is then diluted by a factor of approximately 1 to 443. The site therefore appears to pose no significant threat to human health or the environment.

APPENDIX A
CHROMATOGRAMS FROM FIELD GC

40°C Flow ID
250 µl std

PHOTOVAC

SIGP 0 628.6
SAMPLE LIBRARY 1 JUN 13 1991 14:55
ANALYSIS # 12 STANLEY TOOLS
INTERNAL TEMP 22 VERMONT
GAIN 20 NO. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	4	140.8	103.1 mVS
UNKNOWN	6	314.7	18.4 VS
UNKNOWN	7	[illegible]	[illegible] VS

PHOTOVAC

SAMPLE LIBRARY 1 JUN 13 1991 15:20
ANALYSIS # 12 STANLEY TOOLS
INTERNAL TEMP 26 VERMONT
GAIN 20 NO. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	4	140.8	103.1 mVS
ETHYLBENZENE	6	314.7	20.00 PPB
XYLENE	7	373.2	20.00 PPB

PHOTOVAC

oven 40°C
Flow 10cc/min
std. 20ppb

PHOTOVAC

JUN 13 1991 15:53

FIELD: 28
POWER: 40

SAMPLE	0.0	10.0
CAL	0.0	0.0
EVENT 3	0.0	200.0
EVENT 4	0.0	0.0
EVENT 5	0.0	0.0
EVENT 6	0.0	0.0
EVENT 7	0.0	0.0
EVENT 8	0.0	0.0

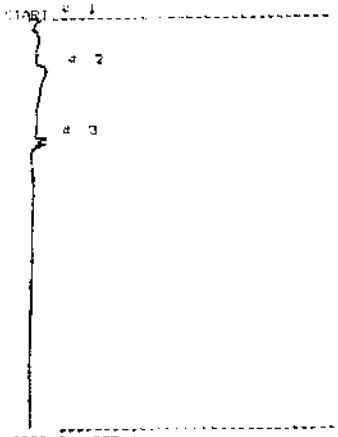
PHOTOVAC

COMPOUND	ID #	R.T.	LIMIT
ETHYLBENZENE	1	314.7	20.00 PPB
XYLENE	2	323.2	20.00 PPB

Unknown	R.T.
A	~20.6
B	~18.2
C	128.4
Xylenes	293.1
Ethylbenzene	346.6

250µl syr blk

PHOTOVAC



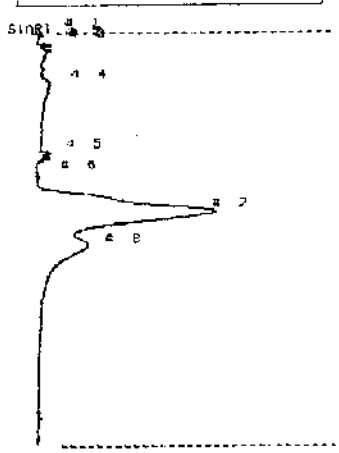
STOP @ 652.4
SAMPLE LIBRARY 1 JUN 19 1991 10:17
ANALYSIS # 1 STANLEY TOOLS
INTERNAL TEMP 28 VERMONT
GAIN 20 AQ. HEADSPACE

OFFSET	60.0 mV
CHART SPEED	0.5 mV/M
SLOPE SENS.	16 16 6 mV/Sec
WINDOW +/-	10 [illegible]
MINIMUM AREA	100 [illegible]
TIMER DELAY	10.0 Sec
ANALYSIS TIME	660.0 Sec
CYCLE TIME	0 Min

COMPOUND NAME PEAK R.T. AREA/PPM

250µl std

PHOTOVAC



STOP @ 660.0
SAMPLE LIBRARY 1 JUN 19 1991 10:31
ANALYSIS # 2 STANLEY TOOLS
INTERNAL TEMP 30 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
ETHYLBENZENE	2	293.1	23.70 PPB
XYLENE	3	346.6	22.65 PPB

CALIBRATION

PHOTOVAC

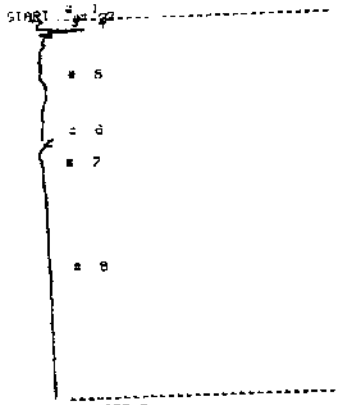
SAMPLE LIBRARY 1 JUN 19 1991 10:41
ANALYSIS # 2 STANLEY TOOLS
INTERNAL TEMP 30 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
ETHYLBENZENE	2	293.1	20.00 PPB
XYLENE	3	346.6	20.00 PPB

PHOTOVAC

MCW-2 250µl

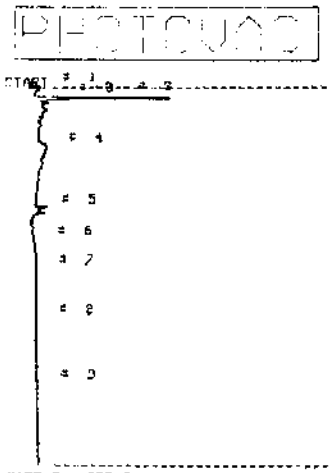
PHOTOVAC



STOP @ 600.0
SAMPLE LIBRARY 1 JUN 19 1991 12:34
ANALYSIS # 1 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	2	18.2	249.2 mVS — B
UNKNOWN	3	20.6	129.9 mVS — A
UNKNOWN	6	196.2	156.4 mVS

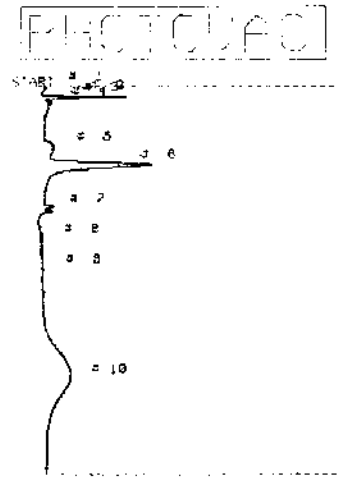
250µl MCW-3



STOP @ 600.0
SAMPLE LIBRARY 1 JUN 19 1991 13:16
ANALYSIS # 2 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM	
UNKNOWN	2	17.4	275.7 mUS	
UNKNOWN	3	20.2	174.[illegible] mUS	— A
ETHYLBENZENE	2	233.1	0.034 PPB	

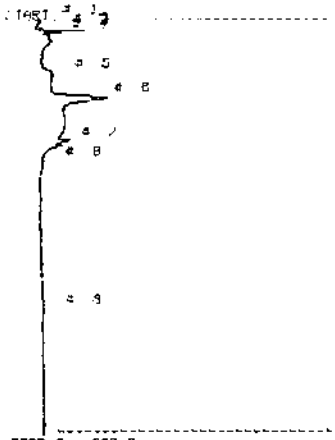
250µl MP-5



STOP @ 614.8
SAMPLE LIBRARY 1 JUN 19 1991 13:59
ANALYSIS # 4 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM	
UNKNOWN	2	[illegible]	[illegible] mUS	— B
UNKNOWN	3	[illegible]	[illegible] mUS	— A
UNKNOWN	8	[illegible]	102.0 mUS	
UNKNOWN	6	125.4	[illegible] US	— C
UNKNOWN	10	462.[illegible]	[illegible] US	

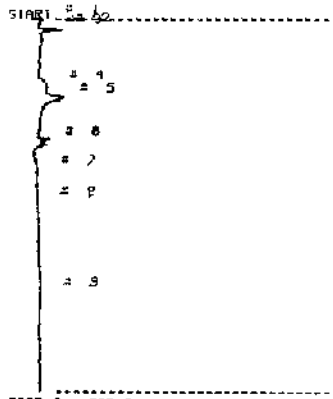
250µl MP-18



STOP @ 660.0
SAMPLE LIBRARY 1 JUN 19 1991 14:18
ANALYSIS # 6 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM	
UNKNOWN	2	19.3	202.0 mUS	— B
UNKNOWN	[illegible]	120.4	1.6 US	— C

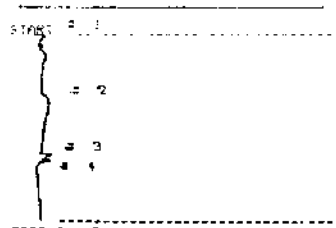
250µl MP-1



STOP @ 590.9
SAMPLE LIBRARY 1 JUN 19 1991 13:46
ANALYSIS # [illegible] STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM	
UNKNOWN	3	129.0	595.3 mUS	— C
UNKNOWN	2	432.7	141.5 mUS	

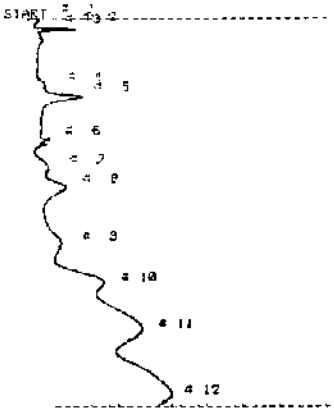
250µl syr blk



STOP @ 295.0
SAMPLE LIBRARY 1 JUN 19 1991 14:6
ANALYSIS # 5 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM

250λ MP-3



STOP @ 616.1
SAMPLE LIBRARY 1 JUN 19 1991 14:30
ANALYSIS # 7 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	9	17.5	219.7 mVS
UNKNOWN	8	125.0	[illegible]
UNKNOWN	7	149.7	[illegible]
ETHYLBENZENE	9	274.5	2.136 PPB
XYLENE	9	355.0	5.796 PPB
UNKNOWN	10	492.0	[illegible] VS
UNKNOWN	11	504.4	[illegible] VS

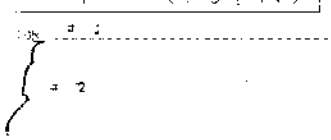
PHOTOVAC

START
STOP @ 0.0
SAMPLE LIBRARY 1 JUN 19 1991 14:32
ANALYSIS # 8 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME PEAK R.T. AREA/PPM

250μl syr blk

PHOTOVAC

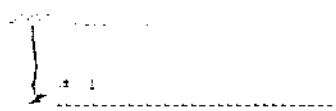


STOP @ 304.4
SAMPLE LIBRARY 1 JUN 19 1991 14:32
ANALYSIS # 9 STANLEY TOOLS
INTERNAL TEMP 33 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME PEAK R.T. AREA/PPM

inst blk

PHOTOVAC



STOP @ 128.2
SAMPLE LIBRARY 1 JUN 19 1991 14:4[illegible]
ANALYSIS # 10 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME PEAK R.T. AREA/PPM

PHOTOVAC

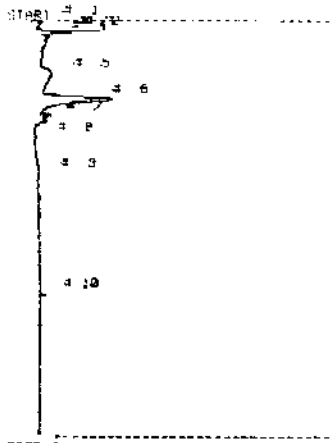
JUN 19 1991 4:12

FIELD: 29
POWER: 35

SAMPLE	0.0	12.0
CAL	0.0	0.0
EVENT 2	0.0	[illegible]
EVENT 4	0.0	0.0
EVENT 6	0.0	0.0
EVENT 7	0.0	0.0
EVENT 8	0.0	0.0
EVENT 9	0.0	0.0

MP-16 250μl

PHOTOVAC

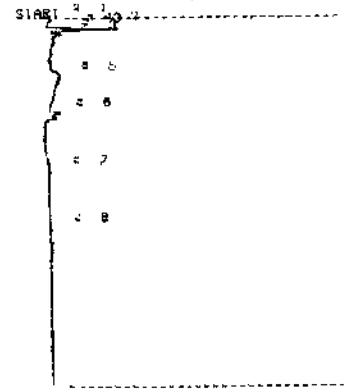


STOP @ 660.0
SAMPLE LIBRARY 1 JUN 19 1991 14:57
ANALYSIS # 11 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	2	12.5	[illegible] mVS
UNKNOWN	3	20.3	[illegible] mVS
UNKNOWN	[illegible]	[illegible]	[illegible]
UNKNOWN	6	128.8	2.2 VS

MCW-4 250μl

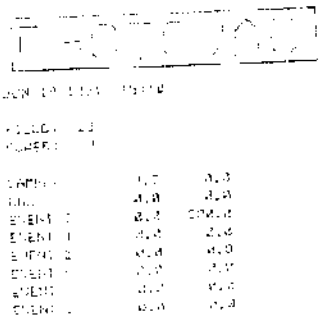
PHOTOVAC



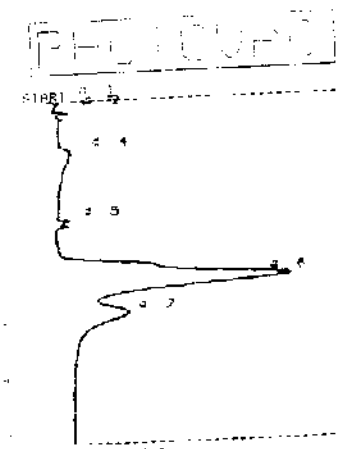
STOP @ 383.2
SAMPLE LIBRARY 1 JUN 19 1991 15:18
ANALYSIS # 12 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME PEAK R.T. AREA/PPM

UNKNOWN	2	[illegible]	[illegible] mVS
UNKNOWN	[illegible]	[illegible]	[illegible] mVS
UNKNOWN	[illegible]	[illegible]	120.7 mVS



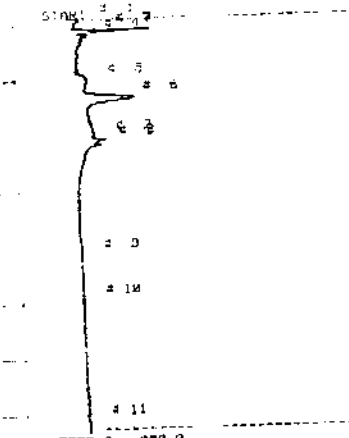
std. 250 µl



STOP @ 540.0
SAMPLE LIBRARY 1 JUN 19 1991 15:38
ANALYSIS # 14 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	4	[illegible]	[illegible] MUS
UNKNOWN	5	[illegible]	[illegible] MUS
ETHYLBENZENE	6	[illegible]	[illegible] PPB
XYLENE	7	[illegible]	[illegible] PPB

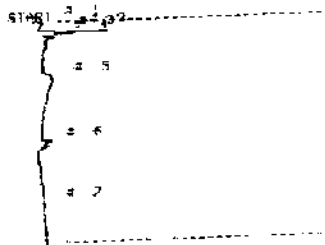
250 µl MP-7



STOP @ 600.0
SAMPLE LIBRARY 1 JUN 19 1991 16:3
ANALYSIS # 15 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	5	18.3	[illegible] MUS
UNKNOWN	9	22.6	187.3 MUS
UNKNOWN	7	[illegible]	[illegible]

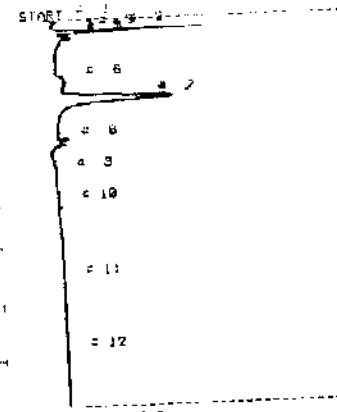
McW-4 250 µl



STOP @ 582.1
SAMPLE LIBRARY 1 JUN 19 1991 16:28
ANALYSIS # 13 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	5	[illegible]	[illegible]
UNKNOWN	9	22.6	[illegible] MUS
UNKNOWN	8	[illegible]	[illegible]
ETHYLBENZENE	7	23.1	0.113 PPM

MP-8 250 µl



STOP @ 615.5
SAMPLE LIBRARY 1 JUN 19 1991 15:51
ANALYSIS # 15 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	5	18.7	240.4 MUS
UNKNOWN	9	21.1	270.8 MUS
UNKNOWN	7	23.7	2.8 US

JUN 20 1991 8:56

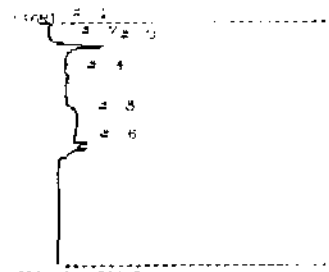
FIELD: 29
POWER: 18

SAMPLE	[illegible]	[illegible]
CAL	[illegible]	[illegible]
EVENT 3	[illegible]	[illegible]
EVENT 4	[illegible]	[illegible]
EVENT 5	[illegible]	[illegible]
EVENT 6	[illegible]	[illegible]
EVENT 7	[illegible]	[illegible]
EVENT 8	[illegible]	[illegible]

START
STOP # [illegible]
SAMPLE LIBRARY 1 JUN 20 1991 [illegible]
ANALYSIS # [illegible] STANLEY TOOLS
INTERNAL TEMP [illegible] VERMONT
GAIN [illegible] HEADSPACE

[illegible]

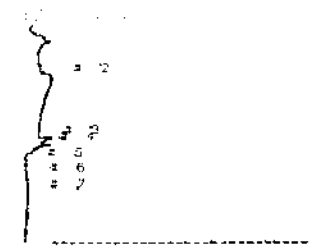
250λ syr blk



STOP # 386.2
SAMPLE LIBRARY 1 JUN 20 1991 9:16
ANALYSIS # [illegible] STANLEY TOOLS
INTERNAL TEMP [illegible] VERMONT
GAIN [illegible]

[illegible]

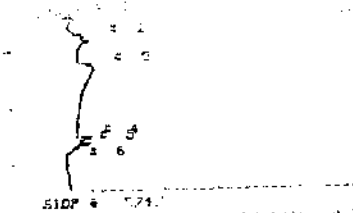
250μl syr blk



STOP # 355.2
SAMPLE LIBRARY 1 JUN 20 1991 9:24
ANALYSIS # [illegible] STANLEY TOOLS
INTERNAL TEMP [illegible] VERMONT
GAIN 22 HEADSPACE

[illegible]

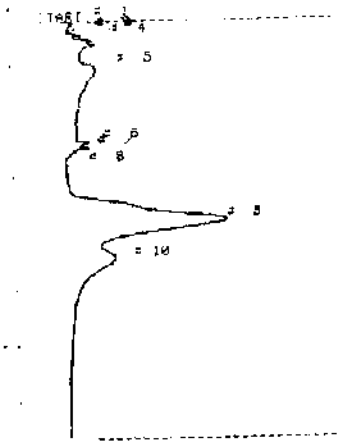
syr #2
syr blk 250μl



STOP # [illegible]
SAMPLE LIBRARY 1 JUN 20 1991 9:29
ANALYSIS # [illegible]
INTERNAL TEMP [illegible]
GAIN [illegible]

[illegible]

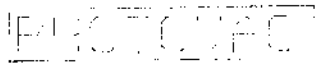
250μl std



STOP # 660.4
SAMPLE LIBRARY 1 JUN 20 1991 9:42
ANALYSIS # [illegible] STANLEY TOOLS
INTERNAL TEMP [illegible] VERMONT
[illegible]

COMPOUND NAME	PEAK	[illegible]	AREA PPM
[illegible]		[illegible]	[illegible] mVS
[illegible]	[illegible]	[illegible]	[illegible] mVS
[illegible]	[illegible]	[illegible]	55.78 PPB
[illegible]	[illegible]	[illegible]	30.21 PPB

CAL/B

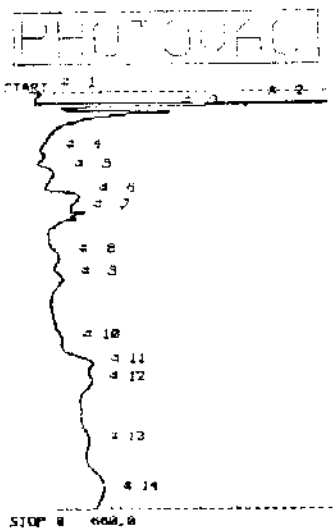


SAMPLE LIBRARY 1 JUN 20 1991 10:36
ANALYSIS # 3 STANLEY TOOLS
INTERNAL TEMP 33 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME PEAK R.T. AREA/PPM

UNKNOWN	[illegible]	[illegible]	[illegible]
UNKNOWN	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

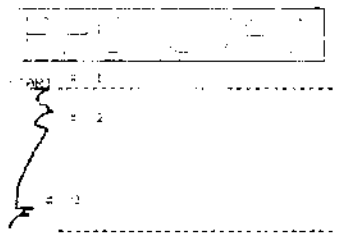
MCW-5



STOP @ 660.0
SAMPLE LIBRARY 1 JUN 20 1991 10:49
ANALYSIS # 3 STANLEY TOOLS
INTERNAL TEMP 33 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	2	[illegible]	[illegible]
UNKNOWN	3	[illegible]	[illegible]
UNKNOWN	[illegible]	[illegible]	[illegible]
UNKNOWN	6	[illegible]	[illegible]
UNKNOWN	7	136.2	134.1 WGS
UNKNOWN	8	[illegible]	[illegible] WGS
ETHYLBENZENE	[illegible]	[illegible]	[illegible]
XYLENE	10	403.6	2,730 PPB
UNKNOWN	11	441.2	[illegible] WS
UNKNOWN	12	622.2	[illegible]
UNKNOWN	13	[illegible]	[illegible]

250 µl syr blk

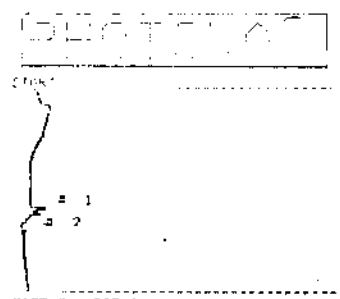


STOP @ 225.0
SAMPLE LIBRARY 1 JUN 20 1991 10:55
ANALYSIS # [illegible] STANLEY TOOLS
INTERNAL TEMP [illegible] VERMONT
GAIN [illegible] AQ. HEADSPACE

COMPOUND NAME PEAK R.T. AREA/PPM

[illegible]

INST. BLK

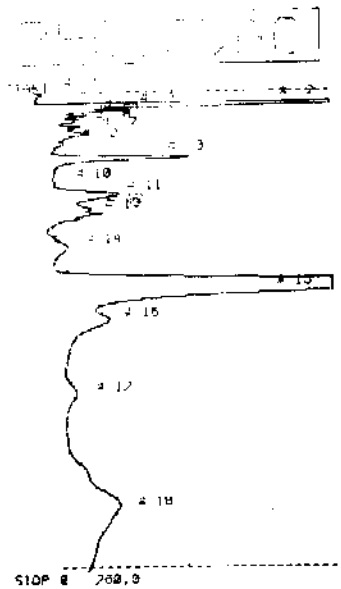


STOP @ 323.[illegible]
SAMPLE LIBRARY 1 JUN 20 1991 [illegible]
ANALYSIS # 6 STANLEY TOOLS
INTERNAL TEMP 26 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME PEAK R.T. AREA/PPM

[illegible]

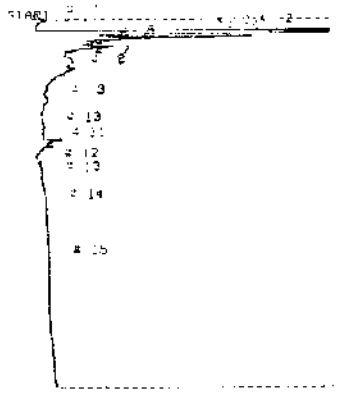
OW-1 250 µl



STOP @ 260.0
SAMPLE LIBRARY 1 JUN 20 1991 11:14
ANALYSIS # [illegible] STANLEY TOOLS
INTERNAL TEMP 33 VERMONT
GAIN 20 AQ. HEADSPACE

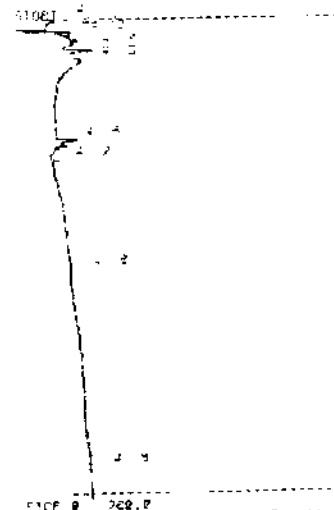
COMPOUND NAME	PEAK	R.T.	AREA/PPM
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
XYLENE	[illegible]	[illegible]	22,24 PPB
UNKNOWN	[illegible]	[illegible]	[illegible] WS

mcw-1 250µl



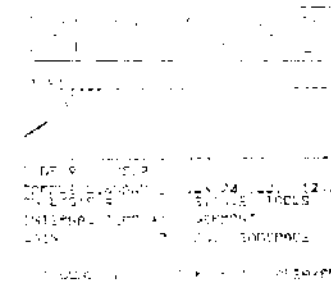
STOP # 384.2
SAMPLE LIBRARY 1 JUN 20 1991 11:27
ANALYSIS # 17 STANLEY TOOLS
INTERNAL TEMP 40 VERMONT
GAIN 20 AQ. HEADSPACE
COMPOUND NAME PEAK R.T. AREA/PPM

OW-3 250µl

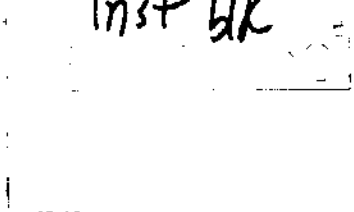


STOP # 260.0
SAMPLE LIBRARY 1 JUN 20 1991 11:55
ANALYSIS # 17 STANLEY TOOLS
INTERNAL TEMP 40 VERMONT
GAIN 20 AQ. HEADSPACE
COMPOUND NAME PEAK R.T. AREA/PPM

INST BLK

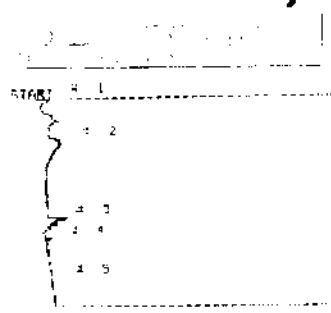


inst blk



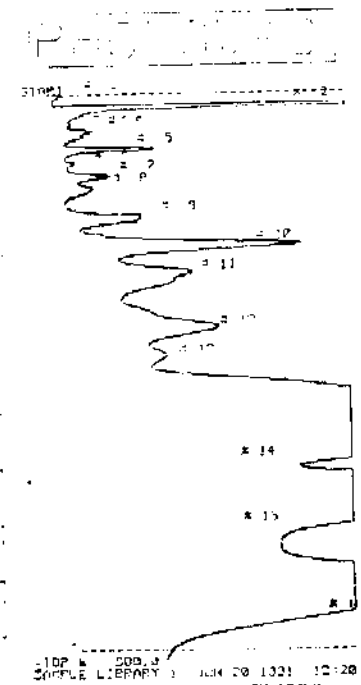
START
STOP # 51.7
SAMPLE LIBRARY 1 JUN 20 1991 12:23
ANALYSIS # 15 STANLEY TOOLS
INTERNAL TEMP 40 VERMONT
GAIN 20 AQ. HEADSPACE
COMPOUND NAME PEAK R.T. AREA/PPM

syr blk 250µl



STOP # 331.9
SAMPLE LIBRARY 1 JUN 20 1991 11:36
ANALYSIS # 11 STANLEY TOOLS
INTERNAL TEMP 11 VERMONT
GAIN 20 AQ. HEADSPACE
COMPOUND NAME PEAK R.T. AREA/PPM

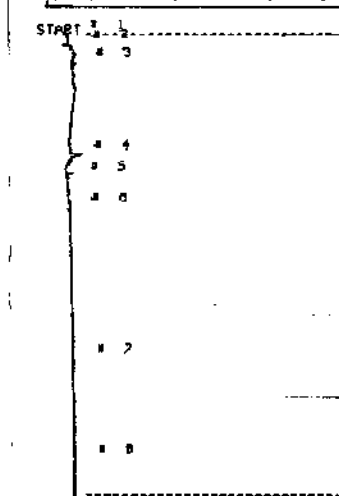
OW-2 250µl



STOP # 500.0
SAMPLE LIBRARY 1 JUN 20 1991 12:20
ANALYSIS # 13 STANLEY TOOLS
INTERNAL TEMP 44 VERMONT
GAIN 20 AQ. HEADSPACE
COMPOUND NAME PEAK R.T. AREA/PPM

OW-2 50µl G=10

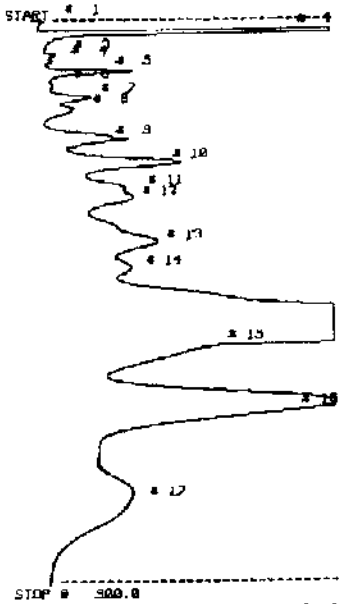
PHOTOVAC



STOP # 351.3 JUN 20 1991 12:44
SAMPLE LIBRARY 18 AQ. HEAD
GAIN 10
COMPOUND NAME PEAK R.T. AREA/PPM
UNKNOWN 4 135.7 148.8 µVS

GC ID
250µl DW-2

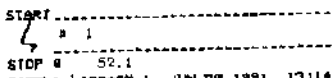
PHOTOVAC



STOP @ 900.0
SAMPLE LIBRARY 1 JUN 20 1991 13:15
ANALYSIS # 17 STANLEY TOOLS
INTERNAL TEMP 39 VERMONT
GAIN 5 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM	
UNKNOWN	2	13.5	9.2	US
UNKNOWN	5	85.6	1.6	US
UNKNOWN	7	127.2	1.2	US
UNKNOWN	8	145.2	1.0	US
UNKNOWN	9	155.7	1.7	US
UNKNOWN	10	232.9	3.7	US
UNKNOWN	11	275.2	5.1	US
UNKNOWN	12	285.8	7.4	US
XYLENE	13	368.2	183.7	PPB
XYLENE	14	402.5	88.50	PPB
UNKNOWN	15	451.6	347.5	US
UNKNOWN	16	613.0	66.5	US

PHOTOVAC

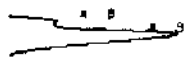


STOP @ 52.1
SAMPLE LIBRARY 1 JUN 20 1991 13:14
ANALYSIS # 18 STANLEY TOOLS
INTERNAL TEMP 38 VERMONT
GAIN 10 AQ. HEADSPACE

COMPOUND NAME PEAK R.T. AREA/PPM

250 µl STANDARD
Flow = 6
gain 20

PHOTOVAC

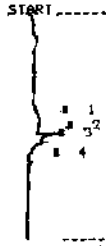


STOP @ 422.3
SAMPLE LIBRARY 1 JUN 20 1991 13:22
ANALYSIS # 19 STANLEY TOOLS
INTERNAL TEMP 38 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME PEAK R.T. AREA/PPM

UNKNOWN	4	136.2	140.3	mUS
ETHYLBENZENE	8	313.6	2.318	PPB
ETHYLBENZENE	9	343.0	15.45	PPB

PHOTOVAC



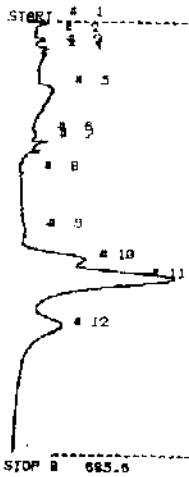
STOP @ 359.8
SAMPLE LIBRARY 1 JUN 20 1991 13:20
ANALYSIS # 20 STANLEY TOOLS
INTERNAL TEMP 37 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME PEAK R.T. AREA/PPM

UNKNOWN 2 136.2 267.8 mUS

250 µl
20 ppb std
FLOW
6 ml/min

PHOTOVAC



STOP @ 685.6
SAMPLE LIBRARY 1 JUN 20 1991 13:46
ANALYSIS # 21 STANLEY TOOLS
INTERNAL TEMP 35 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME PEAK R.T. AREA/PPM

UNKNOWN	5	111.4	138.7	mUS
ETHYLBENZENE	3	738.5	0.372	PPB
XYLENE	10	386.2	11.89	PPB
XYLENE	11	416.8	42.31	PPB

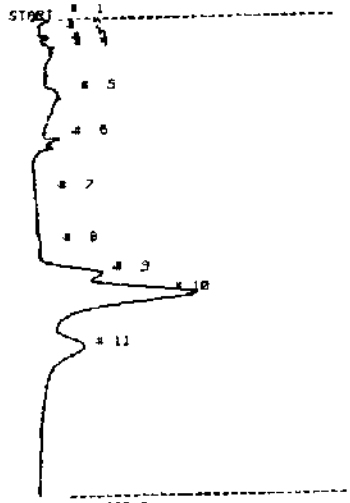
PHOTOVAC

SAMPLE LIBRARY 1 JUN 20 1991 13:50
ANALYSIS # 21 STANLEY TOOLS
INTERNAL TEMP 35 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	5	111.4	138.7 mVS
UNKNOWN	9	338.5	334.4 mVS
ETHYLBENZENE	10	388.2	20.00 PPB
M,P-XYLENE	11	416.8	20.00 PPB

250µl std

PHOTOVAC



STOP @ 760.0
SAMPLE LIBRARY 1 JUN 20 1991 14: 7
ANALYSIS # 22 STANLEY TOOLS
INTERNAL TEMP 34 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	3	46.5	61.1 mVS
UNKNOWN	5	124.4	243.6 mVS
UNKNOWN	6	196.2	292.5 mVS
ETHYLBENZENE	9	387.2	1.729 PPB
M,P-XYLENE	9	416.8	5.262 PPB
M,P-XYLENE	10	443.6	21.68 PPB

PHOTOVAC

SAMPLE LIBRARY 1 JUN 20 1991 14:32
ANALYSIS # 22 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	3	46.5	61.1 mVS
UNKNOWN	5	124.4	243.6 mVS
UNKNOWN	6	196.2	292.5 mVS
UNKNOWN	8	367.2	367.3 mVS
ETHYLBENZENE	9	416.8	20.00 PPB
ETHYLBENZENE	10	443.6	25.13 PPB

PHOTOVAC

I	COMPOUND	ID #	R.T.	LIMIT
	ETHYLBENZENE	1	416.8	20.00 PPB
	M,P-XYLENE	2	416.8	20.00 PPB
	M,P-XYLENE	3	443.6	20.00 PPB

PHOTOVAC

I	COMPOUND	ID #	R.T.	LIMIT
	ETHYLBENZENE	1	416.8	20.00 PPB
	M,P-XYLENE	2	443.6	20.00 PPB

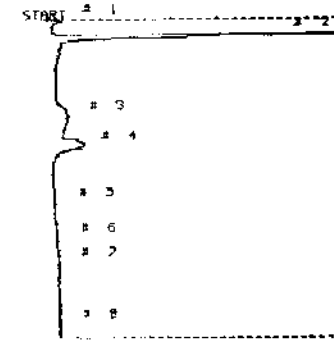
PHOTOVAC

SAMPLE LIBRARY 1 JUN 20 1991 14:05
ANALYSIS # 22 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	3	46.5	61.1 mVS
UNKNOWN	5	124.4	243.6 mVS
UNKNOWN	6	196.2	292.5 mVS
UNKNOWN	8	367.2	367.3 mVS
ETHYLBENZENE	9	416.8	20.00 PPB
M,P-XYLENE	10	443.6	20.00 PPB

250 µl MP-2

PHOTOVAC

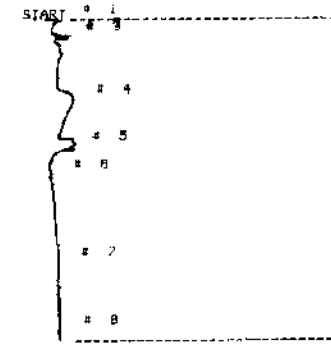


STOP @ 504.9
SAMPLE LIBRARY 1 JUN 20 1991 14:54
ANALYSIS # 23 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	2	26.3	4.4 VS
UNKNOWN	3	157.6	298.4 mVS
UNKNOWN	4	204.0	1.1 VS

250 µl MP-4

PHOTOVAC

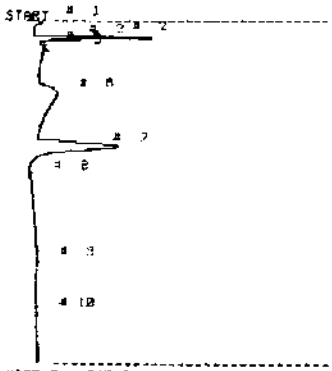


STOP @ 510.2
SAMPLE LIBRARY 1 JUN 20 1991 15: 4
ANALYSIS # 24 STANLEY TOOLS
INTERNAL TEMP 33 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	2	22.7	38.2 mVS
UNKNOWN	3	31.4	51.7 mVS
UNKNOWN	4	130.0	237.7 mVS
UNKNOWN	5	204.0	742.5 mVS
UNKNOWN	7	388.2	282.0 mVS

250 µl MP-6

PHOTOVAC

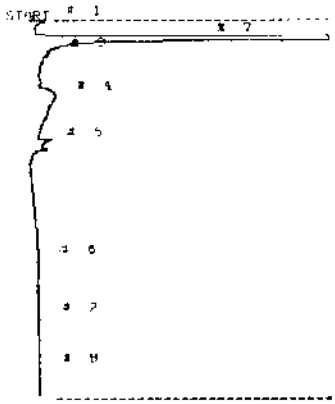


STOP @ 345.2
SAMPLE LIBRARY 1 JUN 20 1991 15:15
ANALYSIS # 25 STANLEY TOOLS
INTERNAL TEMP 33 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	2	27.5	343.2 mVS
UNKNOWN	3	31.3	270.0 mVS
UNKNOWN	6	118.6	250.2 mVS
UNKNOWN	7	204.6	3.6 VS
UNKNOWN	9	386.2	548.3 mVS

MCW-7 250µl

PHOTOVAC

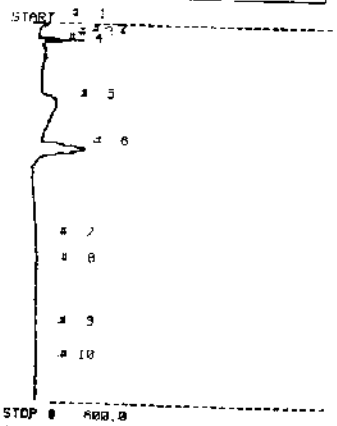


STOP @ 600.0
SAMPLE LIBRARY 1 JUN 20 1991 15:47
ANALYSIS # 27 STANLEY TOOLS
INTERNAL TEMP 33 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	2	28.0	19.2 VS
UNKNOWN	4	124.3	267.3 mVS
UNKNOWN	6	385.2	383.2 mVS

MP-9 250µl

PHOTOVAC

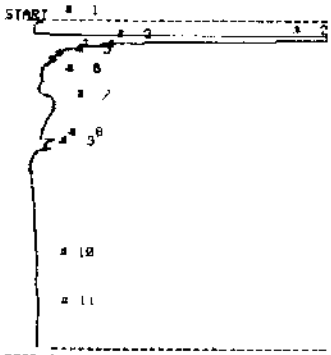


STOP @ 600.0
SAMPLE LIBRARY 1 JUN 20 1991 16:1
ANALYSIS # 29 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	2	27.7	231.7 mVS
UNKNOWN	5	130.0	228.3 mVS
UNKNOWN	6	204.6	2.0 VS
UNKNOWN	7	352.0	865.1 mVS
UNKNOWN	8	392.2	328.5 mVS

MCW-6 250µl

PHOTOVAC

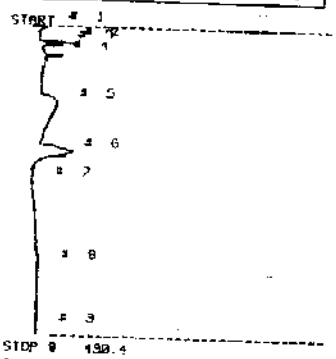


STOP @ 521.0
SAMPLE LIBRARY 1 JUN 20 1991 15:35
ANALYSIS # 26 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	2	28.2	22.5 VS
UNKNOWN	7	136.4	229.1 mVS
UNKNOWN	8	196.2	121.4 mVS
UNKNOWN	10	388.2	297.9 mVS
M,P-XYLENE	11	966.4	0.244 PPB

MP-10 250µl

PHOTOVAC

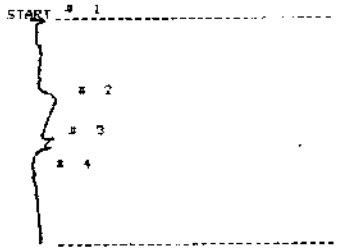


STOP @ 490.4
SAMPLE LIBRARY 1 JUN 20 1991 16:13
ANALYSIS # 23 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	7	27.7	285.0 mVS
UNKNOWN	3	31.4	124.3 mVS
UNKNOWN	4	48.3	116.8 mVS
UNKNOWN	5	125.2	235.8 mVS
UNKNOWN	6	204.6	1.5 VS
UNKNOWN	8	383.2	119.5 mVS

syr blk 250 µl

PHOTOVAC

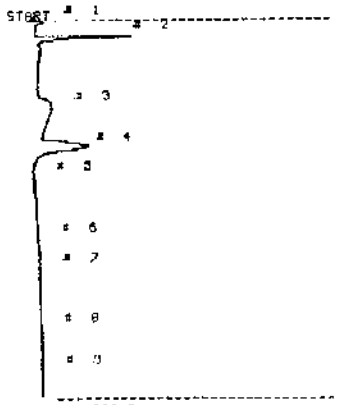


STOP @ 257.6
SAMPLE LIBRARY 1 JUN 20 1991 16:21
ANALYSIS # 30 STANLEY TOOLS
INTERNAL TEMP 33 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	2	131.6	237.1 mVS

mp-11 250 µl

PHOTOVAC

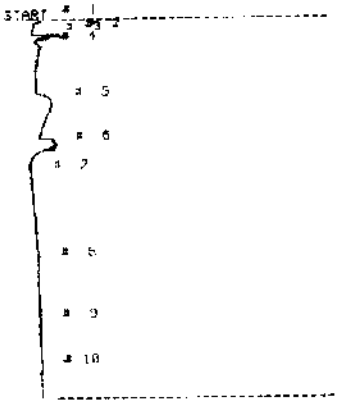


STOP @ 600.0
SAMPLE LIBRARY 1 JUN 20 1991 16:42
ANALYSIS # 31 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	2	26.4	229.3 mVS
UNKNOWN	3	140.8	216.2 mVS
UNKNOWN	4	204.6	2.1 VS

mp-12 250 µl

PHOTOVAC

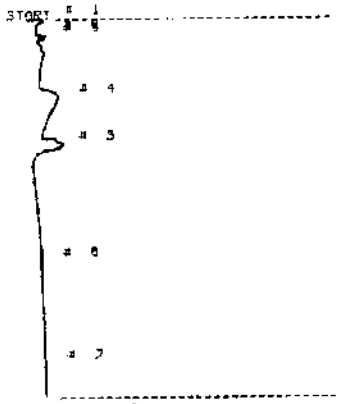


STOP @ 600.0
SAMPLE LIBRARY 1 JUN 20 1991 16:53
ANALYSIS # 32 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	2	27.4	244.8 mVS
UNKNOWN	5	135.2	228.9 mVS
UNKNOWN	8	204.0	266.3 mVS
UNKNOWN	8	389.2	112.7 mVS

mp-13 250 µl

PHOTOVAC

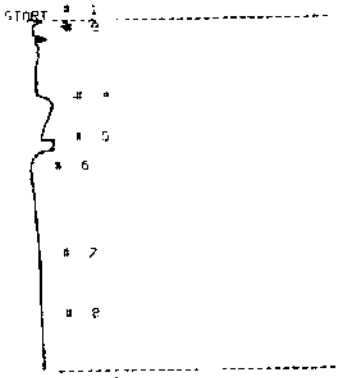


STOP @ 600.0
SAMPLE LIBRARY 1 JUN 20 1991 17: 5
ANALYSIS # 33 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	4	127.2	315.3 mVS
UNKNOWN	5	204.0	1.1 VS
UNKNOWN	6	383.2	306.7 mVS

mp-15 250 µl

PHOTOVAC

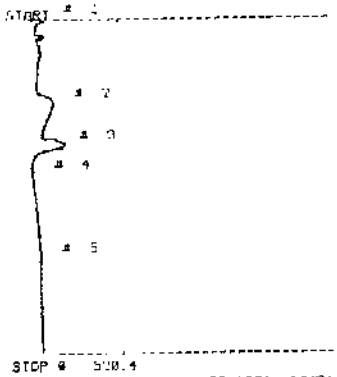


STOP @ 556.4
SAMPLE LIBRARY 1 JUN 20 1991 17:21
ANALYSIS # 34 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	4	128.8	260.1 mVS
UNKNOWN	5	283.4	654.7 mVS
UNKNOWN	7	389.2	181.2 mVS

mp-17 250 µl

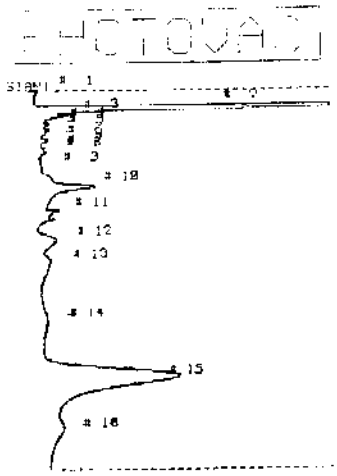
PHOTOVAC



STOP @ 520.4
SAMPLE LIBRARY 1 JUN 20 1991 17:31
ANALYSIS # 35 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	2	138.0	287.1 mVS
UNKNOWN	7	204.0	1.2 VS
UNKNOWN	5	383.2	198.8 mVS

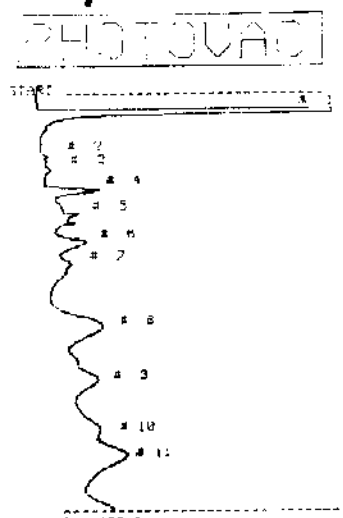
OW-1 125 µl



STOP @ 600.0
SAMPLE LIBRARY 1 JUN 20 1991 12:43
ANALYSIS # 36 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM	
UNKNOWN	2	76.0	8.2	US
UNKNOWN	10	156.8	2.5	US
UNKNOWN	12	243.0	1.2	US
UNKNOWN	13	278.0	1.0	US
UNKNOWN	14	322.2	612.2	mVS
P-XYLENE	15	464.0	18.00	PPB

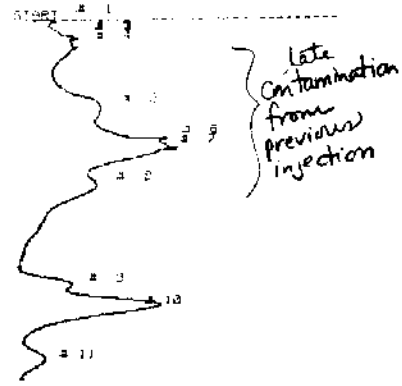
50 µl OW-2



STOP @ 600.0
SAMPLE LIBRARY 1 JUN 20 1991 12:52
ANALYSIS # 37 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM	
UNKNOWN	1	27.9	14.4	US
UNKNOWN	4	154.8	1.5	US
UNKNOWN	5	196.2	884.5	mVS
UNKNOWN	6	242.0	1.6	US
UNKNOWN	7	272.4	1.3	US
UNKNOWN	8	324.2	[illegible]	US
P-XYLENE	9	449.2	1.10	PPB
UNKNOWN	10	545.2	6.7	US
UNKNOWN	11	587.8	10.7	US

250 µl std



STOP @ 656.2
SAMPLE LIBRARY 1 JUN 20 1991 18:10
ANALYSIS # 38 STANLEY TOOLS
INTERNAL TEMP 32 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM	
UNKNOWN	1	146.0	535.3	mVS
UNKNOWN	4	196.2	2.0	US
UNKNOWN	7	210.6	6.2	US
ETHYLBENZENE	8	421.1	15.92	PPB
P-XYLENE	10	475.2	17.85	PPB

PHOTOVAC

oven = 40°c
FLOW = 6 cc/min

PHOTOVAC

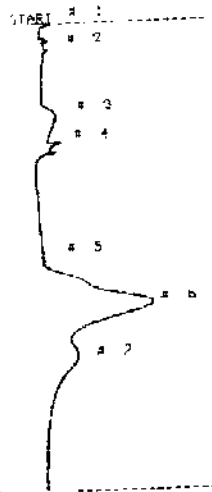
JUN 21 1991 3-10

FIELD: 28
POWER: 13

SAMPLE	5.8	10.0
CAL	3.0	0.0
EVENT 3	0.0	200.0
EVENT 4	0.0	3.0
EVENT 5	0.0	0.0
EVENT 6	0.0	0.0
EVENT 7	0.0	0.0
EVENT 8	0.0	0.0

250 µl std

PHOTOVAC



STOP @ 742.8
SAMPLE LIBRARY : JUN 21 1991 9:50
ANALYSIS # 2 STANLEY TOOLS
INTERNAL TEMP 25 VERMONT
GAIN 20 AC. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	9	152.4	209.7 mVS
UNKNOWN	8	433.2	20.7 US
UNKNOWN	7	542.5	6.0 US

CALIBration

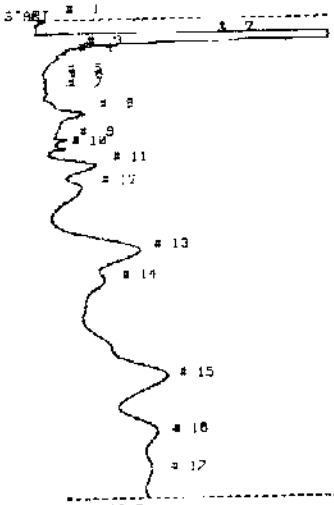
PHOTOVAC

SAMPLE LIBRARY 1 JUN 21 1991 10: 9
ANALYSIS # 3 STANLEY TOOLS
INTERNAL TEMP 25 VERMONT
GAIN 20 AC. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	2.0	20.9 mVS
UNKNOWN	2	45.5	34.0 mVS
UNKNOWN	3	133.2	220.2 mVS
UNKNOWN	4	156.2	83.1 mVS
UNKNOWN	5	374.2	127.4 mVS
[illegible]YLENE	6	[illegible]	20.30 PPB

MCW-9 250 µl

PHOTOVAC

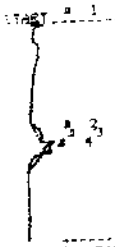


STOP @ 760.0
SAMPLE LIBRARY 1 JUN 21 1991 10:23
ANALYSIS # 4 STANLEY TOOLS
INTERNAL TEMP 27 VERMONT
GAIN 20 AC. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	3.0	43.6 mVS
UNKNOWN	2	29.2	93.2 US
UNKNOWN	3	57.1	224.1 mVS
UNKNOWN	4	82.7	540.0 mVS
UNKNOWN	7	120.8	38.1 mVS
UNKNOWN	8	133.6	3.1 US
UNKNOWN	9	198.2	581.6 mVS
UNKNOWN	10	210.6	234.9 mVS
UNKNOWN	11	222.8	3.2 US
UNKNOWN	12	229.1	3.4 US
UNKNOWN	13	272.2	13.2 US
UNKNOWN	14	425.6	8.5 US
UNKNOWN	15	580.3	31.8 US
UNKNOWN	16	670.8	28.1 US
UNKNOWN	17	750.1	17.7 US

250 µl syr blk

PHOTOVAC



STOP @ 246.8
SAMPLE LIBRARY 1 JUN 21 1991 9:30
ANALYSIS # 1 STANLEY TOOLS
INTERNAL TEMP 25 VERMONT
GAIN 20 AC. HEADSPACE

OFFSET	55.0 mV
CHART SPEED	0.5 cm/min
SLOPE SENS.	10 16 6 mV/sec
WINDOW +/-	5 Percent
MINIMUM AREA	100 µVsec
TIMER DELAY	10.0 Sec
ANALYSIS TIME	263.0 Sec
CYCLE TIME	0 Min

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	2	183.7	203.1 mVS
UNKNOWN	3	196.2	109.3 mVS

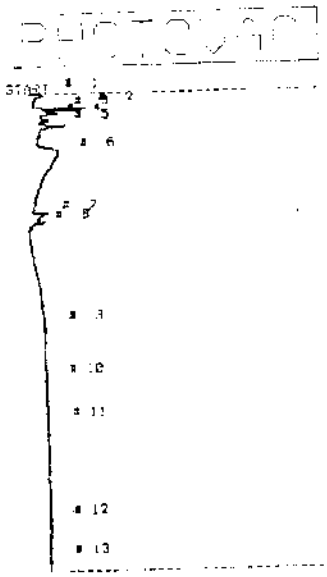
250 µl STD

PHOTOVAC

STOP @ 760.0
SAMPLE LIBRARY 1 JUN 21 1991 10: 5
ANALYSIS # 3 STANLEY TOOLS
INTERNAL TEMP 27 VERMONT
GAIN 20 AC. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	2.0	28.9 mVS
UNKNOWN	2	45.5	34.0 mVS
UNKNOWN	3	133.2	220.2 mVS
UNKNOWN	4	156.2	83.1 mVS
UNKNOWN	5	374.2	127.4 mVS
UNKNOWN	6	450.8	27.1 US

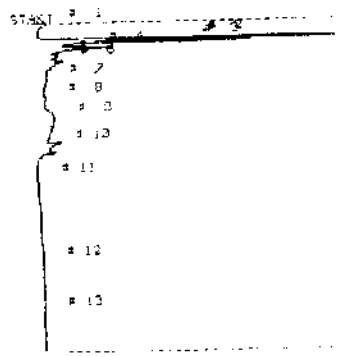
MCW-10 250 µl



STOP @ 760.0
SAMPLE LIBRARY 1 JUN 21 1991 10:48
ANALYSIS # 7 STANLEY TOOLS
INTERNAL TEMP 28 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	3.0	57.2 mVS
UNKNOWN	2	25.3	381.4 mVS
UNKNOWN	3	32.1	42.1 mVS
UNKNOWN	4	44.3	41.1 mVS
UNKNOWN	5	53.5	264.3 mVS
UNKNOWN	6	59.2	[illegible]
UNKNOWN	7	106.2	[illegible]
UNKNOWN	8	210.6	[illegible] mVS
UNKNOWN	9	372.2	[illegible] mVS
UNKNOWN	12	689.7	[illegible] mVS

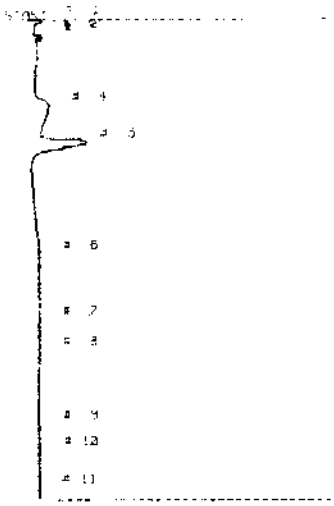
MCW-8



STOP @ 521.[illegible]
SAMPLE LIBRARY 1 JUN 21 1991 [illegible] 8
ANALYSIS # 9 STANLEY TOOLS
INTERNAL TEMP 28 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	[illegible]	63.3 mVS
UNKNOWN	2	26.8	3.3 [illegible]
UNKNOWN	3	32.2	[illegible]
UNKNOWN	4	40.0	[illegible] mVS
UNKNOWN	5	[illegible]	66.0 mVS
UNKNOWN	6	63.[illegible]	[illegible] mVS
UNKNOWN	8	122.8	[illegible] mVS
UNKNOWN	9	[illegible]	[illegible] mVS
UNKNOWN	10	[illegible]	[illegible] mVS
UNKNOWN	12	[illegible]	[illegible] mVS

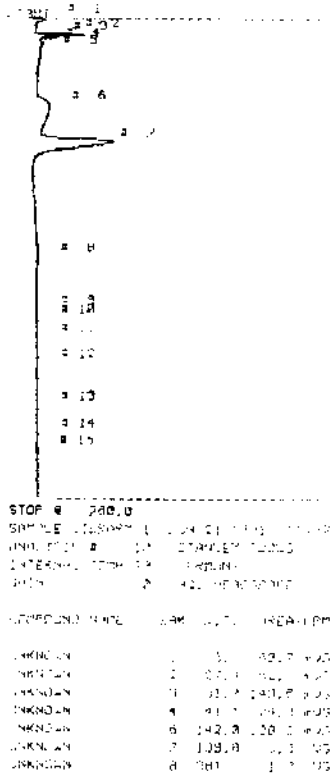
MP-19 250 µl



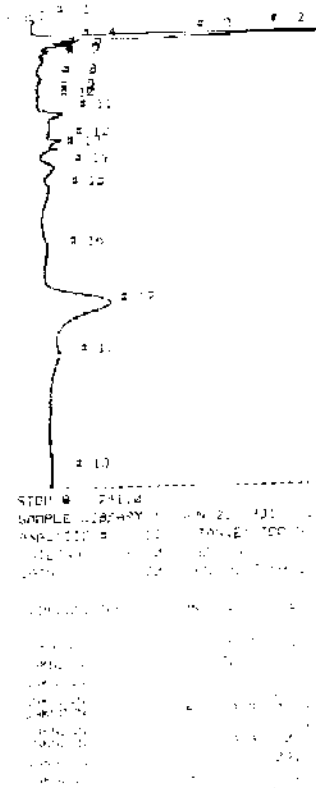
STOP @ 760.0
SAMPLE LIBRARY 1 JUN 21 1991 11:20
ANALYSIS # 9 STANLEY TOOLS
INTERNAL TEMP 28 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN		2.9	34.0 mVS
UNKNOWN		[illegible]	32.7 mVS
UNKNOWN		30.6	31.3 mVS
UNKNOWN	1	141.2	225.0 mVS
UNKNOWN	5	139.7	2.2 [illegible]
UNKNOWN	6	[illegible]	202.4 mVS

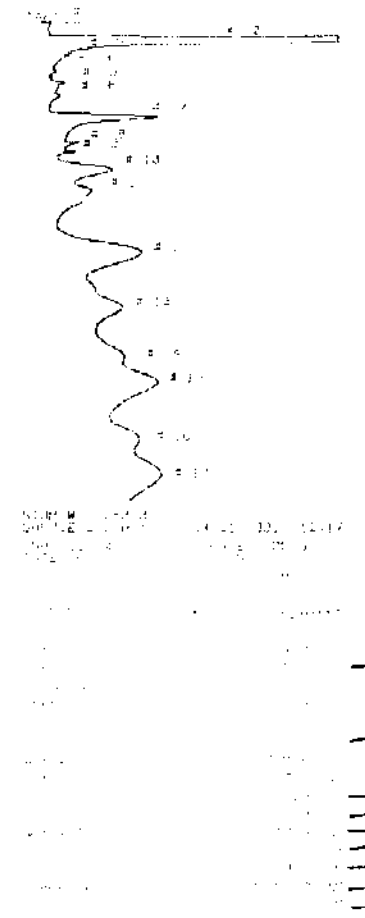
MP-20 250 µl



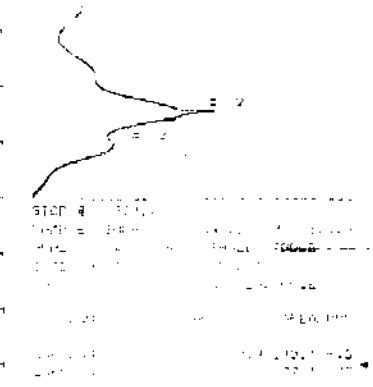
NEW SAMPLE OW-1 125 µl



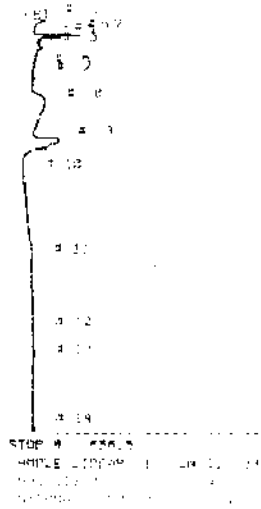
NEW SAMPLE OW-2 125 µl



tail end of previous analysis

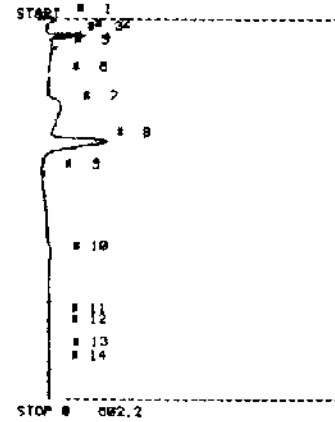


MP-21 250 µl



MP-22 250 µl

PHOTOVAC

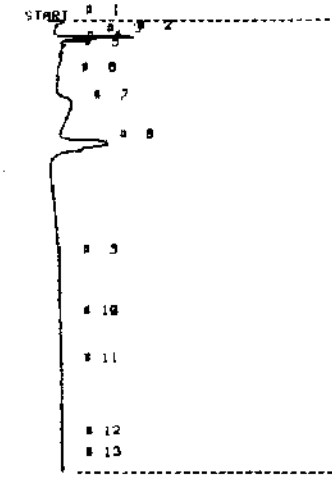


STOP # 602.2
SAMPLE LIBRARY 1 JUN 21 1991 12:51
ANALYSIS # 16 STANLEY TOOLS
INTERNAL TEMP 30 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	3.0	68.3 mUS
UNKNOWN	2	27.1	322.5 mUS
UNKNOWN	3	30.8	167.8 mUS
UNKNOWN	4	40.1	42.5 mUS
UNKNOWN	7	142.4	158.4 mUS
UNKNOWN	8	155.8	2.5 US
UNKNOWN	10	379.2	534.4 mUS

MP-23 250 µl

PHOTOVAC

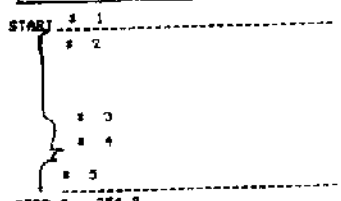


STOP # 713.2
SAMPLE LIBRARY 1 JUN 21 1991 13:4
ANALYSIS # 17 STANLEY TOOLS
INTERNAL TEMP 30 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	3.1	44.5 mUS
UNKNOWN	2	27.0	721.0 mUS
UNKNOWN	3	30.9	318.1 mUS
UNKNOWN	4	41.1	24.3 mUS
UNKNOWN	7	138.0	1.5 US
UNKNOWN	8	155.0	2.2 US
UNKNOWN	9	381.2	386.6 mUS

syr blk 250µl

PHOTOVAC

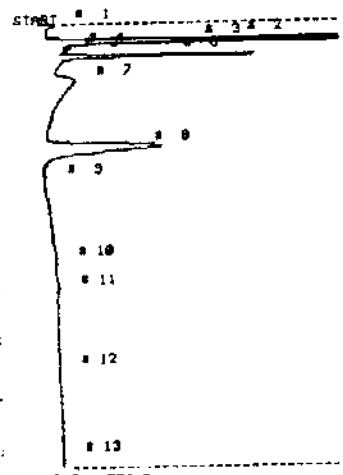


STOP # 254.9
SAMPLE LIBRARY 1 JUN 21 1991 13: 9
ANALYSIS # 18 STANLEY TOOLS
INTERNAL TEMP 31 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	3.4	63.3 mVS
UNKNOWN	3	158.9	185.2 mVS
UNKNOWN	4	156.2	58.3 mVS

MPv24 250µl

PHOTOVAC



STOP # 784.6
SAMPLE LIBRARY 1 JUN 21 1991 13:21
ANALYSIS # 15 STANLEY TOOLS
INTERNAL TEMP 31 VERMONT
GAIN 20 AQ. HEADSPACE

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	3.1	49.3 mVS
UNKNOWN	2	28.8	4.2 VS
UNKNOWN	3	38.2	4.4 VS
UNKNOWN	4	48.5	32.4 mVS
UNKNOWN	6	53.7	2.1 VS
UNKNOWN	7	54.3	2.2 VS
UNKNOWN	8	288.4	5.3 VS
UNKNOWN	10	379.2	2.5 VS
UNKNOWN	11	428.8	1.1 VS
UNKNOWN	12	552.3	31.2 mVS

APPENDIX B
GROUNDWATER SAMPLE COLLECTION RECORDS

ENSR

WELL NO. MW-1

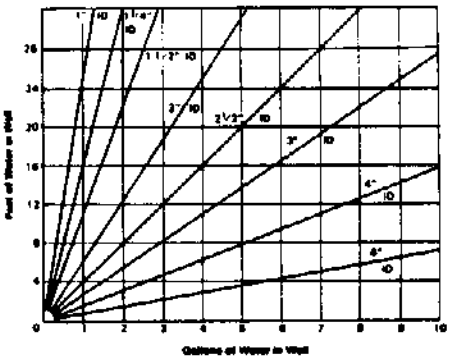
GROUND WATER SAMPLE COLLECTION RECORD

Project No. _____ Date 6/17/91-6/18/91 Time: Start 15:30 am/pm

Project Name Stanley Finish 09:30 am/pm

Location _____

Weather Conds.: Cloudy / Humid / ≈ 80°F Collector JP / RM



1. WATER LEVEL DATA: (measured from ToC)

a. Total Well Length 7.35 Well Casing Type PVC

b. Water Table Depth 5.45 Casing Diameter 2"

c. Length of Water Column 1.90 (a-b)

d. Calculated Purgeable Volume 0.5 gallons

2. WELL PURGEABLE DATA

a. Purge Method Teflon Bailer

b. Required Purge Volume (@ x3 well volumes) 1.5 gallons

c. Field Testing: Equipment Used YSI Temp + Cond., Orion pH

	Volume Removed	T°	PH	Spec. Cond.	Color	Other
1x	0.5 gal	12.5°C	6.65	510	Gray Silty	
2x	0.5 gal	16.0°C	6.67	510	" Silty	
3x	0.5 gal	16.0°C	6.70	510	Gray Silty	

3. SAMPLE COLLECTION: Method Teflon Bailer

Container Type	Preservation	Analysis Req.
3x 40ml VOA	HCL	VOC
3l Amber	ICE	SVOC
1l Plastic	HNO_3	Metals (filtered + Preserv)

Comments

Bail well Dry ≈ 3 well Volumes, Let Recharge ≈ 1 hr, recharge very slow ≈ 1l — Sample VOC, let recharge overnight. Sample VOC 6/17, Sample VOC, SVOC, Metals 6/18.

M890244

ENSR

WELL NO. MW-2

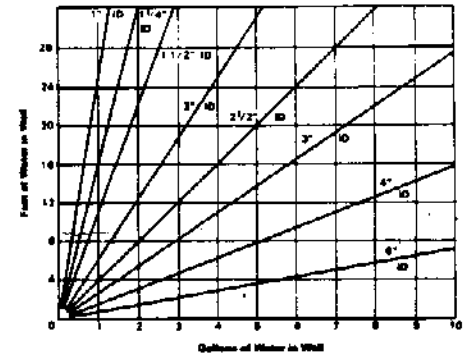
GROUND WATER SAMPLE COLLECTION RECORD

Project No. _____ Date 6/17/91 Time: Start 16:00 am/pm

Project Name Stanley Finish 17:00 am/pm

Location _____

Weather Conds.: Cloudy / Humid ~70°F Collector JP / RM



1. WATER LEVEL DATA: (measured from ToC)

a. Total Well Length 13.95 Well Casing Type PVC

b. Water Table Depth 5.50 Casing Diameter 2"

c. Length of Water Column 8.45 (a-b)

d. Calculated Purgeable Volume 1.5 gal

2. WELL PURGEABLE DATA

a. Purge Method Teflon bailer

b. Required Purge Volume (@ X3 well volumes) 4.5 gallons

c. Field Testing: Equipment Used YSI Temp + Cond., orion pH

Volume Removed	T°	PH	Spec. Cond.	Color	Other
1 x 1.5 gallons	18°C	6.83	1150 µmhos	gray silt	organic "swamp" odor
2 x 1.5 gallons	17°C	6.70	1150 "	"	slight "
3 x 1.5 gallons	17°C	6.70	1100 "	"	slight "

3. SAMPLE COLLECTION: Method Teflon bailer

Container Type	Preservation	Analysis Req.
3x 40ml VOA	HCL	VOC
3l Amber	ICE	SVOC
1l Amber	HCL	TPH
1l Plastic	HNO_3	METALS (Filtered + Preserv)
Comments 500ml Plastic	ICE	Total Dissolved Solids

Ran / Collected Duplicate samples for all analysis
Filtered Metal samples in the field.

M990244

11.80
7.23
4.57

ENSR

WELL NO. MW-3

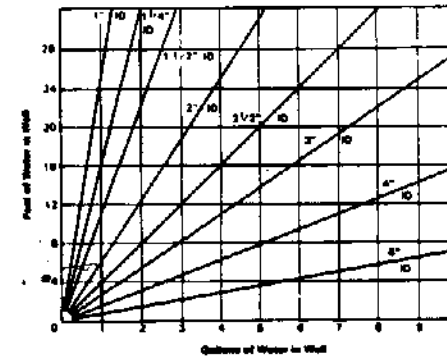
GROUND WATER SAMPLE COLLECTION RECORD

Project No. _____ Date 6/17-6/18 Time: Start 14:55 am/pm

Project Name Stanley Finish 08:00 am/pm

Location _____

Weather Conds.: Cloudy / Humid / ≈80°F Collector JP / RM



1. WATER LEVEL DATA: (measured from ToC)

a. Total Well Length 11.40 Well Casing Type PVC

b. Water Table Depth 7.23 Casing Diameter 2"

c. Length of Water Column 4.57 (a-b)

d. Calculated Purgeable Volume 1 gallon

2. WELL PURGEABLE DATA

a. Purge Method Teflon Bailer

b. Required Purge Volume (@ 1X3 well volumes) 3 gallons

c. Field Testing: Equipment Used Orion Temp + PH, YSI Temp + Cond.

Volume Removed	T°	PH	Spec. Cond.	Color	Other
1 gallon	15°C	7.56	220 umhos	Rust Brown	Silty
2 gallon	13.5°C	7.03	260 "	Rust Brown	Silty
3 gallons				"	"

3. SAMPLE COLLECTION: Method Teflon Bailer

Container Type	Preservation	Analysis Req.
3 x 40 ml VOA	HCL	VOC
500 ml Plastic	ICE	TDS
1 l Amber	HCL	TPH
1 l Plastic	HNO3	Metals (filtered + preserv.)

Comments

Road Box Contained Rain water which was Purged before Sampling. Bailer Becomes lodged at the Bottom of the well at ≈ 2.75gal Purged. Return 6/18, Bailer remains lodged in well, Grab Sample from water above the bailer

M890244

APPENDIX C
ORIGINAL LABORATORY DATA

aquatec
A Member of the Inchcape Environmental Group
55 South Park Drive, Colchester, Vermont 05446
TEL. 802/655-1203 FAX 802/655-1248

ANALYTICAL REPORT

Date: 18 July 1991
ETR No.: 26927, Project No.: 91000
Blank Identification: Blank EDSB002HV for Aquatec Lab No.'s 137197 and 137198.

Volatile Organic Compounds in ug/l
EPA Method 8240

benzene	5 U	methylene chloride	3J
carbon tetrachloride	5 U	chloromethane	10 U
chlorobenzene	5 U	bromomethane	10 U
1,2-dichloroethane	5 U	bromoform	5 U
1,1,1-trichloroethane	5 U	bromodichloromethane	5 U
1,1-dichloroethane	5 U	dibromochloromethane	5 U
1,1,2-trichloroethane	5 U	tetrachloroethene	5 U
1,1,2,2-tetrachloroethane	5 U	toluene	5 U
chloroethane	10 U	trichloroethene	5 U
2-chloroethyl vinyl ether	10 U	vinyl chloride	10 U
chloroform	5 U	acetone	6J
1,1-dichloroethene	5 U	2-butanone	10 U
1,2-dichloroethenes	5 U	carbon disulfide	5 U
1,2-dichloropropane	5 U	2-hexanone	10 U
trans-1,3-dichloropropene	5 U	4-methyl-2-pentanone	10 U
cis-1,3-dichloropropene	5 U	styrene	5 U
ethylbenzene	5 U	vinyl acetate	10 U
		total xylenes	5 U

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	96
toluene-d_8	100
p-bromofluorobenzene	100

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

aquatec
A Member of the Inchcape Environmental Group
55 South Park Drive, Colchester, Vermont 05446
TEL. 802/655-1203 FAX 802/655-1248

ANALYTICAL REPORT

Date: 18 July 1991
Aquatec Lab No.: 137197
ETR No.: 26927, Project No.: 91000
Sample Received On: 22 June 1991; Analyzed On: 6 July 1991
Sample Identification: ENSR Consulting and Engineering, water sample labeled MCW-6, 6/21/91 at 1230 hours.

Volatile Organic Compounds in ug/l
EPA Method 8240

benzene	5 U	methylene chloride	2JB
carbon tetrachloride	5 U	chloromethane	10 U
chlorobenzene	5 U	bromomethane	10 U
1,2-dichloroethane	5 U	bromoform	5 U
1,1,1-trichloroethane	5 U	bromodichloromethane	5 U
1,1-dichloroethane	5 U	dibromochloromethane	5 U
1,1,2-trichloroethane	5 U	tetrachloroethene	5 U
1,1,2,2-tetrachloroethane	5 U	toluene	5 U
chloroethane	10 U	trichloroethene	5 U
2-chloroethyl vinyl ether	10 U	vinyl chloride	10 U
chloroform	5 U	acetone	11B
1,1-dichloroethene	5 U	2-butanone	10 U
1,2-dichloroethenes	5 U	carbon disulfide	5 U
1,2-dichloropropane	5 U	2-hexanone	10 U
trans-1,3-dichloropropene	5 U	4-methyl-2-pentanone	10 U
cis-1,3-dichloropropene	5 U	styrene	5 U
ethylbenzene	5 U	vinyl acetate	10 U
		total xylenes	5 U

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	94
toluene-d_8	97
p-bromofluorobenzene	98

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

aquatec
A Member of the Inchcape Environmental Group
55 South Park Drive, Colchester, Vermont 05446
TEL. 802/655-1203 FAX 802/655-1248

ANALYTICAL REPORT

Date: 18 July 1991
Aquatec Lab No.: 137198
ETR No.: 26927, Project No.: 91000
Sample Received On: 22 June 1991; Analyzed On: 6 July 1991
Sample Identification: ENSR Consulting and Engineering, water sample labeled MCW-9, 6/21/91 at 1200 hours.

Volatile Organic Compounds in ug/l
EPA Method 8240

benzene	5 U	methylene chloride	2JB
carbon tetrachloride	5 U	chloromethane	10 U
chlorobenzene	5 U	bromomethane	10 U
1,2-dichloroethane	5 U	bromoform	5 U
1,1,1-trichloroethane	5 U	bromodichloromethane	5 U
1,1-dichloroethane	5 U	dibromochloromethane	5 U
1,1,2-trichloroethane	5 U	tetrachloroethene	5 U
1,1,2,2-tetrachloroethane	5 U	toluene	5 U
chloroethane	10 U	trichloroethene	5 U
2-chloroethyl vinyl ether	10 U	vinyl chloride	10 U
chloroform	5 U	acetone	8JB
1,1-dichloroethene	5 U	2-butanone	10 U
1,2-dichloroethenes	5 U	carbon disulfide	5 U
1,2-dichloropropane	5 U	2-hexanone	10 U
trans-1,3-dichloropropene	5 U	4-methyl-2-pentanone	10 U
cis-1,3-dichloropropene	5 U	styrene	5 U
ethylbenzene	5 U	vinyl acetate	10 U
		total xylenes	5 U

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	96
toluene-d_8	99
p-bromofluorobenzene	107

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

CONTINUING CALIBRATION CHECK

CASE NO: REGION:
CONTRACTOR: AQUATEC, INC
CONTRACT NO:
INSTRUMENT ID: OWAE

CALIBRATION DATE: 7/6/91
TIME: 16:51
LABORATORY ID: EDS050HHV
INITIAL CALIBRATION DATE: 7/3/91

MINIMUM RF FOR SPCC IS 0.300 **
SPECIAL CASE LIMIT IS 0.250 ++

MAXIMUM %D FOR CCC IS 25% *
SPECIAL CASE LIMIT ~~IS~~ *2%+

NO.	COMPOUND	RF(I)	RF(O)	%D	
1	BROMOCHLOROMETHANE	1.000	1.000	0.000	
2	CHLOROMETHANE	1.549	1.438	7.165	*
3	BROMOMETHANE	1.325	1.263	4.668	
4	VINYL CHLORIDE	1.494	1.281	14.242	*
5	CHLOROETHANE	0.913	0.852	6.707	
6	METHYLENE CHLORIDE	1.615	1.698	-5.136	
7	ACETONE	0.604	0.828	-37.218	
8	ACROLEIN	0.251	0.248	1.375	
9	ACRYLONITRILE	0.566	0.560	1.080	
10	CARBON DISULFIDE	3.899	3.386	13.155	
11	TRICHLOROFLUOROMETHANE	1.757	1.916	-9.038	
12	1,1-DICHLOROETHENE	1.239	1.136	8.347	*
13	1,4-DIFLUOROBENZENE	1.000	1.000	0.000	
14	1,1-DICHLOROETHANE	2.810	2.552	9.181	**
15	TETRAHYDROFURAN	0.225	0.218	3.259	
16	1,2-DICHLOROETHENE (TOTAL)	1.477	1.405	4.863	
17	CHLOROFORM	3.165	3.072	2.943	*
18	1,2-DICHLOROETHANE	2.352	2.351	0.029	
19	1,2-DICHLOROETHANE-D4	1.705	1.717	-0.691	
20	2-BUTANONE	0.205	0.189	7.706	
21	FREON TF	0.458	0.492	-7.568	
22	1,1,1-TRICHLOROETHANE	0.458	0.447	2.441	
23	CARBON TETRACHLORIDE	0.405	0.410	-1.215	
24	VINYL ACETATE	0.839	0.731	12.805	
25	BROMODICHLOROMETHANE	0.592	0.573	3.194	
26	1,2-DICHLOROPROPANE	0.441	0.396	10.216	*
27	CIS-1,3-DICHLOROPROPENE	0.650	0.591	8.997	
28	TRICHLOROETHENE	0.388	0.397	-2.265	
29	DIBROMOCHLOROMETHANE	0.468	0.474	-1.338	
30	METHYLCYCLOHEXANE	0.177	0.172	2.810	
31	1,1,2-TRICHLOROETHANE	0.396	0.399	-0.595	
32	BENZENE	0.995	0.930	6.479	
33	TRANS-1,3-DICHLOROPROPENE	0.532	0.508	4.592	
34	2-CHLOROETHYLVINYLETHER	0.298	0.301	-1.039	
35	BROMOFORM	0.342	0.323	5.579	++
36	CHLOROBENZENE-D5	1.000	1.000	0.000	
37	4-METHYL-2-PENTANONE	1.103	1.038	5.925	
38	2-HEXANONE	0.710	0.668	5.989	
39	1,1,2,2-TETRACHLOROETHANE	1.033	0.970	6.122	**
40	TETRACHLOROETHENE	0.411	0.436	-5.988	
41	BUTYL ACETATE	0.570	0.535	6.066	
42	TOLUENE-D8	1.250	1.242	0.607	
43	TOLUENE	0.832	0.827	0.639	*
44	CHLOROBENZENE	1.057	1.070	-1.185	**
45	ETHYLBENZENE	0.499	0.500	-0.233	*
46	BROMOFLUOROBENZENE	0.936	0.930	0.687	
47	STYRENE	1.029	1.068	-3.862	
48	M-XYLENE	0.671	0.718	-7.029	
49	O- & P-XYLENE	0.618	0.643	-4.082	
50	O-DICHLOROBENZENE	0.790	0.821	-3.910	
51	CYCLOPENTANE	1.172	1.041	11.152	
52	XYLENE (TOTAL)	0.671	0.718	-7.029	
53	2-PROPANOL	0.086	0.140	-61.390	

Check standard response factors for the 8240 analysis of Aquatec Lab Numbers 137197, 137198 and Blank EDSB002HV.

INITIAL CALIBRATION DATA

CASE NO: REGION:
CONTRACTOR: AQUATEC, INC
CONTRACT NO:

INSTRUMENT ID: OWAE
CALIBRATION DATE: 7/3/91

MINIMUM RF FOR SPCC IS 0.300 **
SPECIAL CASE LIMIT IS 0.250 ++

MAXIMUM %RSD FOR CCC IS 30% *
SPECIAL CASE LIMIT IS 40% +

LABORATORY ID: EDS020HV EDS100HV EDS200HV EDR050FHV EDS150HV

NO	COMPOUND	RF	RF	RF	RF	RF	MEAN	%RSD	
1	BROMOCHLOROMETHANE	1.000	1.000	1.000	1.000	1.000	1.000	0.0	
2	CHLOROMETHANE	1.783	1.514	1.437	1.467	1.546	1.549	8.8	**
3	BROMOMETHANE	1.458	1.311	1.228	1.297	1.330	1.325	6.3	
4	VINYL CHLORIDE	1.556	1.490	1.418	1.479	1.528	1.494	3.5	*
5	CHLOROETHANE	0.967	0.903	0.872	0.902	0.920	0.913	3.7	
6	METHYLENE CHLORIDE	1.790	1.603	1.611	1.532	1.540	1.615	6.4	
7	ACETONE	0.848	0.523	0.639	0.561	0.446	0.604	25.4	
8	ACROLEIN	0.235	0.251	0.264	0.265	0.240	0.251	5.3	
9	ACRYLONITRILE	0.554	0.555	0.591	0.585	0.545	0.566	3.6	
10	CARBON DISULFIDE	3.706	3.746	4.097	4.074	3.874	3.899	4.6	
11	TRICHLOROFLUOROMETHANE	1.825	1.753	1.720	1.731	1.757	1.757	2.3	
12	1,1-DICHLOROETHENE	1.222	1.227	1.269	1.259	1.218	1.239	1.8	*
13	1,4-DIFLUOROBENZENE	1.000	1.000	1.000	1.000	1.000	1.000	0.0	
14	1,1-DICHLOROETHANE	2.748	2.803	2.871	2.874	2.756	2.810	2.1	**
15	TETRAHYDROFURAN	0.234	0.223	0.225	0.226	0.218	0.225	2.5	
16	1,2-DICHLOROETHENE (TOTAL)	1.481	1.486	1.484	1.477	1.455	1.477	0.8	
17	CHLOROFORM	3.179	3.178	3.154	3.171	3.146	3.165	0.4	*
18	1,2-DICHLOROETHANE	2.398	2.374	2.282	2.360	2.344	2.352	1.8	
19	1,2-DICHLOROETHANE-D4	1.764	1.754	1.683	1.675	1.649	1.705	2.9	
20	2-BUTANONE	0.222	0.195	0.223	0.205	0.179	0.205	9.0	
21	FREON TF	0.489	0.467	0.457	0.445	0.430	0.458	4.8	
22	1,1,1-TRICHLOROETHANE	0.473	0.460	0.452	0.453	0.453	0.458	1.8	
23	CARBON TETRACHLORIDE	0.424	0.405	0.393	0.396	0.408	0.405	2.9	
24	VINYL ACETATE	0.763	0.854	0.892	0.875	0.809	0.839	6.2	
25	BROMODICHLOROMETHANE	0.586	0.590	0.600	0.597	0.588	0.592	0.9	
26	1,2-DICHLOROPROPANE	0.429	0.439	0.460	0.448	0.428	0.441	3.0	*
27	CIS-1,3-DICHLOROPROPENE	0.635	0.649	0.663	0.657	0.646	0.650	1.6	
28	TRICHLOROETHENE	0.421	0.395	0.382	0.371	0.370	0.388	5.3	
29	DIBROMOCHLOROMETHANE	0.499	0.469	0.457	0.452	0.463	0.468	3.9	
30	METHYLCYCLOHEXANE	0.177	0.178	0.178	0.177	0.177	0.177	0.3	
31	1,1,2-TRICHLOROETHANE	0.431	0.406	0.390	0.377	0.378	0.396	5.7	
32	BENZENE	0.993	1.003	1.017	0.990	0.970	0.995	1.7	
33	TRANS-1,3-DICHLOROPROPENE	0.528	0.535	0.529	0.530	0.540	0.532	0.9	
34	2-CHLOROETHYLVINYLETHER	0.285	0.296	0.304	0.304	0.302	0.298	2.6	
35	BROMOFORM	0.363	0.330	0.330	0.336	0.349	0.342	4.1	++
36	CHLOROBENZENE-D5	1.000	1.000	1.000	1.000	1.000	1.000	0.0	
37	4-METHYL-2-PENTANONE	1.106	1.085	1.139	1.117	1.067	1.103	2.5	
38	2-HEXANONE	0.748	0.643	0.762	0.733	0.666	0.710	7.4	
39	1,1,2,2-TETRACHLOROETHANE	1.088	1.017	1.030	1.017	1.015	1.033	2.9	**
40	TETRACHLOROETHENE	0.480	0.432	0.399	0.375	0.368	0.411	11.2	
41	BUTYL ACETATE	0.574	0.560	0.577	0.573	0.564	0.570	1.2	
42	TOLUENE-D8	1.321	1.297	1.257	1.199	1.174	1.250	5.0	
43	TOLUENE	0.865	0.846	0.830	0.811	0.809	0.832	2.8	*
44	CHLOROBENZENE	1.165	1.061	1.034	1.013	1.014	1.057	5.9	**
45	ETHYLBENZENE	0.519	0.500	0.495	0.490	0.492	0.499	2.3	*
46	BROMOFLUOROBENZENE	0.977	0.985	0.925	0.900	0.894	0.936	4.5	
47	STYRENE	1.036	1.028	1.022	1.023	1.035	1.029	0.6	
48	M-XYLENE	0.673	0.686	0.666	0.657	0.673	0.671	1.5	
49	O- & P-XYLENE	0.633	0.625	0.604	0.611	0.618	0.618	1.8	
50	O-DICHLOROBENZENE	0.861	0.776	0.767	0.762	0.784	0.790	5.1	
51	CYCLOPENTANE	1.150	1.157	1.225	1.202	1.124	1.172	3.4	
52	XYLENE (TOTAL)	0.673	0.686	0.666	0.657	0.673	0.671	1.5	
53	2-PROPANOL	0.086	0.104	0.075	0.083	0.085	0.086	12.4	

M901376

ENSR

CHAIN OF CUSTODY RECORD

Client/Project Name: STANLEY

Project Location: Bennington, VT

Project Number: 6303-029-300

Field Logbook No.:

Sampler: (Print Name) /Affiliation: J. Powers / ENSR

Chain of Custody Tape No.: 0572

Signature: James Powers

Send Results/Report to: ROSEMARY MUTTUCK, ENSR ACTON, MA

Analysis Requested: VOC + ACETONE 8240

Field Sample No./ Identification	Date	Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	Field Filtered	VOC + ACETONE 8240						Lab I.D.	Remarks
MCW-9	6/21/91	2:00	X		3x 40ml VOA	Water	ICE		X							Normal TA
MCW-6	6/21/91	12:30	X		3x 40ml VOA	Water	ICE		X							↓

Relinquished by: (Print Name) / Signature	Date / Time	Received by: (Print Name) / Signature	Date / Time
James Powers / James Powers	Date: 6/21/91 Time: 15:00	FED EX 0313095366	Date: 6/21/91 Time:
Relinquished by: (Print Name) / Signature:	Date: / Time:	Received by: (Print Name) Janine L. Banks / Signature: Janine L. Banks	Date: 6/22/91 Time: 1030
Relinquished by: (Print Name) / Signature:	Date: / Time:	Received by: (Print Name) / Signature:	Date: / Time:

Analytical Laboratory (Destination): AquaTEC

Se[redacted]. 000948

aquatec
A Member of the Inchcape Environmental Group
55 South Park Drive, Colchester, Vermont 05446
TEL. 802/655-1203 FAX 802/655-1248

ANALYTICAL REPORT

ENSR Consulting & Engineering
35 Nagog Park
Acton, MA 01720

Attention : Rosemary Maddock

Date : 07/22/91
ETR Number : 26872
Project No.: 91000
No. Samples: 10
Arrived : 06/19/91
P.O. Number: 89030

JOB:6303-029-300

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter		Result
137007	FB:		
	200.7	Antimony, Total	<0.06
	206.2	Arsenic, Total	<0.01
	200.7	Beryllium, Total	<0.005
	200.7	Cadmium, Total	<0.010
	200.7	Chromium, Total	<0.02
	200.7	Copper, Total	<0.02
	239.2	Lead, Total	<0.005
	245.1	Mercury, Total	<0.0005
	200.7	Nickel, Total	<0.04
	270.2	Selenium, Total	<0.005
	279.2	Thallium, Total	<0.01
	200.7	Zinc, Total	<0.02
	200.7	Silver, Total	<0.02
137009	OW-1:(Filtrate)		
	200.7	Antimony, Total	<0.06
	206.2	Arsenic, Total	0.017
	200.7	Beryllium, Total	<0.005
	200.7	Cadmium, Total	<0.010
	200.7	Chromium, Total	<0.02
	200.7	Copper, Total	<0.02
	239.2	Lead, Total	<0.005
	245.1	Mercury, Total	<0.0005
	200.7	Nickel, Total	0.059
	270.2	Selenium, Total	<0.005
	279.2	Thallium, Total	<0.05
	200.7	Zinc, Total	<0.02
	200.7	Silver, Total	<0.02

< Cont. Next Page >

aquatec
A Member of the Inchcape Environmental Group
55 South Park Drive, Colchester, Vermont 05446
TEL. 802/655-1203 FAX 802/655-1248

ANALYTICAL REPORT

ENSR Consulting & Engineering
35 Nagog Park
Acton, MA 01720

Attention : Rosemary Maddock

Date : 07/22/91
ETR Number : 26872
Project No.: 91000
No. Samples: 10
Arrived : 06/19/91
P.O. Number: 89030

JOB:6303-029-300

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter		Result
137010	OW-2:		
	418.1	Petroleum Hydrocarbons	22.3
	160.1	Total Dissolved Solids	740
137011	OW-2:(Filtrate)		
	200.7	Antimony, Total	<0.06
	206.2	Arsenic, Total	0.015
	200.7	Beryllium, Total	<0.005
	200.7	Cadmium, Total	<0.010
	200.7	Chromium, Total	<0.02
	200.7	Copper, Total	<0.02
	239.2	Lead, Total	<0.005
	245.1	Mercury, Total	<0.0005
	200.7	Nickel, Total	<0.04
	270.2	Selenium, Total	<0.005
	279.2	Thallium, Total	<0.10
	200.7	Zinc, Total	<0.02
	200.7	Silver, Total	<0.02
137014	OW-3:		
	418.1	Petroleum Hydrocarbons	0.78
	160.1	Total Dissolved Solids	229
137015	OW-3:(Filtrate)		
	200.7	Antimony, Total	<0.06
	206.2	Arsenic, Total	<0.01
	200.7	Beryllium, Total	<0.005
	200.7	Cadmium, Total	<0.010
	200.7	Chromium, Total	<0.02
	200.7	Copper, Total	<0.02

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TEL. 802/655-1203 FAX 802/655 1248

ANALYTICAL REPORT

ENSR Consulting & Engineering
35 Nagog Park
Acton, MA 01720

Attention : Rosemary Maddock

Date : 07/22/91
ETR Number : 26872
Project No.: 91000
No. Samples: 10
Arrived : 06/19/91
P.O. Number: 89030

JOB:6303-029-300

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./	Sample Description/	Parameter	Result
Method No.			
137015	OW-3:(Filtrate)		
	239.2	Lead, Total	<0.005
	245.1	Mercury, Total	<0.0005
	200.7	Nickel, Total	<0.04
	270.2	Selenium, Total	<0.005
	279.2	Thallium, Total	<0.01
	200.7	Zinc, Total	<0.02
	200.7	Silver, Total	<0.02

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Submitted By : Kathleen McPee

Aquatec Inc.

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

ENSR Consulting and Engineering

Date: 12 July 1991
Project No: 91000
ETR No: 26872
Sample(s) Received On: 19 June 1991

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Parameter	PBLK1	PBLK2						
Antimony	<0.06							
Arsenic	<0.01							
Beryllium	<0.005							
Cadmium	<0.01							
Chromium	<0.02							
Copper	<0.02							
Lead	<0.005							
Mercury	<0.0005							
Nickel	<0.04							
Selenium	<0.005							
Silver	<0.02							
Thallium	<0.01							
Zinc	<0.02							
Petroleum Hydrocarbons		<0.24						

Lab No.	Sample Description
PBLK1	Prep blank for samples 137007, 137009, 137011, and 137015.
PBLK2	Prep blank for samples 137010 and 137014.

Submitted By: R. Mason McKeen

Aquatec Inc.

QC Summary
ETR 26872

Parameter	EPA Standard	Found (ug/l)	True (ug/l)	% Recovery
Antimony	IVQCS	2010.99	2000.0	100.5
		2044.35	2000.0	102.2
Arsenic	Ventures	48.72	50.0	97.4
		48.92	50.0	97.8
Beryllium	IVQCS	500.04	500.0	100.0
		492.09	500.0	98.4
		485.27	500.0	97.1
		481.82	500.0	96.4
Cadmium	IVQCS	497.30	500.0	99.5
		496.72	500.0	99.3
		500.18	500.0	100.0
		490.81	500.0	98.2
Chromium	IVQCS	499.84	500.0	100.0
		501.85	500.0	100.4
		497.30	500.0	99.5
		494.35	500.0	98.9
Copper	IVQCS	499.44	500.0	99.9
		492.58	500.0	98.5
		487.00	500.0	97.4
		481.57	500.0	96.3
Lead	Ventures	15.34	15.0	102.3
		15.63	15.0	104.2
		15.41	15.0	102.7
		14.81	15.0	98.7
		14.84	15.0	98.9
	Ventures	15.15	15.0	101.0
		14.81	15.0	98.7
Mercury	Standard	1.67	1.8	92.8
		1.87	1.8	103.9
Nickel	IVQCS	495.24	500.0	99.0
		505.34	500.0	101.1
		499.89	500.0	100.0
		487.53	500.0	97.5

QC Summary
ETR 26872

Parameter	EPA Standard	Found (ug/l)	True (ug/l)	% Recovery
Selenium	Ventures	23.12	25.0	92.5
		23.76	25.0	95.0
	Ventures	27.02	25.0	108.1
		25.23	25.0	100.9
Silver	IVQCS	482.20	500.0	96.4
		482.66	500.0	96.5
		476.80	500.0	95.4
		477.27	500.0	95.5
Thallium	Ventures	51.90	50.0	103.8
		51.82	50.0	103.6
		52.04	50.0	104.1
	Ventures	46.72	50.0	93.4
		45.02	50.0	90.0
		45.78	50.0	91.6
Zinc	Ventures	507.71	500.0	101.5
		501.30	500.0	100.3
		492.99	500.0	98.6
		487.55	500.0	97.5
Petroleum Hydrocarbons	Paraffin Oil	24.8 mg/l	29.5 mg/l	84.1

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ANALYTICAL REPORT

Date: 12 July 1991
ETR No.: 26872, Project No.: 91000
Blank Identification: Blank DELB002AV for Aquatec Lab No.'s 137007, 137008, 137010, 137012, 137014 and 137016.

Volatile Organic Compounds in ug/l
EPA Method 8240

benzene	5 U	methylene chloride	1J
carbon tetrachloride	5 U	chloromethane	10 U
chlorobenzene	5 U	bromomethane	10 U
1,2-dichloroethane	5 U	bromoform	5 U
1,1,1-trichloroethane	5 U	bromodichloromethane	5 U
1,1-dichloroethane	5 U	dibromochloromethane	5 U
1,1,2-trichloroethane	5 U	tetrachloroethene	5 U
1,1,2,2-tetrachloroethane	5 U	toluene	5 U
chloroethane	10 U	trichloroethene	5 U
2-chloroethyl vinyl ether	10 U	vinyl chloride	10 U
chloroform	5 U	acetone	3J
1,1-dichloroethene	5 U	2-butanone	10 U
1,2-dichloroethenes	5 U	carbon disulfide	5 U
1,2-dichloropropane	5 U	2-hexanone	10 U
trans-1,3-dichloropropene	5 U	4-methyl-2-pentanone	10 U
cis-1,3-dichloropropene	5 U	styrene	5 U
ethylbenzene	5 U	vinyl acetate	10 U
		total xylenes	5 U

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	87
toluene-d_8	95
p-bromofluorobenzene	100

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

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ANALYTICAL REPORT

Date: 12 July 1991
Aquatec Lab No.: 137007
ETR No.: 26872, Project No.: 91000
Sample Received On: 19 June 1991; Analyzed On: 2 July 1991
Sample Identification: ENSR Consulting and Engineering, water sample labeled FB.

Volatile Organic Compounds in ug/l
EPA Method 8240

benzene	5 U	methylene chloride	2JB
carbon tetrachloride	5 U	chloromethane	10 U
chlorobenzene	5 U	bromomethane	10 U
1,2-dichloroethane	5 U	bromoform	5 U
1,1,1-trichloroethane	5 U	bromodichloromethane	5 U
1,1-dichloroethane	5 U	dibromochloromethane	5 U
1,1,2-trichloroethane	5 U	tetrachloroethene	5 U
1,1,2,2-tetrachloroethane	5 U	toluene	5 U
chloroethane	10 U	trichloroethene	5 U
2-chloroethyl vinyl ether	10 U	vinyl chloride	10 U
chloroform	5 U	acetone	10 U
1,1-dichloroethene	5 U	2-butanone	10 U
1,2-dichloroethenes	5 U	carbon disulfide	5 U
1,2-dichloropropane	5 U	2-hexanone	10 U
trans-1,3-dichloropropene	5 U	4-methyl-2-pentanone	10 U
cis-1,3-dichloropropene	5 U	styrene	5 U
ethylbenzene	5 U	vinyl acetate	10 U
		total xylenes	5 U

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	86
toluene-d_8	96
p-bromofluorobenzene	102

Key to the letters used to qualify the results of the analysis:

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B - The compound was present in the method blank. The result reported here is not blank corrected.

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ANALYTICAL REPORT

Date: 12 July 1991
Aquatec Lab No.: 137008
ETR No.: 26872, Project No.: 91000
Sample Received On: 19 June 1991; Analyzed On: 2 July 1991
Sample Identification: ENSR Consulting and Engineering, water sample labeled OW-1.

Volatile Organic Compounds in ug/l
EPA Method 8240

benzene	5 U	methylene chloride	5 U
carbon tetrachloride	5 U	chloromethane	10 U
chlorobenzene	5 U	bromomethane	10 U
1,2-dichloroethane	5 U	bromoform	5 U
1,1,1-trichloroethane	5 U	bromodichloromethane	5 U
1,1-dichloroethane	5 U	dibromochloromethane	5 U
1,1,2-trichloroethane	5 U	tetrachloroethene	5 U
1,1,2,2-tetrachloroethane	5 U	toluene	5 U
chloroethane	10 U	trichloroethene	5 U
2-chloroethyl vinyl ether	10 U	vinyl chloride	10 U
chloroform	5 U	acetone	10 U
1,1-dichloroethene	5 U	2-butanone	10 U
1,2-dichloroethenes	5 U	carbon disulfide	5 U
1,2-dichloropropane	5 U	2-hexanone	10 U
trans-1,3-dichloropropene	5 U	4-methyl-2-pentanone	10 U
cis-1,3-dichloropropene	5 U	styrene	5 U
ethylbenzene	5 U	vinyl acetate	10 U
		total xylenes	150

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	85
toluene-d_8	96
p-bromofluorobenzene	103

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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ANALYTICAL REPORT

Date: 12 July 1991
Aquatec Lab No.: 137010
ETR No.: 26872, Project No.: 91000
Sample Received On: 19 June 1991; Analyzed On: 2 July 1991
Sample Identification: ENSR Consulting and Engineering, water sample labeled OW-2.

Volatile Organic Compounds in ug/l
EPA Method 8240

benzene	5 U	methylene chloride	5 U
carbon tetrachloride	5 U	chloromethane	10 U
chlorobenzene	5 U	bromomethane	10 U
1,2-dichloroethane	5 U	bromoform	5 U
1,1,1-trichloroethane	5 U	bromodichloromethane	5 U
1,1-dichloroethane	5 U	dibromochloromethane	5 U
1,1,2-trichloroethane	5 U	tetrachloroethene	5 U
1,1,2,2-tetrachloroethane	5 U	toluene	5 U
chloroethane	10 U	trichloroethene	5 U
2-chloroethyl vinyl ether	10 U	vinyl chloride	10 U
chloroform	5 U	acetone	10 U
1,1-dichloroethene	5 U	2-butanone	10 U
1,2-dichloroethenes	5 U	carbon disulfide	5 U
1,2-dichloropropane	5 U	2-hexanone	10 U
trans-1,3-dichloropropene	5 U	4-methyl-2-pentanone	10 U
cis-1,3-dichloropropene	5 U	styrene	5 U
ethylbenzene	5 U	vinyl acetate	10 U
		total xylenes	6

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	86
toluene-d_8	95
p-bromofluorobenzene	104

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

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B - The compound was present in the method blank. The result reported here is not blank corrected.

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ANALYTICAL REPORT

Date: 12 July 1991
Aquatec Lab No.: 137012
ETR No.: 26872, Project No.: 91000
Sample Received On: 19 June 1991; Analyzed On: 2 July 1991
Sample Identification: ENSR Consulting and Engineering, water sample labeled OW-2D.

Volatile Organic Compounds in ug/l
EPA Method 8240

benzene	5 U	methylene chloride	4JB
carbon tetrachloride	5 U	chloromethane	10 U
chlorobenzene	5 U	bromomethane	10 U
1,2-dichloroethane	5 U	bromoform	5 U
1,1,1-trichloroethane	5 U	bromodichloromethane	5 U
1,1-dichloroethane	5 U	dibromochloromethane	5 U
1,1,2-trichloroethane	5 U	tetrachloroethene	5 U
1,1,2,2-tetrachloroethane	5 U	toluene	5 U
chloroethane	10 U	trichloroethene	5 U
2-chloroethyl vinyl ether	10 U	vinyl chloride	10 U
chloroform	5 U	acetone	10 U
1,1-dichloroethene	5 U	2-butanone	10 U
1,2-dichloroethenes	5 U	carbon disulfide	5 U
1,2-dichloropropane	5 U	2-hexanone	10 U
trans-1,3-dichloropropene	5 U	4-methyl-2-pentanone	10 U
cis-1,3-dichloropropene	5 U	styrene	5 U
ethylbenzene	5 U	vinyl acetate	10 U
		total xylenes	5

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	85
toluene-d_8	97
p-bromofluorobenzene	106

Key to the letters used to qualify the results of the analysis:

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J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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ANALYTICAL REPORT

Date: 12 July 1991
Aquatec Lab No.: 137014
ETR No.: 26872, Project No.: 91000
Sample Received On: 19 June 1991; Analyzed On: 2 July 1991
Sample Identification: ENSR Consulting and Engineering, water sample labeled OW-3.

Volatile Organic Compounds in ug/l
EPA Method 8240

benzene	5 U	methylene chloride	1JB
carbon tetrachloride	5 U	chloromethane	10 U
chlorobenzene	5 U	bromomethane	10 U
1,2-dichloroethane	5 U	bromoform	5 U
1,1,1-trichloroethane	5 U	bromodichloromethane	5 U
1,1-dichloroethane	5 U	dibromochloromethane	5 U
1,1,2-trichloroethane	5 U	tetrachloroethene	5 U
1,1,2,2-tetrachloroethane	5 U	toluene	5 U
chloroethane	10 U	trichloroethene	5 U
2-chloroethyl vinyl ether	10 U	vinyl chloride	10 U
chloroform	5 U	acetone	5JB
1,1-dichloroethene	5 U	2-butanone	10 U
1,2-dichloroethenes	5 U	carbon disulfide	5 U
1,2-dichloropropane	5 U	2-hexanone	10 U
trans-1,3-dichloropropene	5 U	4-methyl-2-pentanone	10 U
cis-1,3-dichloropropene	5 U	styrene	5 U
ethylbenzene	5 U	vinyl acetate	10 U
		total xylenes	5 U

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	84
toluene-d_8	94
p-bromofluorobenzene	100

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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ANALYTICAL REPORT

Date: 12 July 1991
Aquatec Lab No.: 137016
ETR No.: 26872, Project No.: 91000
Sample Received On: 19 June 1991; Analyzed On: 2 July 1991
Sample Identification: ENSR Consulting and Engineering, water sample labeled TB.

Volatile Organic Compounds in ug/l
EPA Method 8240

benzene	5 U	methylene chloride	2JB
carbon tetrachloride	5 U	chloromethane	10 U
chlorobenzene	5 U	bromomethane	10 U
1,2-dichloroethane	5 U	bromoform	5 U
1,1,1-trichloroethane	5 U	bromodichloromethane	5 U
1,1-dichloroethane	5 U	dibromochloromethane	5 U
1,1,2-trichloroethane	5 U	tetrachloroethene	5 U
1,1,2,2-tetrachloroethane	5 U	toluene	5 U
chloroethane	10 U	trichloroethene	5 U
2-chloroethyl vinyl ether	10 U	vinyl chloride	10 U
chloroform	5 U	acetone	2JB
1,1-dichloroethene	5 U	2-butanone	10 U
1,2-dichloroethenes	5 U	carbon disulfide	5 U
1,2-dichloropropane	5 U	2-hexanone	10 U
trans-1,3-dichloropropene	5 U	4-methyl-2-pentanone	10 U
cis-1,3-dichloropropene	5 U	styrene	5 U
ethylbenzene	5 U	vinyl acetate	10 U
		total xylenes	5 U

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	83
toluene-d_8	96
p-bromofluorobenzene	100

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

INITIAL CALIBRATION DATA

CASE NO: _____ REGION: _____ INSTRUMENT ID: OWAD
CONTRACTOR: CALIBRATION DATE: 7/2/91
CONTRACT NO: _____

MINIMUM RF FOR SPCC IS 0.300 ** MAXIMUM %RSD FOR CCC IS 30% *
SPECIAL CASE LIMIT IS 0.250 ++ SPECIAL CASE LIMIT IS 40% +

LABORATORY ID: DEL020HI2V DEL100HV DEL200HV DEK050HV DEL150HV

NO	COMPOUND	RF	RF	RF	RF	RF	MEAN	%RSD	
1	BROMOCHLOROMETHANE	1.000	1.000	1.000	1.000	1.000	1.000	0.0	
2	CHLOROMETHANE	1.112	1.019	0.896	1.077	0.922	1.005	9.3	**
3	BROMOMETHANE	1.191	1.084	0.977	0.836	0.817	0.981	16.3	
4	VINYL CHLORIDE	1.113	1.057	1.098	1.100	1.088	1.091	1.9	*
5	CHLOROETHANE	0.642	0.606	0.624	0.619	0.623	0.623	2.0	
6	METHYLENE CHLORIDE	1.267	1.247	1.174	1.122	1.176	1.197	4.9	
7	ACETONE	1.418	1.525	1.161	1.076	1.263	1.288	14.2	
8	ACROLEIN	0.120	0.159	0.160	0.165	0.161	0.153	12.2	
9	ACRYLONITRILE	0.370	0.385	0.403	0.397	0.387	0.388	3.2	
10	CARBON DISULFIDE	2.976	2.863	3.197	3.158	3.146	3.068	4.6	
11	TRICHLOROFLUOROMETHANE	1.636	1.675	1.669	1.647	1.699	1.665	1.4	
12	1,1-DICHLOROETHENE	0.967	0.950	1.005	0.980	0.988	0.978	2.1	*
13	1,4-DIFLUOROBENZENE	1.000	1.000	1.000	1.000	1.000	1.000	0.0	
14	1,1-DICHLOROETHANE	2.084	2.024	2.142	2.104	2.133	2.097	2.2	**
15	TETRAHYDROFURAN	0.145	0.150	0.161	0.154	0.151	0.152	3.9	
16	1,2-DICHLOROETHENE (TOTAL)	1.177	1.123	1.187	1.159	1.174	1.164	2.1	
17	CHLOROFORM	2.368	2.321	2.466	2.417	2.486	2.412	2.8	*
18	1,2-DICHLOROETHANE	1.913	1.893	1.915	1.907	1.972	1.920	1.5	
19	1,2-DICHLOROETHANE-D4	1.287	1.150	1.300	1.287	1.332	1.271	5.5	
20	2-BUTANONE	0.248	0.260	0.262	0.243	0.255	0.254	3.1	
21	FREON TF	0.423	0.408	0.406	0.398	0.390	0.405	3.0	
22	1,1,1-TRICHLOROETHANE	0.419	0.412	0.421	0.415	0.416	0.416	0.8	
23	CARBON TETRACHLORIDE	0.415	0.472	0.429	0.424	0.494	0.447	7.6	
24	VINYL ACETATE	0.693	0.605	0.623	0.628	0.612	0.632	5.5	
25	BROMODICHLOROMETHANE	0.475	0.468	0.494	0.492	0.493	0.484	2.5	
26	1,2-DICHLOROPROPANE	0.349	0.324	0.347	0.339	0.335	0.339	2.9	*
27	CIS-1,3-DICHLOROPROPENE	0.499	0.473	0.512	0.517	0.507	0.502	3.4	
28	TRICHLOROETHENE	0.427	0.389	0.402	0.388	0.385	0.398	4.3	
29	DIBROMOCHLOROMETHANE	0.512	0.479	0.535	0.518	0.515	0.512	3.9	
30	METHYLCYCLOHEXANE	0.155	0.138	0.152	0.150	0.150	0.149	4.3	
31	1,1,2-TRICHLOROETHANE	0.353	0.321	0.337	0.327	0.321	0.332	4.1	
32	BENZENE	0.771	0.720	0.761	0.751	0.745	0.749	2.5	
33	TRANS-1,3-DICHLOROPROPENE	0.418	0.390	0.430	0.429	0.437	0.421	4.3	
34	2-CHLOROETHYLVINYLETHER	0.211	0.205	0.214	0.216	0.213	0.212	2.0	
35	BROMOFORM	0.485	0.433	0.510	0.494	0.499	0.484	6.1	++
36	CHLOROBENZENE-D5	1.000	1.000	1.000	1.000	1.000	1.000	0.0	
37	4-METHYL-2-PENTANONE	0.899	0.808	0.844	0.844	0.828	0.845	4.0	
38	2-HEXANONE	0.898	0.779	0.823	0.829	0.811	0.828	5.2	
39	1,1,2,2-TETRACHLOROETHANE	0.874	0.699	0.785	0.778	0.747	0.777	8.2	**
40	TETRACHLOROETHENE	0.605	0.531	0.533	0.511	0.502	0.536	7.5	
41	BUTYL ACETATE	0.379	0.321	0.357	0.362	0.351	0.354	6.0	
42	TOLUENE-D8	1.191	0.946	1.103	1.076	1.069	1.077	8.1	
43	TOLUENE	0.711	0.640	0.680	0.672	0.667	0.674	3.7	*
44	CHLOROBENZENE	1.133	0.966	1.017	0.984	0.973	1.015	6.7	**
45	ETHYLBENZENE	0.490	0.420	0.450	0.436	0.431	0.446	6.0	*
46	BROMOFLUOROBENZENE	1.069	0.752	0.867	0.835	0.823	0.869	13.7	
47	STYRENE	1.125	0.953	1.012	0.984	0.982	1.011	6.6	
48	M-XYLENE	0.706	0.594	0.620	0.595	0.605	0.624	7.5	
49	O- & P-XYLENE	0.630	0.522	0.568	0.560	0.562	0.568	6.8	
50	O-DICHLOROBENZENE	1.261	0.835	0.935	0.881	0.850	0.952	18.5	
51	CYCLOPENTANE	0.757	0.730	0.769	0.776	0.766	[illegible]	[illegible]	
52	XYLENE (TOTAL)	0.706	0.594	0.620	0.595	0.605	0.624	7.5	
53	2-PROPANOL	0.086	0.107	0.082	0.083	0.073	0.086	14.3	

CONTINUING CALIBRATION CHECK

CASE NO: _____ REGION: _____
CONTRACTOR:
CONTRACT NO:
INSTRUMENT ID: OWAD

CALIBRATION DATE: 7/2/91
TIME: 12:42
LABORATORY ID: DEL050AHV
INITIAL CALIBRATION DATE: 7/2/91

MINIMUM RF FOR SPCC IS 0.300 **
SPECIAL CASE LIMIT IS 0.200 ++

MAXIMUM %D FOR CCC IS 25% *
SPECIAL CASE LIMIT IS *2% +

NO.	COMPOUND	RF(I)	RF(O)	%D	
1	BROMOCHLOROMETHANE	1.000	1.000	0.000	
2	CHLOROMETHANE	1.005	1.072	-6.648	**
3	BROMOMETHANE	0.981	1.212	-23.600	
4	VINYL CHLORIDE	1.091	1.159	-6.169	*
5	CHLOROETHANE	0.623	0.655	-5.212	
6	METHYLENE CHLORIDE	1.197	1.270	-6.047	
7	ACETONE	1.288	1.280	0.637	
8	ACROLEIN	0.153	0.140	8.587	
9	ACRYLONITRILE	0.388	0.368	5.369	
10	CARBON DISULFIDE	3.068	2.986	2.659	
11	TRICHLOROFLUOROMETHANE	1.665	1.719	-3.239	
12	1,1-DICHLOROETHENE	0.978	0.983	-0.476	*
13	1,4-DIFLUOROBENZENE	1.000	1.000	0.000	
14	1,1-DICHLOROETHANE	2.097	2.082	0.716	**
15	TETRAHYDROFURAN	0.152	0.145	4.474	
16	1,2-DICHLOROETHENE (TOTAL)	1.164	1.178	-1.186	
17	CHLOROFORM	2.412	2.410	0.061	*
18	1,2-DICHLOROETHANE	1.920	1.984	-3.349	
19	1,2-DICHLOROETHANE-D4	1.271	1.311	-3.104	
20	2-BUTANONE	0.254	0.248	2.410	
21	FREON TF	0.405	0.410	-1.300	
22	1,1,1-TRICHLOROETHANE	0.416	0.413	0.731	
23	CARBON TETRACHLORIDE	0.447	0.431	3.490	
24	VINYL ACETATE	0.632	0.605	4.334	
25	BROMODICHLOROMETHANE	0.484	0.481	0.622	
26	1,2-DICHLOROPROPANE	0.339	0.332	1.824	*
27	CIS-1,3-DICHLOROPROPENE	0.502	0.482	3.936	
28	TRICHLOROETHENE	0.398	0.409	-2.629	
29	DIBROMOCHLOROMETHANE	0.512	0.516	-0.794	
30	METHYLCYCLOHEXANE	0.149	0.149	-0.292	
31	1,1,2-TRICHLOROETHANE	0.332	0.341	-2.819	
32	BENZENE	0.749	0.747	0.395	
33	TRANS-1,3-DICHLOROPROPENE	0.421	0.411	2.408	
34	2-CHLOROETHYLVINYLETHER	0.212	0.207	2.184	
35	BROMOFORM	0.484	0.477	1.508	++
36	CHLOROBENZENE-D5	1.000	1.000	0.000	
37	4-METHYL-2-PENTANONE	0.845	0.826	2.195	
38	2-HEXANONE	0.828	0.800	3.350	
39	1,1,2,2-TETRACHLOROETHANE	0.777	0.752	3.236	**
40	TETRACHLOROETHENE	0.536	0.559	-4.267	
41	BUTYL ACETATE	0.354	0.340	3.869	
42	TOLUENE-D8	1.077	1.100	-2.124	
43	TOLUENE	0.674	0.671	0.444	*
44	CHLOROBENZENE	1.015	1.027	-1.200	**
45	ETHYLBENZENE	0.446	0.446	-0.185	*
46	BROMOFLUOROBENZENE	0.869	0.887	-2.002	
47	STYRENE	1.011	1.024	-1.229	
48	M-XYLENE	0.624	0.628	-0.654	
49	O- & P-XYLENE	0.568	0.579	-1.886	
50	O-DICHLOROBENZENE	0.952	0.947	0.591	
51	CYCLOPENTANE	0.760	0.735	3.295	
52	XYLENE (TOTAL)	0.624	0.628	-0.654	
53	2-PROPANOL	0.081	0.085	3.576	

Check standard response factors for the 8240 analysis of Aquatec Lab No.'s 137007, 137008, 137010, 137012, 137014, 137016 and Blank DELB002AV.

aquatec
A Member of the Inchcape Environmental Group
55 South Park Drive, Colchester, Vermont 05446
TEL. 802/655-1203 FAX 802/655-1248

ANALYTICAL REPORT

Date: 22 July 1991
ETR No.: 26872, Project No.: 91000
Blank Identification: Blank AB062071S for Aquatec Lab No.'s 137007, 137008 and 137010.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/l
EPA Method 8270

acenaphthene	10 U	benzyl butylphthalate	10 U
1,2,4-trichlorobenzene	10 U	di-n-butyl phthalate	10 U
hexachlorobenzene	10 U	di-n-octyl phthalate	10 U
hexachloroethane	10 U	diethyl phthalate	10 U
bis (2-chloroethyl) ether	10 U	dimethyl phthalate	10 U
2-chloronaphthalene	10 U	benzo(a)anthracene	10 U
1,2-dichlorobenzene	10 U	benzo(a)pyrene	10 U
1,3-dichlorobenzene	10 U	benzo(b)fluoranthene	10 U
1,4-dichlorobenzene	10 U	benzo(k)fluoranthene	10 U
3,3'-dichlorobenzidine	20 U	chrysene	10 U
2,4-dinitrotoluene	10 U	acenaphthylene	10 U
2,6-dinitrotoluene	10 U	anthracene	10 U
fluoranthene	10 U	benzo(ghi)perylene	10 U
4-chlorophenyl phenyl ether	10 U	fluorene	10 U
4-bromophenyl phenyl ether	10 U	phenanthrene	10 U
bis (2-chloroisopropyl) ether	10 U	dibenzo(ah)anthracene	10 U
bis (2-chloroethoxy)methane	10 U	indeno(1,2,3-cd)pyrene	10 U
hexachlorobutadiene	10 U	pyrene	10 U
hexachlorocyclopentadiene	10 U	benzyl alcohol	10 U
isophorone	10 U	4-chloroaniline	10 U
naphthalene	10 U	dibenzofuran	10 U
nitrobenzene	10 U	2-methylnaphthalene	10 U
N-nitrosodiphenylamine+	10 U	2-nitroaniline	50 U
N-nitrosodipropylamine	10 U	3-nitroaniline	50 U
bis (2-ethylhexyl) phthalate	10 U	4-nitroaniline	50 U

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

+ Cannot be separated from diphenylamine.

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ANALYTICAL REPORT

Date: 22 July 1991
ETR No.: 26872, Project No.: 91000
Blank Identification: Blank AB062071S for Aquatec Lab No.'s 137007, 137008 and 137010.

Acid Extractable Semivolatile Organic Compounds in ug/l
EPA Method 8270

2,4,6-trichlorophenol	10 U
p-chloro-m-cresol	10 U
2-chlorophenol	10 U
2,4-dichlorophenol	10 U
2,4-dimethylphenol	10 U
2-nitrophenol	10 U
4-nitrophenol	50 U
2,4-dinitrophenol	50 U
4,6-dinitro-2-methylphenol	50 U
pentachlorophenol	50 U
phenol	10 U
benzoic acid	50 U
2-methylphenol	10 U
4-methylphenol	10 U
2,4,5-trichlorophenol	50 U

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	53	nitrobenzene-d_5	67
phenol-d_6	38	2-fluorobiphenyl	75
2,4,6-tribromophenol	60	terphenyl-d_{14}	86

Key to the letters used to qualify the results of the analysis:

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ANALYTICAL REPORT

Date: 22 July 1991
Aquatec Lab No.: 137007
ETR No.: 26872, Project No.: 91000
Sample Received On: 06/19/91; Extracted On: 06/20/91; Analyzed On: 07/17/91
Sample Identification: ENSR Consulting and Engineering, water sample labeled FB.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/l
EPA Method 8270

acenaphthene	10 U	benzyl butylphthalate	10 U
1,2,4-trichlorobenzene	10 U	di-n-butyl phthalate	10 U
hexachlorobenzene	10 U	di-n-octyl phthalate	10 U
hexachloroethane	10 U	diethyl phthalate	10 U
bis (2-chloroethyl) ether	10 U	dimethyl phthalate	10 U
2-chloronaphthalene	10 U	benzo(a)anthracene	10 U
1,2-dichlorobenzene	10 U	benzo(a)pyrene	10 U
1,3-dichlorobenzene	10 U	benzo(b)fluoranthene	10 U
1,4-dichlorobenzene	10 U	benzo(k)fluoranthene	10 U
3,3'-dichlorobenzidine	20 U	chrysene	10 U
2,4-dinitrotoluene	10 U	acenaphthylene	10 U
2,6-dinitrotoluene	10 U	anthracene	10 U
fluoranthene	10 U	benzo(ghi)perylene	10 U
4-chlorophenyl phenyl ether	10 U	fluorene	10 U
4-bromophenyl phenyl ether	10 U	phenanthrene	10 U
bis (2-chloroisopropyl) ether	10 U	dibenzo(ah)anthracene	10 U
bis (2-chloroethoxy)methane	10 U	indeno(1,2,3-cd)pyrene	10 U
hexachlorobutadiene	10 U	pyrene	10 U
hexachlorocyclopentadiene	10 U	benzyl alcohol	10 U
isophorone	10 U	4-chloroaniline	10 U
naphthalene	10 U	dibenzofuran	10 U
nitrobenzene	10 U	2-methylnaphthalene	10 U
N-nitrosodiphenylamine+	10 U	2-nitroaniline	50 U
N-nitrosodipropylamine	10 U	3-nitroaniline	50 U
bis (2-ethylhexyl) phthalate	10 U	4-nitroaniline	50 U

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was presents in the method blank. The result reported here is not blank corrected.

+ Cannot be separated from diphenylamine.

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ANALYTICAL REPORT

Date: 22 July 1991
Aquatec Lab No.: 137007
ETR No.: 26872, Project No.: 91000
Sample Received On: 06/19/91; Extracted On: 06/20/91; Analyzed On: 07/17/91
Sample Identification: ENSR Consulting and Engineering, water sample labeled FB.

Acid Extractable Semivolatile Organic Compounds in ug/l
EPA Method 8270

2,4,6-trichlorophenol	10 U
p-chloro-m-cresol	10 U
2-chlorophenol	10 U
2,4-dichlorophenol	10 U
2,4-dimethylphenol	10 U
2-nitrophenol	10 U
4-nitrophenol	50 U
2,4-dinitrophenol	50 U
4,6-dinitro-2-methylphenol	50 U
pentachlorophenol	50 U
phenol	10 U
benzoic acid	50 U
2-methylphenol	10 U
4-methylphenol	10 U
2,4,5-trichlorophenol	50 U

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	54	nitrobenzene-d_5	70
phenol-d_6	40	2-fluorobiphenyl	80
2,4,6-tribromophenol	67	terphenyl-d_{14}	87

Key to the letters used to qualify the results of the analysis:

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ANALYTICAL REPORT

Date: 22 July 1991
Aquatec Lab No.: 137008
ETR No.: 26872, Project No.: 91000
Sample Received On: 06/19/91; Extracted On: 06/20/91; Analyzed On: 07/17/91
Sample Identification: ENSR Consulting and Engineering, water sample labeled OW-1.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/l
EPA Method 8270

acenaphthene	10 U	benzyl butylphthalate	10 U
1,2,4-trichlorobenzene	10 U	di-n-butyl phthalate	10 U
hexachlorobenzene	10 U	di-n-octyl phthalate	10 U
hexachloroethane	10 U	diethyl phthalate	10 U
bis (2-chloroethyl) ether	10 U	dimethyl phthalate	10 U
2-chloronaphthalene	10 U	benzo(a)anthracene	10 U
1,2-dichlorobenzene	10 U	benzo(a)pyrene	10 U
1,3-dichlorobenzene	10 U	benzo(b)fluoranthene	10 U
1,4-dichlorobenzene	10 U	benzo(k)fluoranthene	10 U
3,3'-dichlorobenzidine	20 U	chrysene	10 U
2,4-dinitrotoluene	10 U	acenaphthylene	10 U
2,6-dinitrotoluene	10 U	anthracene	10 U
fluoranthene	10 U	benzo(ghi)perylene	10 U
4-chlorophenyl phenyl ether	10 U	fluorene	10 U
4-bromophenyl phenyl ether	10 U	phenanthrene	10 U
bis (2-chloroisopropyl) ether	10 U	dibenzo(ah)anthracene	10 U
bis (2-chloroethoxy)methane	10 U	indeno(1,2,3-cd)pyrene	10 U
hexachlorobutadiene	10 U	pyrene	10 U
hexachlorocyclopentadiene	10 U	benzyl alcohol	10 U
isophorone	10 U	4-chloroaniline	10 U
naphthalene	6J	dibenzofuran	10 U
nitrobenzene	10 U	2-methylnaphthalene	10 U
N-nitrosodiphenylamine+	10 U	2-nitroaniline	50 U
N-nitrosodipropylamine	10 U	3-nitroaniline	50 U
bis (2-ethylhexyl) phthalate	10 U	4-nitroaniline	50 U

Key to the letters used to qualify the results of the analysis:

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+ Cannot be separated from diphenylamine.

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ANALYTICAL REPORT

Date: 22 July 1991
Aquatec Lab No.: 137008
ETR No.: 26872, Project No.: 91000
Sample Received On: 06/19/91; Extracted On: 06/20/91; Analyzed On: 07/17/91
Sample Identification: ENSR Consulting and Engineering, water sample labeled OW-1.

Acid Extractable Semivolatile Organic Compounds in ug/l
EPA Method 8270

2,4,6-trichlorophenol	10 U
p-chloro-m-cresol	10 U
2-chlorophenol	10 U
2,4-dichlorophenol	10 U
2,4-dimethylphenol	10 U
2-nitrophenol	10 U
4-nitrophenol	50 U
2,4-dinitrophenol	50 U
4,6-dinitro-2-methylphenol	50 U
pentachlorophenol	50 U
phenol	10 U
benzoic acid	50 U
2-methylphenol	10 U
4-methylphenol	10 U
2,4,5-trichlorophenol	50 U

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	54	nitrobenzene-d_5	68
phenol-d_6	46	2-fluorobiphenyl	75
2,4,6-tribromophenol	77	terphenyl-d_{14}	83

Key to the letters used to qualify the results of the analysis:

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J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

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ANALYTICAL REPORT

Date: 22 July 1991
Aquatec Lab No.: 137010
ETR No.: 26872, Project No.: 91000
Sample Received On: 06/19/91; Extracted On: 06/20/91; Analyzed On: 07/17/91
Sample Identification: ENSR Consulting and Engineering, water sample labeled OW-2.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/l
EPA Method 8270

acenaphthene	10 U	benzyl butylphthalate	10 U
1,2,4-trichlorobenzene	10 U	di-n-butyl phthalate	10 U
hexachlorobenzene	10 U	di-n-octyl phthalate	10 U
hexachloroethane	10 U	diethyl phthalate	10 U
bis (2-chloroethyl) ether	10 U	dimethyl phthalate	10 U
2-chloronaphthalene	10 U	benzo(a)anthracene	10 U
1,2-dichlorobenzene	10 U	benzo(a)pyrene	10 U
1,3-dichlorobenzene	10 U	benzo(b)fluoranthene	10 U
1,4-dichlorobenzene	10 U	benzo(k)fluoranthene	10 U
3,3'-dichlorobenzidine	20 U	chrysene	10 U
2,4-dinitrotoluene	10 U	acenaphthylene	10 U
2,6-dinitrotoluene	10 U	anthracene	10 U
fluoranthene	10 U	benzo(ghi)perylene	10 U
4-chlorophenyl phenyl ether	10 U	fluorene	10 U
4-bromophenyl phenyl ether	10 U	phenanthrene	10 U
bis (2-chloroisopropyl) ether	10 U	dibenzo(ah)anthracene	10 U
bis (2-chloroethoxy)methane	10 U	indeno(1,2,3-cd)pyrene	10 U
hexachlorobutadiene	10 U	pyrene	10 U
hexachlorocyclopentadiene	10 U	benzyl alcohol	10 U
isophorone	10 U	4-chloroaniline	10 U
naphthalene	47	dibenzofuran	10 U
nitrobenzene	10 U	2-methylnaphthalene	35
N-nitrosodiphenylamine+	10 U	2-nitroaniline	50 U
N-nitrosodipropylamine	10 U	3-nitroaniline	50 U
bis (2-ethylhexyl) phthalate	10 U	4-nitroaniline	50 U

Key to the letters used to qualify the results of the analysis:

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+ Cannot be separated from diphenylamine.

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ANALYTICAL REPORT

Date: 22 July 1991
Aquatec Lab No.: 137010
ETR No.: 26872, Project No.: 91000
Sample Received On: 06/19/91; Extracted On: 06/20/91; Analyzed On: 07/17/91
Sample Identification: ENSR Consulting and Engineering, water sample labeled OW-2.

Acid Extractable Semivolatile Organic Compounds in ug/l
EPA Method 8270

2,4,6-trichlorophenol	10 U
p-chloro-m-cresol	10 U
2-chlorophenol	10 U
2,4-dichlorophenol	10 U
2,4-dimethylphenol	10 U
2-nitrophenol	10 U
4-nitrophenol	50 U
2,4-dinitrophenol	50 U
4,6-dinitro-2-methylphenol	50 U
pentachlorophenol	50 U
phenol	10 U
benzoic acid	50 U
2-methylphenol	10 U
4-methylphenol	10 U
2,4,5-trichlorophenol	50 U

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	47	nitrobenzene-d_5	66
phenol-d_6	37	2-fluorobiphenyl	75
2,4,6-tribromophenol	73	terphenyl-d_{14}	82

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit

B - The compound was presents in the method blank. The result reported here is not blank corrected.

INITIAL CALIBRATION DATA

CASE NO: _____ REGION: _____
CONTRACTOR: AQUATEC
CONTRACT NO: _____

INSTRUMENT ID: 5100A
CALIBRATION DATE: 07/08/91

MINIMUM $\overline{RF}$ FOR SPCC IS 0.050 **
SPECIAL CASE LIMIT IS 0.000 ++

MAXIMUM %RSD FOR CCC IS 30% *
SPECIAL CASE LIMIT IS 40% +

LABORATORY ID: AME020BS AME080BS AME160BS AMD050IBS AME120BS

NO	COMPOUND	RF1	RF2	RF3	RF4	RF5	MEAN	%RSD
1	1,4-DICHLOROBENZENE-D4	1.000	1.000	1.000	1.000	1.000	1.000	0.0
2	N-NITROSODIMETHYLAMINE	0.860	0.840	0.845	0.883	0.774	0.841	4.8
3	2-FLUOROPHENOL	1.874	1.983	2.033	2.035	1.803	1.946	5.3
4	PHENOL-D5	2.783	2.679	2.759	2.715	2.390	2.665	5.9
5	PHENOL	3.400	3.266	3.295	3.208	2.693	3.173	8.7 *
6	ANILINE	3.879	3.668	3.631	3.595	2.723	3.497	12.7
7	BIS(2-CHLOROETHYL)ETHER	2.528	2.386	2.427	2.425	2.690	2.491	4.9
8	2-CHLOROPHENOL	2.343	2.332	2.441	2.390	2.075	2.316	6.1
9	1,3-DICHLOROBENZENE	2.207	1.996	2.027	1.940	1.637	1.961	10.5
10	NAPHTHALENE-D8	1.000	1.000	1.000	1.000	1.000	1.000	0.0
11	1,4-DICHLOROBENZENE	2.366	2.075	2.060	1.984	1.674	2.032	12.1 *
12	BENZYL ALCOHOL	1.316	1.475	1.453	1.420	1.248	1.382	6.9
13	1,2-DICHLOROBENZENE	2.203	1.961	2.010	1.894	1.605	1.935	11.2
14	2-METHYLPHENOL	2.171	2.197	2.119	2.039	1.720	2.049	9.4
15	BIS(2-CHLOROISOPROPYL)ETHER	3.696	3.402	3.475	3.283	2.941	3.359	8.2
16	4-METHYLPHENOL	2.158	2.322	2.165	2.059	1.786	2.098	9.4
17	N-NITROSO-DI-N-PROPYLAMINE	1.938	1.918	1.977	1.884	1.545	1.853	9.4 **
18	HEXACHLOROETHANE	1.045	0.965	0.995	0.963	0.782	0.950	10.4
19	NITROBENZENE-D5	0.687	0.668	0.674	0.666	0.591	0.657	5.7
20	NITROBENZENE	0.730	0.669	0.681	0.650	0.578	0.662	8.3
21	ISOPHORONE	1.346	1.362	1.348	1.348	1.116	1.304	8.0
22	2-NITROPHENOL	0.322	0.334	0.354	0.346	0.307	0.333	5.6 *
23	2,4-DIMETHYLPHENOL	0.715	0.690	0.715	0.687	0.607	0.682	6.5
24	BENZOIC ACID	0.000	0.262	0.313	0.344	0.298	0.329	8.7
25	BIS(2-CHLOROETHOXY)METHANE	0.856	0.787	0.783	0.768	0.664	0.772	8.9
26	2,4-DICHLOROPHENOL	0.441	0.432	0.443	0.433	0.363	0.423	7.9 *
27	1,2,4-TRICHLOROBENZENE	0.446	0.394	0.388	0.378	0.317	0.385	11.9
28	ACENAPHTHENE-D10	1.000	1.000	1.000	1.000	1.000	1.000	0.0
29	NAPHTHALENE	1.775	1.485	1.475	1.406	1.156	1.459	15.1
30	4-CHLOROANILINE	0.501	0.537	0.521	0.526	0.462	0.509	5.8
31	HEXACHLOROBUTADIENE	0.260	0.227	0.221	0.216	0.184	0.221	12.2 *
32	4-CHLORO-3-METHYLPHENOL	0.587	0.635	0.630	0.618	0.507	0.595	8.8 *
33	2-METHYLNAPHTHALENE	1.063	0.921	0.892	0.842	0.684	0.880	15.5
34	HEXACHLOROCYCLOPENTADIENE	0.517	0.522	0.533	0.511	0.510	0.519	1.8 **
35	2,4,6-TRICHLOROPHENOL	0.598	0.597	0.622	0.595	0.564	0.593	3.5 *
36	2,4,5-TRICHLOROPHENOL	0.000	0.649	0.625	0.580	0.556	0.603	6.9
37	2-FLUOROBIPHENYL	2.367	1.911	2.014	1.799	1.682	1.955	13.3
38	2-CHLORONAPHTHALENE	2.125	1.810	1.836	1.685	1.588	1.809	11.2
39	2-NITROANILINE	0.000	0.722	0.712	0.702	0.659	0.699	3.9
40	DIMETHYLPHTHALATE	2.007	2.087	1.973	1.941	1.734	1.952	6.3
41	ACENAPHTHYLENE	3.263	2.724	2.722	2.517	2.231	2.691	14.0
42	2,6-DINITROTOLUENE	0.417	0.426	0.426	0.399	0.355	0.405	7.4
43	3-NITROANILINE	0.000	0.513	0.483	0.510	0.463	0.492	4.8
44	PHENANTHRENE-D10	1.000	1.000	1.000	1.000	1.000	1.000	0.0
45	ACENAPHTHENE	2.303	1.902	1.921	1.773	1.573	1.894	14.1 *
46	2,4-DINITROPHENOL	0.000	0.321	0.292	0.326	0.315	0.313	4.8 **
47	4-NITROPHENOL	0.000	0.399	0.363	0.399	0.375	0.384	4.6 **
48	DIBENZOFURAN	2.769	2.487	2.418	2.254	2.045	2.394	11.2
49	2,4-DINITROTOLUENE	0.529	0.678	0.633	0.650	0.581	0.614	9.6
50	DIETHYLPHTHALATE	2.119	2.295	2.102	2.084	1.835	2.087	7.8
51	4-CHLOROPHENYL-PHENYLETHER	0.886	0.757	0.706	0.651	0.572	0.714	16.4
52	FLUORENE	2.130	1.809	1.711	1.618	1.445	1.742	14.6
53	4-NITROANILINE	0.000	0.489	0.414	0.455	0.442	0.450	6.9
54	4,6-DINITRO-2-METHYLPHENOL	0.000	0.201	0.201	0.204	0.186	0.198	4.1
55	N-NITROSODIPHENYLAMINE	0.623	0.554	0.575	0.542	0.449	0.548	11.6 *
56	2,4,6-TRIBROMOPHENOL	0.204	0.272	0.255	0.274	0.237	0.248	11.5
57	4-BROMOPHENYL-PHENYLETHER	0.287	0.236	0.244	0.224	0.190	0.236	14.9
58	HEXACHLOROBENZENE	0.363	0.290	0.289	0.273	0.233	0.290	16.2
59	PENTACHLOROPHENOL	0.000	0.191	0.187	0.188	0.172	0.184	4.6 *
60	CHRYSENE-D12	1.000	1.000	1.000	1.000	1.000	1.000	0.0
61	PHENANTHRENE	1.551	1.319	1.315	1.250	1.074	1.302	13.1
62	ANTHRACENE	1.575	1.341	1.346	1.249	1.075	1.317	13.7
63	DI-N-BUTYLPHTHALATE	1.839	1.792	1.766	1.681	1.570	1.730	6.1
64	FLUORANTHENE	1.357	1.297	1.279	1.114	1.124	1.234	8.8 *
65	BENZIDINE	0.401	0.384	0.315	0.548	0.835	0.417	39.8
66	PYRENE	2.810	2.395	2.494	2.347	2.004	2.410	12.0
67	TERPHENYL-D14	1.632	1.383	1.449	1.305	1.191	1.409	11.2
68	PERYLENE-D12	1.000	1.000	1.000	1.000	1.000	1.000	0.0
69	BUTYLBENZYLPHTHALATE	1.392	1.404	1.433	1.315	1.328	1.374	3.7
70	3,3'-DICHLOROBENZIDINE	0.382	0.466	0.441	0.382	0.416	0.417	8.8
71	BENZ(A)ANTHRACENE	2.149	2.081	2.099	1.834	1.813	1.995	7.9
72	BIS(2-ETHYLHEXYL)PHTHALATE	2.017	1.889	2.023	1.789	1.739	1.892	6.8
73	CHRYSENE	2.206	2.050	2.023	1.853	1.693	1.965	10.0
74	DI-N-OCTYLPHTHALATE	3.267	2.824	3.272	3.174	2.693	3.046	8.8 *
75	BENZO(B)FLUORANTHENE	2.108	2.026	2.102	2.177	1.794	2.041	7.2
76	BENZO(K)FLUORANTHENE	2.017	1.506	1.818	1.642	1.266	1.650	17.4
77	BENZO(A)PYRENE	1.869	1.768	1.860	1.813	1.558	1.774	7.1 *
78	INDENO(1,2,3-CD)PYRENE	2.098	2.135	2.261	2.146	1.828	2.094	7.6
79	DIBENZ(A,H)ANTHRACENE	1.605	1.595	1.759	1.612	1.362	1.587	8.9
80	BENZO(G,H,I)PERYLENE	1.716	1.846	1.928	1.834	1.564	1.778	7.9
81	PYRIDINE	3.019	2.924	2.900	2.808	2.473	2.825	7.4

CONTINUING CALIBRATION CHECK

CASE NO: _____ REGION: _____
CONTRACTOR: AQUATEC
CONTRACT NO: _____
INSTRUMENT ID: 5100A

CALIBRATION DATE: 07/16/91
TIME: 23:55
LABORATORY ID: AME050AABS
INITIAL CALIBRATION DATE: 07/08/91

MINIMUM $\overline{RF}$ FOR SPCC IS 0.050 **
SPECIAL CASE LIMIT IS 0.000 **

MAXIMUM %D FOR CCC IS 25% *
SPECIAL CASE LIMIT IS *2% *

NO.	COMPOUND	RF(I)	RF(O)	%D	
1	1,4-DINITROBENZENE-D4	1.000	1.000	0.000	
2	N-NITROSODIMETHYLAMINE	0.841	0.875	-4.045	
3	2-FLUOROPHENOL	1.946	1.821	6.420	
4	PHENOL-D5	2.665	2.462	7.621	
5	PHENOL	3.173	3.201	-0.891	*
6	ANILINE	3.499	3.560	-1.734	
7	BIS(2-CHLOROETHYL)ETHER	2.491	2.463	1.119	
8	2-CHLOROPHENOL	2.316	2.165	6.547	
9	1,3-DICHLOROBENZENE	1.961	2.209	-12.613	
10	NAPHTHALENE-D8	1.000	1.000	0.000	
11	1,4-DICHLOROBENZENE	2.032	2.254	-10.917	*
12	BENZYL ALCOHOL	1.382	1.384	-0.149	
13	1,2-DICHLOROBENZENE	1.935	2.149	-11.105	
14	2-METHYLPHENOL	2.049	2.445	-19.303	
15	BIS(2-CHLOROISOPROPYL)ETHER	3.359	3.380	-0.620	
16	4-METHYLPHENOL	2.098	2.482	-18.323	
17	N-NITROSO-DI-N-PROPYLAMINE	1.853	1.905	-2.858	**
18	HEXACHLOROETHANE	0.950	1.024	-7.766	
19	NITROBENZENE-D5	0.657	0.672	-2.230	
20	NITROBENZENE	0.662	0.697	-5.337	
21	ISOPHORONE	1.304	1.342	-2.913	
22	2-NITROPHENOL	0.333	0.307	7.673	*
23	2,4-DIMETHYLPHENOL	0.682	0.644	5.590	
24	BENZOIC ACID	0.329	0.388	-17.801	
25	BIS(2-CHLOROETHOXY)METHANE	0.772	0.810	-5.026	
26	2,4-DICHLOROPHENOL	0.423	0.411	2.826	*
27	1,2,4-TRICHLOROBENZENE	0.385	0.422	-9.739	
28	ACENAPHTHENE-D10	1.000	1.000	0.000	
29	NAPHTHALENE	1.459	1.598	-9.510	
30	4-CHLOROANILINE	0.509	0.492	3.345	
31	HEXACHLOROBUTADIENE	0.221	0.248	-11.977	*
32	4-CHLORO-3-METHYLPHENOL	0.595	0.583	2.074	*
33	2-METHYLNAPHTHALENE	0.880	0.984	-11.805	
34	HEXACHLOROCYCLOPENTADIENE	0.519	0.482	7.012	**
35	2,4,6-TRICHLOROPHENOL	0.593	0.531	10.512	*
36	2,4,5-TRICHLOROPHENOL	0.603	0.711	-17.966	
37	2-FLUOROBIPHENYL	1.955	2.021	-3.412	
38	2-CHLORONAPHTHALENE	1.809	1.892	-4.607	
39	2-NITROANILINE	0.699	0.688	1.572	
40	DIMETHYLPHTHALATE	1.952	2.156	-10.438	
41	ACENAPHTHYLENE	2.691	2.890	-7.395	
42	2,6-DINITROTOLUENE	0.405	0.476	-17.672	
43	3-NITROANILINE	0.492	0.506	-2.825	
44	PHENANTHRENE-D10	1.000	1.000	0.000	
45	ACENAPHTHENE	1.894	2.032	-7.244	*
46	2,4-DINITROPHENOL	0.313	0.257	18.056	**
47	4-NITROPHENOL	0.384	0.378	1.447	**
48	DIBENZOFURAN	2.394	2.642	-10.324	
49	2,4-DINITROTOLUENE	0.614	0.750	-22.051	
50	DIETHYLPHTHALATE	2.087	2.352	-12.705	
51	4-CHLOROPHENYL-PHENYLETHER	0.714	0.783	-9.588	
52	FLUORENE	1.742	1.968	-12.946	
53	4-NITROANILINE	0.450	0.495	-10.015	
54	4,6-DINITRO-2-METHYLPHENOL	0.198	0.168	14.946	
55	N-NITROSODIPHENYLAMINE	0.548	0.567	-3.419	*
56	2,4,6-TRIBROMOPHENOL	0.248	0.265	-6.551	
57	4-BROMOPHENYL-PHENYLETHER	0.236	0.242	-2.594	
58	HEXACHLOROBENZENE	0.290	0.309	-6.833	
59	PENTACHLOROPHENOL	0.184	0.170	7.592	*
60	CHRYSENE-D12	1.000	1.000	0.000	
61	PHENANTHRENE	1.302	1.394	-7.061	
62	ANTHRACENE	1.317	1.457	-10.614	
63	DI-N-BUTYLPHTHALATE	1.730	1.927	-11.400	
64	FLUORANTHENE	1.234	1.451	-17.562	*
~~65~~	~~BENZIDINE~~	~~0.617~~	~~0.346~~	~~43.814~~	
66	PYRENE	2.410	2.406	0.145	
67	TERPHENYL-D14	1.408	1.407	0.077	
68	PERYLENE-D12	1.000	1.000	0.000	
69	BUTYLBENZYLPHTHALATE	1.374	1.381	-0.515	
70	3,3'-DICHLOROBENZIDINE	0.417	0.402	3.734	
71	BENZ(A)ANTHRACENE	1.995	2.069	-3.690	
72	BIS(2-ETHYLHEXYL)PHTHALATE	1.892	1.763	6.816	
73	CHRYSENE	1.965	1.835	6.594	
74	DI-N-OCTYLPHTHALATE	3.046	3.355	-10.140	*
75	BENZO(B)FLUORANTHENE	2.041	1.934	5.275	
76	BENZO(K)FLUORANTHENE	1.650	1.876	-13.675	
77	BENZO(A)PYRENE	1.774	1.805	-1.765	*
78	INDENO(1,2,3-CD)PYRENE	2.094	2.110	-0.775	
79	DIBENZ(A,H)ANTHRACENE	1.587	1.588	-0.090	
80	BENZO(G,H,I)PERYLENE	1.778	1.819	-2.313	
81	PYRIDINE	2.825	2.964	-4.923	

Check standard response factors for the 8270 analysis of Aquatec Lab No.'s 137007, 137008, 137010 and Blank AB062071S.

M901376

ENSR

CHAIN OF CUSTODY RECORD

Client/Project Name: Stanley

Project Location: Shaftsbury, VT

Project Number: 6303-029-300

Field Logbook No.: 691 A0302

Sampler: (Print Name) /Affiliation: R. Matluck / ENSR

Signature: R. Matluck

Chain of Custody Tape No.: 0571

Send Results/Report to: R. Matluck

Analysis Requested

Field Sample No./ Identification	Date	Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	Field Filtered	VOC+Acetone 8240	SVOC 8270	RP Metals	TDS	TPH		Lab I.D.	Remarks
OW-2	6/17/91	1630	✓			AQ	HCl		✓							
↓	↓	↓	✓			AQ	ice			✓						
			✓			AQ	HNO_3	yes			✓					
			✓			AQ	ice					✓				
			✓			AQ	HCl						✓			
OW-2D	6/17/91	1635	✓			AQ	HCl		✓							
↓	↓	↓	✓			AQ	ice			✓						
			✓			AQ	HNO_3	yes			✓					
OW-1	6/17/91	1735	✓			AQ	HCl		✓							

Relinquished by: (Print Name)	Date:	Received by: (Print Name)	Date:
Signature: Rosemary Matluck	Time:	Signature: Airbill 0313095355	Time:
Relinquished by: (Print Name)	Date:	Received by: (Print Name) Maureen E. Henry	Date: 6/19/91
Signature:	Time:	Signature: Maureen E. Henry	Time: 1000
Relinquished by: (Print Name)	Date:	Received by: (Print Name)	Date:
Signature:	Time:	Signature:	Time:

Analytical Laboratory (Destination):

AQUATEC
75 Green Mountain Dr
S. Burlington, VT
05403

Martha Roy

Se[redacted] 000950

M901376

ENSR

CHAIN OF CUSTODY RECORD

Client/Project Name: Stanley

Project Location: Shaftsbury VT

Project Number: 6303-029-300

Field Logbook No.: 691A0302

Sampler: (Print Name) /Affiliation: R. Mattuck / James Jones

Chain of Custody Tape No.: 0571

Signature:

Send Results/Report to: R. Mattuck

Analysis Requested

Field Sample No./ Identification	Date	Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	Field Filtered	VOC+Acetone 8260	SVOC 8270	RP Metals	TDS	TPH	Lab I.D.	Remarks
OW-3	6/18/91	0800	✓			AQ	HCl		✓						
↓	↓	↓	✓			↓	HNO_3	yes			✓				
			✓				ice					✓			
↓	↓	↓	✓			↓	HCl						✓		
FB	6/18/91	0830	✓			AQ	HCl		✓						
↓	↓	↓	✓			↓	ice			✓					
↓	↓	↓	✓			↓	HNO_3				✓				
OW-1	6/18/91	0910	✓			AQ	ice			✓					
↓	↓	↓	✓			AQ	HNO_3	yes			✓				
* TB	6/18/91	1015	✓			AQ	HCl		✓						

Relinquished by: (Print Name)	Date:	Received by: (Print Name)	Date:
Signature: Rosemary Mattuck	Time:	Signature: FedEx Airbill 0313095355	Time:
Relinquished by: (Print Name)	Date:	Received by: (Print Name) Maureen R. Henry	Date: 6-19-91
Signature:	Time:	Signature: Maureen R. Henry	Time: 1000
Relinquished by: (Print Name)	Date:	Received by: (Print Name)	Date:
Signature: (void)	Time:	Signature:	Time:

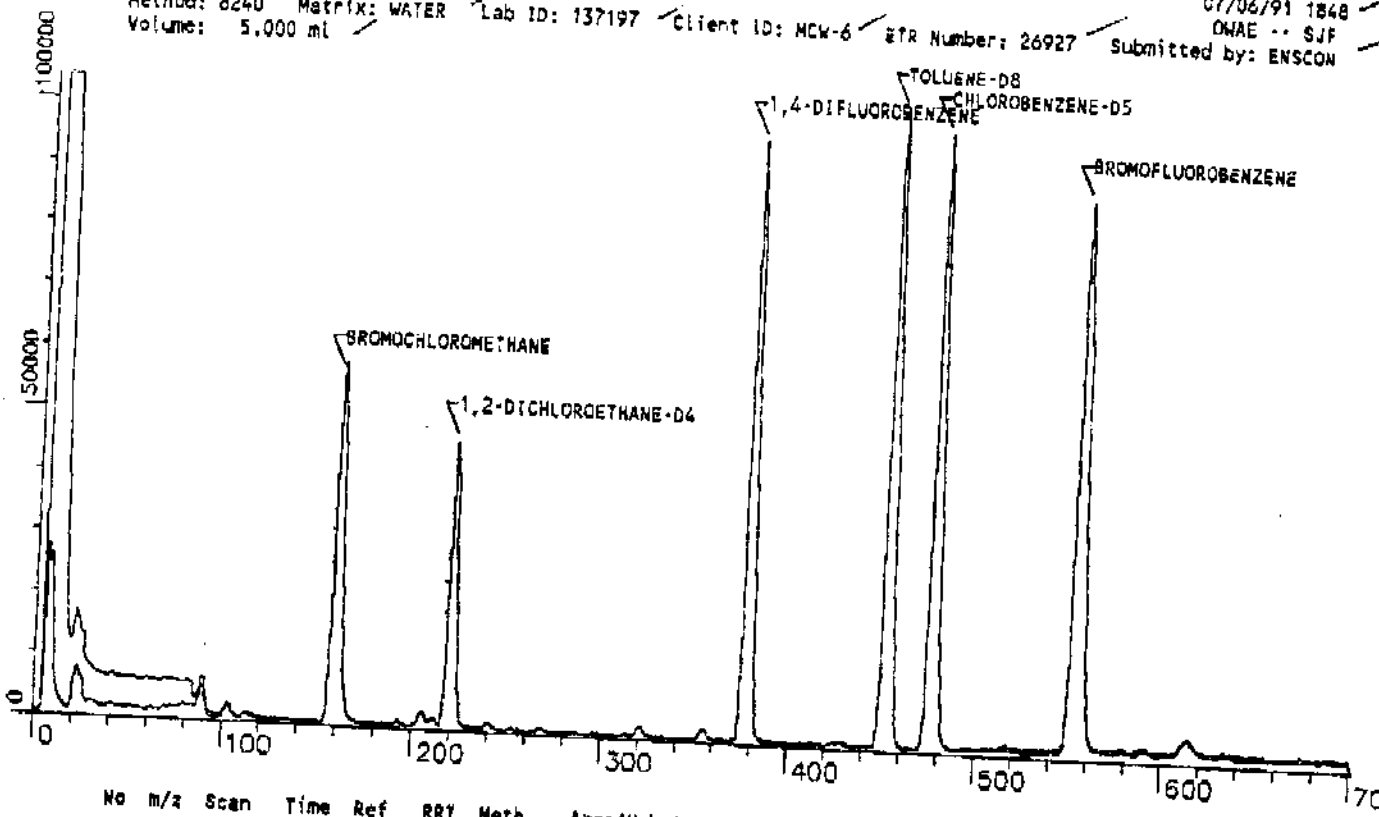
Analytical Laboratory (Destination):
AQUATEC
75 Green Mountain Dr
S. Burlington, VT
05403
Attn Martha Roy

Seq. 000949

* 1-40ml vial broken

Sample: L#137197 CLI#MCW-6 ETR#26927 100%
Conditions: GC/MS OWAE
Method: 8240 Matrix: WATER Lab ID: 137197 Client ID: MCW-6 ETR Number: 26927 Submitted by: ENSCON
Volume: 5.000 ml

E137197V 1
07/06/91 1848
OWAE -- SJF



No	m/z	Scan	Time	Ref	RRT	Meth	Area(Hght)	Amount	%Rec	No	Name
1	128	159	7:57	1	1.000	A BB	36812.	50.000 PPB		1	BROMOCHLOROMETHANE
13	114	378	18:54	13	1.000	A BB	165754.	50.000 PPB		13	1,4-DIFLUOROBENZENE
36	117	477	23:51	36	1.000	A BB	133329.	50.000 PPB		36	CHLOROBENZENE-D5
19	65	220	11:00	1	1.384	A BB	59538.	47.106 PPB	94.2	19	1,2-DICHLOROETHANE-D4
42	98	453	22:39	36	0.950	A BB	160701.	48.519 PPB	97.0	42	TOLUENE-D8
46	95	554	27:42	36	1.161	A BB	121843.	49.156 PPB	98.3	46	BROMOFLUOROBENZENE

No	Ret(L)	Diff	RRT(L)	Ratio	Amnt	Amnt(L)	R.Fac	R.Fac(L)	Ratio	No	Name
1	8:09	12	1.000	1.00	50.00	50.00	1.000	1.000	1.00	1	BROMOCHLOROMETHANE
13	18:54	0	1.000	1.00	50.00	50.00	1.000	1.000	1.00	13	1,4-DIFLUOROBENZENE
36	23:51	0	1.000	1.00	50.00	50.00	1.000	1.000	1.00	36	CHLOROBENZENE-D5
19	11:06	6	1.362	1.02	47.11	50.00	1.617	1.717	0.94	19	1,2-DICHLOROETHANE-D4
42	22:39	0	0.950	1.00	48.52	50.00	1.205	1.242	0.97	42	TOLUENE-D8
46	27:42	0	1.161	1.00	49.16	50.00	0.914	0.930	0.98	46	BROMOFLUOROBENZENE

ED805OHHV (07/06/91 15:49) RFs loaded on OWAE 7/06/91 16:47:42

Sample: LA137197 CLI#MCW-6 ETR#26927 100%
Conditions: GC/MS OWAE
Method: 8240 Matrix: WATER Lab ID: 137197 Client ID: MCW-6 ETR Number: 26927 Submitted by: ENSCON

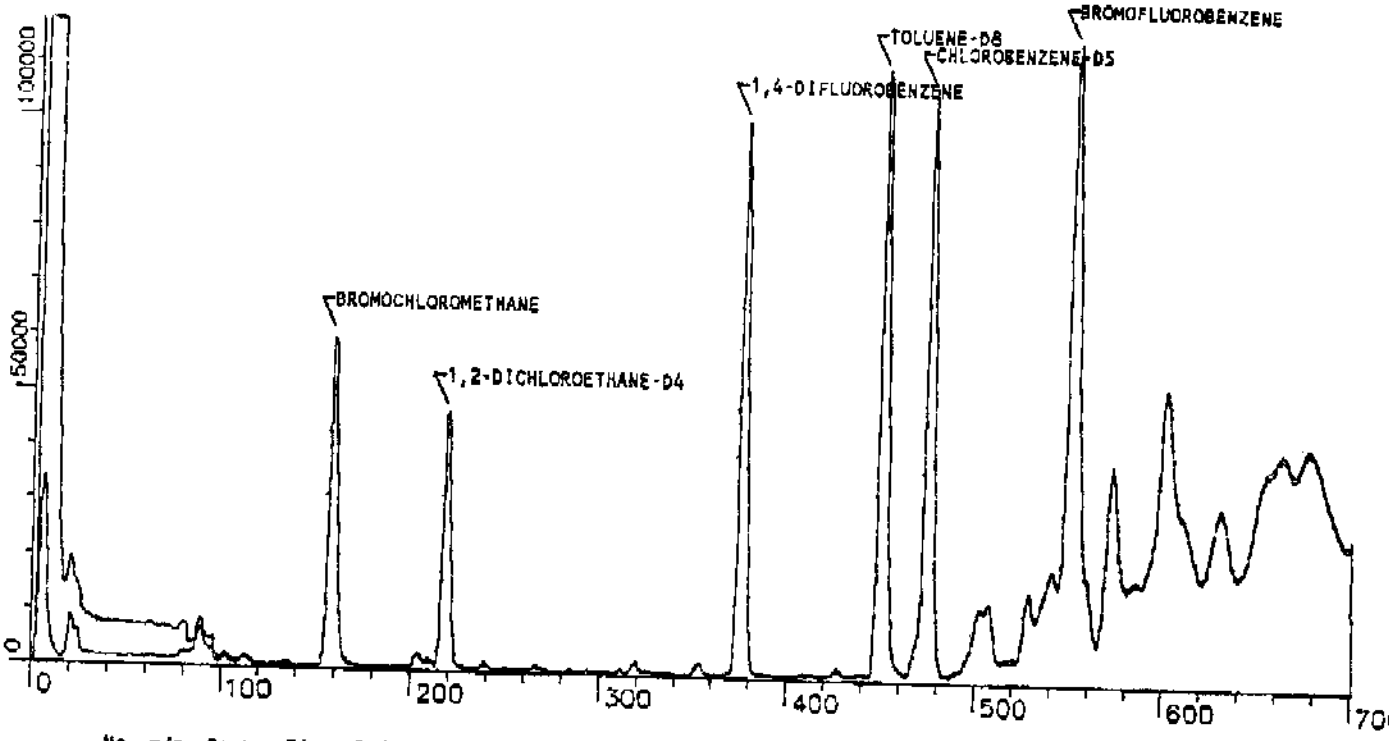
E137197V 2
07/06/91 1848
OWAE -- SJF

No	m/z	Scan	Time	Ref	RRT	Meth	Area(Hght)	Amount	%Rec	No	Name
2	NOT FOUND									2	CHLOROMETHANE
3	NOT FOUND									3	BROMOMETHANE
4	62	~~41~~	~~2:03~~	~~1~~	~~0.250~~	~~A BB~~	~~514.~~	~~0.545 PPB~~		4	VINYL CHLORIDE
5	NOT FOUND									5	CHLOROETHANE
6	84	89	4:27	1	0.560	A BB	2324.	1.859 PPB		6	METHYLENE CHLORIDE
7	43	103	5:09	1	0.648	A BV	6459.	10.590 PPB		7	ACETONE
8	NOT FOUND									8	ACROLEIN
9	NOT FOUND									9	ACRYLONITRILE
10	76	~~422~~	~~6:06~~	~~1~~	~~0.767~~	~~A BB~~	~~92.~~	~~0.037 PPB~~		10	CARBON DISULFIDE
11	NOT FOUND									11	TRICHLOROFLUOROMETHANE
12	NOT FOUND									12	1,1-DICHLOROETHENE
14	NOT FOUND									14	1,1-DICHLOROETHANE
15	NOT FOUND									15	TETRAHYDROFURAN
16	NOT FOUND									16	1,2-DICHLOROETHENE (TOTAL)
17	NOT FOUND									17	CHLOROFORM
18	62	~~221~~	~~11:03~~	~~1~~	~~1.390~~	~~A BB~~	~~1084.~~	~~0.626 PPB~~		18	1,2-DICHLOROETHANE
20	NOT FOUND									20	2-BUTANONE
21	101	212	10:36	13	0.561	A BB	1745.	1.069 PPB		21	FREON TF
22	NOT FOUND									22	1,1,1-TRICHLOROETHANE
23	NOT FOUND									23	CARBON TETRACHLORIDE
24	NOT FOUND									24	VINYL ACETATE
25	NOT FOUND									25	BROMODICHLOROMETHANE
26	NOT FOUND									26	1,2-DICHLOROPROPANE
27	NOT FOUND									27	CIS-1,3-DICHLOROPROPENE
28	NOT FOUND									28	TRICHLOROETHENE
29	NOT FOUND									29	DIBROMOCHLOROMETHANE
30	NOT FOUND									30	METHYLCYCLOHEXANE
31	NOT FOUND									31	1,1,2-TRICHLOROETHANE
32	78	~~324~~	~~16:12~~	~~13~~	~~0.857~~	~~A BB~~	~~547.~~	~~0.168 PPB~~		32	BENZENE
33	NOT FOUND									33	TRANS-1,3-DICHLOROPROPENE
34	NOT FOUND									34	2-CHLOROETHYLVINYLETHER
35	NOT FOUND									35	BROMOFORM
37	43	~~392~~	~~19:36~~	~~36~~	~~0.822~~	~~A BB~~	~~653.~~	~~0.236 PPB~~		37	4-METHYL-2-PENTANONE
38	43	426	21:18	36	0.893	A BB	2188.	1.229 PPB		38	2-HEXANONE
39	83	~~429~~	~~21:27~~	~~36~~	~~0.899~~	~~A BB~~	~~75.~~	~~0.029 PPB~~		39	1,1,2,2-TETRACHLOROETHANE
40	NOT FOUND									40	TETRACHLOROETHENE
41	NOT FOUND									41	BUTYL ACETATE
43	92	~~457~~	~~22:51~~	~~36~~	~~0.958~~	~~A BB~~	~~1116.~~	~~0.507 PPB~~		43	TOLUENE
44	NOT FOUND									44	CHLOROBENZENE
45	NOT FOUND									45	ETHYLBENZENE
47	NOT FOUND									47	STYRENE
48	106	~~592~~	~~29:36~~	~~36~~	~~1.241~~	~~A BB~~	~~405.~~	~~0.211 PPB~~		48	M-XYLENE
49	NOT FOUND									49	O- & P-XYLENE
50	NOT FOUND									50	O-DICHLOROBENZENE
51	NOT FOUND									51	CYCLOPENTANE
52	106	~~592~~	~~29:36~~	~~36~~	~~1.241~~	~~A BB~~	~~405.~~	~~0.211 PPB~~		52	XYLENE (TOTAL)
53	45	135	6:45	1	0.849	A BB	627.	6.088 PPB		53	2-PROPANOL

E137198V 1

Sample: LW137198 CLI#MCW-9 ETR#26927 100%
Conditions: GC/MS OWAE
Method: 8240 Matrix: WATER Lab ID: 137198 Client ID: MCW-9 ETR Number: 26927 Submitted by: ENSCON
Volume: 5.000 ml

07/06/91 1949
OWAE -- SJF



No	m/z	Scan	Time	Ref	RRT	Meth	Area(Hght)	Amount	%Rec	No	Name
1	128	158	7:54	1	1.000	A BB	37503.	50.000 PPB		1	BROMOCHLOROMETHANE
13	114	376	18:48	13	1.000	A BB	170537.	50.000 PPB		13	1,4-DIFLUOROBENZENE
36	117	475	23:45	36	1.000	A BB	138232.	50.000 PPB		36	CHLOROBENZENE-D5
19	65	218	10:54	1	1.380	A BB	61868.	48.047 PPB	96.1	19	1,2-DICHLOROETHANE-D4
42	98	450	22:30	36	0.947	A BB	170491.	49.649 PPB	99.3	42	TOLUENE-D8
46	95	552	27:36	36	1.162	A VB	137733.	53.596 PPB	107.2	46	BROMOFLUOROBENZENE

No	Ret(L)	Diff	RRT(L)	Ratio	Amnt	Amnt(L)	R.Fac	R.Fac(L)	Ratio	No	Name
1	8:09	15	1.000	1.00	50.00	50.00	1.000	1.000	1.00	1	BROMOCHLOROMETHANE
13	18:54	6	1.000	1.00	50.00	50.00	1.000	1.000	1.00	13	1,4-DIFLUOROBENZENE
36	23:51	6	1.000	1.00	50.00	50.00	1.000	1.000	1.00	36	CHLOROBENZENE-D5
19	11:06	12	1.362	1.01	48.05	50.00	1.650	1.717	0.96	19	1,2-DICHLOROETHANE-D4
42	22:39	9	0.950	1.00	49.65	50.00	1.233	1.242	0.99	42	TOLUENE-D8
46	27:42	6	1.161	1.00	53.60	50.00	0.996	0.930	1.07	46	BROMOFLUOROBENZENE

EDS050HHV (07/06/91 15:49) RFs loaded on OWAE 7/06/91 16:47:42

Sample: L#137198 CLIMMCW-9 ETR#26927 100%
Conditions: GC/MS OWAE
Method: 8240 Matrix: WATER Lab ID: 137198 Client ID: MCW-9 ETR Number: 26927 Submitted by: ENSCON
Volume: 5.000 ml

E137198V 2
07/06/91 1949
OWAE -- SJF

No	m/z	Scan	Time	Ref	RRT	Meth	Area(Hght)	Amount	%Rec
2	NOT FOUND								
3	NOT FOUND								
4	NOT FOUND								
5	NOT FOUND								
6	84	89	4:27	1	0.563	A BB	2742.	2.153 PPB	
7	43	103	5:09	1	0.652	A VV	4956.	7.976 PPB	
8	NOT FOUND								
9	NOT FOUND								
10	NOT FOUND								
11	NOT FOUND								
12	NOT FOUND								
14	NOT FOUND								
15	NOT FOUND								
16	NOT FOUND								
17	NOT FOUND								
18	62	~~219~~	~~10:57~~	~~1~~	~~1.386~~	~~A BB~~	~~1247.~~	~~0.698 PPB~~	
20	NOT FOUND								
21	101	210	10:30	13	0.559	A BB	1948.	1.160 PPB	
22	NOT FOUND								
23	NOT FOUND								
24	NOT FOUND								
25	NOT FOUND								
26	NOT FOUND								
27	NOT FOUND								
28	NOT FOUND								
29	NOT FOUND								
30	NOT FOUND								
31	NOT FOUND								
32	78	~~323~~	~~16:09~~	~~13~~	~~0.859~~	~~A BB~~	~~181.~~	~~0.057 PPB~~	
33	NOT FOUND								
34	NOT FOUND								
35	NOT FOUND								
37	43	~~390~~	~~19:30~~	~~36~~	~~0.821~~	~~A BB~~	~~1230.~~	~~0.429 PPB~~	
38	NOT FOUND								
39	NOT FOUND								
40	NOT FOUND								
41	NOT FOUND								
43	92	~~454~~	~~22:48~~	~~36~~	~~0.956~~	~~A BB~~	~~711.~~	~~0.311 PPB~~	
44	112	~~478~~	~~23:54~~	~~36~~	~~1.006~~	~~A BB~~	~~482.~~	~~0.163 PPB~~	
45	NOT FOUND								
47	NOT FOUND								
48	NOT FOUND								
49	106	~~588~~	~~29:24~~	~~36~~	~~1.238~~	~~A BB~~	~~476.~~	~~0.099 PPB~~	
50	NOT FOUND								
51	NOT FOUND								
52	106	~~588~~	~~29:24~~	~~36~~	~~1.238~~	~~A BB~~	~~176.~~	~~0.089 PPB~~	
53	45	135	6:45	1	0.854	A BB	943.	8.988 PPB	

No	Name
2	CHLOROMETHANE
3	BROMOMETHANE
4	VINYL CHLORIDE
5	CHLOROETHANE
6	METHYLENE CHLORIDE
7	ACETONE
8	ACROLEIN
9	ACRYLONITRILE
10	CARBON DISULFIDE
11	TRICHLOROFLUOROMETHANE
12	1,1-DICHLOROETHENE
14	1,1-DICHLOROETHANE
15	TETRAHYDROFURAN
16	1,2-DICHLOROETHENE (TOTAL)
17	CHLOROFORM
18	1,2-DICHLOROETHANE
20	2-BUTANONE
21	FREON TF
22	1,1,1-TRICHLOROETHANE
23	CARBON TETRACHLORIDE
24	VINYL ACETATE
25	BROMODICHLOROMETHANE
26	1,2-DICHLOROPROPANE
27	CIS-1,3-DICHLOROPROPENE
28	TRICHLOROETHENE
29	DIBROMOCHLOROMETHANE
30	METHYLCYCLOHEXANE
31	1,1,2-TRICHLOROETHANE
32	BENZENE
33	TRANS-1,3-DICHLOROPROPENE
34	2-CHLOROETHYLVINYLETHER
35	BROMOFORM
37	4-METHYL-2-PENTANONE
38	2-HEXANONE
39	1,1,2,2-TETRACHLOROETHANE
40	TETRACHLOROETHENE
41	BUTYL ACETATE
43	TOLUENE
44	CHLOROBENZENE
45	ETHYLBENZENE
47	STYRENE
48	M-XYLENE
49	O- & P-XYLENE
50	O-DICHLOROBENZENE
51	CYCLOPENTANE
52	XYLENE (TOTAL)
53	2-PROPANOL

APPENDIX D
TRANSECTS FLOW CALCULATIONS

STANLEY TOOLS, VERMONT
STREAM GAUGING DATA

DOWNSTREAM LOCATION:
CONCRETE CULVERT UNDER THE BUILDING
6/20/91
WIDTH = 13 FEET

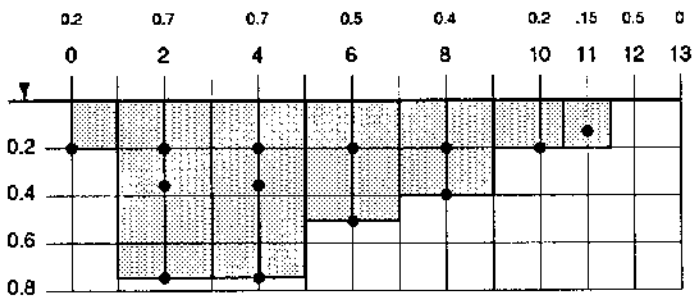
Distance from edge (feet)	Stream Depth (ft)	Flow Measurement Depth (ft)	Flow (ft/sec)
0	0.2	0.2	neg
2	0.7	0.7	0.95
		0.35	1.2
		0.2	0.95
4	0.7	0.7	1.45
		0.35	2.15
		0.2	2.45
6	0.5	0.5	2.25
		0.2	2.2
8	0.4	0.4	1.5
		0.2	1.9
10	0.2	0.2	1.1
11	0.15	0.15	0.4
12	0.05	not deep enough to measure	
13	0	not deep enough to measure	

UPSTREAM LOCATION:
20 FEET UPSTREAM OF LARGE BOULDER

WIDTH = 14.5 FEET

Distance from edge (feet)	Stream Depth (ft)	Flow Measurement Depth (ft)	Flow (ft/sec)
0	0.3	0.3	0
		0.2	0
2	0.8	0.8	0.15
		0.4	0.15
		0.2	0.2
4	1.3	1.3	0.45
		0.65	0.8
		0.2	0.75
6	1.3	1.3	0.55
		0.65	0.72
		0.2	0.85
8	1.2	1.2	0.65
		0.6	0.8
		0.2	0.8
10	1.3	1.3	0
		0.65	0.55
		0.2	0.7
12	1.2	1.2	0.35
		0.6	0.35
		0.2	0.35
14	0.2	0.2	0.1

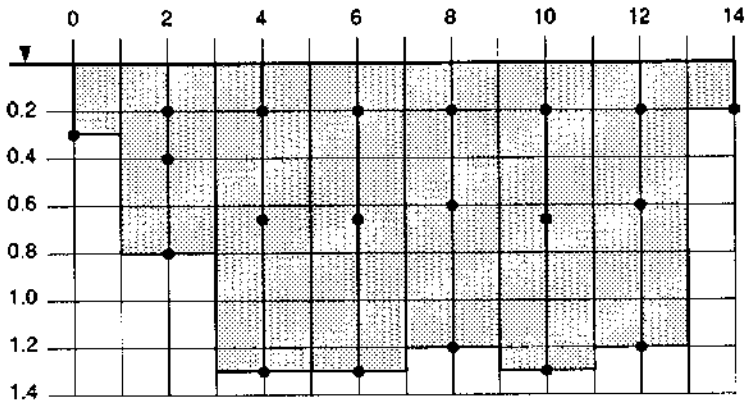
Downstream



Area	Flow	CFS
0.2 X 1	0	0
0.275 X 2	0.95	0.5225
(0.525 - 0.275) X 2	1.2	0.6
(0.7 - 0.525) X 2	0.95	0.3325
0.275 X 2	2.45	1.3475
(0.525 - 0.275) X 2	2.15	1.075
(0.7 - 0.525) X 2	1.45	0.5075
0.35 X 2	2.2	1.54
(0.5 - 0.35) X 2	2.25	0.675
0.3 X 2	1.9	0.72
0.1 X 2	1.9	0.3
0.2 X 1.5	1.1	0.33
0.15 X 1	0.4	0.06

8.01 cfs

Upstream



Area	Flow	CFS	Area	Flow	CFS
0.3 X 1	0	0	0.4 X 2	0.8	0.64
0.3 X 2	0.2	0.12	(0.9 - 0.4) X 2	0.8	0.8
(0.6 - 0.3) X 2	0.15	0.09	(1.2 - 0.9) X 2	0.65	0.39
(0.8 - 0.6) X 2	0.15	0.06	0.425 X 2	0.7	0.595
0.425 X 2	0.75	0.6375	(0.975 - 0.425) X 2	0.55	0.605
(0.975 - 0.425) X 2	0.8	0.88	(1.3 - 0.975) X 2	0	0
(1.3 - 0.975) X 2	0.45	0.2925	0.4 X 2	0.35	0.28
0.425 X 2	0.85	0.85	(0.9 - 0.4) X 2	0.35	0.35
0.55 X 2	0.72	0.792	(1.2 X 0.9) X 2	0.35	0.21
0.325 X 2	0.55	0.3575	0.2 X 2	0.1	0.02

7.97 cfs

APPENDIX E
SLUG TEST ANALYSIS

Summary Sheet.

Stanley Tools, Eagle Square, Shaftesbury VT,
Bouwer & Rice Analysis, OW-1, Rising Head Test,
Benjamin S. Levy, 6/21/91, 6303-029-000.

Test parameters.

Units of water level	$L1 = 1 \cdot ft$
Units of time	$T1 = 1 \cdot min$
Number of records in data file	$n = 24$
Name of data file	OW1R.prn
Value of y2	$y_t = 0.05 \cdot ft$
Value of t2	$t_2 = 0.07 \cdot min$
Length of screen	$L = 2.12 \cdot ft$
Casing radius	$r_c = 1 \cdot in$
Gravel pack radius	$r_w = 3 \cdot in$
Value of L/rw	$F = 8.48$
Distance from water table to bottom of screen	$H = 2.12 \cdot ft$
Saturated thickness of aquifer	$b = 100 \cdot ft$
Initial water level	$y_o = 0.38 \cdot ft$
Value of A coefficient	$Ax(F) = 1.78$
Value of B coefficient	$Bx(F) = 0.25$
Value of C coefficient	$Cx(F) = 1.13$
Value of ln(Re/rw)	$Rerw = 1.11$
Hydraulic conductivity estimate	$K = 2.8 \cdot 10^{-2} \cdot \frac{cm}{sec}$

Summary Sheet.

Stanley Tools, Eagle Square, Shaftesbury VT,
Bouwer & Rice Analysis, OW-2, Rising Head Test,
Benjamin S. Levy, 6/21/91, 6303-029-000.

Test parameters.

Units of water level	$L1 = 1 \cdot ft$
Units of time	$T1 = 1 \cdot min$
Number of records in data file	$n = 9$
Name of data file	OW2R.prn
Value of y2	$y_t = 0.04 \cdot ft$
Value of t2	$t_2 = 0.03 \cdot min$
Length of screen	$L = 8.37 \cdot ft$
Casing radius	$r_c = 1 \cdot in$
Gravel pack radius	$r_w = 3 \cdot in$
Value of L/rw	$F = 33.48$
Distance from water table to bottom of screen	$H = 8.37 \cdot ft$
Saturated thickness of aquifer	$b = 100 \cdot ft$
Initial water level	$y_o = 0.47 \cdot ft$
Value of A coefficient	$Ax(F) = 2.53$
Value of B coefficient	$Bx(F) = 0.41$
Value of C coefficient	$Cx(F) = 2.21$
Value of ln(Re/rw)	$Rerw = 2.17$
Hydraulic conductivity estimate	$K = 3.36 \cdot 10^{-2} \cdot \frac{cm}{sec}$

MINIPIEZOMETER WATER LEVEL DATA 6/21/91

	Stake Elevation (feet)	Depth to MP Water* (feet)	Elevation of Water Table	Piezometer Water Level Above Stream (inches)	
MP-1	94.03	2.45	91.58	0.75	
MP-2	94.69	3.02	91.67	1.06	
MP-3	94.07	1.98	92.09	2.75	
MP-4	94.62	2.53	92.09	2.38	
MP-5	94.41	1.89	92.52	0.81	below
MP-6	94.69	2.11	92.58	0.00	
MP-7	95.82	2.85	92.97	1.00	
MP-8	96.24	2.92	93.32	1.88	
MP-9	95.18	2.02	93.16	0.13	
MP-10	95.86	2.63	93.23	1.38	
MP-11	95.75	2.57	93.18	0.13	
MP-12	96.51	3.03	93.48	1.75	
MP-13	95.58	2.31	93.27	0.44	
MP-14	94.23	2.79	91.44	5.00	below
MP-15	94.34	2.20	92.14	3.25	
MP-16	94.23	2.24	91.99	0.94	
MP-17	94.43	2.41	92.02	2.13	
MP-18	95.00	2.36	92.64	0.25	
MP-19	95.04	2.39	92.65	0.63	
MP-20	95.26	2.31	92.95	0.69	
MP-21	95.35	2.13	93.22	1.56	
MP-22	95.62	2.47	93.15	0.88	
MP-23	94.72	1.31	93.41	2.19	
MP-24	95.38	2.14	93.24	0.50	

* Depth to water from top of stake

* Elevation in feet with respect to an assumed datum of 100.00 feet.

APPENDIX F
STREAM TUBE CALCULATIONS

Stanley Tools Eagle Square – Stream Tube Analysis.
Ground water flow from the Southeast into Paran Creek

Hydraulic Conductivity =	0.0307	cm/s	=	87.02	ft/day
Total Flow per ft Saturated Thickness =	5105.04	gpd/ft			
Total Flow Width =	271	ft			
Saturated Thickness of Flow to River =	10	ft			
Total Flow Estimate =	51050	gpd	=	35.45	gpm
Porosity estimate =	0.3				
Average ground water velocity =	9.37E+00	ft/d	=	3418.5	ft/yr

Tube #	dh (ft)	ds (ft)	dh/ds (dim.)	q (ft/day)	w (ft)	Q/b (gpd/ft)	v (ft/day)
1	0.5	15.50	0.0323	2.8072	17.00	357.01	9.36
2	0.5	15.50	0.0323	2.8072	20.00	420.02	9.36
3	0.5	16.25	0.0308	2.6776	17.00	340.54	8.93
4	0.5	16.25	0.0308	2.6776	17.50	350.55	8.93
5	0.5	16.20	0.0309	2.6859	17.50	351.63	8.95
6	0.5	15.00	0.0333	2.9008	12.50	271.26	9.67
7	0.5	12.50	0.0400	3.4809	13.00	338.53	11.60
8	0.5	13.00	0.0385	3.3471	14.50	363.07	11.16
9	0.5	12.50	0.0400	3.4809	13.75	358.06	11.60
10	0.5	12.00	0.0417	3.6260	12.50	339.07	12.09
11	0.5	11.25	0.0444	3.8677	12.25	354.45	12.89
12	0.5	12.50	0.0400	3.4809	16.25	423.17	11.60
13	0.5	20.00	0.0250	2.1756	20.00	325.51	7.25
14	0.5	32.50	0.0154	1.3388	27.50	275.43	4.46
15	0.5	55.00	0.0091	0.7911	40.00	236.74	2.64

Stanley Tools Eagle Square – Stream Tube Analysis.
Ground water flow from the Southeast into Paran Creek

dh	head change between 5.0 and 4.5 ft contours
ds	streamline distance between 5.0 and 4.5 ft contours
dh/ds	hydraulic gradient along streamline for a given streamtube
q	specific discharge for a given streamtube
w	width of a given streamtube through which flow discharges
Q/b	volume discharge of a streamtube per day per foot of aquifer
v	ground water seepage velocity

Stanley Tools Eagle Square – Stream Tube Analysis.
Ground Water Flow from the Northwest into Paran Creek

Hydraulic Conductivity =	0.0307	cm/s	=	87.02	ft/day
Total Flow per ft Saturated Thickness =	18418.55	gpd/ft			
Total Flow Width =	508	ft			
Saturated Thickness of Flow to River =	10	ft			
Total Flow Estimate =	184186	gpd	=	127.91	gpm
Porosity estimate =	0.3				
Average ground water velocity =	1.87E+01	ft/d	=	6827.9	ft/yr

Tube #	dh (ft)	ds (ft)	dh/ds (dim.)	q (ft/day)	w (ft)	Q/b (gpd/ft)	v (ft/day)
1	0.5	6.25	0.0800	6.9619	7.50	390.61	23.21
2	0.5	6.25	0.0800	6.9619	7.50	390.61	23.21
3	0.5	5.00	0.1000	8.7024	7.00	455.72	29.01
4	0.5	5.00	0.1000	8.7024	5.40	351.55	29.01
5	0.5	6.25	0.0800	6.9619	7.00	364.57	23.21
6	0.5	6.25	0.0800	6.9619	6.25	325.51	23.21
7	0.5	6.25	0.0800	6.9619	5.60	291.66	23.21
8	0.5	5.60	0.0893	7.7700	6.25	363.29	25.90
9	0.5	5.40	0.0926	8.0577	6.25	376.75	26.86
10	0.5	5.60	0.0893	7.7700	6.50	377.83	25.90
11	0.5	5.00	0.1000	8.7024	7.00	455.72	29.01
12	0.5	5.00	0.1000	8.7024	5.60	364.57	29.01
13	0.5	5.00	0.1000	8.7024	6.25	406.89	29.01
14	0.5	6.25	0.0800	6.9619	7.00	364.57	23.21
15	0.5	6.50	0.0769	6.6941	7.50	375.59	22.31
16	0.5	7.00	0.0714	6.2160	7.25	337.14	20.72
17	0.5	6.25	0.0800	6.9619	6.25	325.51	23.21

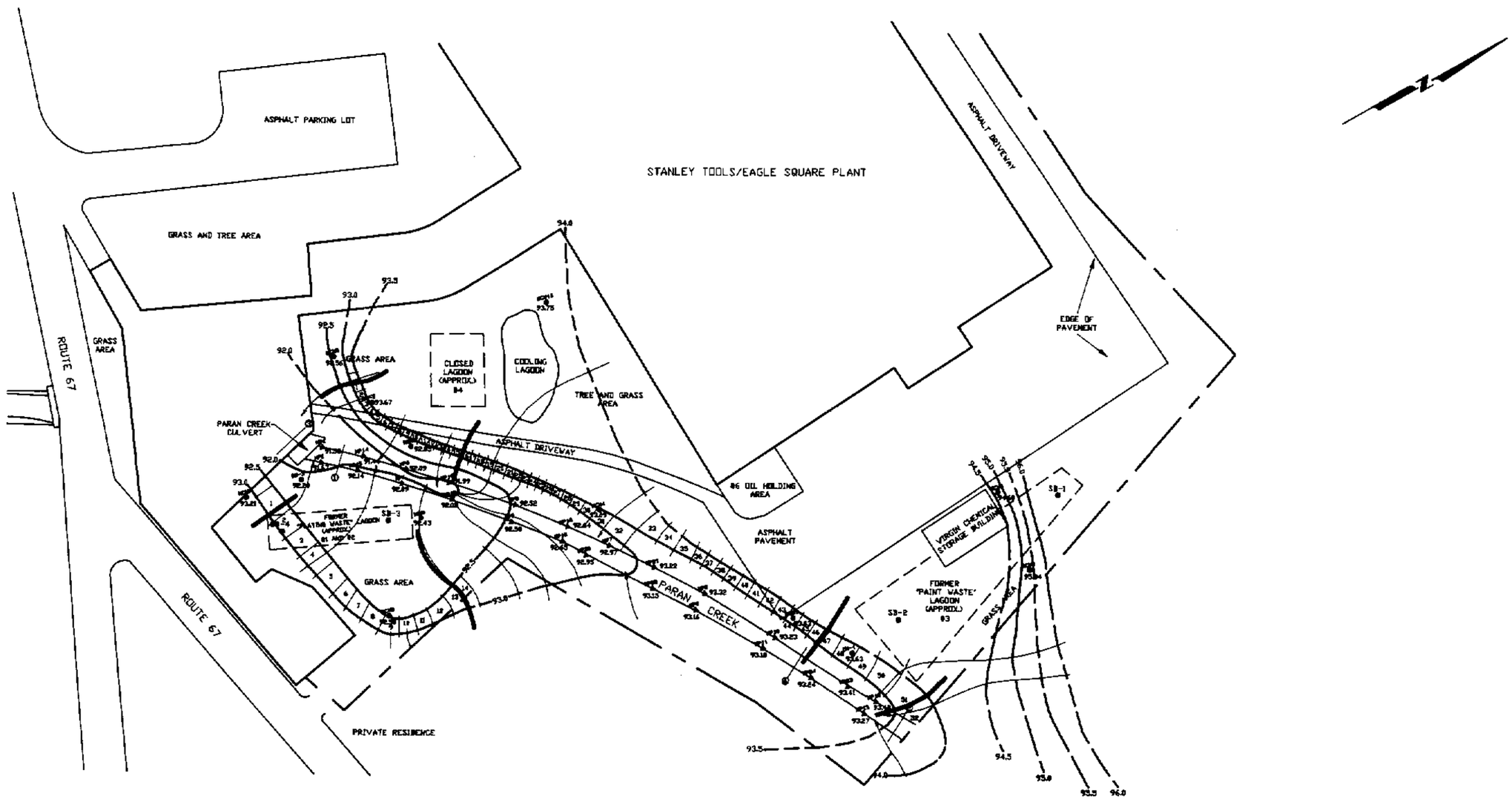
Stanley Tools Eagle Square – Stream Tube Analysis.
Ground Water Flow from the Northwest into Paran Creek

18	0.5	6.25	0.0800	6.9619	6.25	325.51	23.21
19	0.5	6.50	0.0769	6.6941	7.25	363.07	22.31
20	0.5	7.25	0.0690	6.0016	7.80	350.21	20.01
21	0.5	7.00	0.0714	6.2160	6.25	290.64	20.72
22	0.5	7.00	0.0714	6.2160	6.25	290.64	20.72
23	0.5	7.00	0.0714	6.2160	6.25	290.64	20.72
24	0.5	6.25	0.0800	6.9619	6.00	312.49	23.21
25	0.5	5.60	0.0893	7.7700	6.25	363.29	25.90
26	0.5	5.40	0.0926	8.0577	7.25	437.03	26.86
27	0.5	6.25	0.0800	6.9619	7.75	403.63	23.21
28	0.5	6.75	0.0741	6.4462	7.50	361.68	21.49
29	0.5	7.75	0.0645	5.6144	8.75	367.51	18.71
30	0.5	9.50	0.0526	4.5802	9.50	325.51	15.27
31	0.5	10.75	0.0465	4.0476	12.50	378.50	13.49
32	0.5	12.75	0.0392	3.4127	20.00	510.61	11.38
33	0.5	17.00	0.0294	2.5595	15.75	301.58	8.53
34	0.5	12.50	0.0400	3.4809	13.75	358.06	11.60
35	0.5	10.00	0.0500	4.3512	13.75	447.58	14.50
36	0.5	10.00	0.0500	4.3512	12.50	406.89	14.50
37	0.5	10.00	0.0500	4.3512	12.25	398.75	14.50
38	0.5	10.00	0.0500	4.3512	12.25	398.75	14.50
39	0.5	9.75	0.0513	4.4627	12.50	417.32	14.88
40	0.5	10.00	0.0500	4.3512	11.25	366.20	14.50
41	0.5	10.50	0.0476	4.1440	11.25	348.76	13.81
42	0.5	10.50	0.0476	4.1440	11.25	348.76	13.81
43	0.5	10.50	0.0476	4.1440	10.00	310.01	13.81
44	0.5	10.50	0.0476	4.1440	10.00	310.01	13.81
45	0.5	10.75	0.0465	4.0476	10.00	302.80	13.49
46	0.5	11.50	0.0435	3.7836	10.00	283.05	12.61
47	0.5	12.50	0.0400	3.4809	12.50	325.51	11.60
48	0.5	16.50	0.0303	2.6371	12.50	246.60	8.79

Stanley Tools Eagle Square – Stream Tube Analysis.
Ground Water Flow from the Northwest into Paran Creek

49	0.5	16.25	0.0308	2.6776	15.50	310.49	8.93
50	0.5	20.00	0.0250	2.1756	20.50	333.65	7.25
51	0.5	22.50	0.0222	1.9339	20.00	289.34	6.45
52	0.5	32.50	0.0154	1.3388	22.50	225.35	4.46

dh	head change between 5.0 and 4.5 ft contours
ds	streamline distance between 5.0 and 4.5 ft contours
dh/ds	hydraulic gradient along streamline for a given streamtube
q	specific discharge for a given streamtube
w	width of a given streamtube through which flow discharges
Q/b	volume discharge of a streamtube per day per foot of aquifer
v	ground water seepage velocity



LEGEND

- MICROWELLS
- MINI-PIEZOMETERS
- OBSERVATION WELLS
- SOIL BORING
- 93.5 EQUIPOTENTIAL LINE (DASHED WHERE INFERRED) CONTOUR ELEVATION=0.5'
- TRANSECT FOR STREAM FLOW GAUGING
- BOUNDARY OF FLOW TUBE CONTRIBUTING CONTAMINATION TO PARAN CREEK

SCALE IN FEET

0 80 160

ENSR

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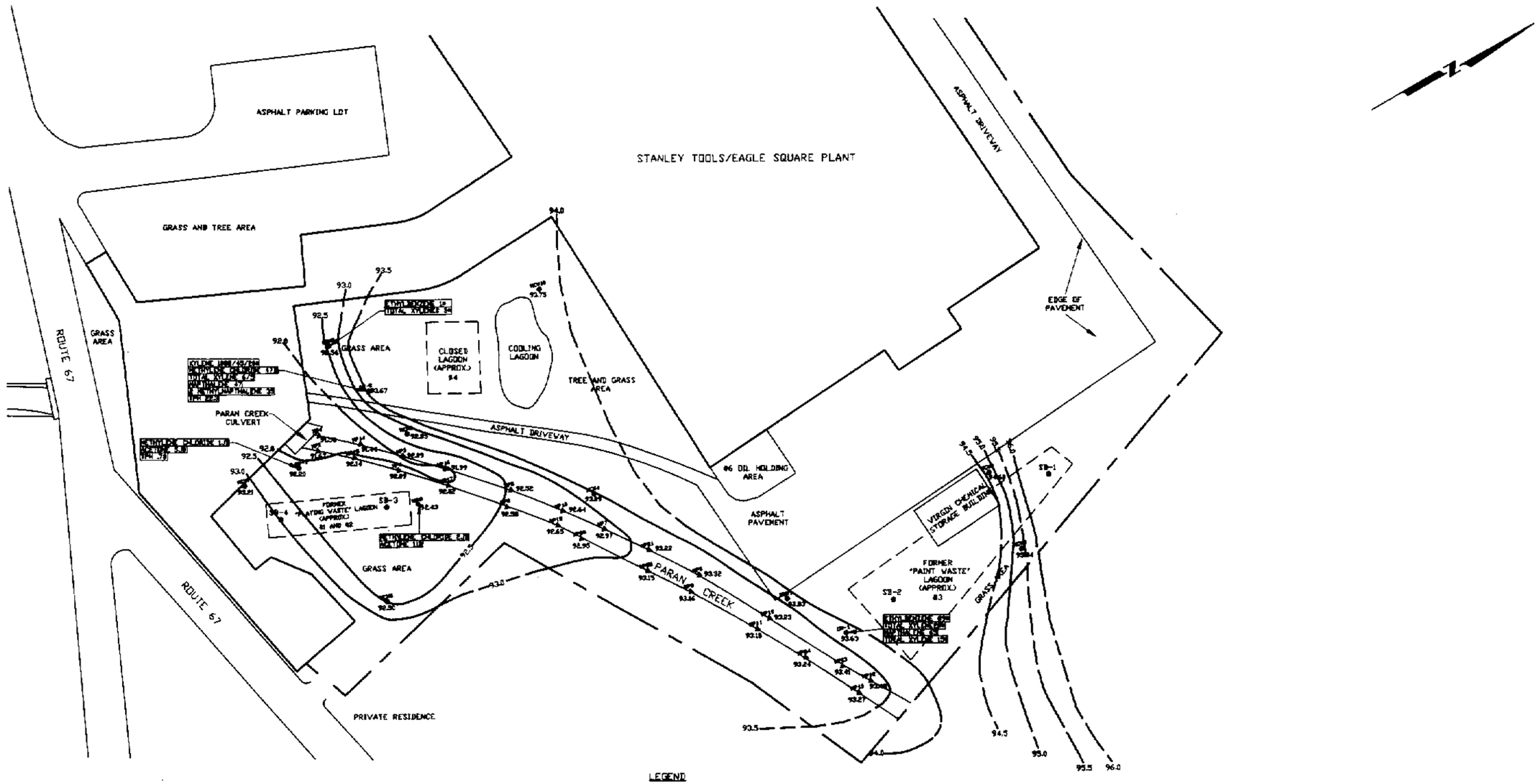
FLOW TUBES CONTRIBUTING CONTAMINATION TO PARAN CREEK STANLEY TOOLS EAGLE SQUARE, VT

DRAWN BY:	DATE:	PROJECT NO.
K.P.B.	8/23/91	6303

630302B



LEGEND

- ● MICROWELLS
- ▲ MINI-PIEZOMETERS
- ● OBSERVATION WELLS
- ⊕ SOIL BORING
- —93.5— EQUIPOTENTIAL LINE (DASHED WHERE INFERRED) CONTOUR ELEVATION=0.5'

J = ESTIMATED VALUE DUE TO LOW CONCENTRATION

B = DETECTED IN BLANK

LABORATORY ANALYSIS UNITS ug/l

6/5 = RESULTS FOR MULTIPLE ANALYSIS

* = ANALYSIS PERFORMED IN FIELD USING PHOTOVAC GAS CHROMATOGRAPH (ppb)

SCALE IN FEET

0 80 160

ENSR

ENSR CONSULTING & ENGINEERING

FIGURE 2-2
GROUNDWATER ANALYSIS RESULTS
STANLEY TOOLS EAGLE SQUARE, VT

DRAWN BY:	DATE:	PROJECT NO.
K.P.B.	8/23/91	6303

0303B