M00263.AR.000051
MCRD PARRIS ISLAND
5090.3a

ANALYTICAL RESULTS FROM 18 TO 30 JUNE 1996 GROUNDWATER TESTING FOR TRICHLOROETHYLENE AT SITE 45 DRY CLEANING FACILITY WITH TRANSMITTAL LETTER MCRD PARRIS ISLAND SC
8/1/1996
BECHTEL

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AUG 1 1996

Commanding Officer
Department of the Navy, Southern Division
Naval Facilities Engineering Command
Attention: Mr. Scott Glass
2155 Eagle Drive, P.O. Box 190010
North Charleston, SC 29419-9010

SUBJECT: Bechtel Job No. 22567
Department of the Navy Contract No. N62467-93-D-0936
DO#48, RESULTS FROM THE JUNE 1996 PHASE 2 SAMPLING EFFORT AT THE DRY CLEANING FACILITY, MARINE CORPS RECRUIT DEPOT, PARRIS ISLAND, SC
Subject Code: 7650/145

Dear Mr. Glass:

Enclosed are the results from the 12 June 1996 through 30 June 1996 Phase 2 direct push sampling effort. Figure 1, the proposed borehole locations, is submitted in order to compare with the As-Built borehole locations, Figure 2a. Figure 2b is presented with 5 clear color overlays to aid in data interpretation.

After your review, copies will be submitted to EPA Region IV, SCDHEC, and the CLEAN per your verbal direction. Please note that this is an information submittal only and an evaluation of the information is not submitted at this time.

Appendix B, Results of Methane Samples Analyzed by USGS, Columbia S.C., is blank as of this submittal. As soon as we receive the results, probably the week of August 5th, I will forward them to you for inclusion in order to have all the information assembled together.

If you should have any other questions or need additional information, please call me at (423) 220-2167.

Sincerely,

Karen S. Atchley

Karen S. Atchley
Project Manager

KSA:dm:LR0845
Enclosure: As stated

GROUNDWATER RESULTS
18 JUNE TO 30 JUNE 1996

1.0 INTRODUCTION

An assessment of groundwater at the MCRD Parris Island, S.C., Dry Cleaner Facility was conducted by Bechtel Environmental, Inc. (BEI) between June 12 and June 30, 1996. The purpose was to confirm and further define the vertical and horizontal extent of groundwater contamination and to collect groundwater physical properties needed to aid in the selection and design of a treatment system. The assessment was based on a contamination assessment May 1994 report written under the direction of Morale, Welfare and Recreation, MCRD Parris Island, S.C.

2.0 RESULTS

The basis for the proposed borehole locations, Figure 1 which was submitted with the 17 June 1996 Monitoring Well Request, was the May 1994 TCE Contamination Assessment Report. Prior to actual sampling, three cone penetrometer boreholes were drilled outside the limits of the contaminant plume, both up- and down- gradient, to locate intermediate clay lenses as well as the Hawthorn formation. After these locations were determined, water samples were collected using direct push technology at various depths in between the clay lenses and analyzed for PCE, TCE, DCE (cis- and trans-) and VC with a field GC. Table 1 gives a summary of all field GC data. Other physical properties were collected on the groundwater which are shown in Table 2. Approximately ten percent of the samples were sent to an offsite laboratory for confirmation whose results are also shown in Table 1. These results, including chain of custody forms, are in Appendix A. Appendix A also contains the information from the three samples for metals, ion analysis, total dissolved solids, total suspended solids, TKN, sulfites, BOD, ammonia, total phosphorus, total organic carbon, filtered total carbon, carbonate, hardness, and turbidity.

Figure 2a depicts the as-built groundwater sampling locations. The borehole locations varied horizontally as the GC sample results indicated the direction of the contaminant plume. Vertical groundwater samples were collected and analyzed until two clean samples were noted. Boreholes with no contamination are exhibited around the entire perimeter of the plume.

Figure 2b has 5 clear overlays which depict the total solvent plumes which exceeded the maximum contaminant limit (MCL) at the various depths. The 7' and the 14' depths have internal plumes which indicates areas >1ppm total solvents. The total solvent number was simply derived by adding the value of each contaminant collectively. No weighted measures were used.

Appendix B includes the information from the samples collected and analyzed for methane by USGS in Columbia S.C. Appendix C includes the geologic information obtained from the direct push technology. A summary table of conductivity measurements is presented before the hydrocone test information for easy reference, and Appendix D includes copies of the GC log data along with a written narrative explaining the GC/sample preparation, calibration and peak identification.

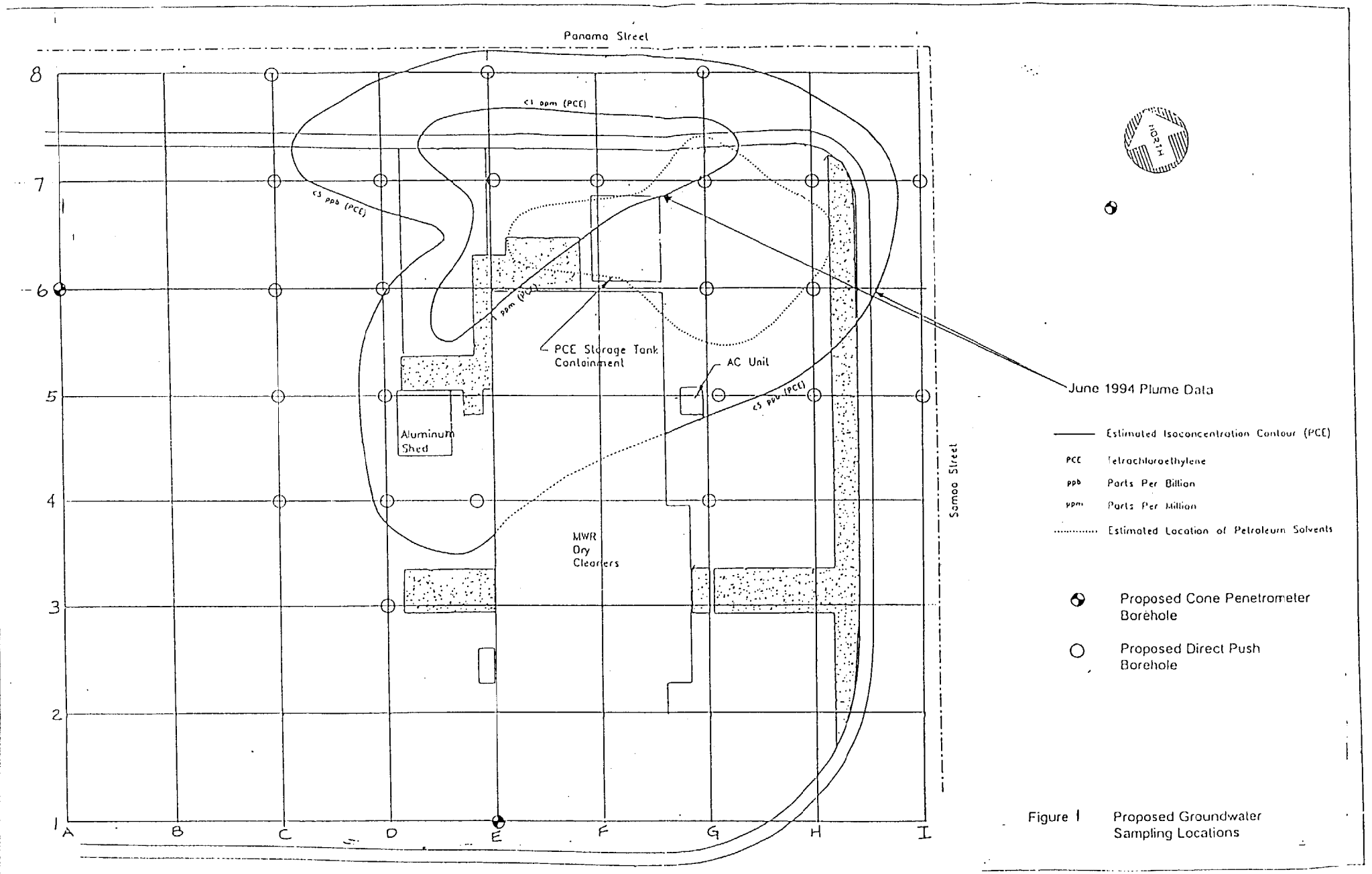


Figure 1 Proposed Groundwater Sampling Locations

TABLE 1
FIELD GC SUMMARY DATA
18 JUNE TO 30 JUNE 1996
MCRD PARRIS ISLAND DRY CLEANER FACILITY

Gas Chromotograph used was HNU Model 311
-: no peek found at retention time
< : peek found less than calibration
>: actual concentration may exceed reported value
T: tentatively identified; peek not resolved

SAMPLE NUMBER	DATE COLLECTED	DATE ANALYZED	SAMPLE RUN	VINYL CHLORIDE MCL - 2 ppb	1,2-TRANS DCE MCL - 100 ppb	1,2-CIS DCE MCL - 70 ppb	TCE MCL - 5 ppb	PCE MCL- 5 ppb
615E15-22-21	6/19/96	6/19/96	13	T	1.1	-	-	-
615E15-30	6/19/96	6/19/96	14	-	-	-	-	-
615E15-37	6/19/96	6/19/96	16	T	<0.5	-	-	-
610K13-15	6/19/96	6/19/96	9	T	-	-	-	-
615E15-6	6/19/96	6/19/96	10/12	T	164	8,617	13.3	-
615E15-13	6/19/96	6/20/96	17	-	-	38.5	21.7	-
615E15-13REP	6/19/96	6/20/96	18	-	-	56.5	32.8	18.1
615E15-13; Duplicate sent to lab					**-**	***57.8***	***25.9***	***7.2***
322D09-7.5	6/20/96	6/20/96	9/10	T	61.9	2,569	21,686	11,832
322D09-13	6/20/96	6/20/96	11	T	-	-	1.6	-
322D09-13; Duplicate sent to lab					**-**	**-**	***0.57J***	**-**
322D09-22	6/20/96	6/20/96	13	T	-	-	1.4	<5
322D09-28	6/20/96	6/20/96	14	-	-	-	0.6	<5
322D09-36	6/20/96	6/20/96	15	T	-	-	-	<5
621C18-14	6/20/96	6/20/96	19	T	-	-	-	-
621C18-7	6/20/96	6/20/96	21	-	-	2	3.2	1.1
621C18-21	6/20/96	6/21/96	7	T	-	-	-	-
300C22-7	6/20/96	6/21/96	9	T	-	-	-	-
300C22-22	6/21/96	6/21/96	13	T	-	-	-	-
300C22-14	6/21/96	6/21/96	14	T	-	-	-	-
500C24-14	6/21/96	6/21/96	17	T	-	-	-	-
500C24-7	6/21/96	6/21/96	19	T	2.17	-	-	-
500C24-22	6/21/96	6/21/96	18	T	-	-	-	-
700D21-7	6/21/96	6/21/96	26	-	29.7	528	208	56
700D21-14	6/21/96	6/21/96	28	T	-	-	-	-
700D21-22	6/21/96	6/21/96	32	-	-	-	-	-
700D21-28	6/21/96	6/21/96	33	T	-	-	-	-
800E00-7	6/24/96	6/24/96	13	-	< 0.5	< 0.5	-	-

SAMPLE NUMBER	DATE COLLECTED	DATE ANALYZED	SAMPLE RUN	VINYL CHLORIDE MCL - 2 ppb	1,2-TRANS DCE MCL - 100 ppb	1,2-CIS DCE MCL - 70 ppb	TCE MCL - 5 ppb	PCE MCL- 5 ppb
800E00-14	6/24/96	6/24/96	14	-	2.35	-	-	-
800G00-7	6/24/96	6/24/96	18	-	1.7	-	-	-
800G00-7; Duplicate sent to lab					-	-	-	-
800G00-14	6/24/96	6/24/96	19	T	0.5	-	-	-
700H05-7	6/24/96	6/24/96	20	-	-	9.2	1.47	-
700H05-14	6/24/96	6/24/96	23	-	-	-	-	-
500G20-7	6/24/96	6/24/96	31	T	2.56	45	-	-
500G20-14	6/24/96	6/24/96	30	T	4.84	>161	>89.6	>19.6
710E24-14	6/24/96	6/24/96	38	T	-	-	-	14.4
710E24-21	6/25/96	6/25/96	12	-	-	3.87	-	1.2
710E24-28	6/25/96	6/25/96	15	-	-	6.58	< 0.5	36.6
710E24-7	6/24/96	6/24/96	40	-	290	2,454	4,711	>115,330
600G00-14	6/25/96	6/25/96	26/27	-	-	9.12	4,553	2,896
600G00-21	6/25/96	6/25/96	28	-	-	-	-	0.8
600G00-34	6/25/96	6/25/96	30	-	-	-	-	-
710E24-38	6/25/96	6/25/96	32	-	-	-	-	<5
600G00-28	6/25/96	6/25/96	31	-	-	-	-	-
404H21-7	6/26/96	6/26/96	8	-	<5	19	< 0.5	<5
404H21-14	6/26/96	6/26/96	9	-	-	42.6	1.17	-
400G09-7	6/26/96	6/26/96	16	-	-	-	-	-
400G09-14	6/26/96	6/26/96	17/19	-	126	1,865	7,702	33,131
600H00-14	6/26/96	6/26/96	23	-	-	30.2	1,049	1,746
500G20-28	6/26/96	6/26/96	25	-	-	-	2.55	14
600H00-7	6/26/96	6/26/96	24	-	-	26.7	23.4	74.8
500G20-34	6/26/96	6/26/96	28	-	-	-	-	-
212G15-14	6/26/96	6/26/96	29/31	-	54.6	700	4,349	12,789
212G15-28	6/26/96	6/27/96	7	-	-	-	4.8	6.5
500G20-37	6/26/96	6/27/96	8	-	-	-	1	1.94
600H00-28	6/27/96	6/27/96	17	-	-	-	1.64	4.59
600H00-23	6/27/96	6/27/96	18	-	-	-	<0.5	<5.0
102G00-14	6/27/96	6/27/96	19	-	-	1.3	62.2	362
600H00-36	6/27/96	6/27/96	20	-	-	-	0.8	<5
-110G10-14	6/27/96	6/27/96	22	-	0.9	199	1.91	<5
118H05-14	6/27/96	6/27/96	25/26	T	19.1	307	4,279	1,198
102F00-14	6/27/96	6/27/96	27	T	-	0.6	<5	<0.5
400G09-23	6/27/96	6/27/96	9	-	1.96	-	< 0.5	<5
400G09-28	6/27/96	6/28/96	8	-	2.18	2.14	<5	1.98
400G09-36	6/27/96	6/28/96	7	-	-	-	5.2	14.1

SAMPLE NUMBER	DATE COLLECTED	DATE ANALYZED	SAMPLE RUN	VINYL CHLORIDE MCL - 2 ppb	1,2-TRANS DCE MCL - 100 ppb	1,2-CIS DCE MCL - 70 ppb	TCE MCL - 5 ppb	PCE MCL- 5 ppb
-218G00-14	6/28/96	6/28/96	12	-	3.23	-	-	<5
010J05-14	6/28/96	6/28/96	13	-	4.73	-	8.13	<5
010J05-14; Duplicate sent to lab					-	***1.9J***	***9.9***	***2.2***
102F00-23	6/28/96	6/28/96	15	-	-	-	-	-
102F00-28	6/28/96	6/28/96	16	T	8.48	-	-	0.9
-011H14-7	6/28/96	6/28/96	17	-	5.39	1.91	<5	0.7
-011H14-14	6/28/96	6/28/96	18	T	8.65	<	1.66	5.28
-011H14-14; Duplicate sent to lab					-	***0.89J***	***2.9***	***6.2***
-011H14-36	6/28/96	6/28/96	19	-	0.5	-	<5	2.32
-011H14-36; Duplicate sent to lab					-	-	***0.93J***	***3.6***
-011H14-28	6/28/96	6/28/96	21	-	12.1	-	-	-
-011H14-28; Duplicate sent to lab					-	-	-	-
-218J05-36	6/28/96	6/28/96	22	-	9.84	-	-	-
-218J05-28	6/28/96	6/28/96	23	-	5.91	-	1.96	9.37
-218J05-14	6/28/96	6/28/96	24	-	-	-	-	-
-218G00-28	6/28/96	6/28/96	26	-	8.16	-	-	-
118H05-7	6/29/96	6/29/96	14	-	5.8	54	454	794
118H05-36	6/29/96	6/29/96	17	-	4.6	< 0.5	1.06	1.06
118H05-28	6/29/96	6/29/96	18	-	-	-	-	-
108J18-14	6/29/96	6/29/96	27	-	<5	-	-	-
-115J23-14	6/29/96	6/29/96	24	-	-	-	-	-
-218G00-36	6/28/96	6/29/96	30	T	3.9	-	-	-
-115J23-28	6/29/96	6/29/96	26	-	0.6	-	-	-
108J18-7	6/29/96	6/29/96	32	-	15.7	303	61.7	42.1
108J18-28	6/29/96	6/29/96	33	-	12.7	-	-	-
108J18-36	6/29/96	6/29/96	34	-	9.55	-	-	-
102F00-7	6/29/96	6/29/96	38	-	-	-	-	-
-310J05-14	6/29/96	6/29/96	39	T	<5	-	-	<1
-310J05-28	6/29/96	6/29/96	40	T	<5	-	-	<2
-310J05-36	6/29/96	6/29/96	41	T	2.13	-	-	-
-115J23-7	6/29/96	6/29/96	43	T	2.08	-	-	<1
200L13-9	6/30/96	6/30/96	8	-	-	-	-	4.98
200L13-16	6/30/96	6/30/96	11	-	4.97	<	-	-
200L13-30	6/30/96	6/30/96	12	-	13.6	<	-	<
010J05-28	6/30/96	6/30/96	16	-	3.5	-	-	-
-110G10-28	6/30/96	6/30/96	18	-	2.1	-	-	-
200M15-9	6/30/96	6/30/96	21	-	-	-	-	-

TABLE 2
FIELD CHEMISTRY RESULTS
19 JUNE TO 30 JUNE 1996
MCRD PARRIS ISLAND DRY CLEANER FACILITY

LOCATION	DATE	TIME	DEPTH	pH	TEMP	TURBIDITY	CONDUCTIVITY	ORP	SALINITY	D.O. (mg/l)	D.O. (mg/l)	TOTAL ALKALINITY
			(ft)		(^{0}C)	(NTU)	(mS/cm)	(mV)	%	INSTRUMENT	WINKLER	(mg/l) AS CaCO3
601K13	19-Jun	8:35	15	6.19	26.3	999	0.804	-79.1	0.03	0.61	0	60
601K13	19-Jun	9:00	15	6.08	26.2	562	0.792	-92.2	0.03	0.13	0	60
615E15	19-Jun	14:45	13	6.74	26.4	999	0.399	-14.6	0.01	0.57	TOO TURBID	TOO TURBID
615E15	19-Jun	15:06	13	6.2	25	434	0.392	-80.9	0.01	1.16	0	110
615E15	19-Jun	17:17	21	6.41	28.1	38	0.904	-115.9	0.05	1.06	2.4	110
615E15	19-Jun	17:45	30	7.35	28.5	200	1.29	-45.8	0.07	1.39	*3.2	270
615E15	19-Jun	18:42	37	7.73	28	999	1.36	46.7	0.07	3.77	4.5	320
322D09	20-Jun		7.5	NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
322D09	20-Jun	10:41	13	NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
322D09	20-Jun	11:54	22	6.3	27.4	999	1.92	-7.9	0.11	0.02	0[1]	120
322D09	20-Jun	13:32	28	6.82	29.8	259	1.91	-60.8	0.11	1.44	1.6	200
322D09	20-Jun	14:17	36	7.25	30.7	290	1.75	-75.8	0.08	1.58	*3	320
621C18	20-Jun		7	NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
621C18	20-Jun	15:58	14	6.54	27.4	971	0.536	-26.1	0.02	1.25	1.2[2]	0
621C18	20-Jun	17:08	21	7.21	26.3	399	1.22	-91.6	0.05	0.36	1.6	300
300C22	20-Jun	16:09	7	NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
300C22	21-Jun	8:15	14	6.24	24.8	999	0.439	35.6	0.02	1.16	1.4[3]	120
300C22	21-Jun	9:27	22	6.19	25	999	1.99	-9.6	0.09	0.07	< 0.2	110
500C24	21-Jun	10:26	7	NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
500C24	21-Jun	11:16	14	6.43	27.2	999	0.526	-4.2	0.03	1.57	1.2	150
500C24	21-Jun	11:55	22	7.1	27.9	775	1.3	-64.1	0.07	0.04	< 0.2	320
700D21	21-Jun	14:20	7	NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
700D21	21-Jun	15:12	14	6.77	29.2	826	0.595	-17.8	0.03	1.87	2.4	160
700D21	21-Jun		22	SLOW FILL, WET CHEM SAMPLE NOT TAKEN								
800E00	24-Jun	8:30	7	NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
800E00	24-Jun	9:16	14	6.64	29.5	999	0.59	-15.7	0.03	1.1	1.2	150
800G00	24-Jun	10:19	7	6.3	32	999	0.412	-36.9	0.02	0.57	TOO TURBID[4]	TOO TURBID
800G00	24-Jun	10:55	14	6.51	30.3	999	0.415	11.5	0.02	0.64	<0.2[1]	140
700H05	24-Jun	11:41	7	NO SAMPLE FOR WET CHEMISTRY								
700H05	24-Jun	12:26	14	6.64	29	999	0.468	-19.2	0.02	0.11	(NO COLOR)	N/A
500G20	24-Jun	13:35	14	6.46	31.7	999	0.491	2.6	0.02	0.12	-	110

LOCATION	DATE	TIME	DEPTH	pH	TEMP	TURBIDITY	CONDUCTIVITY	ORP	SALINITY	D.O. (mg/l)	D.O. (mg/l)	TOTAL ALKALINITY
			(ft)		(°C)	(NTU)	(mS/cm)	(mV)	%	INSTRUMENT	WINKLER	(mg/l) AS CaCO3
500G20	24-Jun		7	NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
710E24	24-Jun	16:15	7	NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
710E24	24-Jun	16:53	14	6.48	29.8	999	0.481	-4.7	0.01	0.04	O FLOC SETTLE	160
710E24	25-Jun	8:49	22	6.53	28	161	0.729	-49.0	0.03	1.28	1.8	85
710E24	25-Jun	9:53	28	6.79	28.2	557	1.12	-47.5	0.05	1.26	1.8	180
600G00	25-Jun	11:02	7	6.59	28.5	999	0.568	124.4	0.02	0.8	TOO TURBID	TOO TURBID
600G00	25-Jun	13:49	14	6.36	29	999	0.444	22.6	0.01	2.89	1.4	95
600G00	25-Jun		22	ONLY COLLECTED APPROX. 100ml, NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
600G00	25-Jun	15:26	28	6.87	29.9	999	0.93	-44.9	0.05	0.68	0.4	160
600G00	25-Jun	16:06	34	7.54	29	401	1.17	-36.9	0.06	2.48	2.6	280
710E24	25-Jun	17:04	38	7.83	29.9	541	1.34	34.8	0.07	1.04	1.8	320
404H21	26-Jun	8:00	7	NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
404H21	26-Jun	8:58	14	6.13	27.5	851	0.586	13.2	0.03	1.74	2	110
400G09	26-Jun	10:26	7	NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
400G09	26-Jun	11:04	14	6.32	26.6	999	0.492	17.9	0.02	0.38	0.6	110
600H00	26-Jun	11:56	7	NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
600H00	26-Jun	13:44	14	6.35	27.7	661	0.468	39.2	0.02	1.76	2.4	120
500G20	26-Jun	14:32	28	7.18	25.1	999	0.901	-2.7	0.03	1.68	1.8	210
500G20	26-Jun	15:23	34	7.63	26.6	674	1.23	44.3	0.07	1.65	2.2	400
212G15	26-Jun	15:56	14	NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
212G15	26-Jun	16:32	28	7.31	26.8	562	1.48	-16.7	0.08	1.75	*2.6	240
500G20	26-Jun	17:16	37	7.4	25.3	843	1.17	-44.5	0.05	1.79	*2.4	300
600H00	27-Jun	8:33	23	NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
600H00	27-Jun	9:15	28	6.89	24.1	891	1.01	-36.0	0.05	1.14	*1.0	180
600H00	27-Jun	10:14	36	7.39	24.2	999	1.18	-125.8	0.06	0.33	0.2	350
102G00	27-Jun	11:28	14	6.05	26.5	999	0.92	55.8	0.04	1.46	0.8	80
-110G10	27-Jun	12:29	14	6.64	27.9	999	1.12	118.9	0.05	3.96	4.2[6]	150
118H05	27-Jun	14:15	14	6.34	27.1	600	0.67	30.8	0.03	1.92	1	160
102F00	27-Jun	15:04	14	6.17	27.4	959	0.95	66.1	0.04	1.97	1.8	100
400G09	27-Jun	16:15	23	NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
400G09	27-Jun	16:41	28	7	26.3	999	1.07	-29.3	0.04	1.17	*1.6	200
400G09	27-Jun	15:10	36	7.74	27.5	223	1.27	93.8	0.05	2.97	4.2	280
-218G00	28-Jun	8:09	14	5.65	23.7	484	2.74	105.8	0.13	1.37	1.4	45
010J05	28-Jun	9:15	14	6.14	25.5	664	1.06	-1.3	0.04	1.73	1.8	90
102F00	28-Jun	10:36	21	NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
102F00	28-Jun	11:18	28	6.84	26.9	324	3.79	-51.9	0.19	1.99	2.4	140
-011H14	28-Jun	13:15	7	6.15	31.5	999	0.609	-49.6	0.02	0.43	TOO TURBID[1,]	80

LOCATION	DATE	TIME	DEPTH	pH	TEMP	TURBIDITY	CONDUCTIVITY	ORP	SALINITY	D.O. (mg/l)	D.O. (mg/l)	TOTAL ALKALINITY
			(ft)		(^{0}C)	(NTU)	(mS/cm)	(mV)	%	INSTRUMENT	WINKLER	(mg/l) AS CaCO3
-011H14	28-Jun	14:12	14	6	29.4	314	1.52	10.1	0.07	1.63	1.8	80
-011H14	28-Jun	14:53	28	7.14	27.9	358	1.59	-62.7	0.09	1.5	2	220
-011H14	28-Jun	15:40	36	7.75	28	213	1.97	**	0.09	3.88	4.2	340
-218J05	28-Jun	17:00	14	6.36	27.7	462	1.54	**	0.07	1.04	1.2	130
-218J05	28-Jun	17:34	28	7.08	26.6	303	1.04	**	0.04	2.05	2.4	140
-218J05	28-Jun	18:11	36	7.42	25.4	612	1.42	**	0.06	0.77	1.6	360
-218G00	28-Jun	19:13	28	6.96	24.3	662	5.35	**	0.28	1.02	1.6	230
-218G00	28-Jun	19:50	36	6.86	23.8	109	15.9	**	0.93	1.51	2.2	320
118H05	29-Jun	7:55	7	NO SAMPLE FOR WET CHEMISTRY								
118H05	29-Jun	9:03	28	7.07	25.3	457	1.46	**	0.06	0.6	1.2	260
118H05	29-Jun	9:41	36	7.45	25.4	999	1.57	**	0.07	2.44	3.6	460
-115J23	29-Jun	10:42	14	6.15	27	305	1.16	**	0.05	1.42	1.4[6]	60
-115J23	29-Jun	11:20	28	7.11	26.6	999	0.734	**	0.03	0.35	0.8	180
108J18	29-Jun	12:28	14	6.15	29.4	587	3.4	**	0.17	1.51	0.8	70
108J18	29-Jun	13:52	7	5.67	32.5	999	0.516	**	0.02	2.52	0.4	40
108J18	29-Jun	14:30	28	7.17	28.6	879	0.76	**	0.03	1.75	2	180
108J18	29-Jun	15:03	36	7.56	29	497	1.26	**	0.05	1.43	1.2	420
102F00	29-Jun	16:17	7	NO SAMPLE FOR WET CHEMISTRY								
-310J05	29-Jun	17:11	14	NOT RUN- LOCATING ADDITIONAL SAMPLE POINTS								
-310J05	29-Jun	17:50	28	6.99	27.9	999	1.03	**	0.04	1.39	2.2	140
-310J05	29-Jun	18:23	36	7.52	27	990	1.39	**	0.06	0.86	1	520
-115J23	29-Jun	18:54	7	NOT ENOUGH SAMPLE FOR WET CHEMISTRY								
200L13	30-Jun	8:07	9	6	28.4	999	0.235	**	0	3.04	3	60
200L13	30-Jun	8:45	16	6.03	25.6	999	0.372	**	0.01	1.08	0.4	80
200L13	30-Jun	9:28	30	7.01	25.6	999	0.654	**	0.02	1.27	1.4	180
010J05	30-Jun	10:10	28	6.75	26.7	930	0.98	**	0.04	0	<0.2	160
-110G10	30-Jun	11:38	28	6.69	27.6	188	3.24	**	0.16	0.37	0.6	180
200M15	30-Jun	13:49	9	NO SAMPLE FOR WET CHEMISTRY								

D.O. : Dissolved Oxygen

ORP : Oxidation Reduction Potential

* D.O. Floc Floating

** Meter Quit Responding

[1]Very turbid; gray

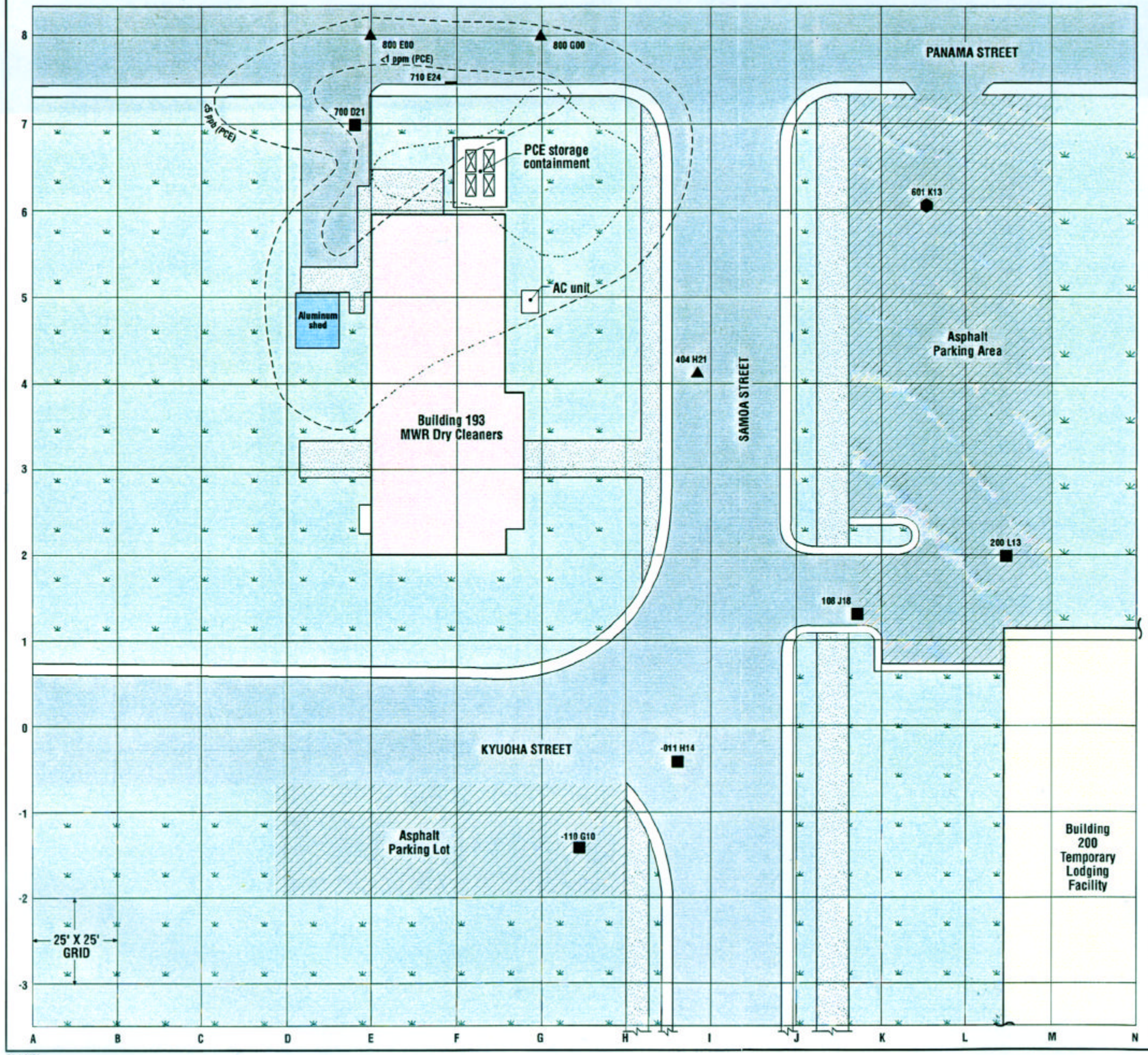
[2]Alk turned pink on addition of BCG

[3]Floc resuspended on last step

[4]Too turbid to titrate; very muddy brown

[5]Floc did not settle

[6]Very silty



Z1.0 9851

N

Sample Location Numbering Scheme

Grid intersection point

616 H21

Distance in feet North & East from grid intersection point. (max. value would be 25 ft). (e.g. 16 ft North of grid line 6, and 21 ft East of grid line H.

LEGEND

- ------- Estimated Isoconcentration Contour (PCE) from June 1994 S & ME Report
- -- ... ... Estimated Location of Petroleum Solvents from June 1994 S & ME Report
- **PCE** Tetrachloroethylene
- **ppb** parts per billion
- **ppm** parts per million
- ⬢ Cone Penetrometer Borehole
- ▲ Borehole with no Contamination
- ■ Borehole with Contamination

Figure 2a

Bechtel

Navy Rac Project
Contract No. N62467-93-D-0936

MCRD Parris Island, SC
As-Built Groundwater Sampling Locations

Date: 7/1/96 D.O. #48

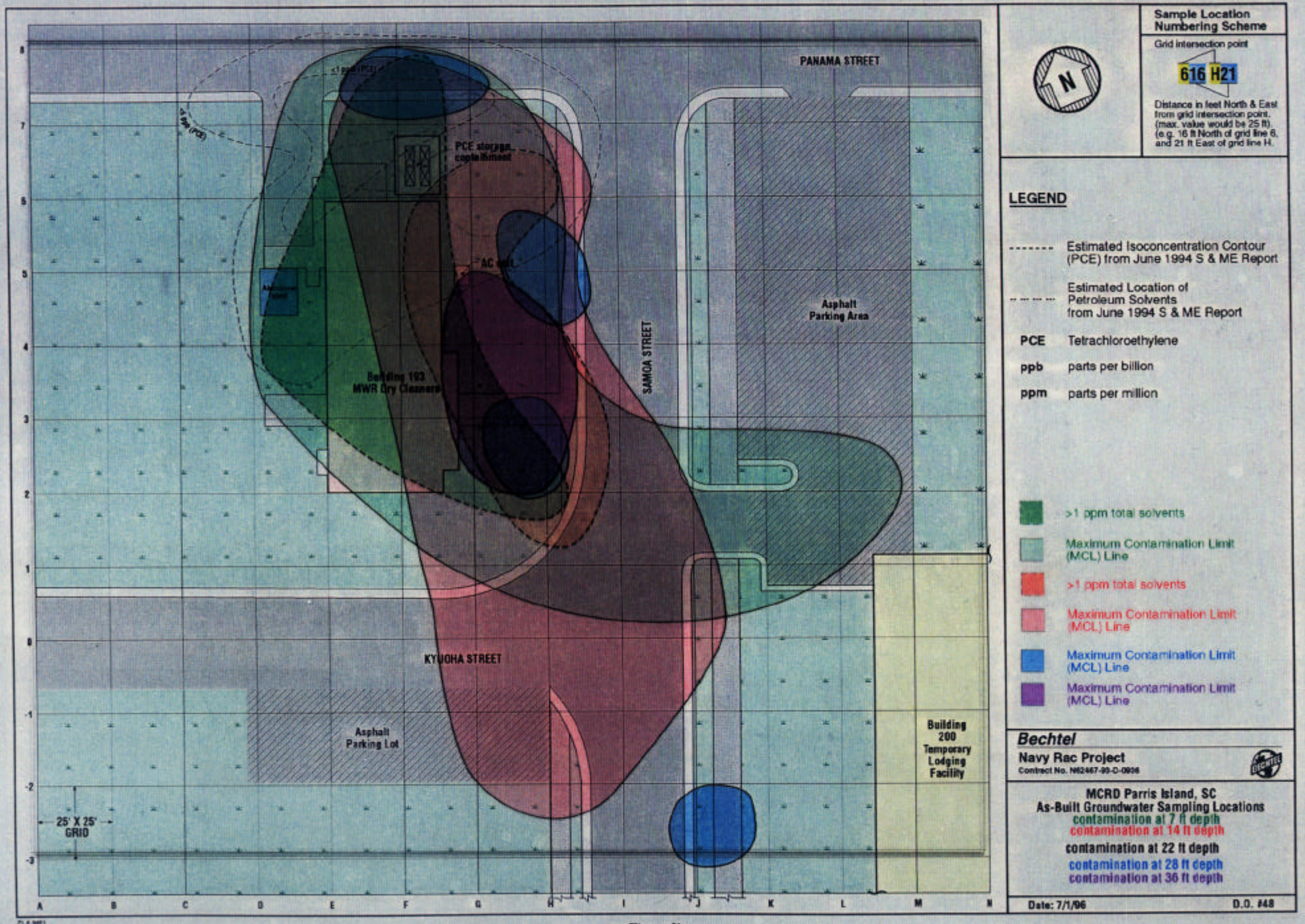

PANAMA STREET
PCE storage containment
AC unit
Asphalt Parking Area
SAMOA STREET
Building 193 MWR Dry Cleaners
KYUSHA STREET
Asphalt Parking Lot
Building 200 Temporary Lodging Facility
25' X 25' GRID
A B C D E F G H I J K L M N
8 7 6 5 4 3 2 1 0 -1 -2 -3
N
Sample Location Numbering Scheme
Grid intersection point
616 H21
Distance in feet North & East from grid intersection point. (max. value would be 25 ft). (e.g. 16 ft North of grid line 6, and 21 ft East of grid line H.
LEGEND
Estimated Isoconcentration Contour (PCE) from June 1994 S & ME Report
Estimated Location of Petroleum Solvents from June 1994 S & ME Report
PCE Tetrachloroethylene
ppb parts per billion
ppm parts per million
>1 ppm total solvents
Maximum Contamination Limit (MCL) Line
>1 ppm total solvents
Maximum Contamination Limit (MCL) Line
Maximum Contamination Limit (MCL) Line
Maximum Contamination Limit (MCL) Line
Bechtel
Navy Rac Project
Contract No. N62467-93-D-0936
MCRD Parris Island, SC
As-Built Groundwater Sampling Locations
contamination at 7 ft depth
contamination at 14 ft depth
contamination at 22 ft depth
contamination at 28 ft depth
contamination at 36 ft depth
Date: 7/1/96
D.O. #48

Figure 2b

APPENDIX A
RESULTS FROM LAB CONFIRMATION SAMPLES

VSD

CHAIN OF CUSTODY RECORD

21947

Page 1 of 2

Facility Name: MWR Dry Cleaners	SEIR No.: PI006
Site Name: MCRD, Parris Island, SC.	COC Number: ~~0001~~ PI026
Delivery Order No.: 0048	Lab: GEL VSD 6/25/96
Cooler/Crate No.: 140	Field Logbook No.: PI-GW/QC-001
Sampling Event:: PCE Plume	Logbook Pg. No.: 1-3

Sampled by: Ray Hoekstra (Print) / (Sign) — (Print) / (Sign)

Legend — SAMPLE TYPE

PSB	Preservative Blank	BLS	Blind Spike
FDP	Field Duplicate	BLB	Blink Blank
ENV	Environmental	PTS	Point Source
FDB	Field Blank	FRP	Field Replicate
GEO	Geotechnical Sample	RSB	Rinsate Blank
MXD	Matrix Spike Duplicate	SPL	Split
MXS	Matrix Spike	TPB	Trip Blank

MATRIX

AIR	Air	SBS	Subsurface Soil (>6")	PBS	Post Burn Soil
FLO	Flora	SED	Sediment	PTW	Potable Water
FAU	Fauna	SFS	Surface Soil (0-6")	SEP	Seeps
GWT	Groundwater	SPW	Surface Water	SOL	Solid
LCH	Leachate	SLG	Sludge	WWT	Waste Water
OIL	Oil	SLW	Solid Waste	SST	Surface Water
DIW	Deionized Water	OFW	Organic Free Water		Storm Event
DFW	Deionized Organic Free Water				

QC LEVELS

- C Sample results and QC reported
- D Sample results, QC and raw data reported
- E Sample results, blanks, and calibration reported
- S Screening level analysis; sample results and as reported

Station ID	BEI Sample ID	Sample Type	Matrix Code	Collection Date/Time	Container ID	Preservative	Pay Item	Parameter	Priority	QC Code
LOII(13-15	PI16171	ENV	GWT	6/19/96/0830	-01	NONE, 4°C	5.15	BOD	7DA-1	C
					-02	NONE 4°C 5.143	5.109 5.113	CARBONATE TSS, TURBIDITY		
					-03	NONE, 4°C	5.108	TDS		
					-04	EDTA	5.101	SULFITES		
					-05	HNO_3	4.31	METALS		
					-06	NONE, 4°C	5.17	IONS		

RELINQUISHED BY	RECEIVED BY	DATE	TIME	REASON FOR TRANSFER
		6/20/96	15:00	PACK FOR SHIPMENT
		6/20/96	17:00	SHIP TO LAB
	Regina Cormaud	6/21/96	0845	

COMMENTS/INSTRUCTIONS

CONTAMINATION	YES	NO
Radiological		X
Chemical	X	

NAVY RAC PROJECT 22567-145

BECHTEL ID NUMBER:

001-0211-002-01

SC/PO SEQ SHT SUBMTL

Shipper: FEDERAL EXPRESS

Ship to: GEL

Airbill No. _____ Traffic Report No. _____

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s. UN2910

Temp 10°C

T° = 3.°C

114

COC #001

CHAIN OF CUSTODY RECORD (Continued)

Station ID	BEI Sample ID	Sample Type	Matrix Code	Collection Date/Time	Container ID	Preservative	Pay Item	Parameter	Priority	QC Level	
001K13-15	PI16171	ENV	GWT	6/19/96-0830	-07	H_2SO_4	5.38	HARDNESS	7DAY	C	
					-08	NONE, 4°C	5.85	ORTHO PO_4			
					-09	H_2SO_4	5.52, 5.12, 5.87, 5.45	TOC, TKN, NH_3, PO_4			
					-10	NONE, 4°C	5.52	DOC			
					~~-11~~	~~NONE~~	1WD				
001SE15-13	PI16172	ENV	GWT	6/19/96-1515	-01, -02, -03	HCL, 4°C	1.49	TCL VOLATILES	7DAY	C	.2
					-04	HNO_3	4.31	METALS			
					-05	H_2SO_4	5.52, 5.12, 5.87, 5.45	TOC, TKN NH_3, PO_4			
					-06	NONE, 4°C	5.17	IONS			
					-07	EDTA	5.101	SULFITES			
					-08	NONE, 4°C	5.143, 5.109, 5.113	CARBONATE TSS, ~~ALK~~ TURBIDITY			
					-09	NONE, 4°C	5.85	ORTHO PO_4			
					-10	NONE, 4°C	5.108	~~TSD~~ 1WD TDS			
					-11	H_2SO_4	5.38	HARDNESS			
					-12	NONE, 4°C	5.15	BOD			
					-13	NONE, 4°C	5.52	DOC			
TRIP BLANK	NOT INCLUDED										
322D09-13	PI16173	ENV	GWT	6/20/96-1041	-01, -02, -03	HCL, 4°C	1.49	TCL VOLATILES	7DAY	C	.3

NAVY RAC PROJECT 22567-145

BECHTEL ID NUMBER:
~~001-0211~~-002-01

SC/PO	SEQ	SHT	SUBMTL

CONTRACT COMPLIANCE SCREEN AND DATA ASSESSMENT SUMMARY

FACILITY ID: Parris Island
DELIVERY ORDER: 048
SITE ID: MWR Dry Cleaners - Phase II Sampling
SEIR ID: PI-008
COC #: PI-026
DATE: 7/11/96
REVIEWER: R. Vaughan Robert W. Vaughan
LABORATORY: GEL
SUPPLIER DOCUMENT NO. 22567-145-001-0211-002-01
MATRIX: GWT
SAMPLE ID's: PI 16171, 16172

DATE(s) OF SAMPLE COLLECTION: 6/19/96
CHARGE NUMBER: 22567-145-139918
NUMBER OF HOURS CHARGED TO REVIEW DATA PACKAGE: 2
LEVEL OF REVIEW: C ✓ D ____ Other ____

PARAMETERS: VOC ✓ BNA ____ PEST/PCB ____ MERCURY ____ METALS ____
CN ____ TPH ____ SULFIDE ____ TOX ____ TSS/TDS ____ GEOTECH ____ RAD ____

I. COMPLETENESS/COMPARABILITY

A. Are all deliverables specified by the QC Level on the COC present? yes
(QC level descriptions can be found in the subcontract Technical Specification)
B. Are forms properly completed and legible? Yes
C. Were all requested analyses performed by the laboratory? yes
(Please attach completeness report from BEIDMS)
D. Were the requested analytical methods used for sample analysis? Yes

II. TURN-AROUND TIME

Date samples submitted to lab	6-20-96	Date samples received by lab	6-21-96
Priority level specified for FAX	7 day	Priority level specified for hard copy	15 day
Due date of FAX	6-28-96	Due date of data transmittal	7-8-96 *
Date of FAX transmittal	6-27-96	Date of data transmittal	7-5-96
Was turnaround time met for FAX	yes	Was turnaround time met for data transmittal	yes
Number of days late	0	Number of days late	0

* After allowance for July 4th holiday, the 15th day falls on Sunday 7-7 so due date moved to Monday 7-8. RVD

III. HOLDING TIMES EDD rec'd 7-11-96; 1st EDD w/ wet chem in new format; no gen

Were all samples extracted and analyzed within specified holding times? Yes

IV. COMMENTS

V. DATA ASSESSMENT SUMMARY

1. VOLATILE ORGANICS BY GC/MS

1. Were samples analyzed within technical holding times?

✓ Yes ___ No

Comments: 6/25/96

2. Were all BFB tunes compliant?

✓ Yes ___ No

Comments:

3. Were all initial calibration criteria compliant (minimum RF and % RSDs)? SPCC/CCC

✓ Yes ___ No

Comments: all SPCC/CCC RRF and RSDs acceptable. all other compounds same.

4. Were all continuing calibration criteria compliant (minimum RF and %Ds)? SPCC/CCC

✓ Yes ___ No

Comments: SPCC/CCC RF & %D OK. The following compounds had %Ds >30 %: MIBK, 2-nitropropane, tert-butylbenzene, 1,2,4-trichlorobenzene, naphthalene, 1,2,3-trichlorobenzene, dichlorodifluoromethane, chloromethane, bromomethane, chloroethane, trichlorofluoromethane, acrolein, carbon disulfide, isobutyl alcohol, vinyl acetate, methacrylonitrile, ethyl methacrylate, ~~benzyl~~ benzyl chloride, bis(2-chloroisopropyl)ether.

5. Were all surrogate recoveries compliant?

✓ Yes ___ No

Comments: _____

6. Were internal standards compliant?

✓ Yes ___ No

Comments: _____

7. Were target compounds detected in the method blank(s)?

✓ Yes ___ No

Comments: $MeCl_2$ @ 1.4

8. Were compounds detected in the method blank also detected in associated samples at levels less than 5 times the blank concentration (for non-common lab contaminants) or less than 10 times the blank concentration (for common lab contaminants)?

✓ Yes ___ No ___ N/A

Comments: PB16172, 16173, AT20012

9. Were MS/MSD recoveries and RPDs within the recommended quality control limits?

✓ Yes ___ No ___ N/A

Comments: _____

10. Were duplicate RPDs, for lab and/or field duplicates, within the recommended quality control limits?

___ Yes ___ No ✓ N/A

Comments: _____

11. Were LCS recoveries within the recommended recovery windows?

✓ Yes ___ No ___ N/A

Comments: _____

Additional Comments: _____

2. ORGANICS BY GC

Analytes Evaluated: _____

1. Were samples analyzed within technical holding times?

___ Yes ___ No ___ N/A

Comments: _____

2. Were all initial calibration criteria compliant (minimum RF and % RSDs)?

___ Yes ___ No

Comments: _____

3. Were all continuing calibration criteria compliant (minimum RF and %Ds)?

___ Yes ___ No

Comments: _____

4. Were all surrogate recoveries compliant?

___ Yes ___ No ___ N/A

Comments: _____

5. Were internal standards compliant?

____ Yes ____ No ____ N/A

Comments: _____

6. Were target compounds detected in the method blank(s)?

____ Yes ____ No

Comments: _____

7. Were compounds detected in the method blank also detected in associated samples at levels less than 5 times the blank concentration (for non-common lab contaminants) or less than 10 times the blank concentration (for common lab contaminants)?

____ Yes ____ No ____ N/A

Comments: _____

8. Were MS/MSD recoveries and RPDs within the recommended quality control limits?

____ Yes ____ No ____ N/A

Comments: _____

9. Were duplicate RPDs, for lab and/or field duplicates, within the recommended quality control limits?

____ Yes ____ No ____ N/A

Comments: _____

10. Were LCS recoveries within the recommended recovery windows?

____ Yes ____ No ____ N/A

Comments: _____

Additional Comments: _____

3. SEMIVOLATILES BY GC/MS

1. Were samples extracted and/or analyzed within technical holding times?

____ Yes ____ No

Comments: _____

2. Were all DFTPP tunes compliant?

____ Yes ____ No ____ N/A

Comments: _____

3. Were all initial calibration criteria compliant (minimum RF and % RSDs)?

____ Yes ____ No

Comments: _____

4. Were all continuing calibration criteria compliant (minimum RF and %Ds)?

___ Yes ____ No

Comments: _____

5. Were all surrogate recoveries compliant?

____ Yes ____ No

Comments: _____

6. Were internal standards compliant?

____ Yes ____ No

Comments: _____

7. Were target compounds detected in the method blank(s)?

____ Yes ____ No

Comments: _____

8. Were compounds detected in the method blank also detected in associated samples at levels less than 5 times the blank concentration (for non-common lab contaminants) or less than 10 times the blank concentration (for common lab contaminants)?

____ Yes ____ No ____ N/A

Comments: _____

9. Were MS/MSD recoveries and RPDs within the recommended quality control limits?

____ Yes ____ No

Comments: _____

10. Were duplicate RPDs, for lab and/or field duplicates, within the recommended quality control limits?

____ Yes ____ No ____ N/A

Comments: _____

11. Were LCS recoveries within the recommended recovery windows?

____ Yes ____ No ____ N/A

Comments: _____

Additional Comments: _____

4. PEST/PCB'S BY GC

1. Were samples extracted and/or analyzed within technical holding times?

____ Yes ____ No

Comments: _____

_____

_____

2. Were all initial calibration criteria compliant (minimum RF and % RSDs)?

____ Yes ____ No

Comments: _____

_____

_____

3. Were all continuing calibration criteria compliant (minimum RF and %Ds)?

____ Yes ____ No

Comments: _____

_____

_____

4. Were all surrogate recoveries compliant?

____ Yes ____ No

Comments: _____

_____

_____

5. Were target compounds detected in the method blank(s)?

____ Yes ____ No

Comments: _____

_____

_____

6. Were compounds detected in the method blank also detected in the associated sample at levels less than 5 times the blank concentration?

____ Yes ____ No ____ N/A

Comments: _____

_____

_____

7. Were MS/MSD recoveries and RPD's within the recommended quality control limits?

____ Yes ____ No

Comments: _____

_____

_____

8. Were duplicate RPDs, for lab and/or field duplicates, within the recommended quality control limits?

___ Yes ___ No ___ N/A

Comments: _____

9. Were LCS recoveries within the recommended recovery windows?

___ Yes ___ No ___ N/A

Comments: _____

Additional Comments: _____

5. METALS AND MERCURY

1. Were samples analyzed within technical holding times?

✓ Yes ___ No

Comments: Extr: 6/24/96 analysis: 6/25/96

2. Were all initial calibration criteria compliant?

✓ Yes ___ No

3. Were all continuing calibration verification criteria compliant:

✓ Yes ___ No

Comments: Poor CCV recoveries for: Mg, Na

4. Were target compounds detected in the method blank(S) at levels greater than the IDL?

✓ Yes ___ No

Comments: Fe@ 4.72; Mg@ 18.31; K@ 219.05

5. Were compounds detected in the method blank also detected in associated samples at levels less than 5 times the blank concentration?

___ Yes ✓ No ___ N/A

Comments: _____

6. Were MS/MSD recoveries and duplicate RPD's within the recommended quality control limits?

✓ Yes ___ No

Comments: using 4x rule.

7. Were duplicate RPDs, for lab and/or field duplicates, within the recommended quality control limits?

___ Yes ___ No ✓ N/A

Comments: _____

8. Were LCS recoveries within the recommended recovery windows?

✓ Yes ___ No

Comments: _____

Additional Comments: LCS/AB recoveries acceptable. Serial dilution results acceptable.

6. CYANIDE AND MISCELLANEOUS WET CHEMISTRY ANALYSES

Analyses Evaluated:

BOD5	Fluoride	Ortho phosphorus	Dis. Org. Carbon
Alkalinity	Nitrite	Sulfide	TOC
Hardness	N. trate	Turbidity	ammonia
Bromide	Sulfate	TDS	Tl phos.
chloride		TSS	TKN

1. Was sample prepared and/or analyzed within technical holding times?

dlw 7/11/96 ✓ Yes ✓ No

Comments: P116171 – HT violation for: BOD5, O-PO4, NO2, NO3 (received late)
P116172 – received on time – lab out for NO2, NO3

2. Were initial calibration criteria compliant?

✓ Yes ___ No ___ N/A

Comments: _____

3. Were continuing calibration criteria compliant?

✓ Yes ___ No ___ N/A

Comments: _____

4. Were all surrogate recoveries compliant?

___ Yes ___ No ✓ N/A

Comments: _____

5. Were target compounds detected in the method blank(s)?

___ Yes ✓ No

Comments: _____

6. Were compounds detected in the method blank also detected in associated sample(s) at a concentration less than 5 times the blank concentration?

___ Yes ___ No ✓ N/A

Comments: _____

7. Were MS/MSD recoveries and RPD's within the recommended quality control limits?

✓ Yes ___ No ___ N/A

Comments: _____

8. Were duplicate RPDs, for lab and/or field duplicates, within the recommended quality control limits?

___ Yes ___ No ✓ N/A

Comments: _____

9. Were LCS recoveries within the recommended recovery limits?

___ Yes ___ No ___ N/A

Comments: _____

Additional Comments: _____

7. **OVERALL DATA ASSESSMENTS:** as above

Station ID 601K13-15

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

CERTIFICATE OF ANALYSIS

Client: Bechtel
PO Box 350
Oak Ridge, Tennessee 37831-0350
Contact: Ms. Lori Davenport
Project Description: Parris Island/PI

cc: BECH00295 Report Date: June 27, 1996

Sample ID	: 9606399-01 DL1 PI16171 GWT
Lab ID	: 9606399-04
Matrix	: GWT
Date Collected	: 06/19/96
Date Received	: 06/21/96
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M	C
General Chemistry												
Phosphorus, Total as PO4		18.3	0.30	0.50	mg/l	10.	JHC	06/25/96	1359	86311	1	1
Nitrogen, Total Kjeldahl		4.3	0.30	0.50	mg/l	5.0	JHC	06/25/96	1631	86312	2	N

M = Method	Method-Description
M 1	EPA 365.4
M 2	EPA 351.2

C = Container	Lab. Container ID	Reference ID
C 1	9606399-04.01	PI1617109

Notes:
The qualifiers in this report are defined as follows:
J indicates presence of analyte between DL (Detect Limit) and RL (Report Limit)
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicate that a quality control analyte recovery is outside of specified acceptance criteria.

GEL Laboratory Certifications EPI Laboratory Certifications

Station ID 601K13-15

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

CERTIFICATE OF ANALYSIS

Client: Bechtel
PO Box 350
Oak Ridge, Tennessee 37831-0350
Contact: Ms. Lori Davenport
Project Description: Parris Island/PI

cc: BECH00295 Report Date: June 27, 1996

Sample ID : PI16171 GWT
Lab ID : 9606399-01
Matrix : GWT
Date Collected : 06/19/96
Date Received : 06/21/96
Priority : Rush
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M	C
General Chemistry												
BOD - 05 day	U	3.0	3.0	3	mg/l	3.0	GLW	06/21/96	1455	86280	1	1
Carbonates as CaCO3	U	1.0	1.0	1	mg/l	1.0	SDW	06/24/96	2000	86368	2	2
Hardness as CaCO3		168	1.0	1	mg/l	1.0	SDW	06/25/96	2000	86442	3	3
Bromide		0.98	0.20	0.25	mg/l	1.0	JPB	06/24/96	1406	86284	N	1
Chlorides		216	3.2	12.5	mg/l	50.	JPB	06/24/96	1251	86284	N	1
Fluoride		0.65	0.02	0.05	mg/l	1.0	JPB	06/24/96	1251	86284	4	1
Nitrogen, Nitrite	U	0.01	0.01	0.05	mg/l	1.0	JPB	06/22/96	0026	86285	N	1
Nitrogen, Nitrate	U	0.02	0.02	0.05	mg/l	1.0	JPB	06/24/96	1406	86284	N	1
Sulfate as SO4	B	0.39	0.09	1	mg/l	1.0						
Phosphorus, Ortho		0.07	0.01	0.05	mg/l	1.0	TSM	06/21/96	1430	86278	5	4
Sulfite	U	50.0	50.0	50	mg/l	10.	TSM	06/21/96	1310	86279	6	5
Turbidity		2410	200.0	200	NTU	1000	SDW	06/21/96	1720	86286	7	4
Solids, Total Dissolved		582	6.3	10	mg/l	1.0	LIB	06/24/96	1650	86314	8	6
Solids, Total Suspended		551	6.3	10	mg/l	1.0	LIB	06/24/96	1700	86309	9	6
Dissolved Organic Carbon		4.1	0.20	1	mg/l	1.0	LS	02/26/96	1430	86394	10	N
Total Organic Carbon		5.8	0.20	1	mg/l	1.0	LS	06/25/96	1130	86427	10	7
Nitrogen, Ammonia		0.68	0.02	0.10	mg/l	1.0	JHC	06/26/96	1324	86417	11	7
Phosphorus, Total as PO4	E	3.7	0.03	0.10	mg/l	1.0	JHC	06/25/96	1143	86311	12	8
Nitrogen, Total Kjeldahl	E	2.4	0.06	0.10	mg/l	1.0	JHC	06/25/96	1603	86312	13	8

M = Method	Method-Description
M 1	SM 17th 5210/EPA 405.1
M 2	SM 17th ed 2320B
M 3	EPA 215.2
M 4	EPA 300.0
M 5	EPA 365.2

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
PI16171GWT

Lab Name: GENERAL_ENGINEERING_LABS_ Contract: BECH00295_

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 66399W

Matrix (soil/water): WATER Lab Sample ID: 9606399-01

Level (low/med): LOW__ Date Received: 06/21/96

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7440-70-2	Calcium	35600			P
7439-89-6	Iron	46800			P
7439-95-4	Magnesium	10700			P
7439-96-5	Manganese	468			P
7440-09-7	Potassium	3200			P
7440-23-5	Sodium	98100			P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

FORM I - IN ILM03.0

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

CERTIFICATE OF ANALYSIS

Client: Bechtel
PO Box 350
Oak Ridge, Tennessee 37831-0350
Contact: Ms. Lori Davenport
Project Description: Parris Island/PI

cc: BECH00295 Report Date: June 27, 1996

Sample ID	: 9606399-02 DL1 PI16172 GWT
Lab ID	: 9606399-05
Matrix	: GWT
Date Collected	: 06/19/96
Date Received	: 06/21/96
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M	C
General Chemistry												
Phosphorus, Total as PO4		3.5	0.05	0.10	mg/l	2.0	JHC	06/25/96	1359	86311	1	1
Nitrogen, Total Kjeldahl		2.2	0.20	0.20	mg/l	2.0	JHC	06/25/96	1631	86312	2	N

M = Method	Method-Description
M 1	EPA 365.4
M 2	EPA 351.2

C = Container	Lab. Container ID	Reference ID
C 1	9606399-05.01	PI1617205

Notes:
The qualifiers in this report are defined as follows:
J indicates presence of analyte between DL (Detect Limit) and RL (Report Limit)
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicate that a quality control analyte recovery is outside of specified acceptance criteria.

GEL Laboratory Certifications EPI Laboratory Certifications

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

CERTIFICATE OF ANALYSIS

Client: Bechtel
PO Box 350
Oak Ridge, Tennessee 37831-0350
Contact: Ms. Lori Davenport
Project Description: Parris Island/PI

cc: BECH00295 Report Date: June 27, 1996

Sample ID : PI16172 GWT
Lab ID : 9606399-02
Matrix : GWT
Date Collected : 06/19/96
Date Received : 06/21/96
Priority : Rush
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M	C
General Chemistry												
BOD - 05 day	U	3.0	3.0	3	mg/l	3.0	GLW	06/21/96	1455	86280	1	1
Carbonates as CaCO3	U	1.0	1.0	1	mg/l	1.0	SDW	06/24/96	2000	86368	2	2
Hardness as CaCO3		120	1.0	1	mg/l	1.0	SDW	06/25/96	2000	86442	3	3
Bromide		0.53	0.20	0.25	mg/l	1.0	JPB	06/24/96	1500	86284	N	1
Chlorides		28.7	0.70	2.5	mg/l	10.	JPB	06/24/96	1323	86284	N	1
Fluoride		0.33	0.02	0.05	mg/l	1.0	JPB	06/24/96	1323	86284	4	1
Nitrogen, Nitrite	U	0.01	0.01	0.05	mg/l	1.0	JPB	06/22/96	0113	86285	N	1
Nitrogen, Nitrate	U	0.02	0.02	0.05	mg/l	1.0	JPB	06/24/96	1500	86284	N	1
Sulfate as SO4		50.1	0.90	10	mg/l	10.	JPB	06/24/96	1323	86284	N	1
Phosphorus, Ortho		0.23	0.01	0.05	mg/l	1.0	TSM	06/21/96	1430	86278	5	4
Sulfite	U	50.0	50.0	50	mg/l	10.	TSM	06/21/96	1310	86279	6	5
Turbidity		791	20.0	20	NTU	100	SDW	06/21/96	1720	86286	7	4
Solids, Total Dissolved		481	6.3	10	mg/l	1.0	LIB	06/24/96	1650	86314	8	6
Solids, Total Suspended		839	6.3	10	mg/l	1.0	LIB	06/24/96	1700	86309	9	6
Dissolved Organic Carbon		5.7	0.20	1	mg/l	1.0	LS	02/26/96	1430	86394	10	N
Total Organic Carbon		8.0	0.20	1	mg/l	1.0	LS	06/25/96	1130	86427	10	7
Nitrogen, Ammonia		0.36	0.02	0.10	mg/l	1.0	JHC	06/26/96	1324	86417	11	7
Phosphorus, Total as PO4	E	3.6	0.03	0.10	mg/l	1.0	JHC	06/25/96	1143	86311	12	8
Nitrogen, Total Kjeldahl	E	2.3	0.06	0.10	mg/l	1.0	JHC	06/25/96	1603	86312	13	8

M = Method	Method-Description
M 1	SM 17th 5210/EPA 405.1
M 2	SM 17th ed 2320B
M 3	EPA 215.2
M 4	EPA 300.0
M 5	EPA 365.2

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
PI16172GWT

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 66399W

Matrix: (soil/water) WATER Lab Sample ID: 9606399-02

Sample wt/vol: 20 (g/ml) ml Lab File ID: 10207

Level: (low/med) LOW Date Received: 06/21/96

% Moisture: not dec. _____ Date Analyzed: 06/25/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l		Q
74-87-3	chloromethane		2.0	U
74-83-9	bromomethane		2.0	U
75-01-4	vinyl chloride		2.0	U
75-00-3	chloroethane		2.0	U
75-09-2	methylene chloride		0.50	JB
67-64-1	acetone		10.0	U
75-15-0	carbon disulfide		5.0	U
75-35-4	1,1-dichloroethene		2.0	U
75-34-3	1,1-dichloroethane		2.0	U
156-60-5	trans-1,2-dichloroethene		0.91	J
67-66-3	chloroform		2.0	U
107-06-2	1,2-dichloroethane		2.0	U
78-93-3	2-butanone		5.0	U
71-55-6	1,1,1-trichloroethane		2.0	U
56-23-5	carbon tetrachloride		2.0	U
75-27-4	bromodichloromethane		2.0	U
78-87-5	1,2-dichloropropane		2.0	U
10061-01-5	cis-1,3-dichloropropene		2.0	U
79-01-6	trichloroethene		25.9	
124-48-1	dibromochloromethane		2.0	U
79-00-5	1,1,2-trichloroethane		2.0	U
71-43-2	benzene		2.0	U
10061-02-6	trans-1,3-dichloropropene		2.0	U
75-25-2	bromoform		2.0	U
108-10-1	4-methyl-2-pentanone		5.0	U
591-78-6	2-hexanone		5.0	U
127-18-4	tetrachloroethene		7.2	
79-34-5	1,1,2,2-tetrachloroethane		2.0	U
108-88-3	toluene		2.0	U
108-90-7	chlorobenzene		2.0	U
100-41-4	ethylbenzene		2.0	U
100-42-5	styrene		2.0	U
108-05-4	Vinyl Acetate		5.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
PI16172GWT

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 66399W

Matrix: (soil/water) WATER Lab Sample ID: 9606399-02

Sample wt/vol: 20 (g/ml) ml Lab File ID: 1O207

Level: (low/med) LOW Date Received: 06/21/96

% Moisture: not dec. _____ Date Analyzed: 06/25/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
156-59-2	cis-1,2-Dichloroethene	57.8	
1330-20-7	xylenes (total)	4.0	U

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

PI16172GWT

Lab Name: GENERAL_ENGINEERING_LABS_ Contract: BECH00295_

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 66399W

Matrix (soil/water): WATER Lab Sample ID: 9606399-02

Level (low/med): LOW__ Date Received: 06/21/96

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7440-70-2	Calcium__	32200	_		P_
7439-89-6	Iron_____	48800	_		P_
7439-95-4	Magnesium	9100	_		P_
7439-96-5	Manganese	275	_		P_
7440-09-7	Potassium	3200	_		P_
7440-23-5	Sodium___	60100	_		P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

_____

_____

_____

_____

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
PI16173GWT

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 66399W

Matrix: (soil/water) WATER Lab Sample ID: 9606399-03

Sample wt/vol: 20 (g/ml) ml Lab File ID: 10208

Level: (low/med) LOW Date Received: 06/21/96

% Moisture: not dec. _____ Date Analyzed: 06/25/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
74-87-3	chloromethane	2.0	U
74-83-9	bromomethane	2.0	U
75-01-4	vinyl chloride	2.0	U
75-00-3	chloroethane	2.0	U
75-09-2	methylene chloride	0.46	JB
67-64-1	acetone	10.0	U
75-15-0	carbon disulfide	5.0	U
75-35-4	1,1-dichloroethene	2.0	U
75-34-3	1,1-dichloroethane	2.0	U
156-60-5	trans-1,2-dichloroethene	2.0	U
67-66-3	chloroform	2.0	U
107-06-2	1,2-dichloroethane	2.0	U
78-93-3	2-butanone	5.0	U
71-55-6	1,1,1-trichloroethane	2.0	U
56-23-5	carbon tetrachloride	2.0	U
75-27-4	bromodichloromethane	2.0	U
78-87-5	1,2-dichloropropane	2.0	U
10061-01-5	cis-1,3-dichloropropene	2.0	U
79-01-6	trichloroethene	0.57	J
124-48-1	dibromochloromethane	2.0	U
79-00-5	1,1,2-trichloroethane	2.0	U
71-43-2	benzene	2.0	U
10061-02-6	trans-1,3-dichloropropene	2.0	U
75-25-2	bromoform	2.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
591-78-6	2-hexanone	5.0	U
127-18-4	tetrachloroethene	2.0	U
79-34-5	1,1,2,2-tetrachloroethane	2.0	U
108-88-3	toluene	2.0	U
108-90-7	chlorobenzene	2.0	U
100-41-4	ethylbenzene	2.0	U
100-42-5	styrene	2.0	U
108-05-4	Vinyl Acetate	5.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
PI16173GWT

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 66399W

Matrix: (soil/water) WATER Lab Sample ID: 9606399-03

Sample wt/vol: 20 (g/ml) ml Lab File ID: 1O208

Level: (low/med) LOW Date Received: 06/21/96

% Moisture: not dec. _____ Date Analyzed: 06/25/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
156-59-2	cis-1,2-Dichloroethene	2.0	U
1330-20-7	xylenes (total)	4.0	U

1000455

CHAIN OF CUSTODY RECORD

Page 1 of 2

Facility Name: MWR DRY CLEANERS
Site Name: MCRD, PARRIS ISLAND SC
Delivery Order No.: 048
Cooler/Crate No.: 125
Sampling Event:: PCE PLUME INVESTIGATION

SEIR No.: PI008 VSP 6/26/96
COC Number: ~~002 003~~ PI028
Lab: GEL
Field Logbook No.: PI-EM-003
Logbook Pg. No.: 35-38

Sampled by: C. Ehrhart (Print) C. Ehrhart (Sign) Joe Duncan (Print) Joe Duncan (Sign)

Legend — SAMPLE TYPE

PSB	Preservative Blank	BLS	Blind Spike
FDP	Field Duplicate	BLB	Blink Blank
ENV	Environmental	PTS	Point Source
FDB	Field Blank	FRP	Field Replicate
GEO	Geotechnical Sample	RSB	Rinsate Blank
MXD	Matrix Spike Duplicate	SPL	Split
MXS	Matrix Spike	TPB	Trip Blank

MATRIX

AIR	Air	SBS	Subsurface Soil (>6")	PBS	Post Burn Soil
FLO	Flora	SED	Sediment	PTW	Potable Water
FAU	Fauna	SFS	Surface Soil (0-6")	SEP	Seeps
GWT	Groundwater	SPW	Surface Water	SOL	Solid
LCH	Leachate	SLG	Sludge	WWT	Waste Water
OIL	Oil	SLW	Solid Waste	SST	Surface Water Storm Event
DIW	Deionized Water	OFW	Organic Free Water		
DFW	Deionized Organic Free Water				

QC LEVELS

- C Sample results and QC reported
- D Sample results, QC and raw data reported
- E Sample results, blanks, and calibration reported
- S Screening level analysis; sample results and as reported

Station ID	BEI Sample ID	Sample Type	Matrix Code	Collection Date/Time	Container ID	Preservative	Pay Item	Parameter	Priority	QC Code
800600-7	PI16174	ENV	GWT	6/24/96 1020	PI1617401	HCL	1.99	TCL Vol.	7	C
"	↓	↓	↓	" "	PI1617402	HCL	1.99	↓	↓	↓
"	↓	↓	↓	" "	PI1617403	HCL	1.99	↓	↓	↓
800800-7	PI16175	↓	↓	6/25/96-1327	PI1617501	↓	↓	TCL Vol	↓	↓
↓	↓	↓	↓	~~6/25/96-1327~~	~~PI1617502~~	↓	↓	↓	↓	↓
↓	↓	↓	↓	6/25/96-1327	PI1617503	↓	↓	↓	↓	↓

RELINQUISHED BY	RECEIVED BY	DATE	TIME	REASON FOR TRANSFER
Joe Duncan	FedEx	6/25/96	14:30	SHIP TO LAB
	R Dorrough	6/26/96	0845	

COMMENTS/INSTRUCTIONS
INSUFFICIENT SAMPLE VOLUME TO FILL PI16175Ø2.

CONTAMINATION	YES	NO
Radiological		X
Chemical	X	

Shipper:

Ship to:

Airbill No. _____ Traffic Report No. _____

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s. UN2910

Temp 10°C

CHAIN OF CUSTODY RECORD (Continued)

Station ID	BEI Sample ID	Sample Type	Matrix Code	Collection Date/Time	Container ID	Preservative	Pay Item	Parameter	Priority	QC Level
~~XX~~	PI1617S	ENV	GWT	25Jun96/1143	PI1617504	HNO_3	4.31	METALS	7	C
XX600-7				25Jun/1217	PI1617505	NONE	5.15	BOD		
				25Jun/1207	PI1617506	CARBONATE, TSS, TURB	5.109, 5.143, 5.113	NONE		
				25Jun/1157	PI1617507	EDTA	5.101	SULFITES		
				25Jun/1153	PI1617508	NONE	5.108	TDS		
				25Jun/1145	PI1617509	H_2SO_4	5.38	HARDNESS		
				25Jun/1146	PI1617510	NONE	5.17	IONS		
				25Jun/1136	PI1617511	~~ORTHO PO~~ NONE POL	5.85	ORTHO PO4		
				25Jun/1128	PI1617512	NONE	5.52	DOC		
				25Jun/1133	PI1617513	H_2SO_4	5.45, 5.12, 5.47, 5.52	TOC, TKN, NH_3, PO4		

NAVY RAC PROJECT 22567.4

BECHTEL ID NUMBER: 001-0213-002-01

SC/FO | SEQ | SHT | SUBMT

CONTRACT COMPLIANCE SCREEN AND DATA ASSESSMENT SUMMARY

FACILITY ID: Parris Island
DELIVERY ORDER: 048
SITE ID: MWR Dry Cleaners Phase II Sampling
SEIR ID: PI.008
COC #: PI028
DATE: 7-12-96
REVIEWER: Wayne E. Tewery
LABORATORY: GEL
SUPPLIER DOCUMENT NO. 145-0001-0213-2-1
MATRIX: Groundwater
SAMPLE ID's: PI16174 & PI16175

DATE(s) OF SAMPLE COLLECTION:
CHARGE NUMBER: 22567-145-139918
NUMBER OF HOURS CHARGED TO REVIEW DATA PACKAGE: 2
LEVEL OF REVIEW: C ✓ D ____ Other ____

PARAMETERS: VOC ✓ BNA ____ PEST/PCB ____ MERCURY ____ METALS ✓
CN ____ TPH ____ SULFIDE ✓ TOX ✓ TSS/TDS ✓ GEOTECH ____ RAD ____
OTHER ✓

I. COMPLETENESS/COMPARABILITY

A. Are all deliverables specified by the QC Level on the COC present? yes
(QC level descriptions can be found in the subcontract Technical Specification)
B. Are forms properly completed and legible? yes
C. Were all requested analyses performed by the laboratory? Yes
(Please attach completeness report from BEIDMS)
D. Were the requested analytical methods used for sample analysis? Yes

II. TURN-AROUND TIME

Date samples submitted to lab	6-25-96	Date samples received by lab	6-26-96
Priority level specified for FAX	7 day	Priority level specified for hard copy	15 day
Due date of FAX	7-3-96	Due date of data transmittal	7-12-96 *
Date of FAX transmittal	7-3-96	Date of data transmittal	7-11-96
Was turnaround time met for FAX	yes	Was turnaround time met for data transmittal	yes
Number of days late	0	Number of days late	0

* Allows for July 4th holiday.

III. HOLDING TIMES

Were all samples extracted and analyzed within specified holding times? Yes

IV. COMMENTS

The samples were received at 10°C, therefore the VOA compounds (gases) that would be most affected will be conservatively J/UJ qualified

V. DATA ASSESSMENT SUMMARY

1. VOLATILE ORGANICS BY GC/MS

1. Were samples analyzed within technical holding times?

✓ Yes ___ No

Comments: _____

2. Were all BFB tunes compliant?

✓ Yes ___ No

Comments: _____

3. Were all initial calibration criteria compliant (minimum RF and % RSDs)?

✓ Yes ___ No

Comments: The RSD's for target compounds were within QC limits.

4. Were all continuing calibration criteria compliant (minimum RF and %Ds)?

___ Yes ✓ No

Comments: The %D's of chloromethane, bromomethane and vinyl acetate were outside QC limits, therefore associated results will be J/UJ qualified.

5. Were all surrogate recoveries compliant?

✓ Yes ___ No

Comments: _____

6. Were internal standards compliant?

✓ Yes ___ No

Comments: _____

7. Were target compounds detected in the method blank(s)?

✓ Yes ___ No

Comments: Methylene chloride was detected in the method blank at 0.7 mg/L

8. Were compounds detected in the method blank also detected in associated samples at levels less than 5 times the blank concentration (for non-common lab contaminants) or less than 10 times the blank concentration (for common lab contaminants)?

___ Yes ___ No ✓ N/A

Comments: _____

9. Were MS/MSD recoveries and RPDs within the recommended quality control limits?

✓ Yes ___ No ___ N/A

Comments: _____

10. Were duplicate RPDs, for lab and/or field duplicates, within the recommended quality control limits?

___ Yes ___ No ✓ N/A

Comments: _____

11. Were LCS recoveries within the recommended recovery windows?

___ Yes ✓ No ___ N/A

Comments: The LCS recoveries of chloromethane, bromomethane and vinyl acetate were outside method QC limits, therefore associated results will be J/UJ qualified.

Additional Comments: _____

2. ORGANICS BY GC

Analytes Evaluated: _____

1. Were samples analyzed within technical holding times?

___ Yes ___ No ___ N/A

Comments: _____

2. Were all initial calibration criteria compliant (minimum RF and % RSDs)?

___ Yes ___ No

Comments: _____

3. Were all continuing calibration criteria compliant (minimum RF and %Ds)?

___ Yes ___ No

Comments: _____

4. Were all surrogate recoveries compliant?

___ Yes ___ No ___ N/A

Comments: _____

5. Were internal standards compliant?

____ Yes ____ No ____ N/A

Comments: _____

6. Were target compounds detected in the method blank(s)?

____ Yes ____ No

Comments: _____

7. Were compounds detected in the method blank also detected in associated samples at levels less than 5 times the blank concentration (for non-common lab contaminants) or less than 10 times the blank concentration (for common lab contaminants)?

____ Yes ____ No ____ N/A

Comments: _____

8. Were MS/MSD recoveries and RPDs within the recommended quality control limits?

____ Yes ____ No ____ N/A

Comments: _____

9. Were duplicate RPDs, for lab and/or field duplicates, within the recommended quality control limits?

____ Yes ____ No ____ N/A

Comments: _____

10. Were LCS recoveries within the recommended recovery windows?

____ Yes ____ No ____ N/A

Comments: _____

Additional Comments: _____

3. SEMIVOLATILES BY GC/MS

1. Were samples extracted and/or analyzed within technical holding times?

____ Yes ____ No

Comments: _____

2. Were all DFTPP tunes compliant?

____ Yes ____ No ____ N/A

Comments: _____

3. Were all initial calibration criteria compliant (minimum RF and % RSDs)?

____ Yes ____ No

Comments: _____

4. Were all continuing calibration criteria compliant (minimum RF and %Ds)?

___ Yes ____ No

Comments: _____

5. Were all surrogate recoveries compliant?

____ Yes ____ No

Comments: _____

6. Were internal standards compliant?

____ Yes ____ No

Comments: _____

7. Were target compounds detected in the method blank(s)?

____ Yes ____ No

Comments: _____

_____

_____

8. Were compounds detected in the method blank also detected in associated samples at levels less than 5 times the blank concentration (for non-common lab contaminants) or less than 10 times the blank concentration (for common lab contaminants)?

____ Yes ____ No ____ N/A

Comments: _____

_____

_____

9. Were MS/MSD recoveries and RPDs within the recommended quality control limits?

____ Yes ____ No

Comments: _____

_____

_____

10. Were duplicate RPDs, for lab and/or field duplicates, within the recommended quality control limits?

____ Yes ____ No ____ N/A

Comments: _____

_____

_____

11. Were LCS recoveries within the recommended recovery windows?

____ Yes ____ No ____ N/A

Comments: _____

_____

_____

Additional Comments: _____

_____

_____

_____

_____

4. PEST/PCB'S BY GC

1. Were samples extracted and/or analyzed within technical holding times?

____ Yes ____ No

Comments: _____

_____

_____

2. Were all initial calibration criteria compliant (minimum RF and % RSDs)?

____ Yes ____ No

Comments: _____

_____

_____

3. Were all continuing calibration criteria compliant (minimum RF and %Ds)?

____ Yes ____ No

Comments: _____

_____

_____

4. Were all surrogate recoveries compliant?

____ Yes ____ No

Comments: _____

_____

_____

5. Were target compounds detected in the method blank(s)?

____ Yes ____ No

Comments: _____

_____

_____

6. Were compounds detected in the method blank also detected in the associated sample at levels less than 5 times the blank concentration?

____ Yes ____ No ____ N/A

Comments: _____

_____

_____

7. Were MS/MSD recoveries and RPD's within the recommended quality control limits?

____ Yes ____ No

Comments: _____

_____

_____

8. Were duplicate RPDs, for lab and/or field duplicates, within the recommended quality control limits?

___ Yes ___ No ___ N/A

Comments: _____

9. Were LCS recoveries within the recommended recovery windows?

___ Yes ___ No ___ N/A

Comments: _____

Additional Comments: _____

5. METALS AND MERCURY

1. Were samples analyzed within technical holding times?

✓ Yes ___ No

Comments: _____

2. Were all initial calibration criteria compliant?

✓ Yes ___ No

3. Were all continuing calibration verification criteria compliant:

✓ Yes ___ No

Comments: _____

4. Were target compounds detected in the method blank(S) at levels greater than the IDL?

___ Yes ✓ No

Comments: _____

5. Were compounds detected in the method blank also detected in associated samples at levels less than 5 times the blank concentration?

___ Yes ___ No ✓ N/A

Comments: _____

6. Were MS/MSD recoveries and duplicate RPD's within the recommended quality control limits?

✓ Yes ___ No

Comments: _____

7. Were duplicate RPDs, for lab and/or field duplicates, within the recommended quality control limits?

✓ Yes ___ No ___ N/A

Comments: _____

8. Were LCS recoveries within the recommended recovery windows?

✓ Yes ___ No

Comments: _____

Additional Comments: The initial and final CRDL recoveries of Mg and Na were outside QC limits, however no action was taken

6. CYANIDE AND MISCELLANEOUS WET CHEMISTRY ANALYSES

Analyses Evaluated:

BOD	Carbonates	DOC/TOC
Hardness	NH_3	Phosphorus (o-and total)
Sulfate/sulfite	TDS/TSS	TKN
Turbidity	Ions	

1. Was sample prepared and/or analyzed within technical holding times?

✓ Yes ___ No

Comments: _____

2. Were initial calibration criteria compliant?

✓ Yes ___ No ___ N/A

Comments: _____

3. Were continuing calibration criteria compliant?

✓ Yes ___ No ___ N/A

Comments: _____

4. Were all surrogate recoveries compliant?

___ Yes ___ No ✓ N/A

Comments: _____

5. Were target compounds detected in the method blank(s)?

___ Yes ✓ No

Comments: _____

6. Were compounds detected in the method blank also detected in associated sample(s) at a concentration less than 5 times the blank concentration?

___ Yes ___ No ✓ N/A

Comments: _____

7. Were MS/MSD recoveries and RPD's within the recommended quality control limits?

✓ Yes ___ No ___ N/A

Comments: _____

CONTRACT COMPLIANCE SCREEN AND DATA ASSESSMENT SUMMARY

8. Were duplicate RPDs, for lab and/or field duplicates, within the recommended quality control limits?

✓ Yes ___ No

Comments: _____

9. Were LCS recoveries within the recommended recovery limits?

✓ Yes ___ No ___ N/A

Comments: _____

Additional Comments: _____

7. **OVERALL DATA ASSESSMENTS:** The data was acceptable, and only minor qualification was necessary.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
PI16174GWT

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 66455W

Matrix: (soil/water) WATER Lab Sample ID: 9606455-01

Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P109

Level: (low/med) LOW Date Received: 06/26/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
74-87-3	chloromethane	2.0	U
74-83-9	bromomethane	2.0	U
75-01-4	vinyl chloride	2.0	U
75-00-3	chloroethane	2.0	U
75-09-2	methylene chloride	5.0	U
67-64-1	acetone	10.0	U
75-15-0	carbon disulfide	5.0	U
75-35-4	1,1-dichloroethene	2.0	U
75-34-3	1,1-dichloroethane	2.0	U
156-60-5	trans-1,2-dichloroethene	2.0	U
67-66-3	chloroform	2.0	U
107-06-2	1,2-dichloroethane	2.0	U
78-93-3	2-butanone	5.0	U
71-55-6	1,1,1-trichloroethane	2.0	U
56-23-5	carbon tetrachloride	2.0	U
75-27-4	bromodichloromethane	2.0	U
78-87-5	1,2-dichloropropane	2.0	U
10061-01-5	cis-1,3-dichloropropene	2.0	U
79-01-6	trichloroethene	2.0	U
124-48-1	dibromochloromethane	2.0	U
79-00-5	1,1,2-trichloroethane	2.0	U
71-43-2	benzene	2.0	U
10061-02-6	trans-1,3-dichloropropene	2.0	U
75-25-2	bromoform	2.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
591-78-6	2-hexanone	5.0	U
127-18-4	tetrachloroethene	2.0	U
79-34-5	1,1,2,2-tetrachloroethane	2.0	U
108-88-3	toluene	2.0	U
108-90-7	chlorobenzene	2.0	U
100-41-4	ethylbenzene	0.13	J
100-42-5	styrene	2.0	U
108-05-4	Vinyl Acetate	5.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PI16174GWT

ɔ Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 66455W

Matrix: (soil/water) WATER Lab Sample ID: 9606455-01

Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P109

Level: (low/med) LOW Date Received: 06/26/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
156-59-2	cis-1,2-Dichloroethene	2.0	U
1330-20-7	xylenes (total)	4.0	U

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

CERTIFICATE OF ANALYSIS

Client: Bechtel
PO Box 350
Oak Ridge, Tennessee 37831-0350
Contact: Ms. Lori Davenport
Project Description: Parris Island/PI

cc: BECH00295 Report Date: July 03, 1996

Sample ID	: 9606455-03 DL1 PI16175 GWT
Lab ID	: 9606455-04
Matrix	: GWT
Date Collected	: 06/17/96
Date Received	: 06/26/96
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M	C
General Chemistry												
Dissolved Organic Carbon		136	0.80	5	mg/l	5.0	LS	02/26/96	1430	86394	1	N
Total Organic Carbon		176	1.5	10	mg/l	10.	LS	06/26/96	1430	86486	1	1
Nitrogen, Ammonia		5.2	0.09	0.25	mg/l	5.0	JHC	06/26/96	1712	86417	2	N
Phosphorus, Total as PO4		8.2	0.30	0.50	mg/l	10.	JHC	07/01/96	1811	86645	3	N
Nitrogen, Total Kjeldahl		9.6	0.60	1	mg/l	10.	JHC	07/01/96	2025	86647	4	N

M = Method	Method-Description
M 1	EPA 415.1
M 2	EPA 350.1
M 3	EPA 365.4
M 4	EPA 351.2

C = Container	Lab. Container ID	Reference ID
C 1	9606455-04.02	PI1617513

Notes:
The qualifiers in this report are defined as follows:
J indicates presence of analyte between DL (Detect Limit) and RL (Report Limit)
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicate that a quality control analyte recovery is outside of specified acceptance criteria.

7

19

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

CERTIFICATE OF ANALYSIS

NAVY RAC PROJECT 22567-145
BECHTEL ID NUMBER:
001-0213-002-01
SC/PO SEQ SHT SUBMTL

Client: Bechtel
PO Box 350
Oak Ridge, Tennessee 37831-0350
Contact: Ms. Lori Davenport
Project Description: Parris Island/PI

cc: BECH00295 Report Date: July 03, 1996

Sample ID : PI16175 GWT
Lab ID : 9606455-03
Matrix : GWT
Date Collected : 06/25/96
Date Received : 06/26/96
Priority : Rush
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M	C
General Chemistry												
BOD - 05 day		8.9	1.0	1	mg/l	1.0	GLW	06/26/96	1550	86497	1	1
Carbonates as CaCO3	U	1.0	1.0	1	mg/l	1.0	SDW	06/26/96	1930	86504	2	2
Hardness as CaCO3		206	1.0	1	mg/l	1.0	TSM	06/28/96	1320	86616	3	3
Bromide		1.3	0.80	1.2	mg/l	5.0	TLD	07/01/96	1628	86685	4	4
Chlorides		10.2	0.40	1.2	mg/l	5.0						
Fluoride	U	0.10	0.10	0.25	mg/l	5.0						
Nitrogen, Nitrite	U	0.01	0.01	0.05	mg/l	1.0	JPB	06/27/96	1203	86510	4	4
Nitrogen, Nitrate		0.05	0.02	0.05	mg/l	1.0						
Sulfate as SO4		1.0	0.09	1	mg/l	1.0						
Phosphorus, Ortho		0.16	0.01	0.05	mg/l	1.0	SDW	06/26/96	1600	86503	5	5
Sulfite	U	5.0	5.0	5	mg/l	1.0	JEN	06/26/96	1130	86485	6	6
Turbidity		258	2.0	2	NTU	10.	SDW	06/26/96	1830	86502	7	6
Solids, Total Dissolved		1200	6.3	10	mg/l	1.0	LIB	06/27/96	1300	86536	8	7
Solids, Total Suspended		3740	6.3	10	mg/l	1.0	LIB	06/27/96	1020	86530	9	7
Dissolved Organic Carbon	E	107	0.20	1	mg/l	1.0	LS	02/26/96	1430	86394	10	N
Total Organic Carbon	E	114	0.20	1	mg/l	1.0	LS	06/26/96	1430	86486	10	8
Nitrogen, Ammonia	E	3.5	0.02	0.10	mg/l	1.0	JHC	06/26/96	1712	86417	11	8
Phosphorus, Total as PO4	E	3.6	0.03	0.10	mg/l	1.0	JHC	07/01/96	1656	86645	12	8
Nitrogen, Total Kjeldahl	E	2.3	0.06	0.10	mg/l	1.0	JHC	07/01/96	2024	86647	13	8

The following prep procedures were performed:

ICP	FGD	06/27/96	1530	86550	14

M = Method	Method-Description
M 1	SM 17th 5210/EPA 405.1

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
PI16175GWT

b Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 66455W

Matrix: (soil/water) WATER Lab Sample ID: 9606455-02

Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P106

Level: (low/med) LOW Date Received: 06/26/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
74-87-3	chloromethane	2.0	U
74-83-9	bromomethane	2.0	U
75-01-4	vinyl chloride	2.0	U
75-00-3	chloroethane	2.0	U
75-09-2	methylene chloride	5.0	U
67-64-1	acetone	16.7	
75-15-0	carbon disulfide	5.0	U
75-35-4	1,1-dichloroethene	2.0	U
75-34-3	1,1-dichloroethane	2.0	U
156-60-5	trans-1,2-dichloroethene	0.77	J
67-66-3	chloroform	2.0	U
107-06-2	1,2-dichloroethane	2.0	U
78-93-3	2-butanone	5.0	U
71-55-6	1,1,1-trichloroethane	2.0	U
56-23-5	carbon tetrachloride	2.0	U
75-27-4	bromodichloromethane	2.0	U
78-87-5	1,2-dichloropropane	2.0	U
10061-01-5	cis-1,3-dichloropropene	2.0	U
79-01-6	trichloroethene	2.0	U
124-48-1	dibromochloromethane	2.0	U
79-00-5	1,1,2-trichloroethane	2.0	U
71-43-2	benzene	5.0	
10061-02-6	trans-1,3-dichloropropene	2.0	U
75-25-2	bromoform	2.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
591-78-6	2-hexanone	5.0	U
127-18-4	tetrachloroethene	1.3	J
79-34-5	1,1,2,2-tetrachloroethane	2.0	U
108-88-3	toluene	1.8	J
108-90-7	chlorobenzene	2.0	U
100-41-4	ethylbenzene	2.7	
100-42-5	styrene	2.0	U
108-05-4	Vinyl Acetate	5.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PI16175GWT

b Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 66455W

Matrix: (soil/water) WATER Lab Sample ID: 9606455-02

Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P106

Level: (low/med) LOW Date Received: 06/26/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
156-59-2	cis-1,2-Dichloroethene	44.8	
1330-20-7	xylenes (total)	4.0	U

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

PI16175GWT

Lab Name: GENERAL_ENGINEERING_LABS_ Contract: BECH00295_

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 66455W

Matrix (soil/water): WATER Lab Sample ID: 9606455-03

Level (low/med): LOW__ Date Received: 06/26/96

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7440-70-2	Calcium	73800			P
7439-89-6	Iron	195000			P
7439-95-4	Magnesium	22100			P
7439-96-5	Manganese	422			P
7440-09-7	Potassium	7910			P
7440-23-5	Sodium	13000			P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

FORM I - IN ILM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PI16175GWT

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 67002W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9606455-02

Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P106

Level: (low/med) LOW Date Received: 06/26/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
74-87-3	chloromethane	2.0	U
74-83-9	bromomethane	2.0	U
75-01-4	vinyl chloride	2.0	U
75-00-3	chloroethane	2.0	U
75-09-2	methylene chloride	5.0	U
67-64-1	acetone	16.7	
75-15-0	carbon disulfide	5.0	U
75-35-4	1,1-dichloroethene	2.0	U
75-34-3	1,1-dichloroethane	2.0	U
156-60-5	trans-1,2-dichloroethene	0.77	J
67-66-3	chloroform	2.0	U
107-06-2	1,2-dichloroethane	2.0	U
78-93-3	2-butanone	5.0	U
71-55-6	1,1,1-trichloroethane	2.0	U
56-23-5	carbon tetrachloride	2.0	U
75-27-4	bromodichloromethane	2.0	U
78-87-5	1,2-dichloropropane	2.0	U
10061-01-5	cis-1,3-dichloropropene	2.0	U
79-01-6	trichloroethene	2.0	U
124-48-1	dibromochloromethane	2.0	U
79-00-5	1,1,2-trichloroethane	2.0	U
71-43-2	benzene	5.0	
10061-02-6	trans-1,3-dichloropropene	2.0	U
75-25-2	bromoform	2.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
591-78-6	2-hexanone	5.0	U
127-18-4	tetrachloroethene	1.3	J
79-34-5	1,1,2,2-tetrachloroethane	2.0	U
108-88-3	toluene	1.8	J
108-90-7	chlorobenzene	2.0	U
100-41-4	ethylbenzene	2.7	
100-42-5	styrene	2.0	U
108-05-4	Vinyl Acetate	5.0	U

Station ID 600G00-7

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PI16175GWT

ab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 67002W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9606455-02

Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P106

Level: (low/med) LOW Date Received: 06/26/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
156-59-2	cis-1,2-Dichloroethene	44.8	
1330-20-7	xylenes (total)	4.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PI16175GWTMS

ab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 67002W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: QC368698

Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P107

Level: (low/med) LOW Date Received: 06/26/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
74-87-3	chloromethane	2.0	U
74-83-9	bromomethane	2.0	U
75-01-4	vinyl chloride	2.0	U
75-00-3	chloroethane	2.0	U
75-09-2	methylene chloride	19.4	B
67-64-1	acetone	10.0	U
75-15-0	carbon disulfide	5.0	U
75-35-4	1,1-dichloroethene	23.4	
75-34-3	1,1-dichloroethane	22.3	
156-60-5	trans-1,2-dichloroethene	23.0	
67-66-3	chloroform	20.5	
107-06-2	1,2-dichloroethane	18.9	
78-93-3	2-butanone	5.0	U
71-55-6	1,1,1-trichloroethane	21.9	
56-23-5	carbon tetrachloride	21.2	
75-27-4	bromodichloromethane	19.6	
78-87-5	1,2-dichloropropane	20.1	
10061-01-5	cis-1,3-dichloropropene	20.0	
79-01-6	trichloroethene	20.7	
124-48-1	dibromochloromethane	18.2	
79-00-5	1,1,2-trichloroethane	18.9	
71-43-2	benzene	22.7	
10061-02-6	trans-1,3-dichloropropene	18.6	
75-25-2	bromoform	19.7	
108-10-1	4-methyl-2-pentanone	0.88	J
591-78-6	2-hexanone	1.8	J
127-18-4	tetrachloroethene	20.0	
79-34-5	1,1,2,2-tetrachloroethane	21.2	
108-88-3	toluene	20.4	
108-90-7	chlorobenzene	19.1	
100-41-4	ethylbenzene	22.1	
100-42-5	styrene	19.5	
108-05-4	Vinyl Acetate	5.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PI16175GWTMS

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 67002W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: QC368698

Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P107

Level: (low/med) LOW Date Received: 06/26/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
156-59-2	cis-1,2-Dichloroethene	59.1	
1330-20-7	xylenes (total)	4.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PI16175GWTMSD

ab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 67002W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: QC368699

Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P108

Level: (low/med) LOW Date Received: 06/26/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
74-87-3	chloromethane	2.0	U
74-83-9	bromomethane	2.0	U
75-01-4	vinyl chloride	2.0	U
75-00-3	chloroethane	2.0	U
75-09-2	methylene chloride	17.8	B
67-64-1	acetone	10.0	U
75-15-0	carbon disulfide	5.0	U
75-35-4	1,1-dichloroethene	21.6	
75-34-3	1,1-dichloroethane	22.0	
156-60-5	trans-1,2-dichloroethene	21.6	
67-66-3	chloroform	20.1	
107-06-2	1,2-dichloroethane	19.5	
78-93-3	2-butanone	5.0	U
71-55-6	1,1,1-trichloroethane	20.6	
56-23-5	carbon tetrachloride	19.7	
75-27-4	bromodichloromethane	19.1	
78-87-5	1,2-dichloropropane	20.6	
10061-01-5	cis-1,3-dichloropropene	20.3	
79-01-6	trichloroethene	19.2	
124-48-1	dibromochloromethane	19.6	
79-00-5	1,1,2-trichloroethane	20.8	
71-43-2	benzene	21.5	
10061-02-6	trans-1,3-dichloropropene	19.8	
75-25-2	bromoform	22.2	
108-10-1	4-methyl-2-pentanone	1.2	J
591-78-6	2-hexanone	2.6	J
127-18-4	tetrachloroethene	19.2	
79-34-5	1,1,2,2-tetrachloroethane	25.3	
108-88-3	toluene	20.7	
108-90-7	chlorobenzene	19.3	
100-41-4	ethylbenzene	23.0	
100-42-5	styrene	2.0	U
108-05-4	Vinyl Acetate	5.0	U

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ab Name: GENERAL ENGINEERING LABOR Contract: NA

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Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P108

Level: (low/med) LOW Date Received: 06/26/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
156-59-2	cis-1,2-Dichloroethene	65.5	
1330-20-7	xylenes (total)	4.0	U

CHAIN OF CUSTODY RECORD

Facility Name: MWR DRY CLEANERS
Site Name: MCRD PARRIS ISLAND SC
Delivery Order No.: 048
Cooler/Crate No.: 175
Sampling Event:: PCE PLUME INVESTIGATION

SEIR No.: PI-008
COC Number: C.O.C - PI - 029
Lab: GENERAL ENGINEERING LABORATORY
Field Logbook No.: PI-BH-003
Logbook Pg. No.: 44

Sampled by: JOE DUNCAN (Print) / JW Duncan (Sign) ____ (Print) ____ (Sign)

Legend

SAMPLE TYPE

PSB	Preservative Blank	BLS	Blind Spike
FDP	Field Duplicate	BLB	Blink Blank
ENV	Environmental	PTS	Point Source
FDB	Field Blank	FRP	Field Replicate
GEO	Geotechnical Sample	RSB	Rinsate Blank
MXD	Matrix Spike Duplicate	SPL	Split
MXS	Matrix Spike	TPB	Trip Blank

MATRIX

AIR	Air	SBS	Subsurface Soil (>6")	PBS	Post Burn Soil
FLO	Flora	SED	Sediment	PTW	Potable Water
FAU	Fauna	SFS	Surface Soil (0-6")	SEP	Seeps
GWT	Groundwater	SPW	Surface Water	SOL	Solid
LCH	Leachate	SLG	Sludge	WWT	Waste Water
OIL	Oil	SLW	Solid Waste	SST	Surface Water Storm Event
DIW	Deionized Water	OFW	Organic Free Water		
DFW	Deionized Organic Free Water				

QC LEVELS

C Sample results and QC reported
D Sample results, QC and raw data reported
E Sample results, blanks, and calibration reported
S Screening level analysis; sample results and as reported

Station ID	BEI Sample ID	Sample Type	Matrix Code	Collection Date/Time	Container ID	Preservative	Pay Item	Parameter	Priority	QC Code
010J05	PI16176	ENV	GWT	28JUN96/0915	-01,-02,-03	HCl, 4°C	1.49	TCL VOLATILES	7 DAY	C
11H14-14	PI16177	ENV	GWT	28JUN96/1412	-01,-02,-03	HCl, 4°C	↓	↓	↓	↓
11H14-28	PI16178	ENV	GWT	28JUN/1413	-01,-02,-03	HCl, 4°C				
11H14-36	PI16179	ENV	GWT	28JUN/1540	-01,-02,-03	HCl, 4°C				

RELINQUISHED BY	RECEIVED BY	DATE	TIME	REASON FOR TRANSFER
JW Duncan		1600	28JUN96	SHIP TO LAB
	R Donnelly	0845	7-01-96	

COMMENTS/INSTRUCTIONS
NO TRIP BLANKS AVAILABLE

CONTAMINATION	YES	NO
Radiological		X
Chemical	X	

Shipper: FEDERAL EXPRESS
Ship to: GEL

Airbill No. ____ Traffic Report No. ____

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s. UN2910

CONTRACT COMPLIANCE SCREEN AND DATA ASSESSMENT SUMMARY

FACILITY ID: Pam's Island
DELIVERY ORDER: 048
SITE ID: MWR Dry Cleaners Phase II Sampling
SEIR ID: PI.008
COC #: PI029
DATE: 7-9-96
REVIEWER:
LABORATORY: GEL 2
SUPPLIER DOCUMENT NO. 22567-145-0001-0212-002-01
MATRIX: Groundwater
SAMPLE ID's: PI16176, PI16177, PI16178, PI16179

DATE(s) OF SAMPLE COLLECTION: 6-28-96
CHARGE NUMBER: 22567-145-139918
NUMBER OF HOURS CHARGED TO REVIEW DATA PACKAGE:
LEVEL OF REVIEW: C ✓ D ____ Other ____

PARAMETERS: VOC ✓ BNA ____ PEST/PCB ____ MERCURY ____ METALS ____
CN ____ TPH ____ SULFIDE ____ TOX ____ TSS/TDS ____ GEOTECH ____ RAD ____

I. COMPLETENESS/COMPARABILITY

A. Are all deliverables specified by the QC Level on the COC present? ____
(QC level descriptions can be found in the subcontract Technical Specification)
B. Are forms properly completed and legible? ____
C. Were all requested analyses performed by the laboratory? ____
(Please attach completeness report from BEIDMS)
D. Were the requested analytical methods used for sample analysis? ____

II. TURN-AROUND TIME

Date samples submitted to lab	6-28-96	Date samples received by lab	7-1-96
Priority level specified for FAX	7 day	Priority level specified for hard copy	15 day
Due date of FAX	7-9-96	Due date of data transmittal	7-19-96 *
Date of FAX transmittal	7-2-96	Date of data transmittal	7-5-96
Was turnaround time met for FAX	yes	Was turnaround time met for data transmittal	yes
Number of days late	0	Number of days late	0

Allows for July 4th holiday

III. HOLDING TIMES

Were all samples extracted and analyzed within specified holding times? yes

IV. COMMENTS

V. DATA ASSESSMENT SUMMARY

1. VOLATILE ORGANICS BY GC/MS

1. Were samples analyzed within technical holding times?

✓ Yes ___ No

Comments: 7/1/96

2. Were all BFB tunes compliant?

✓ Yes ___ No

Comments:

3. Were all initial calibration criteria compliant (minimum RF and % RSDs)?

✓ Yes ___ No RSD

Comments: All compounds RRF < 30% and RRF 70.1.

4. Were all continuing calibration criteria compliant (minimum RF and %Ds)?

___ Yes ___ No

Comments: All SPCC/CCC RF and %D acceptable. Other compounds outside 20%D include: Trichlorofluoromethane, acrolein, acetonitrile, tert-butylbenzene, pentachloroethane, dibromodifluoromethane, chloromethane, bromomethane, allyl chloride, vinyl acetate

5. Were all surrogate recoveries compliant?

✓ Yes ___ No

Comments: _____

6. Were internal standards compliant?

✓ Yes ___ No

Comments: _____

7. Were target compounds detected in the method blank(s)?

✓ Yes ___ No

Comments: VBLK01 (7/1/96) MeCl$_2$ @ 0.7

8. Were compounds detected in the method blank also detected in associated samples at levels less than 5 times the blank concentration (for non-common lab contaminants) or less than 10 times the blank concentration (for common lab contaminants)?

✓ Yes ___ No ___ N/A

Comments: P116176, 16178, 16179

9. Were MS/MSD recoveries and RPDs within the recommended quality control limits?

✓ Yes ___ No ___ N/A

Comments: _____

10. Were duplicate RPDs, for lab and/or field duplicates, within the recommended quality control limits?

___ Yes ___ No ✓ N/A

Comments: _____

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EPA SAMPLE NO.

PI16176GWT

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 67002W

Matrix: (soil/water) WATER Lab Sample ID: 9607002-01

Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P110

Level: (low/med) LOW Date Received: 07/01/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
74-87-3	chloromethane	2.0	U
74-83-9	bromomethane	2.0	U
75-01-4	vinyl chloride	2.0	U
75-00-3	chloroethane	2.0	U
75-09-2	methylene chloride	1.0	BJ
67-64-1	acetone	10.0	U
75-15-0	carbon disulfide	5.0	U
75-35-4	1,1-dichloroethene	2.0	U
75-34-3	1,1-dichloroethane	2.0	U
156-60-5	trans-1,2-dichloroethene	2.0	U
67-66-3	chloroform	2.0	U
107-06-2	1,2-dichloroethane	2.0	U
78-93-3	2-butanone	5.0	U
71-55-6	1,1,1-trichloroethane	2.0	U
56-23-5	carbon tetrachloride	2.0	U
75-27-4	bromodichloromethane	2.0	U
78-87-5	1,2-dichloropropane	2.0	U
10061-01-5	cis-1,3-dichloropropene	2.0	U
79-01-6	trichloroethene	9.9	
124-48-1	dibromochloromethane	2.0	U
79-00-5	1,1,2-trichloroethane	2.0	U
71-43-2	benzene	2.0	U
10061-02-6	trans-1,3-dichloropropene	2.0	U
75-25-2	bromoform	2.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
591-78-6	2-hexanone	5.0	U
127-18-4	tetrachloroethene	2.2	
79-34-5	1,1,2,2-tetrachloroethane	2.0	U
108-88-3	toluene	2.0	U
108-90-7	chlorobenzene	2.0	U
100-41-4	ethylbenzene	2.0	U
100-42-5	styrene	2.0	U
108-05-4	Vinyl Acetate	5.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PI16176GWT

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 67002W

Matrix: (soil/water) WATER Lab Sample ID: 9607002-01

Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P110

Level: (low/med) LOW Date Received: 07/01/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
156-59-2	cis-1,2-Dichloroethene	1.9	J
1330-20-7	xylenes (total)	4.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PI16177GWT

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 67002W

Matrix: (soil/water) WATER Lab Sample ID: 9607002-02

Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P111

Level: (low/med) LOW Date Received: 07/01/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
74-87-3	chloromethane	2.0	U
74-83-9	bromomethane	2.0	U
75-01-4	vinyl chloride	2.0	U
75-00-3	chloroethane	2.0	U
75-09-2	methylene chloride	5.0	U
67-64-1	acetone	10.0	U
75-15-0	carbon disulfide	5.0	U
75-35-4	1,1-dichloroethene	2.0	U
75-34-3	1,1-dichloroethane	2.0	U
156-60-5	trans-1,2-dichloroethene	2.0	U
67-66-3	chloroform	2.0	U
107-06-2	1,2-dichloroethane	2.0	U
78-93-3	2-butanone	5.0	U
71-55-6	1,1,1-trichloroethane	2.0	U
56-23-5	carbon tetrachloride	2.0	U
75-27-4	bromodichloromethane	2.0	U
78-87-5	1,2-dichloropropane	2.0	U
10061-01-5	cis-1,3-dichloropropene	2.0	U
79-01-6	trichloroethene	2.9	
124-48-1	dibromochloromethane	2.0	U
79-00-5	1,1,2-trichloroethane	2.0	U
71-43-2	benzene	2.0	U
10061-02-6	trans-1,3-dichloropropene	2.0	U
75-25-2	bromoform	2.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
591-78-6	2-hexanone	5.0	U
127-18-4	tetrachloroethene	6.2	
79-34-5	1,1,2,2-tetrachloroethane	2.0	U
108-88-3	toluene	2.0	U
108-90-7	chlorobenzene	2.0	U
100-41-4	ethylbenzene	2.0	U
100-42-5	styrene	2.0	U
108-05-4	Vinyl Acetate	5.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PI16177GWT

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 67002W

Matrix: (soil/water) WATER Lab Sample ID: 9607002-02

Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P111

Level: (low/med) LOW Date Received: 07/01/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
156-59-2	cis-1,2-Dichloroethene	0.89	J
1330-20-7	xylenes (total)	4.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PI16178GWT

ab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 67002W

Matrix: (soil/water) WATER Lab Sample ID: 9607002-03

Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P112

Level: (low/med) LOW Date Received: 07/01/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
74-87-3	chloromethane	2.0	U
74-83-9	bromomethane	2.0	U
75-01-4	vinyl chloride	2.0	U
75-00-3	chloroethane	2.0	U
75-09-2	methylene chloride	0.81	BJ
67-64-1	acetone	10.0	U
75-15-0	carbon disulfide	5.0	U
75-35-4	1,1-dichloroethene	2.0	U
75-34-3	1,1-dichloroethane	2.0	U
156-60-5	trans-1,2-dichloroethene	2.0	U
67-66-3	chloroform	2.0	U
107-06-2	1,2-dichloroethane	2.0	U
78-93-3	2-butanone	5.0	U
71-55-6	1,1,1-trichloroethane	2.0	U
56-23-5	carbon tetrachloride	2.0	U
75-27-4	bromodichloromethane	2.0	U
78-87-5	1,2-dichloropropane	2.0	U
10061-01-5	cis-1,3-dichloropropene	2.0	U
79-01-6	trichloroethene	2.0	U
124-48-1	dibromochloromethane	2.0	U
79-00-5	1,1,2-trichloroethane	2.0	U
71-43-2	benzene	2.0	U
10061-02-6	trans-1,3-dichloropropene	2.0	U
75-25-2	bromoform	2.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
591-78-6	2-hexanone	5.0	U
127-18-4	tetrachloroethene	2.0	U
79-34-5	1,1,2,2-tetrachloroethane	2.0	U
108-88-3	toluene	2.0	U
108-90-7	chlorobenzene	2.0	U
100-41-4	ethylbenzene	2.0	U
100-42-5	styrene	2.0	U
108-05-4	Vinyl Acetate	5.0	U

Station ID -011H14-28

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PI16178GWT

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 67002W

Matrix: (soil/water) WATER Lab Sample ID: 9607002-03

Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P112

Level: (low/med) LOW Date Received: 07/01/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
156-59-2	cis-1,2-Dichloroethene	2.0	U
1330-20-7	xylenes (total)	4.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PI16179GWT

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 67002W

Matrix: (soil/water) WATER Lab Sample ID: 9607002-04

Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P113

Level: (low/med) LOW Date Received: 07/01/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
74-87-3	chloromethane	2.0	U
74-83-9	bromomethane	2.0	U
75-01-4	vinyl chloride	2.0	U
75-00-3	chloroethane	2.0	U
75-09-2	methylene chloride	0.86	BJ
67-64-1	acetone	10.0	U
75-15-0	carbon disulfide	5.0	U
75-35-4	1,1-dichloroethene	2.0	U
75-34-3	1,1-dichloroethane	2.0	U
156-60-5	trans-1,2-dichloroethene	2.0	U
67-66-3	chloroform	2.0	U
107-06-2	1,2-dichloroethane	2.0	U
78-93-3	2-butanone	5.0	U
71-55-6	1,1,1-trichloroethane	2.0	U
56-23-5	carbon tetrachloride	2.0	U
75-27-4	bromodichloromethane	2.0	U
78-87-5	1,2-dichloropropane	2.0	U
10061-01-5	cis-1,3-dichloropropene	2.0	U
79-01-6	trichloroethene	0.93	J
124-48-1	dibromochloromethane	2.0	U
79-00-5	1,1,2-trichloroethane	2.0	U
71-43-2	benzene	2.0	U
10061-02-6	trans-1,3-dichloropropene	2.0	U
75-25-2	bromoform	2.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
591-78-6	2-hexanone	5.0	U
127-18-4	tetrachloroethene	3.6	
79-34-5	1,1,2,2-tetrachloroethane	2.0	U
108-88-3	toluene	2.0	U
108-90-7	chlorobenzene	2.0	U
100-41-4	ethylbenzene	2.0	U
100-42-5	styrene	2.0	U
108-05-4	Vinyl Acetate	5.0	U

Station ID -011H14-36

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PI16179GWT

ab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: 67002W

Matrix: (soil/water) WATER Lab Sample ID: 9607002-04

Sample wt/vol: 20 (g/ml) ml Lab File ID: 2P113

Level: (low/med) LOW Date Received: 07/01/96

% Moisture: not dec. _____ Date Analyzed: 07/01/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l	Q
156-59-2	cis-1,2-Dichloroethene	2.0	U
1330-20-7	xylenes (total)	4.0	U

APPENDIX B
RESULTS OF METHANE SAMPLES ANALYZED BY USGS
COLUMBIA, S.C.

United States Department of the Interior

U.S. GEOLOGICAL SURVEY

Water Resources Division
720 Gracern Road - Suite 129
Columbia, SC 29210-7651

Karen Atchley
Bechtel Environmental, Inc.
151 Lafayette Dr.
Oak Ridge, TN 37831-0350

August 20, 1996

Dear Ms. Atchley:

Please find enclosed results for dissolved inorganic carbon (DIC) and methane (CH_4) for the wells you sampled at the Parris Island dry cleaners site.

There is quite a range in DIC concentrations; I gather that sample PI-161711 is the background well, and the others are contaminated (> 200 mg/L DIC is a large number). These elevated DIC numbers can indicate significant mineralization of hydrocarbons **if** most of the DIC is from CO_2 generated by such a process. For methane, 0.1 to 1.2 mg/L is not high, but does indicate some methanogenesis has occurred in those wells.

Thanks for your patience while these samples were being analyzed.

Sincerely,

James E. Landmeyer, Ph.D.

DIC and METHANE concentrations at Parris Island Site.

June 19-20, 1996

NA = NOT ANALYZED; ND = BELOW DETECTION LIMIT OF 0.01 mg/L OR 1 µM.

SAMPLE		UNCORRECTED DIC			CORRECTED DIC		METHANE		
		HEAD	SAMPLE		SAMPLE		HEAD	SAMPLE	
		µM	mg/L	µM	mg/L	µM	µM	mg/L	µM
BLANK		18.7	5.6	127.1			ND	----------	----------
Bechtel	PI161711	294.3	88.0	2001.1	82.5	1874.0	11	1.2	72.1
	PI1617214	804.5	240.7	5470.4	235.1	5343.4	1	0.1	8.6
	PI1617304	797.8	238.7	5424.8	233.1	5297.7	ND	----------	----------
	PI1617305	655.5	196.1	4457.4	190.5	4330.3	ND	----------	----------

Calibration Report

Data File Name : C:\HPCHEM\1\DATA\BECH0696\001F0101.D
Operator : PAUL M BRADLEY
Instrument : MSG TCD
Sample Name : 5% STD
Run Time Bar Code:
Acquired on : 20 Aug 96 11:17 AM
Report Created on: 20 Aug 96 12:36 PM
Last Recalib on : 09 JUL 96 03:37 PM
Multiplier : 1

Page Number : 1
Vial Number : 1
Injection Number : 1
Sequence Line : 1
Instrument Method: CO2&CH4.MTH
Analysis Method : CO2&CH4.MTH
Sample Amount : 0
ISTD Amount :

Calibration Table

Pk#	RT	Lvl	umol/L	Amt/Area	Ref Istd I#	Name
1	2.374	1	1631.0	1.2739e-003	1	CH4
2	4.671	1	2036.0	8.9395e-004	2	CO2

Calibration Settings

Title:

Reference window: 5.000 %
Non-reference window: 5.000 %
Units of amount: umol/L
Multiplier: 1.0
RF uncal peaks: 0.0
Sample Amount: 0.0

Sample ISTD Information

No Sample ISTD Amounts

Multilevel Information

Fit: Linear
Origin: Force

Calibration Report

Data File Name : C:\HPCHEM\1\DATA\BECH0696\002F0101.D
Operator : PAUL M BRADLEY
Instrument : MSG TCD
Sample Name : 5% STD
Run Time Bar Code:
Acquired on : 20 Aug 96 11:56 AM
Report Created on: 20 Aug 96 12:36 PM
Last Recalib on : 20 Aug 96 12:36 PM
Multiplier : 1

Page Number : 1
Vial Number : 2
Injection Number : 1
Sequence Line : 1
Instrument Method: CO2&CH4.MTH
Analysis Method : CO2&CH4.MTH
Sample Amount : 0
ISTD Amount :

Calibration Table

Pk#	RT	Lvl	umol/L	Amt/Area	Ref Istd I#	Name
1	2.377	1	1631.0	1.3014e-003	1	CH4
2	4.679	1	2036.0	9.2406e-004	2	CO2

Calibration Settings

Title:

Reference window: 5.000 %
Non-reference window: 5.000 %
Units of amount: umol/L
Multiplier: 1.0
RF uncal peaks: 0.0
Sample Amount: 0.0

Sample ISTD Information

No Sample ISTD Amounts

Multilevel Information

Fit: Linear
Origin: Force

External Standard Report

Data File Name : C:\HPCHEM\1\DATA\BECH0696\003F0101.D
Operator : PAUL M BRADLEY
Instrument : MSG TCD
Sample Name : BLANK
Run Time Bar Code:
Acquired on : 20 Aug 96 12:34 PM
Report Created on: 20 Aug 96 12:41 PM
Last Recalib on : 20 Aug 96 12:36 PM
Multiplier : 1

Page Number : 1
Vial Number : 3
Injection Number : 1
Sequence Line : 1
Instrument Method: CO2&CH4.MTH
Analysis Method : CO2&CH4.MTH
Sample Amount : 0
ISTD Amount :

Sig. 1 in C:\HPCHEM\1\DATA\BECH0696\003F0101.D

Ret Time	Area	Type	Width	Ref#	umol/L	Name
2.377	* not found *			1		CH4
4.809	22032	PV	0.164	2	20.359	CO2

Not all calibrated peaks were found

External Standard Report

Data File Name : C:\HPCHEM\1\DATA\BECH0696\004F0101.D
Operator : PAUL M BRADLEY
Instrument : MSG TCD
Sample Name : BLANK
Run Time Bar Code:
Acquired on : 20 Aug 96 12:40 PM
Report Created on: 20 Aug 96 12:46 PM
Last Recalib on : 20 Aug 96 12:36 PM
Multiplier : 1

Page Number : 1
Vial Number : 4
Injection Number : 1
Sequence Line : 1
Instrument Method: CO2&CH4.MTH
Analysis Method : CO2&CH4.MTH
Sample Amount : 0
ISTD Amount :

Sig. 1 in C:\HPCHEM\1\DATA\BECH0696\004F0101.D

Ret Time	Area	Type	Width	Ref#	umol/L	Name
2.377	* not found *			1		CH4
4.805	20222	PV	0.161	2	18.686	CO2

Not all calibrated peaks were found

External Standard Report

Data File Name : C:\HPCHEM\1\DATA\BECH0696\005F0101.D
Operator : PAUL M BRADLEY
Instrument : MSG TCD
Sample Name : BECHTELPI161711
Run Time Bar Code:
Acquired on : 20 Aug 96 12:46 PM
Report Created on: 20 Aug 96 12:59 PM
Last Recalib on : 20 Aug 96 12:36 PM
Multiplier : 1

Page Number : 1
Vial Number : 5
Injection Number : 1
Sequence Line : 1
Instrument Method: CO2&CH4.MTH
Analysis Method : CO2&CH4.MTH
Sample Amount : 0
ISTD Amount :

Sig. 1 in C:\HPCHEM\1\DATA\BECH0696\005F0101.D

Ret Time	Area	Type	Width	Ref#	umol/L	Name
2.423	8158	MM	0.087	1	10.617	CH4
4.799	318462	FV	0.169	2	294.279	CO2

User Modified

External Standard Report

Data File Name : C:\HPCHEM\1\DATA\BECH0696\006F0101.D
Operator : PAUL M BRADLEY
Instrument : MSG TCD
Sample Name : BECHTELPI1617214
Run Time Bar Code:
Acquired on : 20 Aug 96 12:52 PM
Report Created on: 20 Aug 96 12:59 PM
Last Recalib on : 20 Aug 96 12:36 PM
Multiplier : 1

Page Number : 1
Vial Number : 6
Injection Number : 1
Sequence Line : 1
Instrument Method: CO2&CH4.MTH
Analysis Method : CO2&CH4.MTH
Sample Amount : 0
ISTD Amount :

Sig. 1 in C:\HPCHEM\1\DATA\BECH0696\006F0101.D

Ret Time	Area	Type	Width	Ref#	umol/L	Name
2.413	967	MM	0.088	1	1.259	CH4
4.768	870582	PV	0.171	2	804.473	CO2

User Modified

External Standard Report

Data File Name : C:\HPCHEM\1\DATA\BECH0696\008F0101.D
Operator : PAUL M BRADLEY
Instrument : MSG TCD
Sample Name : BECHTELPI1617305
Run Time Bar Code:
Acquired on : 20 Aug 96 01:05 PM
Report Created on: 20 Aug 96 01:11 PM
Last Recalib on : 20 Aug 96 12:36 PM
Multiplier : 1

Page Number : 1
Vial Number : 8
Injection Number : 1
Sequence Line : 1
Instrument Method: CO2&CH4.MTH
Analysis Method : CO2&CH4.MTH
Sample Amount : 0
ISTD Amount :

Sig. 1 in C:\HPCHEM\1\DATA\BECH0696\008F0101.D

Ret Time	Area	Type	Width	Ref#	umol/L	Name
2.423	87	MM	0.055	1	0.113	CH4
4.782	709362	MM	0.182	2	655.496	CO2

User Modified

External Standard Report

Data File Name : C:\HPCHEM\1\DATA\BECH0696\007F0101.D
Operator : PAUL M BRADLEY
Instrument : MSG TCD
Sample Name : BECHTELPI1617304
Run Time Bar Code:
Acquired on : 20 Aug 96 12:58 PM
Report Created on: 20 Aug 96 01:05 PM
Last Recalib on : 20 Aug 96 12:36 PM
Multiplier : 1

Page Number : 1
Vial Number : 7
Injection Number : 1
Sequence Line : 1
Instrument Method: CO2&CH4.MTH
Analysis Method : CO2&CH4.MTH
Sample Amount : 0
ISTD Amount :

Sig. 1 in C:\HPCHEM\1\DATA\BECH0696\007F0101.D

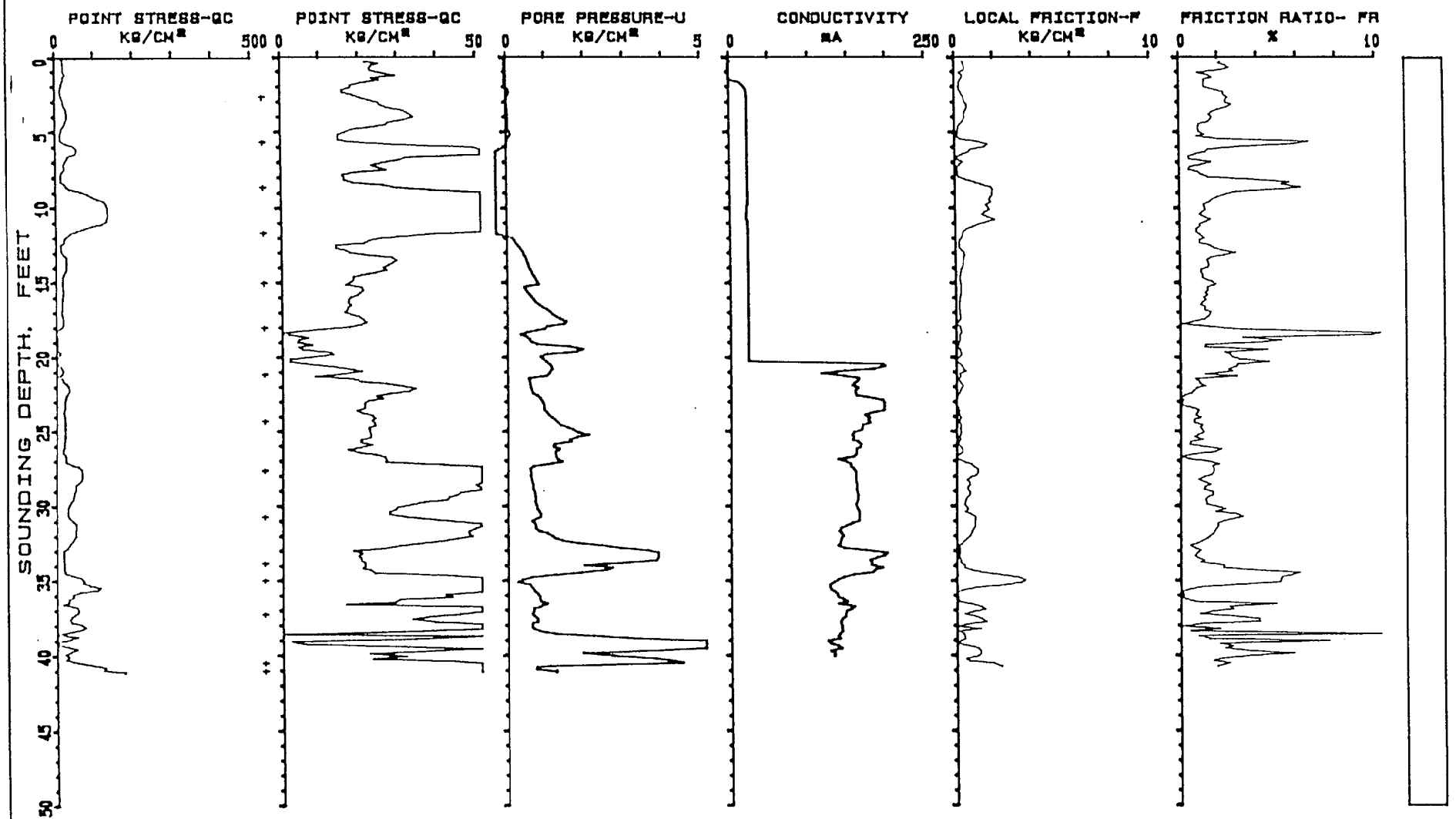
Ret Time	Area	Type	Width	Ref#	umol/L	Name
2.423	144	MM	0.073	1	0.188	CH4
4.770	863320	MM	0.183	2	797.762	CO2

User Modified

APPENDIX C
GEOLOGIC INFORMATION FROM DIRECT PUSH

CONDUCTIVITY/PIEZOCONE SOUNDING TEST

CONDUCTIVITY / PIEZOCONE SOUNDING TEST



\+ PUSH INTERRUPTED TO ADD ROD
PORE PRESSURE DECAY DATA MAY BE AVAILABLE

FILE #..... BECHTEL
PARRIS ISLAND CLEANERS
PROJECT# 22567-145-SC-0594
SOUNDING # 100E03
TEST DATE 06-20-1996 00:28:44

IN-SITU TECHNOLOGY SOIL BEHAVIOR TABLE
FOR SOUTHEASTERN UNITED STATES SOILS

JOB NAME ..... BECHTEL ENVIRONMENTAL
PARRIS ISLAND CLEANERS
PROJECT# 22567-145-SC-0594
FILE NAME..... 100E03

DEPTH FEET	SOIL BEHAVIOR TYPE	PT (KG/CM2)	LF (KG/CM2)	N VALUES	N' #	VERTICAL EFFECTIVE STRESS (KG/CM2)	RELATIVE DENSITY (%) *	FRICTION ANGLE (DEGREES) **	YOUNGS MODULUS (KG/CM2) ***	UNDRAINED SHEAR STRENGTH (KG/CM2) ****	SENSITIVITY	COMP.	OCR
1	DENSE OR CEMENTED S.	6084.4	.49	1014	1014	.058	>90%	>48	13385	--	--	--	--
2	CLAYEY FINE SAND	24	.31	9	9	.107	40%-50%	44-46	52	--	--	--	--
3	SANDY CLAY	19.5	.46	9	9	.151	--	--	--	1.21	4.1	.01	>6
4	CLAYEY FINE SAND	30.2	.59	12	12	.2	50%-60%	42-44	66	--	--	--	--
5	SILTY TO CLAYEY F.S.	25.7	.28	8	8	.23	40%-50%	40-42	56	--	--	--	--
6	SILTY CLAY TO CLAY	22.6	.85	15	15	.258	--	--	--	1.39	2.6	UD	>6
7	SILTY TO CLAYEY F.S.	43.4	.42	14	14	.289	60%-70%	42-44	95	--	--	--	--
8	CLAYEY FINE SAND	21.9	.24	8	8	.319	40%-50%	38-40	48	--	--	--	--
9	CLAY	30.6	1.54	30	30	.344	--	--	--	1.88	1.9	UD	>6
[illegible]	SILTY TO CLAYEY F.S.	106.9	1.81	35	35	.375	70%-80%	44-46	235	--	--	--	--
[illegible]	SILTY FINE SAND	134.3	1.64	33	33	.406	80%-90%	46-48	295	--	--	--	--
[illegible]	SILTY FINE SAND	76.2	.59	19	19	.437	70%-80%	42-44	167	--	--	--	--
13	CLAYEY FINE SAND	18.8	.32	7	7	.467	<40%	36-38	41	--	--	--	--
14	CLAYEY FINE SAND	26	.41	10	10	.498	<40%	36-38	57	--	--	--	--
15	CLAYEY FINE SAND	21.9	.26	8	8	.529	<40%	36-38	48	--	--	--	--
16	CLAYEY FINE SAND	19.1	.26	7	7	.56	<40%	34-36	42	--	--	--	--
17	CLAYEY FINE SAND	17.1	.22	6	6	.59	<40%	34-36	37	--	--	--	--
18	SILTY TO CLAYEY F.S.	19.4	.05	6	6	.621	<40%	34-36	42	--	--	--	--
19	CLAY	6.5	.22	6	6	.646	--	--	--	.33	2.9	.03	3
20	SILTY CLAY TO CLAY	7.9	.18	5	5	.673	--	--	--	.42	4.2	.03	3
21	SANDY CLAY	10.1	.26	5	5	.701	--	--	--	.55	3.9	.02	3
22	CLAYEY FINE SAND	20.3	.25	8	8	.732	<40%	34-36	44	--	--	--	--
23	SILTY TO CLAYEY F.S.	28.4	.11	9	9	.762	<40%	36-38	62	--	--	--	--
24	SILTY TO CLAYEY F.S.	21.4	.13	7	7	.793	<40%	32-34	47	--	--	--	--
25	SILTY TO CLAYEY F.S.	23.4	.23	7	7	.824	<40%	34-36	51	--	--	--	--
26	SILTY TO CLAYEY F.S.	22.2	.19	7	7	.855	<40%	32-34	48	--	--	--	--
27	SILTY TO CLAYEY F.S.	22.5	.2	7	7	.885	<40%	32-34	49	--	--	--	--
28	SILTY TO CLAYEY F.S.	51.1	.9	17	17	.916	<40%	38-40	112	--	--	--	--
29	SILTY TO CLAYEY F.S.	58.2	.69	19	19	.947	40%-50%	38-40	128	--	--	--	--

)E03 CONTINUED BECHTEL ENVIRONMENTAL

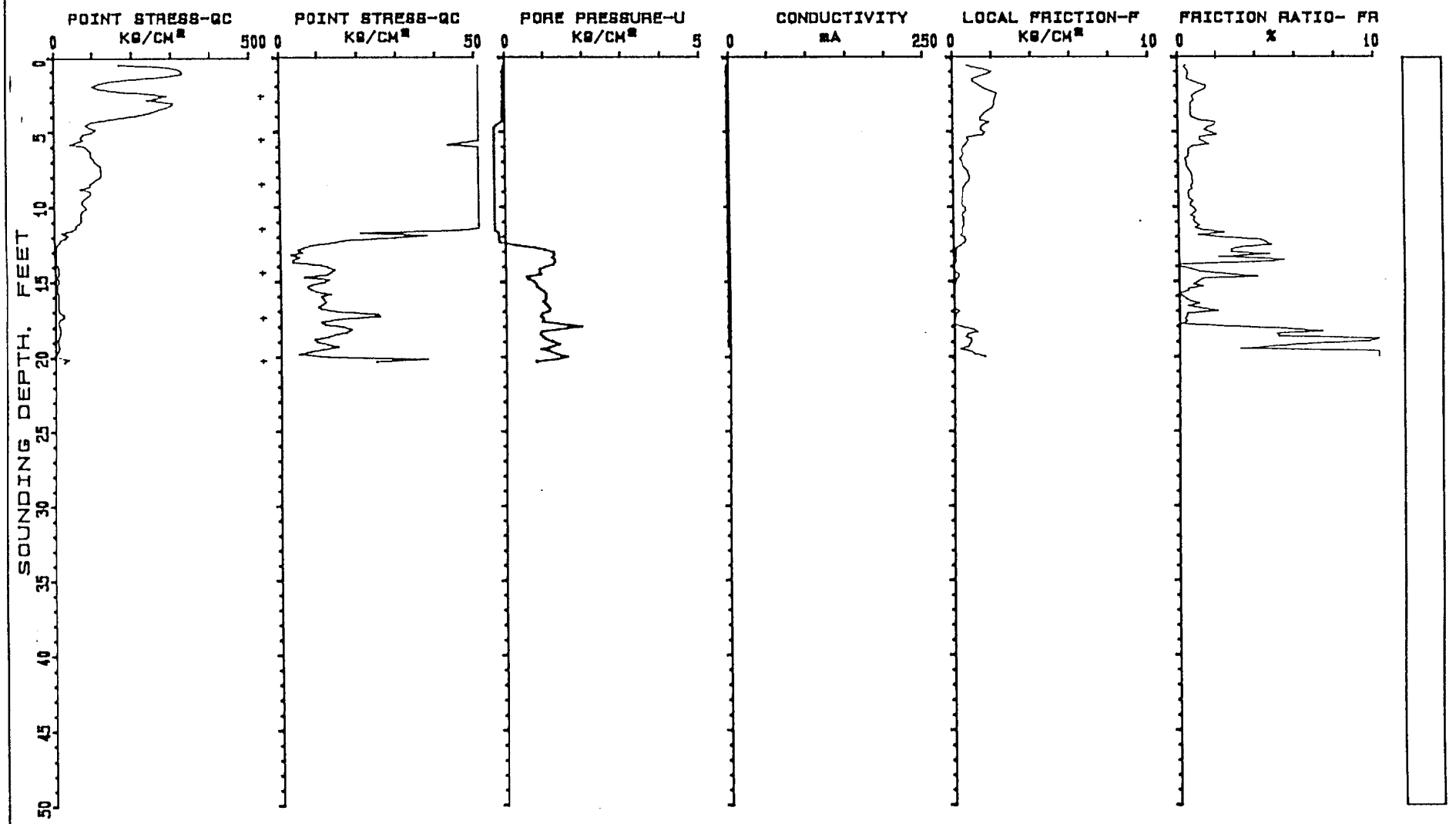
DEPTH FEET	SOIL BEHAVIOR TYPE	PT (KG/CM2)	LF (KG/CM2)	N VALUES	N'	VERTICAL STRESS	RELATIVE DENSITY	FRICTION ANGLE	YOUNGS MODULUS	UNDRAINED SHEAR ST	SENSITIVITY	COMP.	OCR
30	SILTY TO CLAYEY F.S.	42.3	.59	14	14	.978	<40%	36-38	93	--	--	--	--
31	CLAYEY FINE SAND	31.9	.79	12	12	1.008	<40%	34-36	70	--	--	--	--
32	SILTY TO CLAYEY F.S.	48.8	.83	16	16	1.039	<40%	36-38	107	--	--	--	--
33	SILTY TO CLAYEY F.S.	34.8	.29	11	11	1.07	<40%	34-36	76	--	--	--	--
34	CLAYEY FINE SAND	20.4	.27	8	8	1.101	<40%	30-32	44	--	--	--	--
35	CLAY	37.8	2.2	37	37	1.126	--	--	--	2.23	1.7	UD	6
36	SILTY TO CLAYEY F.S.	77.5	1.08	25	25	1.156	40%-50%	38-40	170	--	--	--	--
37	SILTY TO CLAYEY F.S.	38.7	.66	12	12	1.187	<40%	34-36	85	--	--	--	--
38	SILTY TO CLAYEY F.S.	47.9	.86	15	15	1.218	<40%	36-38	105	--	--	--	--
39	SILTY FINE SAND	46.4	.28	11	11	1.249	<40%	36-38	102	--	--	--	--
40	SANDY CLAY	26.3	.86	13	13	1.276	--	--	--	1.49	3	.02	6

\# N'=POINT STRESS*(.2+.04*FRICTION RATIO)
* NORMALLY CONSOLIDATED SANDS
** FOR OVERCONSOLIDATED SANDS,SLIGHTLY REDUCE ABOVE FRICTION ANGLES
*** FOR OVERCONSOLIDATED SANDS, YOUNG'S MODULUS MAY BE AS MUCH AS 3 TO 6 TIMES HIGHER
**** NK OF 16 USED. FOR OVERCONSOLIDATED CLAYS, AN NK OF 17 IS SUGGESTED

THE ABOVE DATA WAS COMPUTED FOLLOWING 'BASIC' GUIDELINES BY P. K. ROBERTSON AND R. G. CAMPANELLA IN THE HANDBOOK 'GUIDELINES FOR USE AND INTERPERTATION OF THE ELECTRONIC CONE PENETRATION TEST'

ADDITIONAL LOCAL CORRELATIONS DEVELOPED BY IN-SITU TECHNOLOGY HAVE ALSO BEEN USED IN COMPUTING THE ABOVE DATA. IT IS THE POLICY OF IN-SITU TECHNOLOGY TO CONTINUALLY UPGRADE AND MODIFY C.P.T CORRELATIONS AS PUBLISHED RESEARCH AND LOCAL EXPERIENCE GROWS.

CONDUCTIVITY / PIEZOCONE SOUNDING TEST



\+ PUSH INTERRUPTED TO ADD ROD
PORE PRESSURE DECAY DATA MAY BE AVAILABLE

FILE #..... BECHTEL
PARRIS ISLAND CLEANERS
PROJECT# 22567-145-SC-0594
SOUNDING # 200L13
TEST DATE 08-29-1996 20:31:21

IN-SITU TECHNOLOGY SOIL BEHAVIOR TABLE
FOR SOUTHEASTERN UNITED STATES SOILS

JOB NAME ..... BECHTEL ENVIRONMENTAL
PARRIS ISLAND CLEANERS
PROJECT# 22567-145-SC-0594
FILE NAME..... 200L13

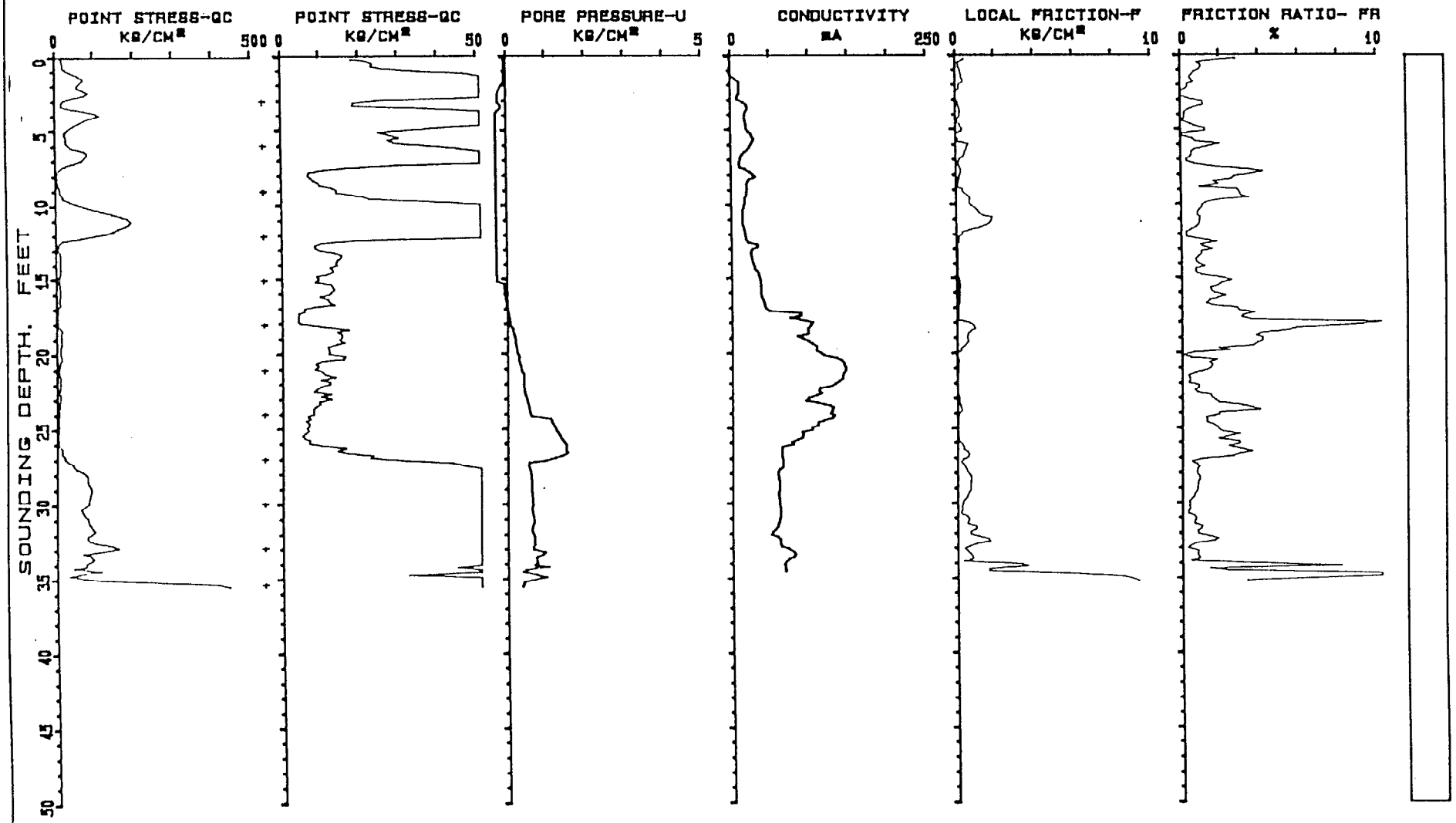
DEPTH FEET	SOIL BEHAVIOR TYPE	PT (KG/CM2)	LF (KG/CM2)	N VALUES	N' #	VERTICAL EFFECTIVE STRESS (KG/CM2)	RELATIVE DENSITY (%) *	FRICTION ANGLE (DEGREES) **	YOUNGS MODULUS (KG/CM2) ***	UNDRAINED SHEAR STRENGTH (KG/CM2) ****	SENSITIVITY	COMP.	OCR
1	DENSE OR CEMENTED S.	314.3	1.83	52	52	.058	>90%	>48	691	--	--	--	--
2	FINE SAND	213	1.42	42	42	.112	>90%	>48	468	--	--	--	--
3	FINE SAND	191.8	2.07	38	38	.166	>90%	>48	421	--	--	--	--
4	FINE SAND	267	1.83	53	53	.219	>90%	>48	587	--	--	--	--
5	SILTY FINE SAND	129.9	1.58	32	32	.25	>90%	46-48	285	--	--	--	--
6	SILTY TO CLAYEY F.S.	78.7	1.04	26	26	.281	70%-80%	44-46	173	--	--	--	--
7	SILTY FINE SAND	89.7	.54	22	22	.312	70%-80%	44-46	197	--	--	--	--
8	FINE SAND	118.6	.78	23	23	.345	80%-90%	46-48	260	--	--	--	--
9	FINE SAND	97.4	.66	19	19	.378	70%-80%	44-46	214	--	--	--	--
	SILTY FINE SAND	83.7	.54	20	20	.409	70%-80%	44-46	184	--	--	--	--
	SILTY FINE SAND	75	.6	18	18	.44	60%-70%	42-44	165	--	--	--	--
12	SILTY TO CLAYEY F.S.	50.8	.54	16	16	.47	50%-60%	40-42	111	--	--	--	--
13	SANDY CLAY	16.7	.41	8	8	.498	--	--	--	.99	4	.01	6
14	SILTY CLAY TO CLAY	5.1	.1	3	3	.525	--	--	--	.26	4.7	.04	1-1.5
15	CLAYEY FINE SAND	11.7	.15	4	4	.556	<40%	32-34	25	--	--	--	--
16	CLAYEY FINE SAND	10.2	.04	4	4	.587	<40%	30-32	22	--	--	--	--
17	CLAYEY FINE SAND	11.8	.03	4	4	.617	<40%	30-32	25	--	--	--	--
18	SILTY TO CLAYEY F.S.	17.1	.05	5	5	.648	<40%	32-34	37	--	--	--	--
19	CLAY	13.6	.84	13	13	.673	--	--	--	.78	1.6	.01	6

\# N'=POINT STRESS*(.2+.04*FRICTION RATIO)
* NORMALLY CONSOLIDATED SANDS
** FOR OVERCONSOLIDATED SANDS,SLIGHTLY REDUCE ABOVE FRICTION ANGLES
*** FOR OVERCONSOLIDATED SANDS, YOUNG'S MODULUS MAY BE AS MUCH AS 3 TO 6 TIMES HIGHER
**** NK OF 16 USED. FOR OVERCONSOLIDATED CLAYS, AN NK OF 17 IS SUGGESTED

THE ABOVE DATA WAS COMPUTED FOLLOWING 'BASIC' GUIDELINES BY P. K. ROBERTSON AND R. G. CAMPANELLA IN THE HANDBOOK 'GUIDELINES FOR USE AND INTERPERTATION OF THE ELECTRONIC CONE PENETRATION TEST'

ADDITIONAL LOCAL CORRELATIONS DEVELOPED BY IN-SITU TECHNOLOGY HAVE ALSO BEEN USED IN COMPUTING THE ABOVE DATA. IT IS THE POLICY OF IN-SITU TECHNOLOGY TO CONTINUALLY UPGRADE AND MODIFY C.P.T CORRELATIONS AS PUBLISHED RESEARCH AND LOCAL EXPERIENCE GROWS.

CONDUCTIVITY / PIEZOCONE SOUNDING TEST



* PUSH INTERRUPTED TO ADD ROD
PORE PRESSURE DECAY DATA MAY BE AVAILABLE

FILE #..... BECHTEL
PARRIS ISLAND CLEANERS
PROJECT# 22567-145-SC-0594
SOUNDING # 322D09
TEST DATE 06-20-1996 08:52:04

IN-SITU TECHNOLOGY SOIL BEHAVIOR TABLE
FOR SOUTHEASTERN UNITED STATES SOILS

JOB NAME ..... BECHTEL ENVIRONMENTAL
PARRIS ISLAND CLEANERS
PROJECT# 22567-145-SC-0594
FILE NAME..... 322D09

DEPTH FEET	SOIL BEHAVIOR TYPE	PT (KG/CM2)	LF (KG/CM2)	N VALUES #	N' #	VERTICAL EFFECTIVE STRESS (KG/CM2)	RELATIVE DENSITY (%) *	FRICTION ANGLE (DEGREES) **	YOUNGS MODULUS (KG/CM2) ***	UNDRAINED SHEAR STRENGTH (KG/CM2) ****	SENSITIVITY	COMP.	OCR
1	SILTY TO CLAYEY F.S.	26.4	.29	8	8	.048	50%-60%	>48	58	--	--	--	--
2	SILTY FINE SAND	60.3	.37	15	15	.097	70%-80%	>48	132	--	--	--	--
3	SILTY FINE SAND	63.7	.14	15	15	.146	70%-80%	46-48	140	--	--	--	--
4	SILTY FINE SAND	48.2	.27	12	12	.195	60%-70%	44-46	106	--	--	--	--
5	SILTY FINE SAND	74	.27	18	18	.226	70%-80%	46-48	162	--	--	--	--
6	SILTY TO CLAYEY F.S.	29.9	.32	9	9	.256	40%-50%	40-42	65	--	--	--	--
7	SILTY FINE SAND	67.7	.43	16	16	.287	70%-80%	44-46	148	--	--	--	--
8	SILTY TO CLAYEY F.S.	27.7	.26	9	9	.318	40%-50%	40-42	60	--	--	--	--
9	SANDY CLAY	10.3	.26	5	5	.345	--	--	--	.61	3.9	.02	6
	CLAYEY FINE SAND	28.7	.71	11	11	.376	40%-50%	38-40	63	--	--	--	--
	SILTY FINE SAND	123.5	1.37	30	30	.407	80%-90%	44-46	271	--	--	--	--
	FINE SAND	170.1	1.14	34	34	.44	>90%	46-48	374	--	--	--	--
13	SILTY FINE SAND	49.2	.18	12	12	.471	50%-60%	40-42	108	--	--	--	--
14	CLAYEY FINE SAND	13.1	.13	5	5	.502	<40%	32-34	28	--	--	--	--
15	CLAYEY FINE SAND	12.6	.12	5	5	.532	<40%	32-34	27	--	--	--	--
16	SANDY CLAY	11.5	.22	5	5	.56	--	--	--	.66	5.1	.02	6
17	SANDY CLAY	11.7	.19	5	5	.587	--	--	--	.67	6	.02	6
18	CLAY	5.4	.23	5	5	.612	--	--	--	.27	2.2	.04	1-1.5
19	CLAY	11.8	.76	11	11	.637	--	--	--	.67	1.5	.02	6
20	SANDY CLAY	13.9	.41	6	6	.664	--	--	--	.79	3.3	.02	6
21	CLAYEY FINE SAND	11.8	.11	4	4	.695	<40%	30-32	25	--	--	--	--
22	CLAYEY FINE SAND	11.2	.07	4	4	.726	<40%	30-32	24	--	--	--	--
23	CLAYEY FINE SAND	11	.11	4	4	.756	<40%	30-32	24	--	--	--	--
24	SANDY CLAY	9.4	.22	4	4	.784	--	--	--	.5	4.2	.03	3
25	SANDY CLAY	7	.11	3	3	.811	--	--	--	.34	6.3	.04	1-1.5
26	SILTY CLAY TO CLAY	6.4	.17	4	4	.838	--	--	--	.3	3.6	.03	1-1.5
27	SANDY CLAY	16	.48	8	8	.866	--	--	--	.9	3.2	.01	6
28	SILTY TO CLAYEY F.S.	49.5	.47	16	16	.897	<40%	38-40	108	--	--	--	--
29	SILTY FINE SAND	85.1	.75	21	21	.927	50%-60%	40-42	187	--	--	--	--
30	SILTY FINE SAND	87.9	.52	21	21	.958	50%-60%	40-42	193	--	--	--	--

2D09 CONTINUED BECHTEL ENVIRONMENTAL

DEPTH FEET	SOIL BEHAVIOR TYPE	PT (KG/CM2)	LF (KG/CM2)	N VALUES	N'	VERTICAL STRESS	RELATIVE DENSITY	FRICTION ANGLE	YOUNGS MODULUS	UNDRAINED SHEAR ST	SENSITIVITY	COMP.	OCR
31	SILTY FINE SAND	75.7	.39	18	18	.989	50%-60%	38-40	166	--	--	--	--
32	SILTY FINE SAND	91.5	.77	22	22	1.02	50%-60%	40-42	201	--	--	--	--
33	SILTY FINE SAND	107.8	1.06	26	26	1.05	60%-70%	40-42	237	--	--	--	--
34	SILTY FINE SAND	103.2	1.03	25	25	1.081	50%-60%	40-42	227	--	--	--	--
35	CLAY	70.3	4.86	70	70	1.106	--	--	--	4.26	1.4	UD	6

\# N'=POINT STRESS*(.2+.04*FRICTION RATIO)

* NORMALLY CONSOLIDATED SANDS

** FOR OVERCONSOLIDATED SANDS,SLIGHTLY REDUCE ABOVE FRICTION ANGLES

*** FOR OVERCONSOLIDATED SANDS, YOUNG'S MODULUS MAY BE AS MUCH AS 3 TO 6 TIMES HIGHER

**** NK OF 16 USED. FOR OVERCONSOLIDATED CLAYS, AN NK OF 17 IS SUGGESTED

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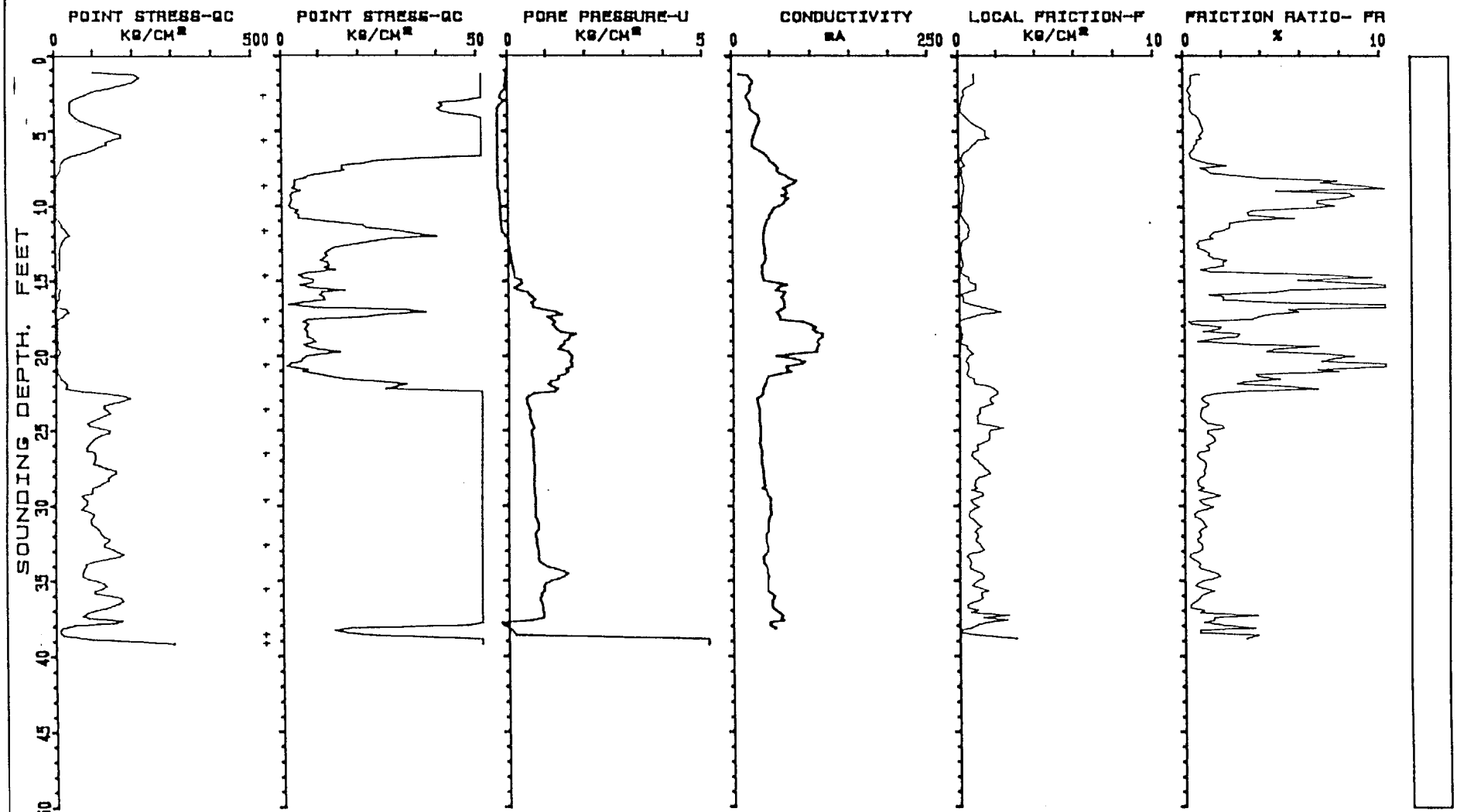
CONDUCTIVITY / PIEZOCONE SOUNDING TEST



\+ PUSH INTERRUPTED TO ADD ROD
PORE PRESSURE DECAY DATA MAY BE AVAILABLE

FILE #..... BECHTEL
PARRIS ISLAND CLEANERS
PROJECT# 22567-145-SC-0594
SOUNDING # 601K13
TEST DATE 06-18-1996 19:33:15

10d

IN-SITU TECHNOLOGY SOIL BEHAVIOR TABLE
FOR SOUTHEASTERN UNITED STATES SOILS

JOB NAME ..... BECHTEL ENVIRONMENTAL
PARRIS ISLAND CLEANERS
PROJECT# 22567-145-SC-0594
FILE NAME..... 601K13

DEPTH FEET	SOIL BEHAVIOR TYPE	PT (KG/CM2)	LF (KG/CM2)	N VALUES #	N' #	VERTICAL EFFECTIVE STRESS (KG/CM2)	RELATIVE DENSITY (%) *	FRICTION ANGLE (DEGREES) **	YOUNGS MODULUS (KG/CM2) ***	UNDRAINED SHEAR STRENGTH (KG/CM2) ****	SENSITIVITY	COMP.	OCR
2	DENSE OR CEMENTED S.	203.6	.75	33	33	.058	>90%	>48	447	--	--	--	--
3	FINE SAND	105.9	.27	21	21	.112	80%-90%	>48	232	--	--	--	--
4	SILTY FINE SAND	43.1	.23	10	10	.161	60%-70%	44-46	94	--	--	--	--
5	SILTY FINE SAND	86.9	.98	21	21	.191	70%-80%	46-48	191	--	--	--	--
6	FINE SAND	150	1.11	30	30	.225	>90%	>48	330	--	--	--	--
7	SILTY FINE SAND	79	.32	19	19	.255	70%-80%	44-46	173	--	--	--	--
8	CLAYEY FINE SAND	15.9	.22	6	6	.286	<40%	38-40	34	--	--	--	--
9	CLAY	4.5	.26	4	4	.311	--	--	--	.25	1.7	.05	3
10	SOFT CLAY	2.8	.18	2	2	.327	--	--	--	.14	1.5	UD	1-1.5
11	CLAY	4.3	.21	4	4	.352	--	--	--	.23	2	.05	3
12	LAYEY FINE SAND	24.3	.49	9	9	.383	<40%	38-40	53	--	--	--	--
13	SILTY TO CLAYEY F.S.	21.8	.17	7	7	.414	<40%	36-38	47	--	--	--	--
14	SANDY CLAY	11.5	.19	5	5	.441	--	--	--	.67	5.9	.02	6
15	CLAY	8.9	.33	8	8	.466	--	--	--	.5	2.6	.02	6
16	CLAY	9.2	.59	9	9	.491	--	--	--	.52	1.5	.02	6
17	CLAY	11.2	.91	11	11	.516	--	--	--	.64	1.2	.02	6
18	SANDY CLAY	19.2	.59	9	9	.543	--	--	--	1.14	3.2	.01	6
19	SENSITIVE FINE GRAIN	6.6	.05	3	3	.565	--	--	--	.34	12.4	.03	3
20	CLAY	9.1	.43	9	9	.59	--	--	--	.5	2.1	.02	3
21	SOFT CLAY	5.1	.43	5	5	.606	--	--	--	.24	1.1	UD	1-1.5
22	CLAY	15.6	.75	15	15	.631	--	--	--	.9	2	.01	6
23	SILTY TO CLAYEY F.S.	103.2	1.76	34	34	.662	60%-70%	42-44	227	--	--	--	--
24	FINE SAND	138.5	1.23	27	27	.695	70%-80%	42-44	304	--	--	--	--
25	SILTY FINE SAND	110.7	1.38	27	27	.726	60%-70%	42-44	243	--	--	--	--
26	SILTY FINE SAND	107.3	1.32	26	26	.756	60%-70%	42-44	236	--	--	--	--
27	SILTY FINE SAND	93.1	.88	23	23	.787	60%-70%	40-42	204	--	--	--	--
28	FINE SAND	127	1.3	25	25	.82	70%-80%	42-44	279	--	--	--	--
29	FINE SAND	117.6	.89	23	23	.854	60%-70%	42-44	258	--	--	--	--
30	SILTY FINE SAND	82.4	.99	20	20	.884	50%-60%	40-42	181	--	--	--	--
31	SILTY FINE SAND	84.5	.71	21	21	.915	50%-60%	40-42	185	--	--	--	--

DEPTH FEET	SOIL BEHAVIOR TYPE	PT (KG/CM2)	LF (KG/CM2)	N VALUES	N'	VERTICAL STRESS	RELATIVE DENSITY	FRICTION ANGLE	YOUNGS MODULUS	UNDRAINED SHEAR ST	SENSITIVITY	COMP.	OCR
32	SILTY FINE SAND	103.2	.97	25	25	.946	60%-70%	40-42	227	--	--	--	--
33	FINE SAND	130.3	1.06	26	26	.979	60%-70%	42-44	286	--	--	--	--
34	FINE SAND	134.7	.61	26	26	1.012	70%-80%	42-44	296	--	--	--	--
35	SILTY FINE SAND	79.3	.93	19	19	1.043	50%-60%	38-40	174	--	--	--	--
36	FINE SAND	118.5	1.08	23	23	1.076	60%-70%	40-42	260	--	--	--	--
37	FINE SAND	147.2	.75	29	29	1.11	70%-80%	42-44	323	--	--	--	--
38	SILTY FINE SAND	101.4	1.42	25	25	1.14	50%-60%	40-42	223	--	--	--	--

\# N'=POINT STRESS*(.2+.04*FRICTION RATIO)
* NORMALLY CONSOLIDATED SANDS
** FOR OVERCONSOLIDATED SANDS,SLIGHTLY REDUCE ABOVE FRICTION ANGLES
*** FOR OVERCONSOLIDATED SANDS, YOUNG'S MODULUS MAY BE AS MUCH AS 3 TO 6 TIMES HIGHER
**** NK OF 16 USED. FOR OVERCONSOLIDATED CLAYS, AN NK OF 17 IS SUGGESTED

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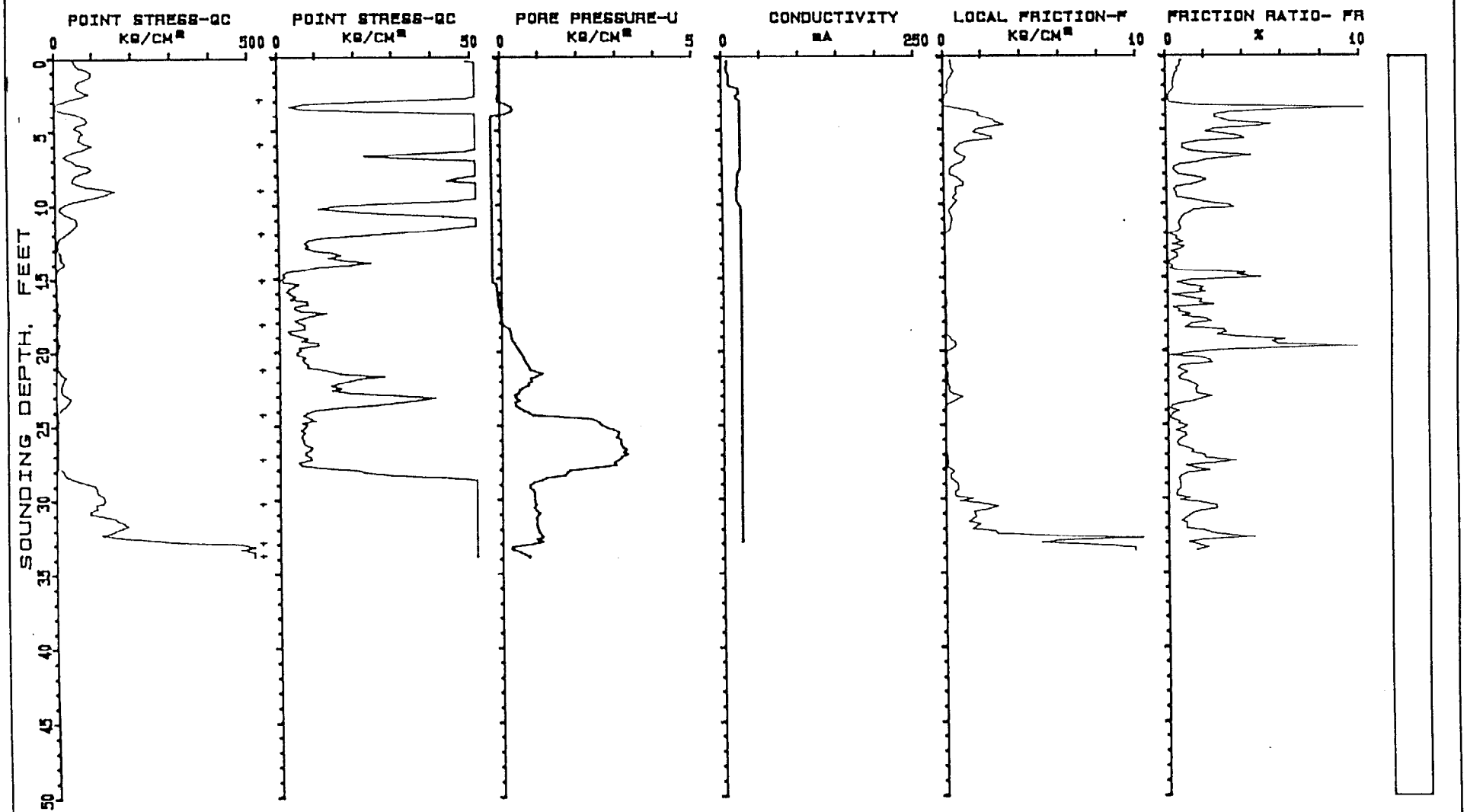
CONDUCTIVITY / PIEZOCONE SOUNDING TEST



* PUSH INTERRUPTED TO ADD ROD
PORE PRESSURE DECAY DATA MAY BE AVAILABLE

FILE #..... BECHTEL
PARRIS ISLAND CLEANERS
PROJECT# 22567-145-SC-0594
SOUNDING # 610A20
TEST DATE 06-18-1998 16:33:02

IN-SITU TECHNOLOGY SOIL BEHAVIOR TABLE
FOR SOUTHEASTERN UNITED STATES SOILS

JOB NAME ..... BECHTEL ENVIRONMENTAL
PARRIS ISLAND CLEANERS
PROJECT# 22567-145-SC-0594
FILE NAME..... 610A20

DEPTH FEET	SOIL BEHAVIOR TYPE	PT (KG/CM2)	LF (KG/CM2)	N VALUES #	N'	VERTICAL EFFECTIVE STRESS (KG/CM2)	RELATIVE DENSITY (%) *	FRICTION ANGLE (DEGREES) **	YOUNGS MODULUS (KG/CM2) ***	UNDRAINED SHEAR STRENGTH (KG/CM2) ****	SENSITIVITY	COMP.	OCR
1	SILTY FINE SAND	74.1	.52	18	18	.048	70%-80%	>48	163	--	--	--	--
2	SILTY FINE SAND	79.1	.32	19	19	.097	70%-80%	>48	174	--	--	--	--
3	SILTY FINE SAND	63.3	.14	15	15	.146	70%-80%	46-48	139	--	--	--	--
4	SILTY CLAY TO CLAY	28.2	1.13	18	18	.19	--	--	--	1.75	2.4	UD	>6
5	CLAYEY FINE SAND	72.4	2.35	28	28	.221	70%-80%	46-48	159	--	--	--	--
6	SILTY TO CLAYEY F.S.	73.9	1.63	24	24	.251	70%-80%	44-46	162	--	--	--	--
7	SILTY TO CLAYEY F.S.	52.1	.86	17	17	.282	60%-70%	42-44	114	--	--	--	--
8	SILTY FINE SAND	68.9	.57	17	17	.313	70%-80%	44-46	151	--	--	--	--
9	SILTY FINE SAND	78.8	.76	19	19	.344	70%-80%	44-46	173	--	--	--	--
	ILTY FINE SAND	92.1	.58	23	23	.375	70%-80%	44-46	202	--	--	--	--
	LAYEY FINE SAND	27.3	.37	10	10	.405	40%-50%	38-40	60	--	--	--	--
12	SILTY FINE SAND	48.5	.27	12	12	.436	50%-60%	40-42	106	--	--	--	--
13	CLAYEY FINE SAND	13.4	.03	5	5	.467	<40%	34-36	29	--	--	--	--
14	CLAYEY FINE SAND	14.3	.05	5	5	.498	<40%	34-36	31	--	--	--	--
15	SENSITIVE FINE GRAIN	9.1	.01	4	4	.52	--	--	--	.51	67.5	.02	3
16	SENSITIVE FINE GRAIN	2.5	.02	1	1	.542	--	--	--	.1	9	.08	1
17	SENSITIVE FINE GRAIN	4.5	.06	2	2	.564	--	--	--	.22	7	.04	1-1.5
18	SANDY CLAY	6.7	.07	3	3	.591	--	--	--	.35	8.4	.02	3
19	CLAY	5	.12	5	5	.616	--	--	--	.24	4.1	.05	1-1.5
20	CLAY	7.2	.39	7	7	.641	--	--	--	.38	1.8	.03	3
21	SANDY CLAY	6.2	.07	3	3	.668	--	--	--	.31	8	.02	1-1.5
22	CLAYEY FINE SAND	17	.14	6	6	.699	<40%	32-34	37	--	--	--	--
23	CLAYEY FINE SAND	18	.35	7	7	.73	<40%	32-34	39	--	--	--	--
24	SILTY TO CLAYEY F.S.	26.3	.3	8	8	.76	<40%	34-36	57	--	--	--	--
25	SENSITIVE FINE GRAIN	7.6	.02	3	3	.782	--	--	--	.38	26.8	.02	1-1.5
26	SENSITIVE FINE GRAIN	6.3	.04	3	3	.804	--	--	--	.3	13.3	.03	1-1.5
27	SANDY CLAY	7.1	.07	3	3	.832	--	--	--	.34	9.4	.04	1-1.5
28	SANDY CLAY	9.5	.22	4	4	.859	--	--	--	.49	4.2	.03	3
29	SILTY FINE SAND	52.2	.47	13	13	.89	40%-50%	38-40	114	--	--	--	--
30	FINE SAND	115.9	.75	23	23	.923	60%-70%	40-42	254	--	--	--	--

.10A20 CONTINUED BECHTEL ENVIRONMENTAL

DEPTH FEET	SOIL BEHAVIOR TYPE	PT (KG/CM2)	LF (KG/CM2)	N VALUES	N'	VERTICAL STRESS	RELATIVE DENSITY	FRICTION ANGLE	YOUNGS MODULUS	UNDRAINED SHEAR ST	SENSITIVITY	COMP.	OCR
31	SILTY TO CLAYEY F.S.	110	1.75	36	36	.954	60%-70%	40-42	242	--	--	--	--
32	FINE SAND	161.2	1.68	32	32	.987	70%-80%	42-44	354	--	--	--	--
33	SILTY TO CLAYEY F.S.	231.2	5.9	77	77	1.018	>90%	44-46	508	--	--	--	--
34	SILTY FINE SAND	494.6	9.44	123									
					123	1.048	>90%	46-48	1088	--	--	--	--

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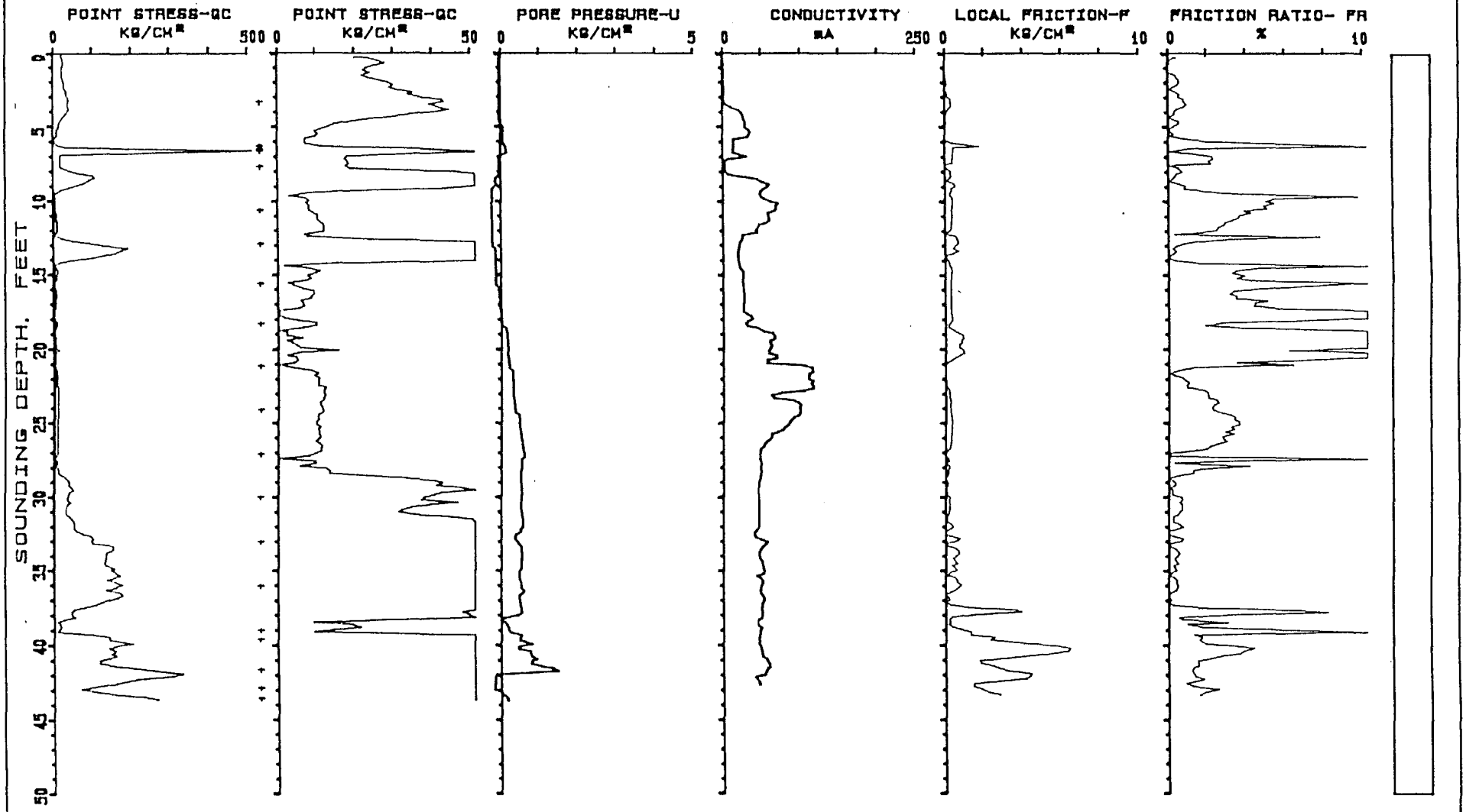
CONDUCTIVITY / PIEZOCONE SOUNDING TEST



* PUSH INTERRUPTED TO ADD ROD
PORE PRESSURE DECAY DATA MAY BE AVAILABLE

FILE #..... BECHTEL
PARRIS ISLAND CLEANERS
PROJECT# 22567-145-SC-0594
SOUNDING # 615E15
TEST DATE 06-19-1998 12:26:56

IN-SITU TECHNOLOGY SOIL BEHAVIOR TABLE
FOR SOUTHEASTERN UNITED STATES SOILS

JOB NAME ..... BECHTEL ENVIRONMENTAL
PARRIS ISLAND CLEANERS
PROJECT# 22567-145-SC-0594
FILE NAME..... 615E15

DEPTH FEET	SOIL BEHAVIOR TYPE	PT (KG/CM2)	LF (KG/CM2)	N VALUES #	N'	VERTICAL EFFECTIVE STRESS (KG/CM2)	RELATIVE DENSITY (%) *	FRICTION ANGLE (DEGREES) **	YOUNGS MODULUS (KG/CM2) ***	UNDRAINED SHEAR STRENGTH (KG/CM2) ****	SENSITIVITY	COMP.	OCR
1	SILTY TO CLAYEY F.S.	25.3	0	8	8	.048	50%-60%	46-48	55	--	--	--	--
2	SILTY TO CLAYEY F.S.	24.4	.09	8	8	.097	50%-60%	44-46	53	--	--	--	--
3	SILTY TO CLAYEY F.S.	32.2	.17	10	10	.146	50%-60%	44-46	70	--	--	--	--
4	SILTY TO CLAYEY F.S.	41.4	.27	13	13	.195	60%-70%	44-46	91	--	--	--	--
5	SILTY TO CLAYEY F.S.	25.2	.01	8	8	.226	40%-50%	40-42	55	--	--	--	--
6	CLAYEY FINE SAND	10	.08	4	4	.256	<40%	36-38	22	--	--	--	--
7	FINE SAND	119.6	.09	23	23	.29	80%-90%	46-48	263	--	--	--	--
8	CLAYEY FINE SAND	9	.07	3	3	.32	<40%	34-36	19	--	--	--	--
9	FINE SAND	80	.06	16	16	.354	70%-80%	44-46	176	--	--	--	--
	'ANDY CLAY	16.5	.35	8	8	.381	--	--	--	.99	4.6	.01	6
	CLAY	8.7	.39	8	8	.406	--	--	--	.5	2.2	.02	6
12	SANDY CLAY	11.5	.32	5	5	.433	--	--	--	.67	3.5	.02	6
13	CLAYEY FINE SAND	21.2	.44	8	8	.464	<40%	36-38	46	--	--	--	--
14	FINE SAND	140.5	.27	28	28	.497	80%-90%	44-46	309	--	--	--	--
15	CLAYEY FINE SAND	19.5	.3	7	7	.528	<40%	36-38	42	--	--	--	--
16	CLAY	7	.33	7	7	.553	--	--	--	.38	2	.03	3
17	CLAY	8.1	.31	8	8	.578	--	--	--	.44	2.5	.03	3
18	SOFT CLAY	3	.36	3	3	.594	--	--	--	.12	.8	UD	1
19	CLAY	4.7	.36	4	4	.619	--	--	--	.22	1.2	.05	1-1.5
20	SOFT CLAY	1.5	.89	1	1	.635	--	--	--	.02	.1	UD	<1
21	SOFT CLAY	1.4	.57	1	1	.651	--	--	--	.01	.2	UD	<1
22	SENSITIVE FINE GRAIN	7	.01	3	3	.673	--	--	--	.36	51.4	.02	3
23	SANDY CLAY	11.5	.17	5	5	.7	--	--	--	.63	6.7	.02	3
24	SANDY CLAY	11.8	.27	5	5	.728	--	--	--	.65	4.2	.02	3
25	SILTY CLAY TO CLAY	11.2	.34	7	7	.755	--	--	--	.61	3.2	.02	3
26	SILTY CLAY TO CLAY	10.9	.35	7	7	.782	--	--	--	.59	3.1	.02	3
27	SANDY CLAY	11.2	.21	5	5	.81	--	--	--	.6	5.1	.02	3
28	SOFT CLAY	.5	.13	0	0	.826	--	--	--	-.07	.3	UD	<1
29	SILTY TO CLAYEY F.S.	20.5	.06	6	6	.857	<40%	32-34	45	--	--	--	--
30	SILTY FINE SAND	44	.04	11	11	.887	<40%	36-38	96	--	--	--	--

SE15 CONTINUED BECHTEL ENVIRONMENTAL

DEPTH FEET	SOIL BEHAVIOR TYPE	PT (KG/CM2)	LF (KG/CM2)	N VALUES	N'	VERTICAL STRESS	RELATIVE DENSITY	FRICTION ANGLE	YOUNGS MODULUS	UNDRAINED SHEAR ST	SENSITIVITY	COMP.	OCR
31	SILTY TO CLAYEY F.S.	37.5	.24	12	12	.918	<40%	36-38	82	--	--	--	--
32	SILTY FINE SAND	47.3	.23	11	11	.949	<40%	36-38	104	--	--	--	--
33	FINE SAND	79.2	.21	15	15	.982	50%-60%	40-42	174	--	--	--	--
34	FINE SAND	132.4	.48	26	26	1.015	60%-70%	42-44	291	--	--	--	--
35	FINE SAND	138.7	.49	27	27	1.048	70%-80%	42-44	305	--	--	--	--
36	FINE SAND	159.9	.56	31	31	1.082	70%-80%	42-44	351	--	--	--	--
37	FINE SAND	162.6	.29	32	32	1.115	70%-80%	42-44	357	--	--	--	--
38	SILTY TO CLAYEY F.S.	87	1.49	29	29	1.146	50%-60%	38-40	191	--	--	--	--
39	SILTY TO CLAYEY F.S.	28.9	.35	9	9	1.176	<40%	32-34	63	--	--	--	--
40	SILTY TO CLAYEY F.S.	104.9	2.93	34	34	1.207	50%-60%	40-42	230	--	--	--	--
41	SILTY TO CLAYEY F.S.	161	4.8	53	53	1.238	70%-80%	42-44	354	--	--	--	--
42	SILTY FINE SAND	192.8	2.97	48	48	1.269	70%-80%	42-44	424	--	--	--	--
43	SILTY FINE SAND	198.7	2.57	49	49	1.3	70%-80%	42-44	437	--	--	--	--

$ N'=POINT STRESS*(.2+.04*FRICTION RATIO)
* NORMALLY CONSOLIDATED SANDS
** FOR OVERCONSOLIDATED SANDS,SLIGHTLY REDUCE ABOVE FRICTION ANGLES
** FOR OVERCONSOLIDATED SANDS, YOUNG'S MODULUS MAY BE AS MUCH AS 3 TO 6 TIMES HIGHER
*** NK OF 16 USED. FOR OVERCONSOLIDATED CLAYS, AN NK OF 17 IS SUGGESTED

THE ABOVE DATA WAS COMPUTED FOLLOWING 'BASIC' GUIDELINES BY P. K. ROBERTSON AND R. G. CAMPANELLA IN THE HANDBOOK 'GUIDELINES FOR USE AND INTERPERTATION OF THE ELECTRONIC CONE PENETRATION TEST'

ADDITIONAL LOCAL CORRELATIONS DEVELOPED BY IN-SITU TECHNOLOGY HAVE ALSO BEEN USED IN COMPUTING THE ABOVE DATA. IT IS THE POLICY OF IN-SITU TECHNOLOGY TO CONTINUALLY UPGRADE AND MODIFY C.P.T CORRELATIONS AS PUBLISHED RESEARCH AND LOCAL EXPERIENCE GROWS.

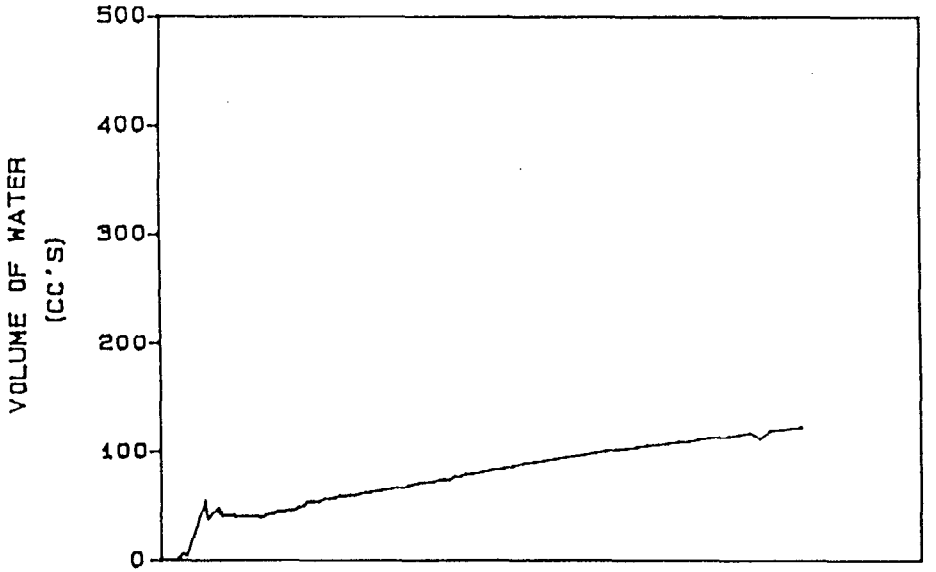
HYDROCONE TEST

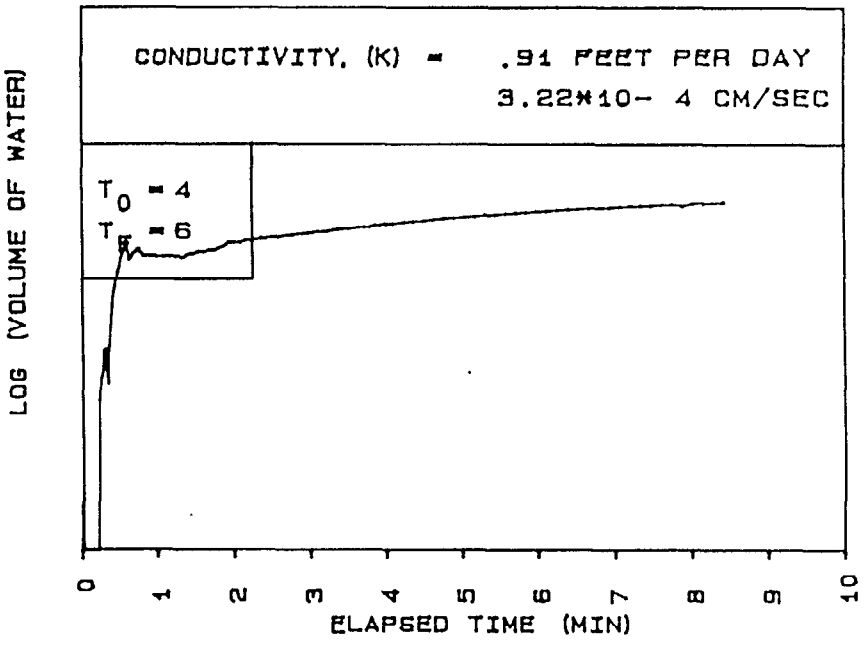
SUMMARY OF CONDUCTIVITY MEASUREMENTS (cm/sec)
18 JUNE TO 30 JUNE 1996
MCRD PARRIS ISLAND DRY CLEANER FACILITY

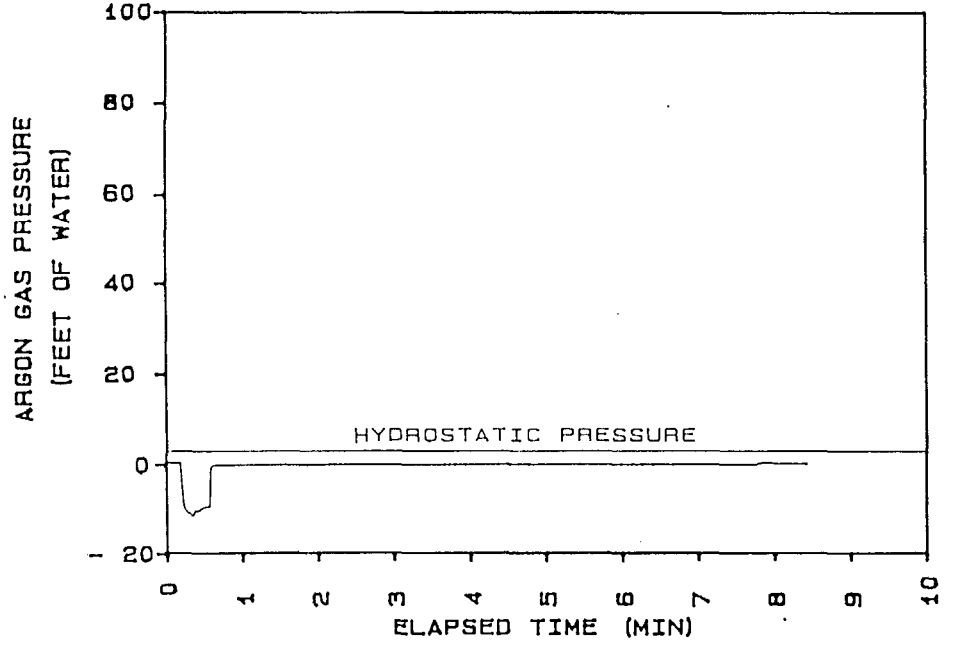
								Borehole Depth						
Borehole Location	7ft	9ft	13ft	14ft	16ft	21ft	22ft	23ft	28ft	30ft	34ft	36ft	37ft	38ft
300C22	3.22*10-4			2.23*10-3			N.A.							
500C24	3.14*10-5			1.15*10-4			9.69*10-5							
322D09	2.08*10-4		5.11*10-3				1.59*10-5		5.81*10-4			5.76*10-4		
700D21	2.48*10-4			7.15*10-5		3.34*10-5			4.33*10-4					
615E15	N.A.		N.A.			1.75*10-4				7.51*10-4			6.46*10-4	
710E24	7.71*10-5			3.28*10-4			1.17*10-4		8.74*10-4					1.37*10-4
102F00	2.45*10-4			N.A.				8.75*10-5	2.37*10-4					
800E00	4.29*10-4			1.49*10-4										
621C18	7.31*10-4			7.66*10-5		2.07*10-5								
102G00				8.77*10-4										
-110G10				N.A.					1.02*10-5					
212G15				3.32*10-4					N.A.					
-218G00				2.58*10-4					2.3*10-5			2.95*10-4		
400G09	5.7*10-5			8.12*10-5				3.26*10-5	1.43*10-3			2.62*10-4		
500G20	1.62*10-3			2.06*10-3					5.45*10-4		5.17*10-4		3.07*10-4	
600G00	N.A.			1.51*10-3		N.A.			6.97*10-4		4.5*10-4			
800G00	8.27*10-4			4.16*10-4										
118H05	2.02*10-3			3.37*10-4					3.81*10-5			5.73*10-4		
-011H14	1.09*10-3			1.07*10-4					3.22*10-4			2.72*10-4		
404H21	1.17*10-4			4.22*10-4										
600H00	2.62*10-4			6.28*10-4				1.43*10-5	2.82*10-4			2.23*10-4		
700H05	4.94*10-3			2.49*10-4										
010J05				1.39*10-4					1.41*10-3					
108J18	2.25*10-3			1.08*10-4					2.8*10-4			5.4*10-4		
-115J23	4.82*10-4			8.99*10-5					1.15*10-3					
-218J05				5.24*10-5					3.04*10-4			2.65*10-4		
-310J05				1.36*10-4					2.17*10-4			6.33*10-4		
200L13		2.12*10-3			1.08*10-4					1.31*10-3				
200M09		3.75*10-5												

N.A.- DATA NOT AVAILABLE

HYDROCONE TEST



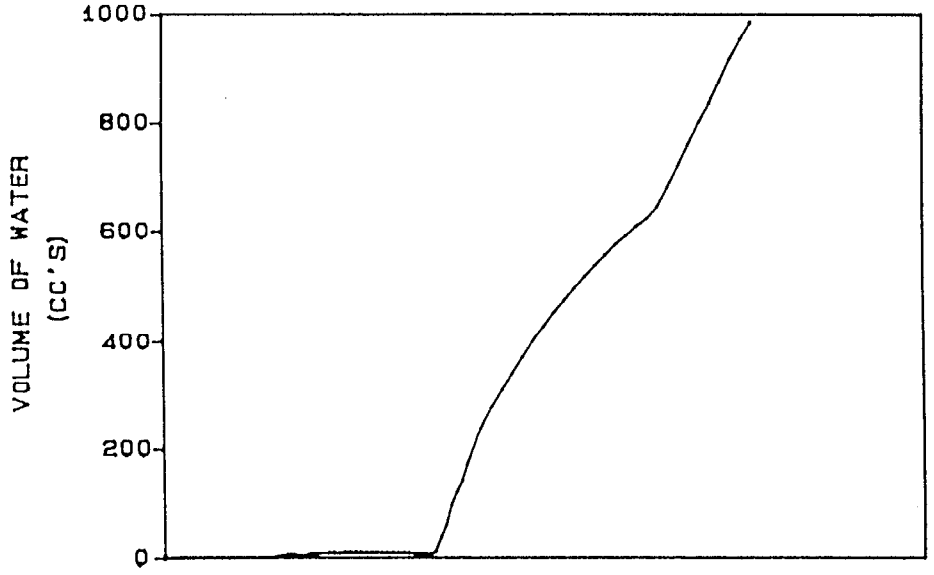


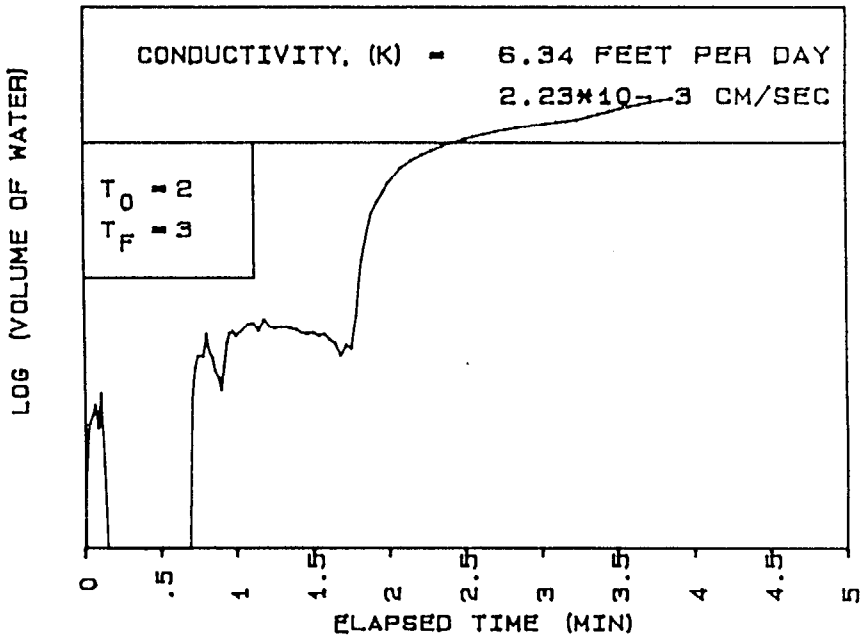


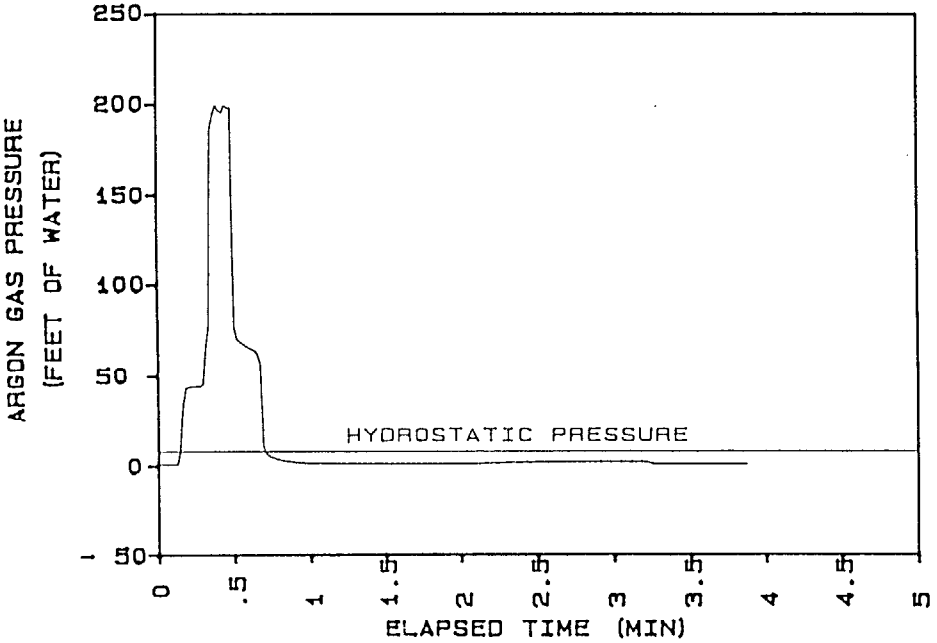
BECHTEL PARRIS ISLAND
LOCATION... 3C-7
TEST DATE
18: 04: 29 06-20-1996

SAMPLE DEPTH (FT) 7
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



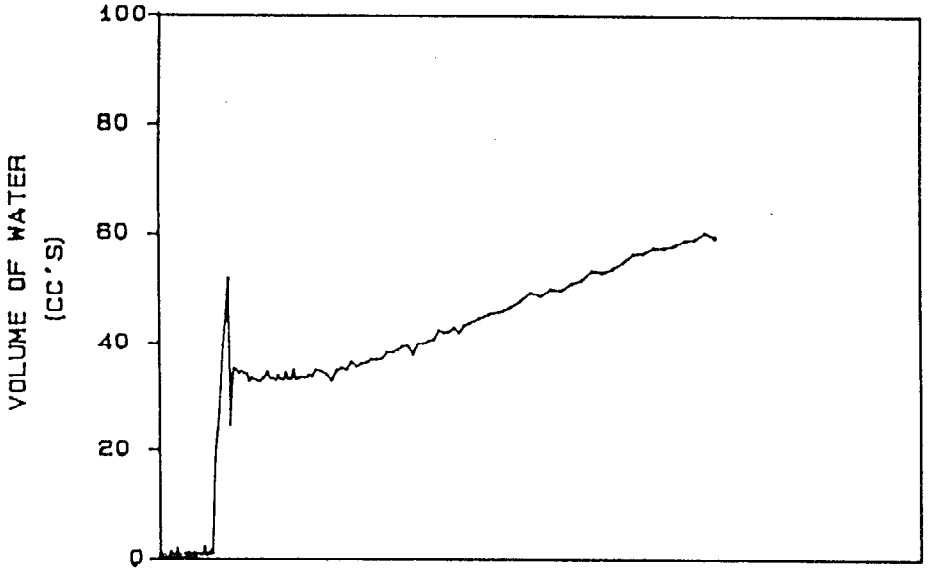


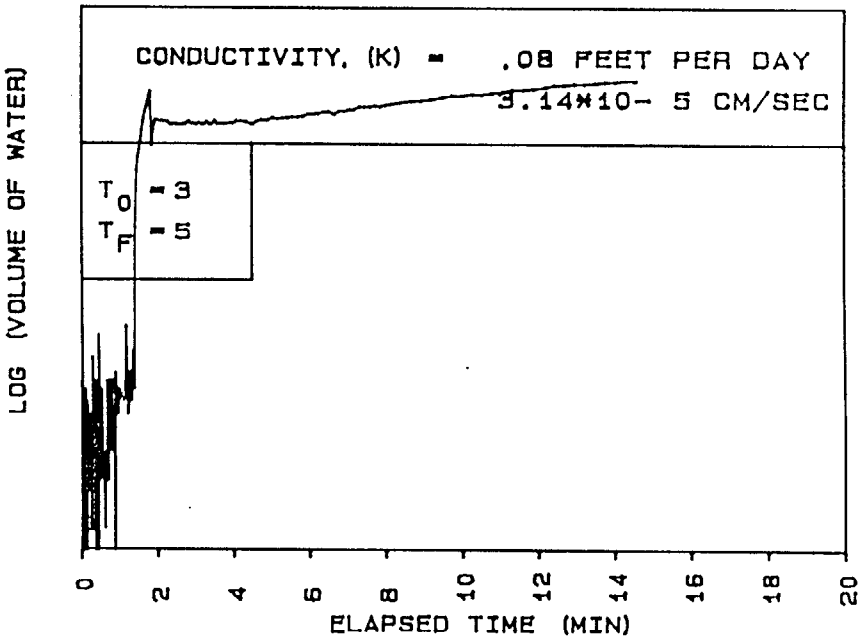


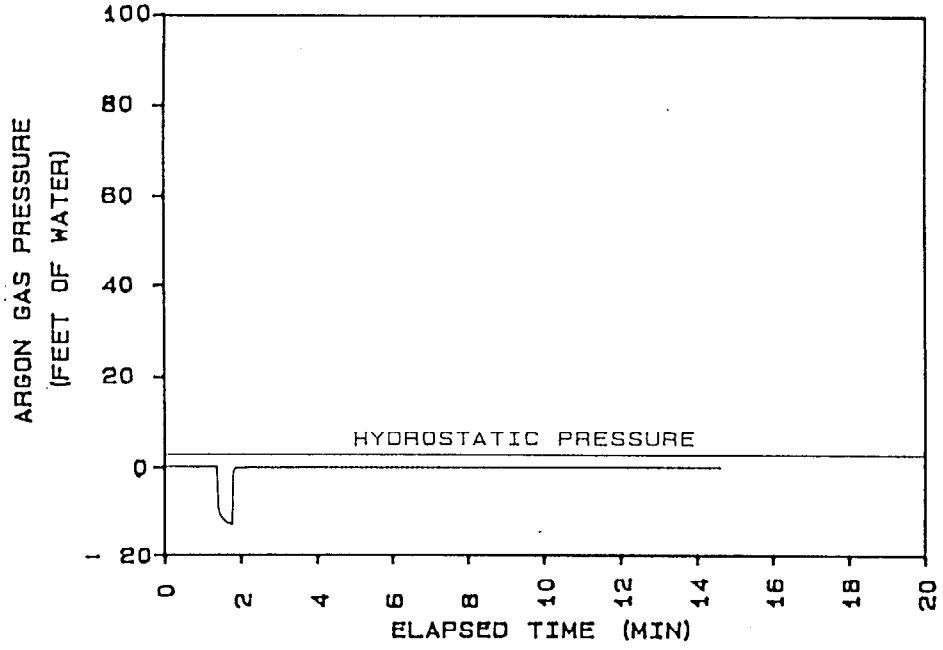
BECHTEL PARRIS ISLAND
LOCATION... 3C-14
TEST DATE
08: 13: 29 06-21-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 7.5

HYDROCONE TEST



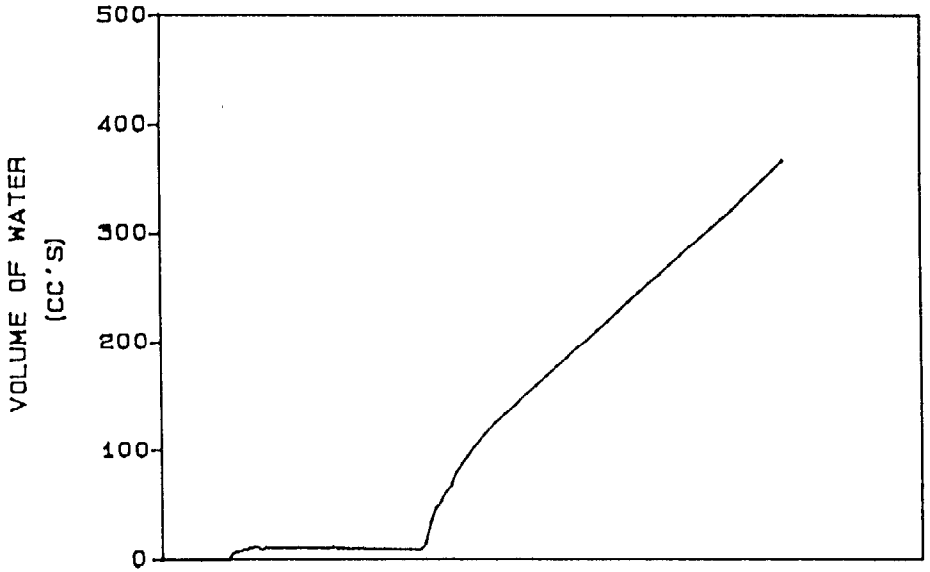


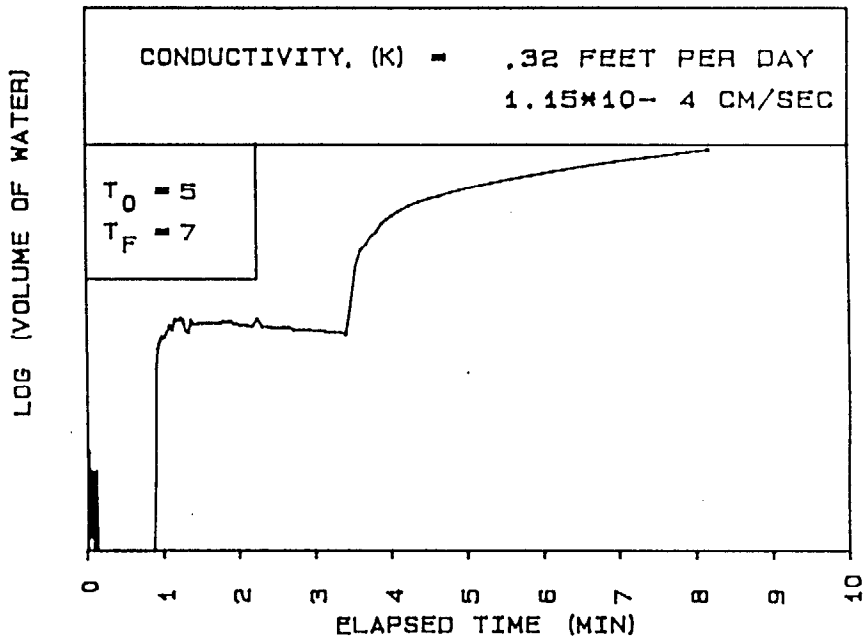


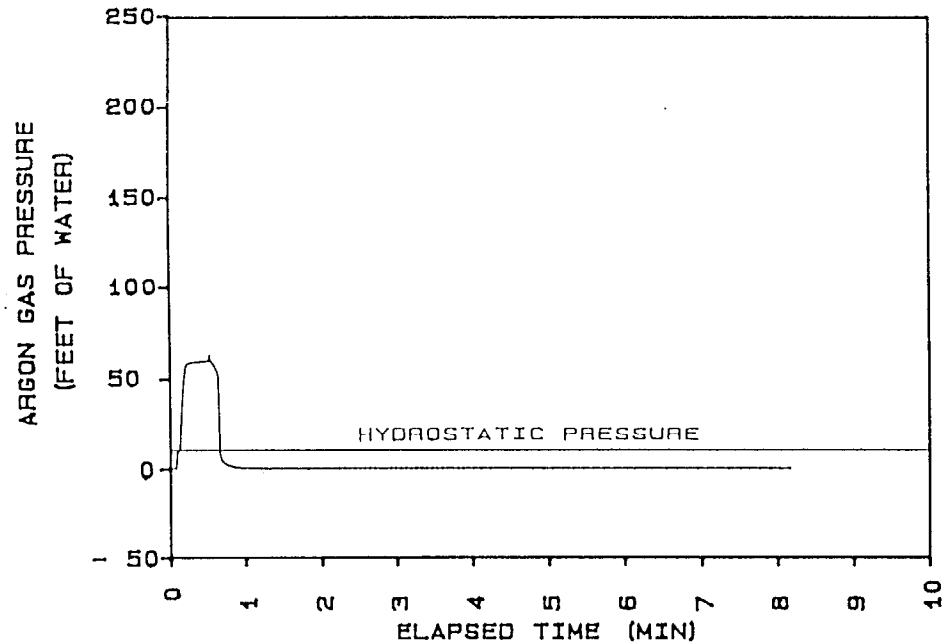
BECHTEL PARRIS ISLAND
LOCATION... SC-7
TEST DATE
10: 15: 01 06-21-1996

SAMPLE DEPTH (FT) 7
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



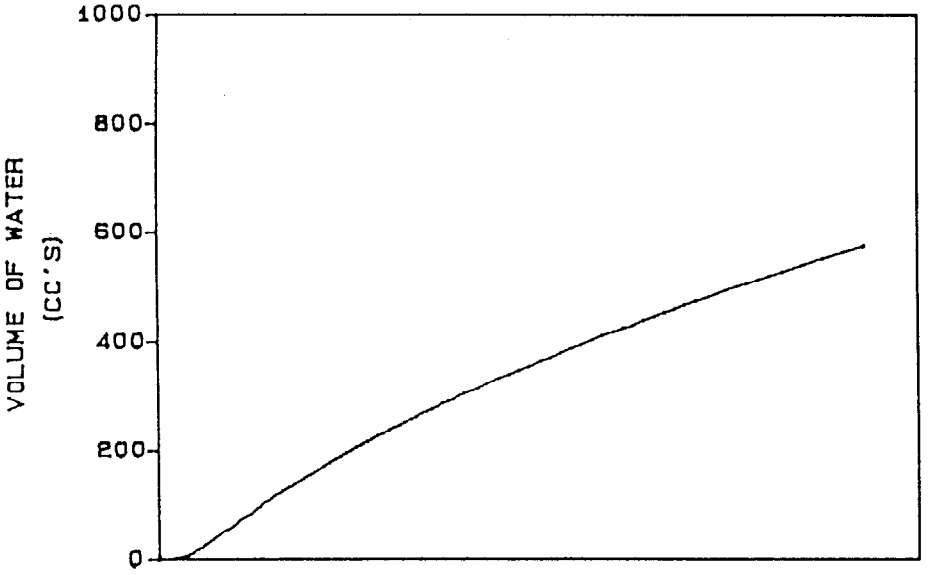


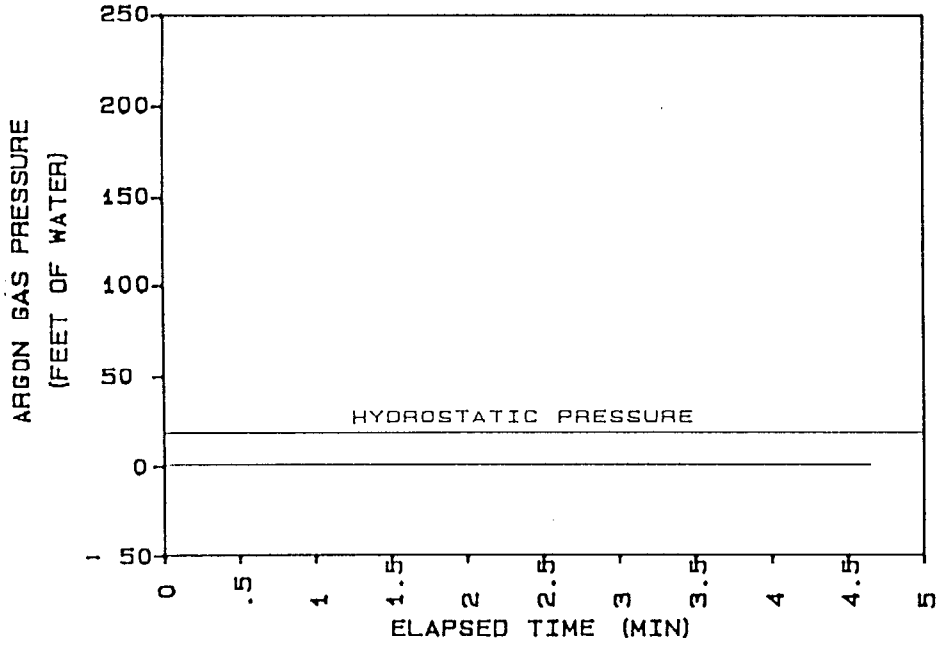


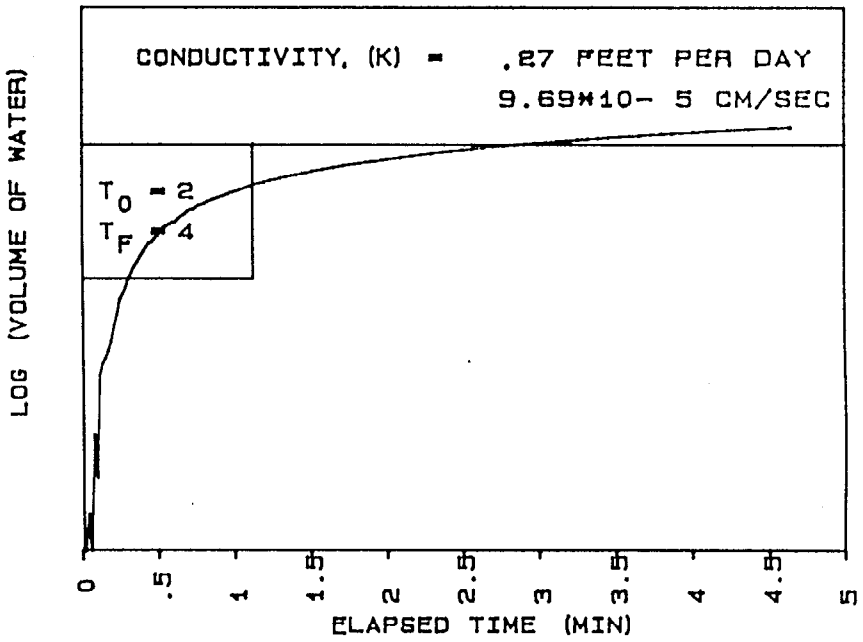
BECHTEL PARRIS ISLAND
LOCATION... SC-14
TEST DATE
11: 01: 25 06-21-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



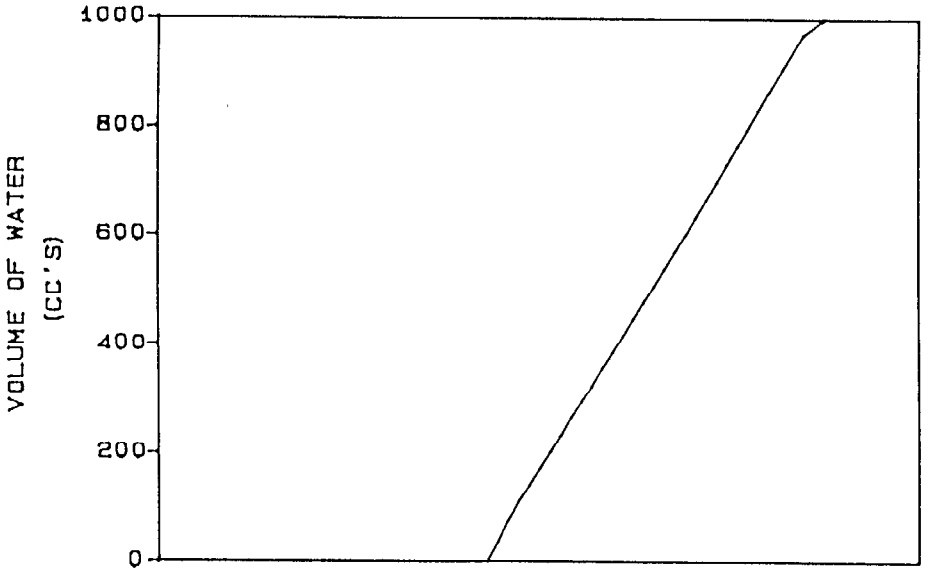


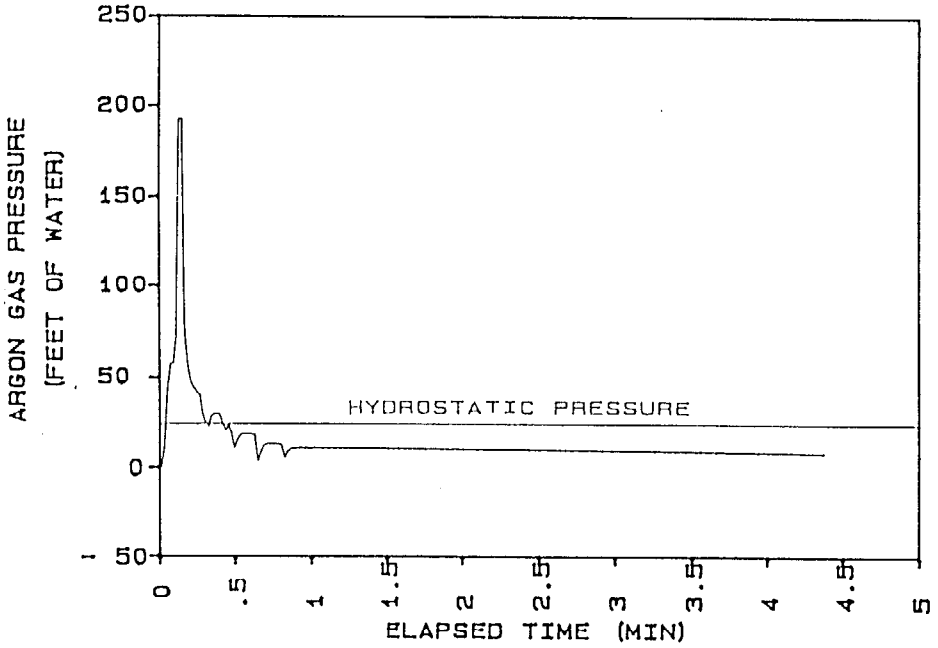


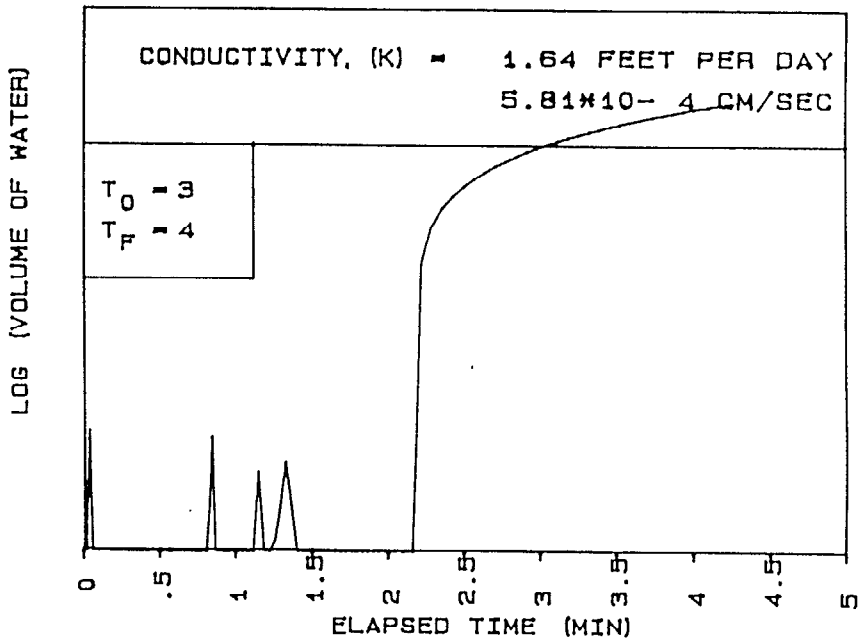
BECHTEL PARRIS ISLAND
LOCATION... SC-22
TEST DATE
12: 01: 18 06-21-1996

SAMPLE DEPTH (FT) 22
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



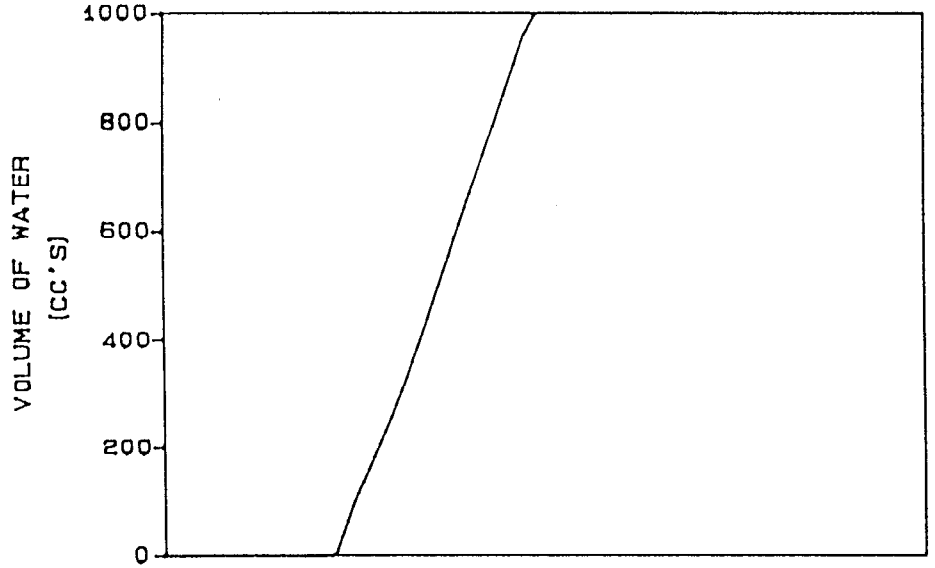


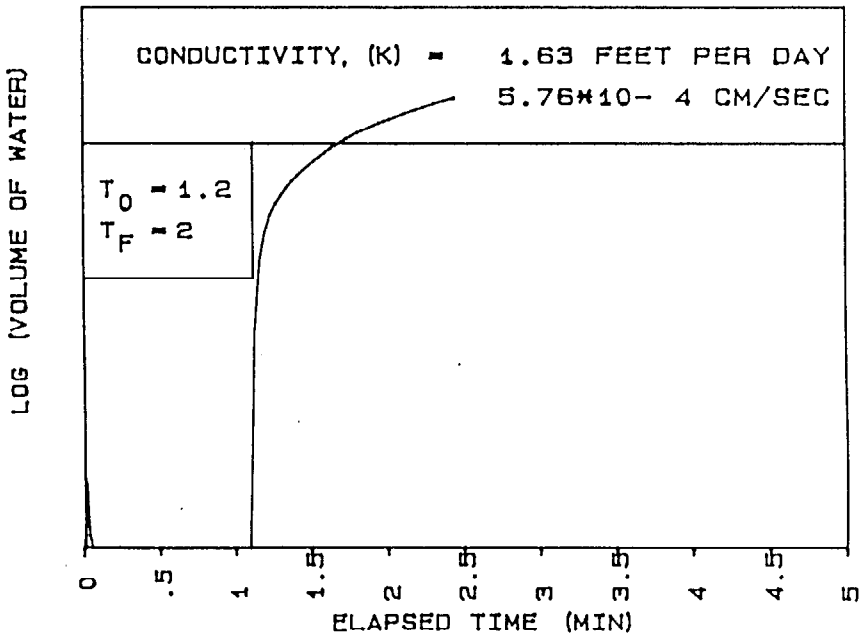


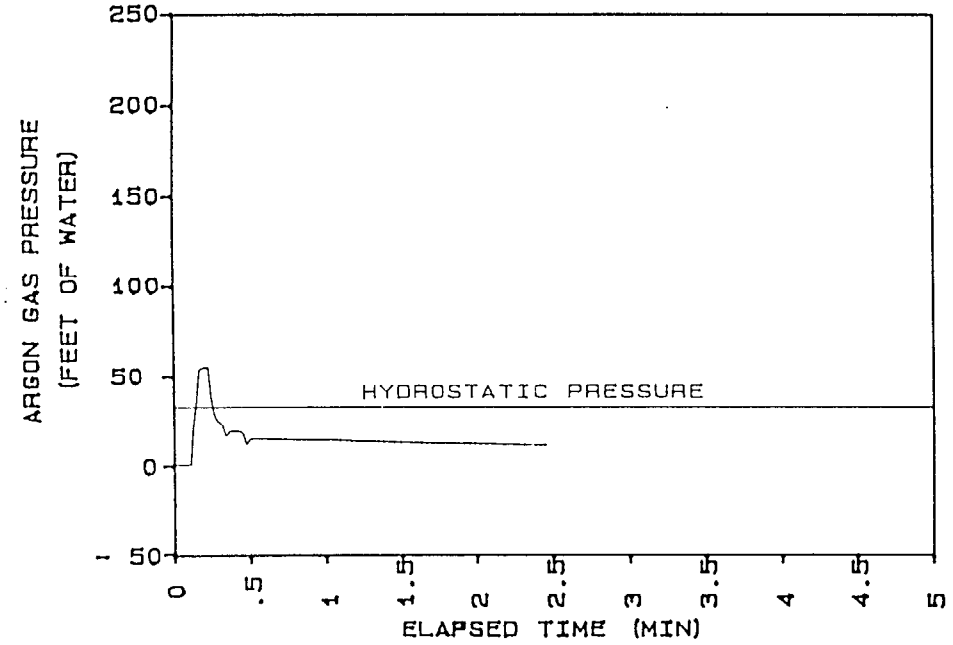
BECHTEL PARRIS ISLAND
LOCATION... 30-28
TEST DATE
13: 29: 33 06-20-1996

SAMPLE DEPTH (FT) 28
@ROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



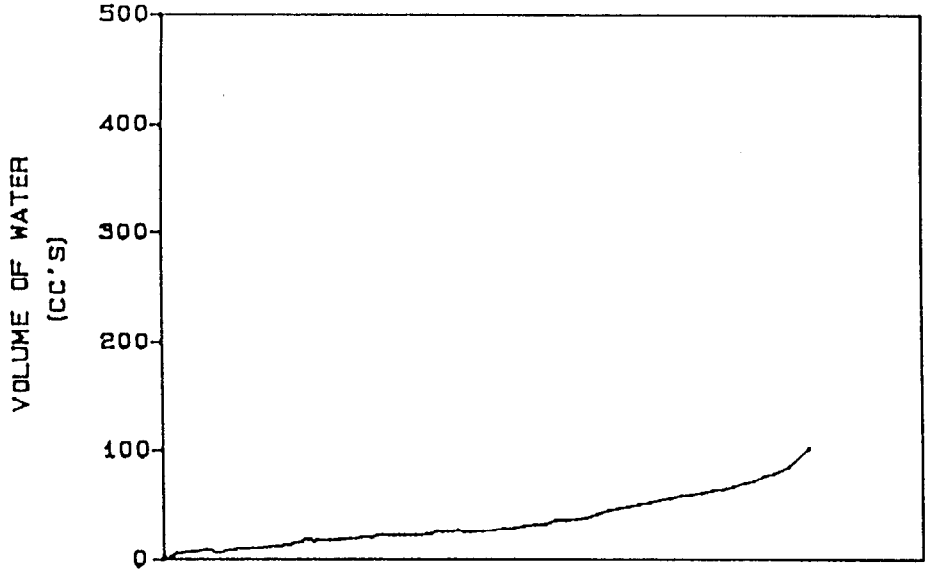


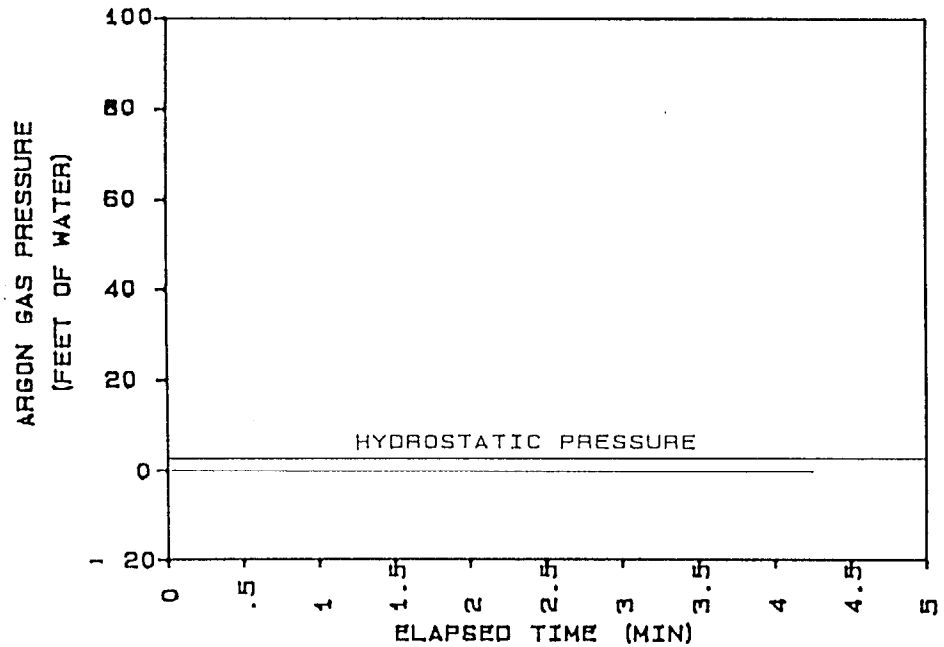


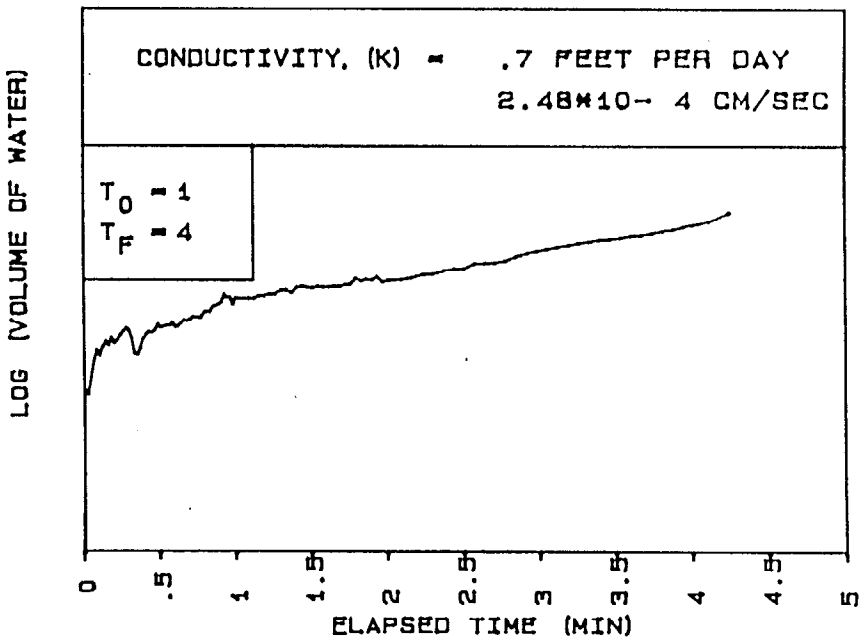
BECHTEL PARRIS ISLAND
LOCATION... 30-36
TEST DATE
14: 11: 42 06-20-1996

SAMPLE DEPTH (FT) 36
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



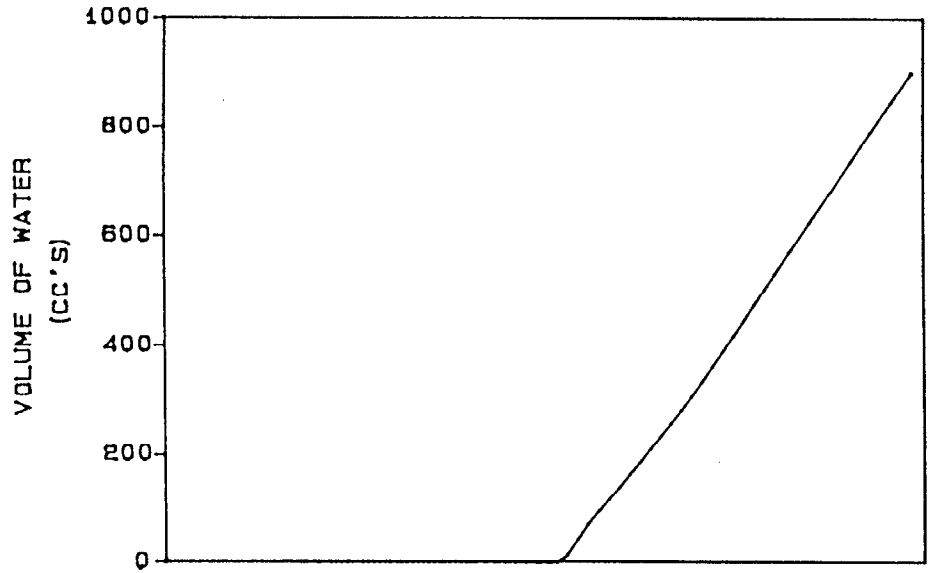


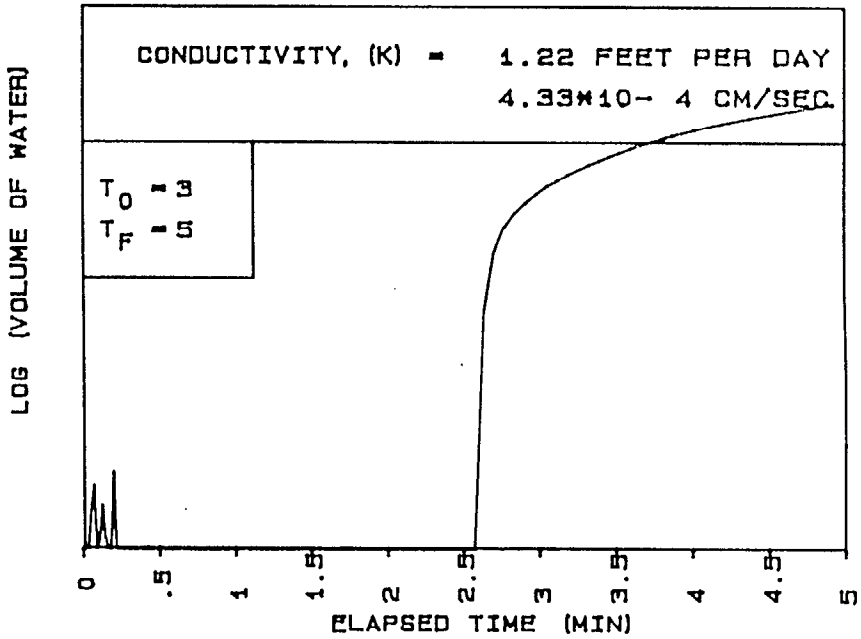


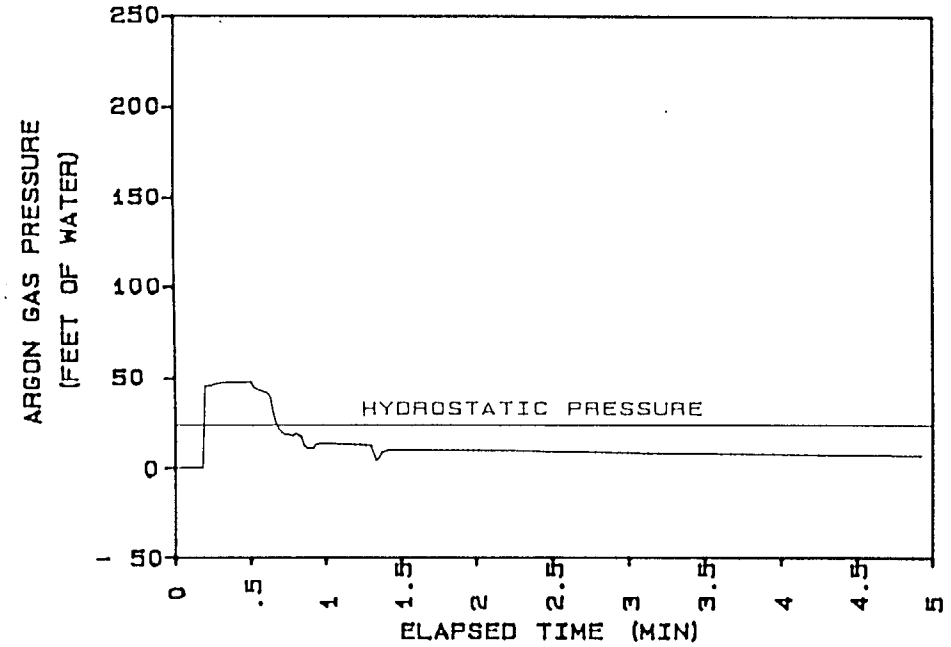
BECHTEL PARRIS ISLAND
LOCATION... 7D-7
TEST DATE
14: 22: 02 06-21-1996

SAMPLE DEPTH (FT) 7
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



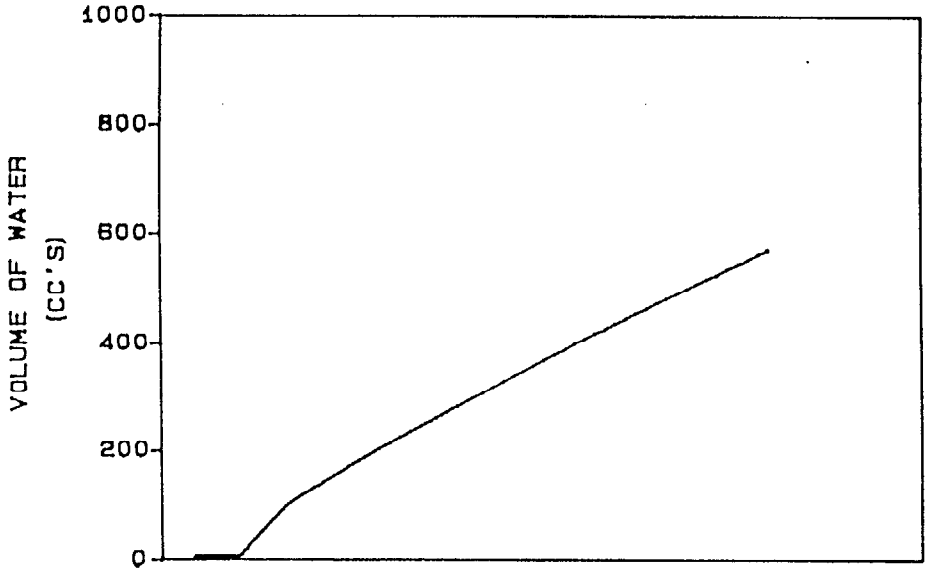


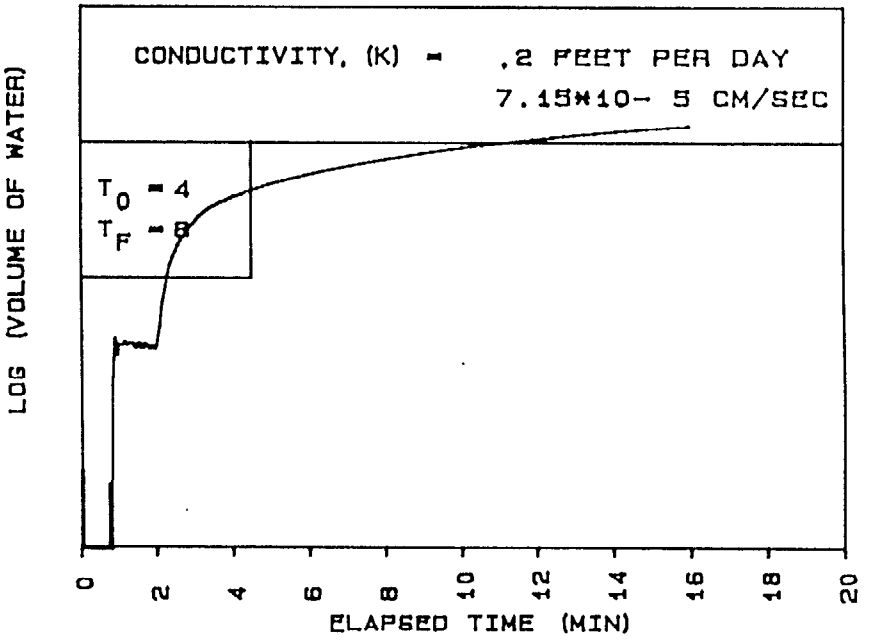


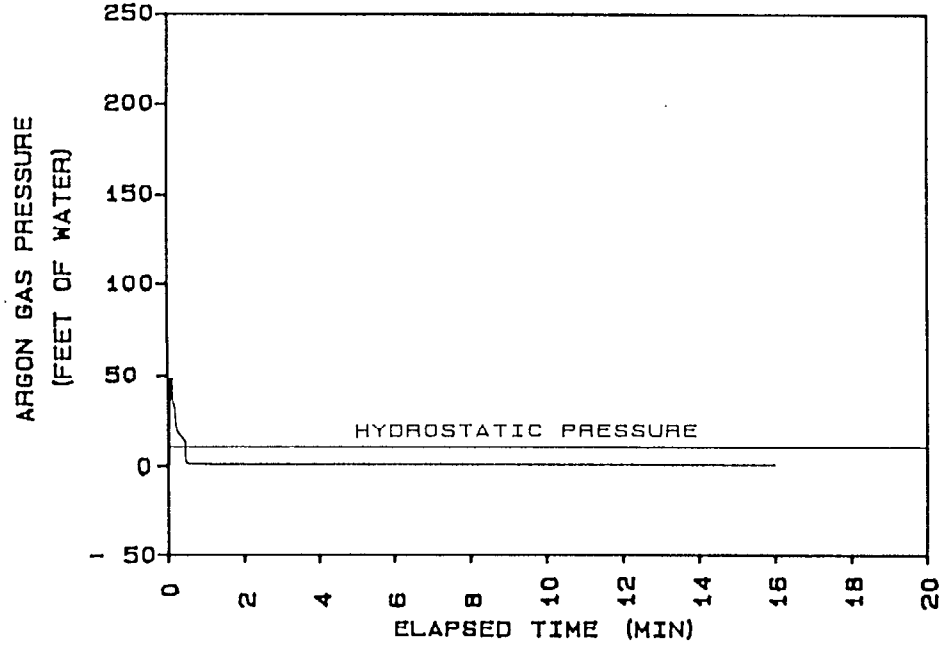
BECHTEL PARRIS ISLAND
LOCATION... 7D-28
TEST DATE
17: 04: 04 06-21-1996

SAMPLE DEPTH (FT) 28
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



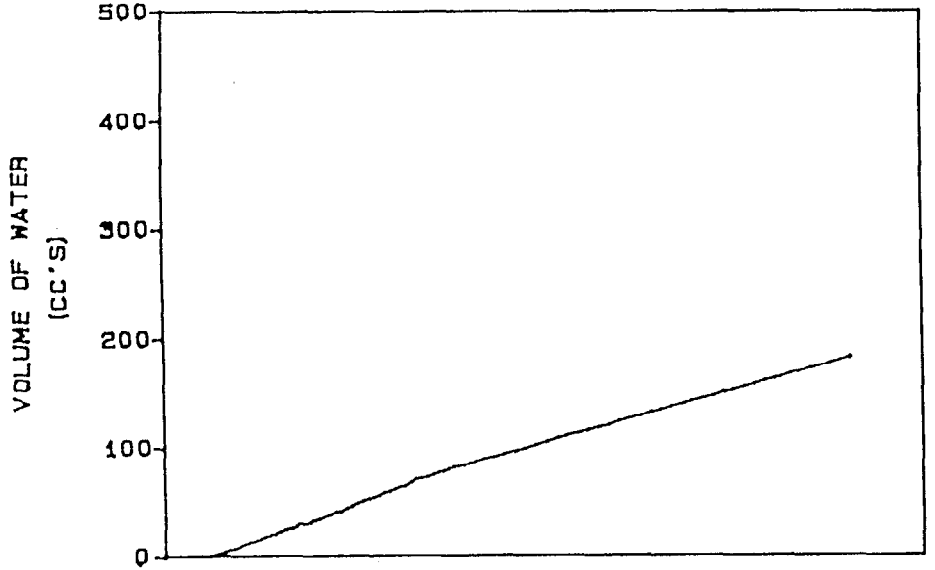


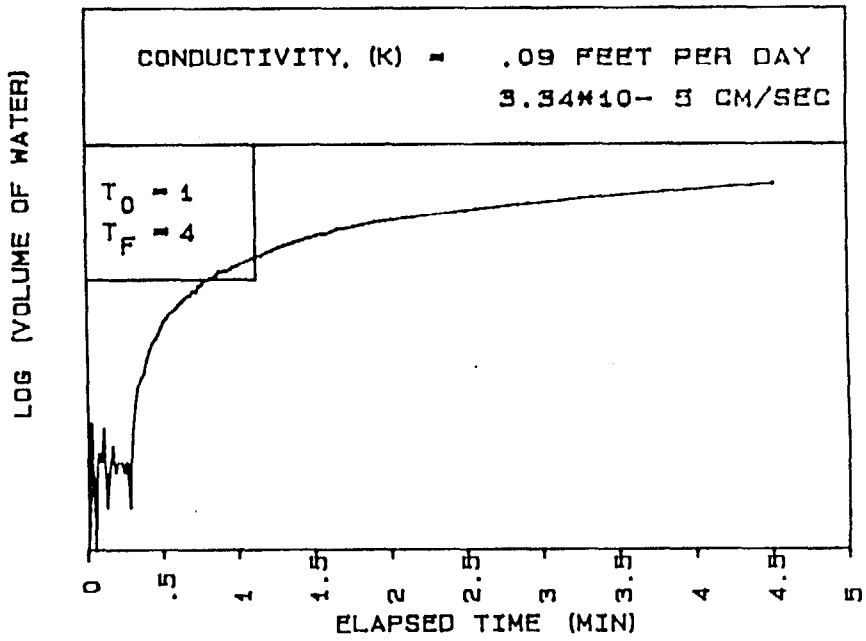


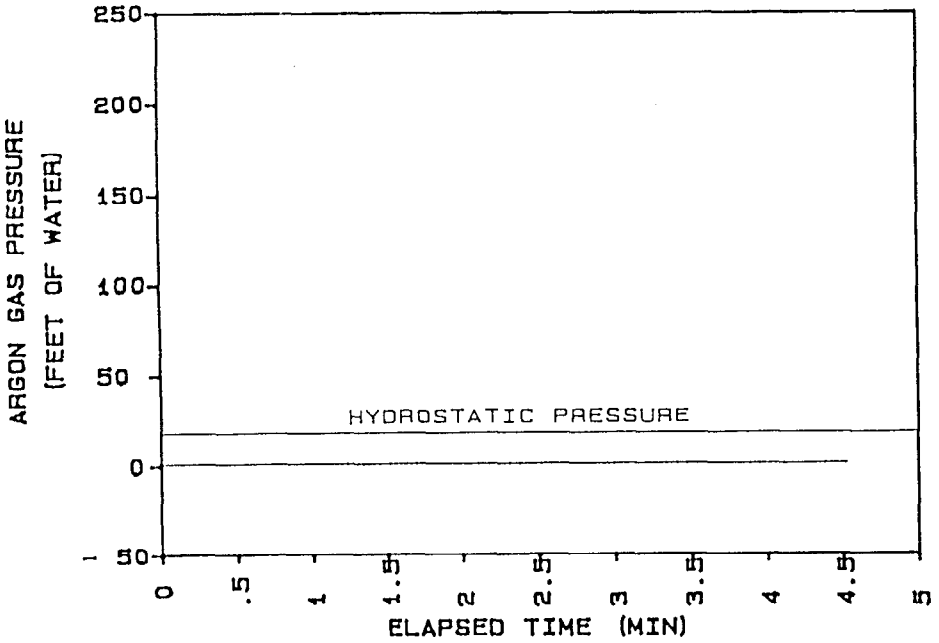
BECHTEL PARRIS ISLAND
LOCATION... 70-14
TEST DATE
14: 55: 59 06-21-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



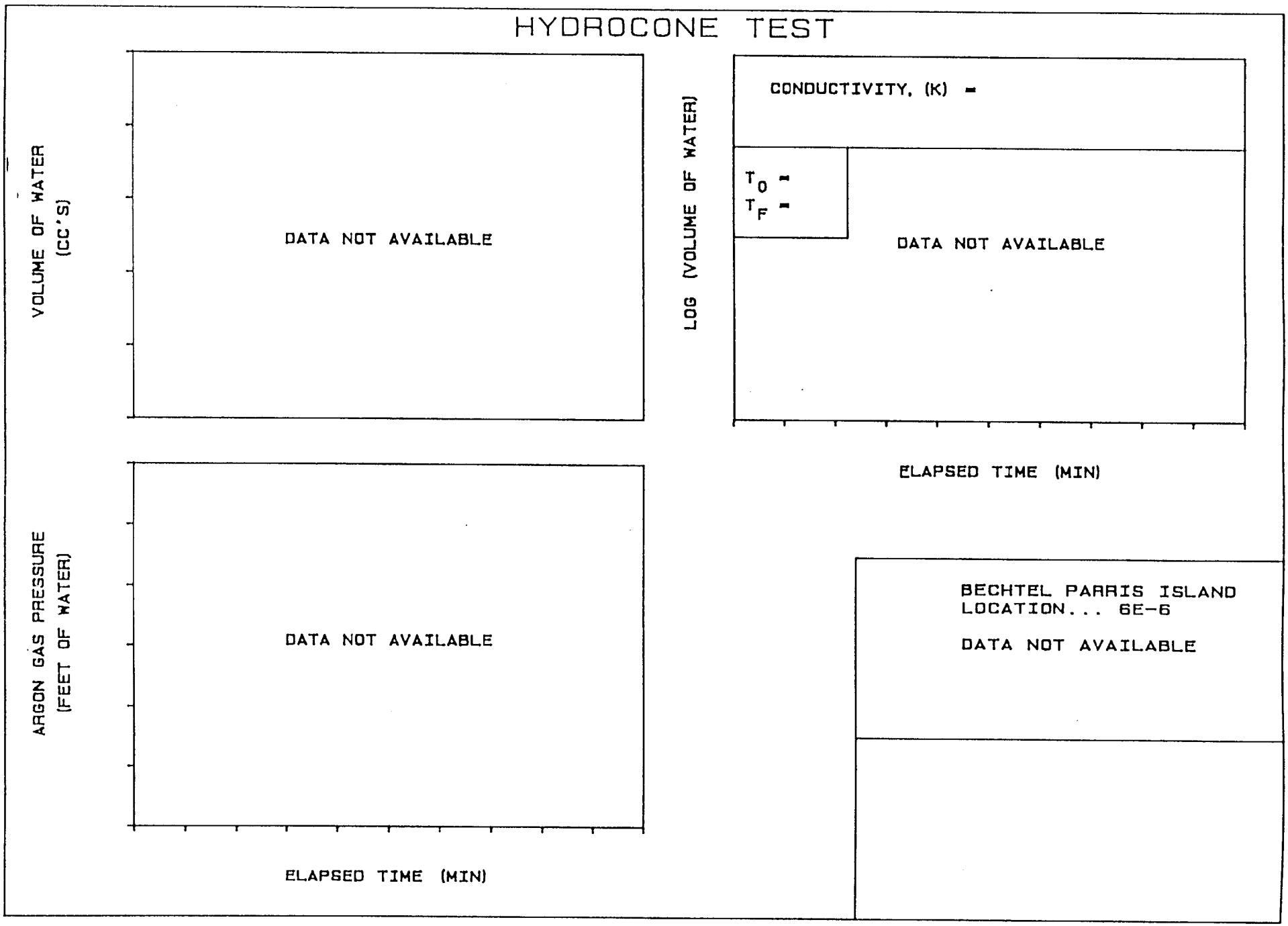




BECHTEL PARRIS ISLAND
LOCATION... 70-21
TEST DATE
16: 13: 57 06-21-1996

SAMPLE DEPTH (FT) 22
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



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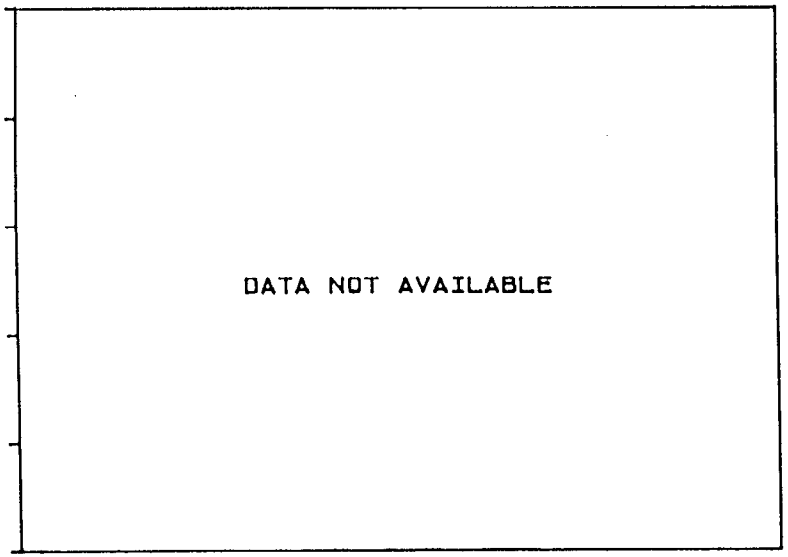
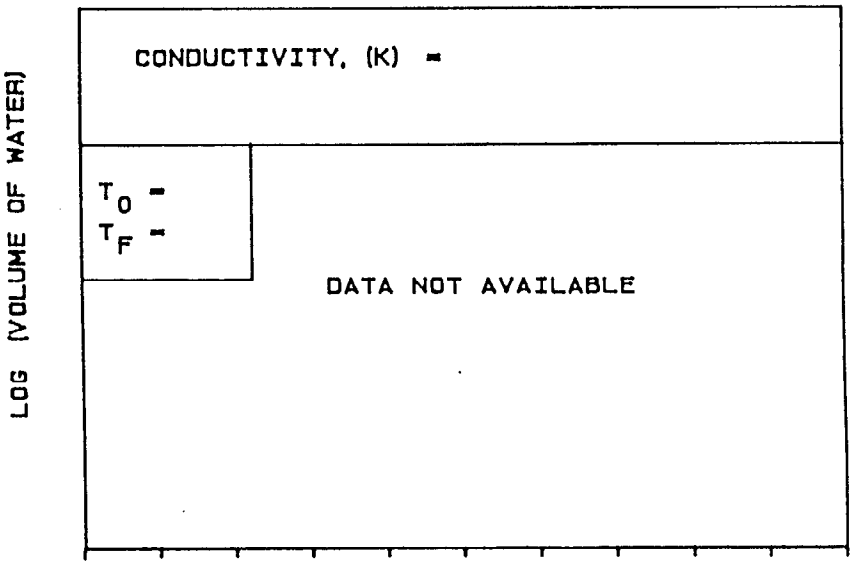
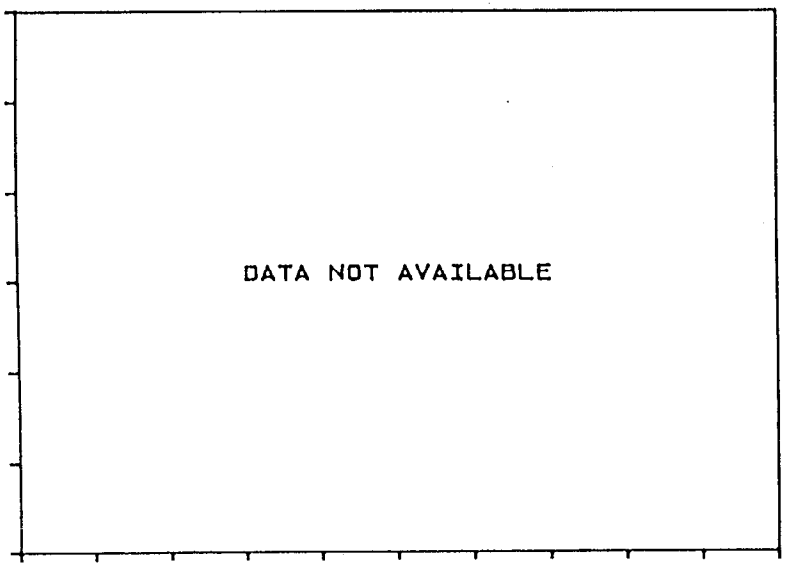


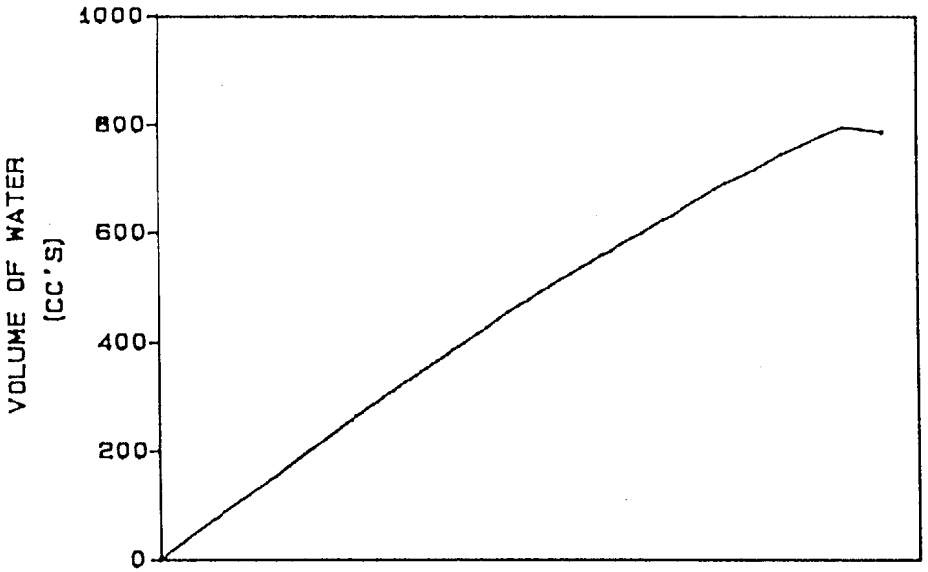


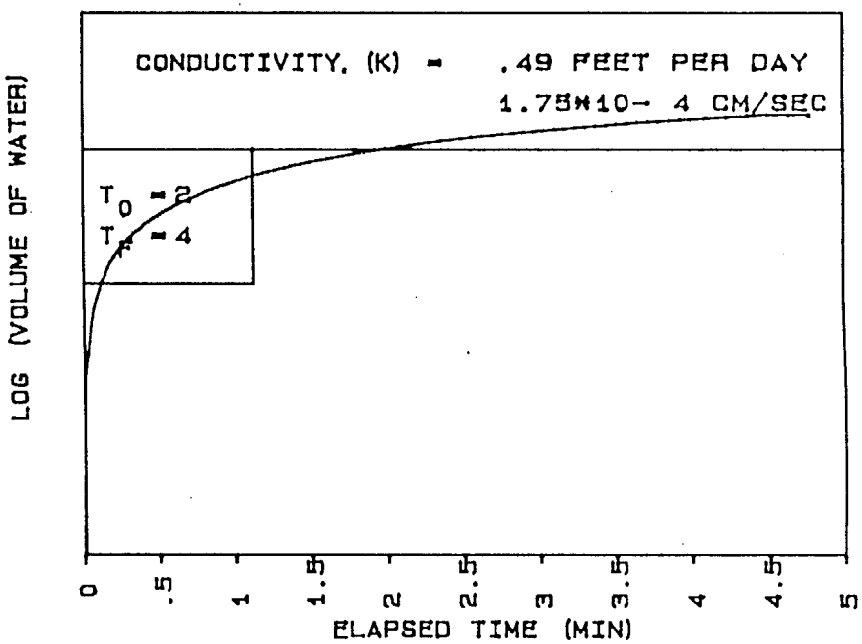


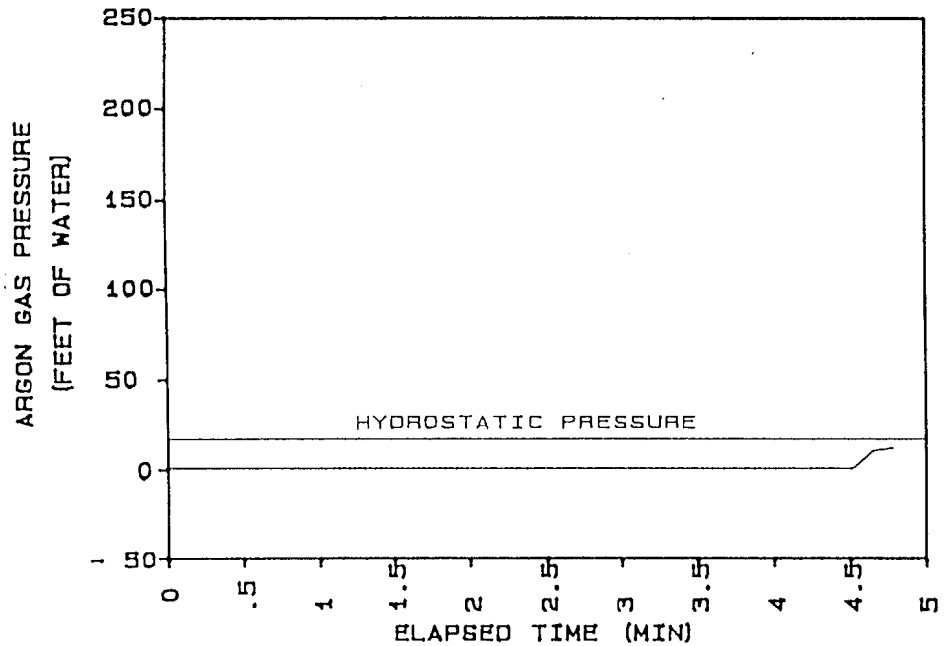
BECHTEL PARRIS ISLAND
LOCATION... 6E-14

DATA NOT AVAILABLE

HYDROCONE TEST



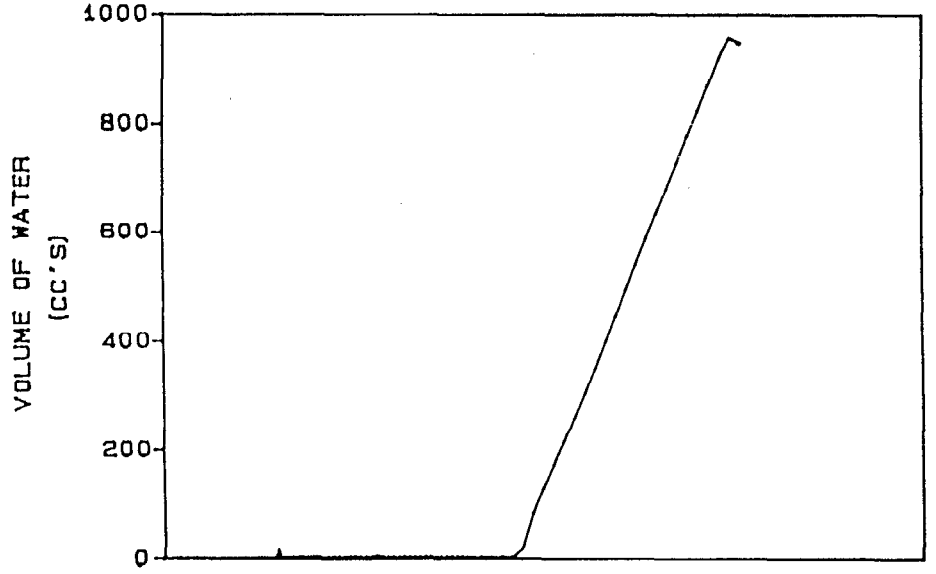


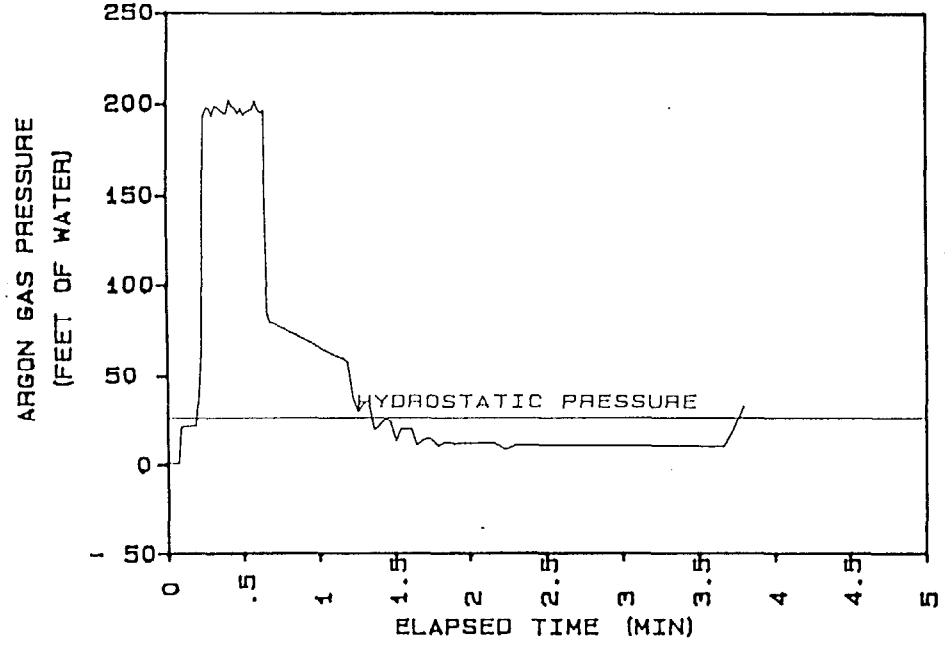


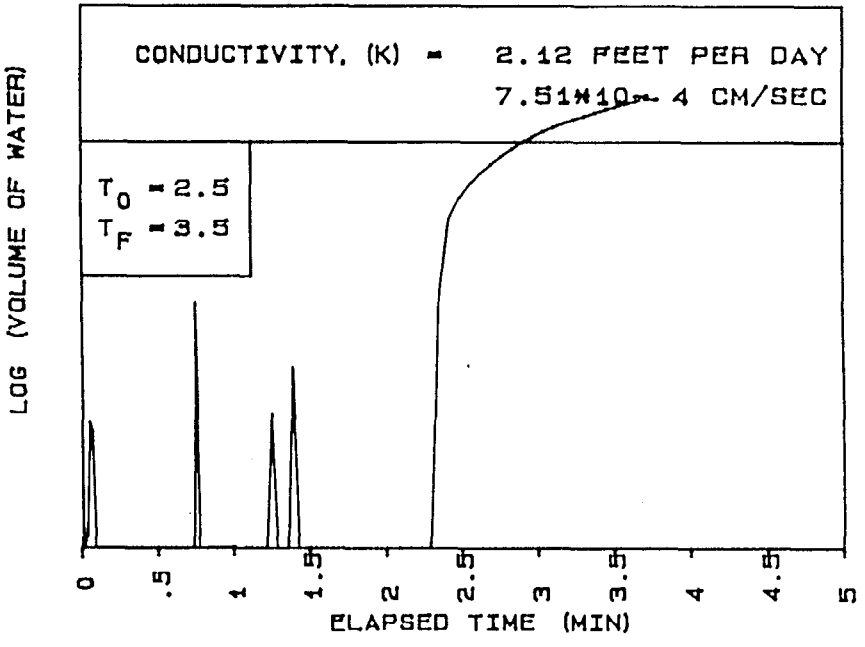
BECHTEL PARRIS ISLAND
LOCATION... 6E-21
TEST DATE
17: 11: 38 06-19-1996

SAMPLE DEPTH (FT) 21
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



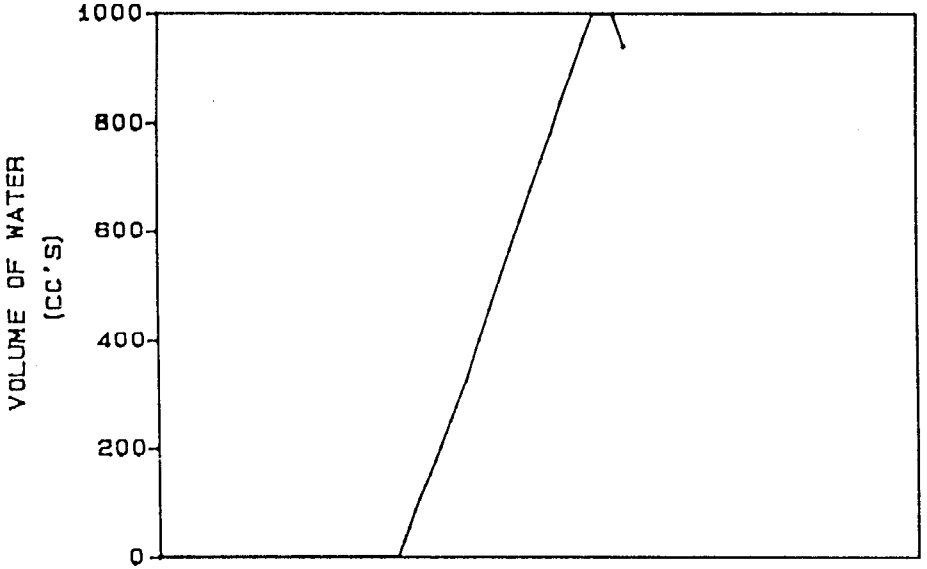


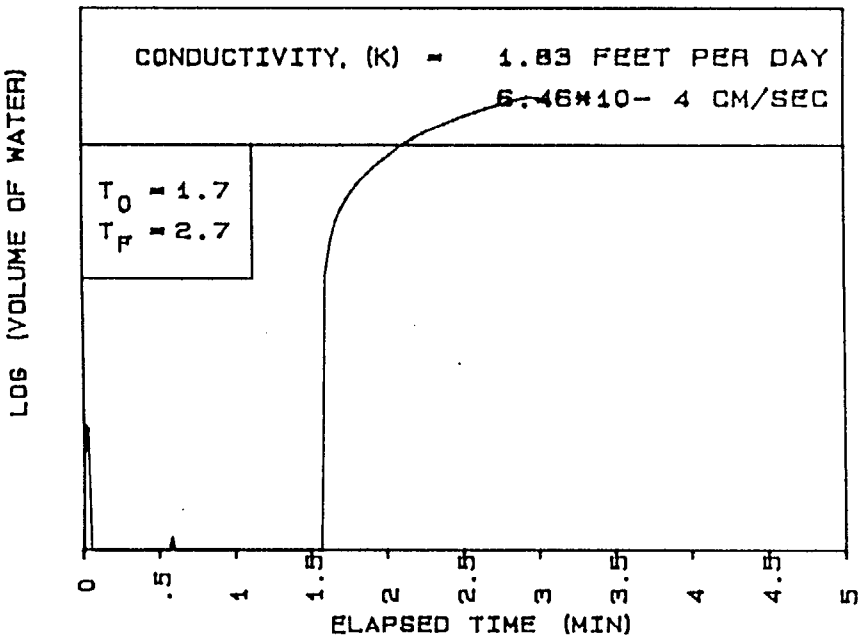


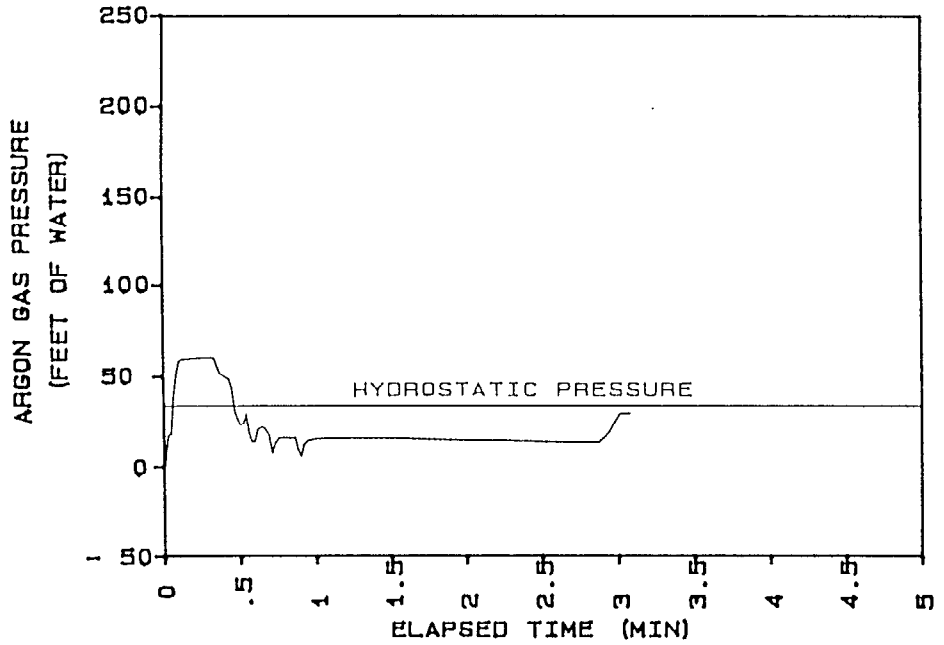
BECHTEL PARRIS ISLAND
LOCATION... 6E-30
TEST DATE
18: 05: 43 06-19-1996

SAMPLE DEPTH (FT) 30
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



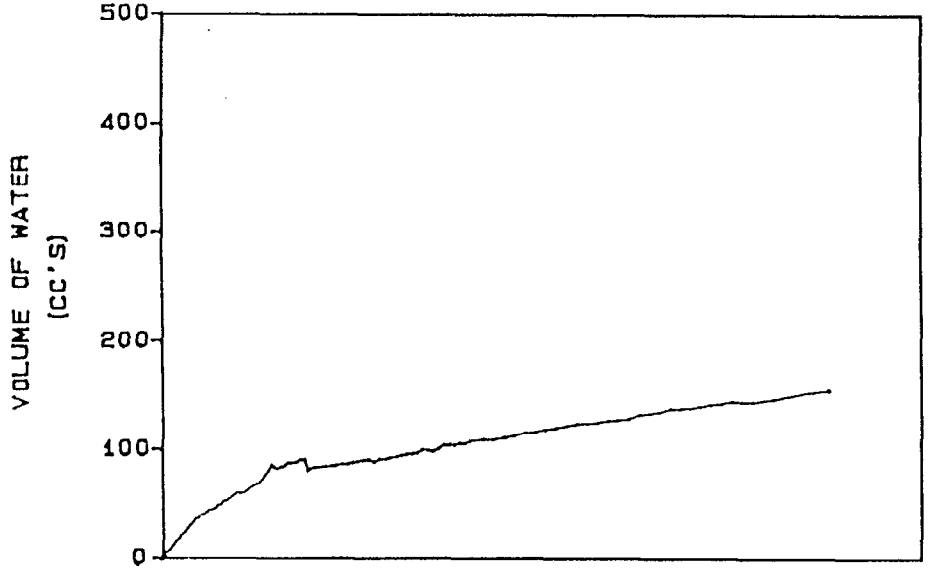


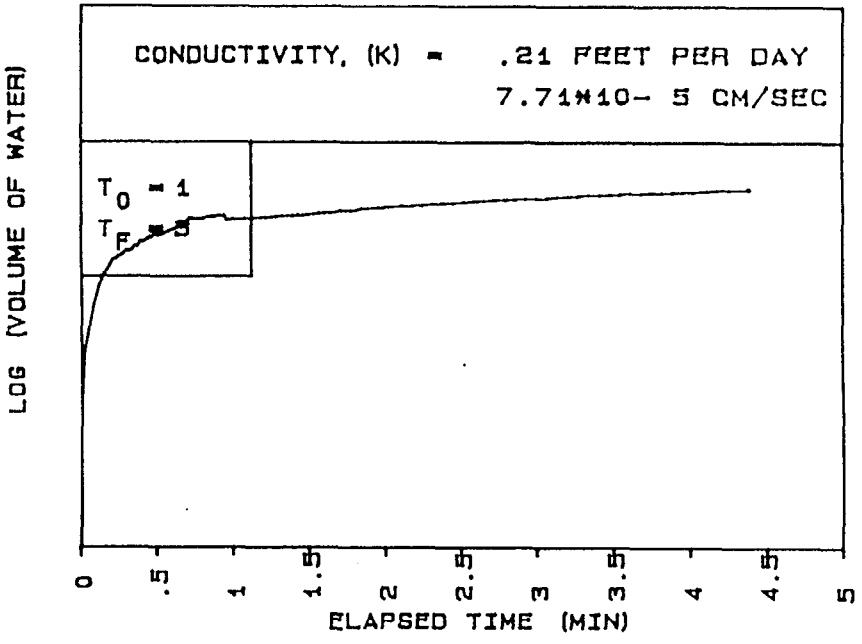


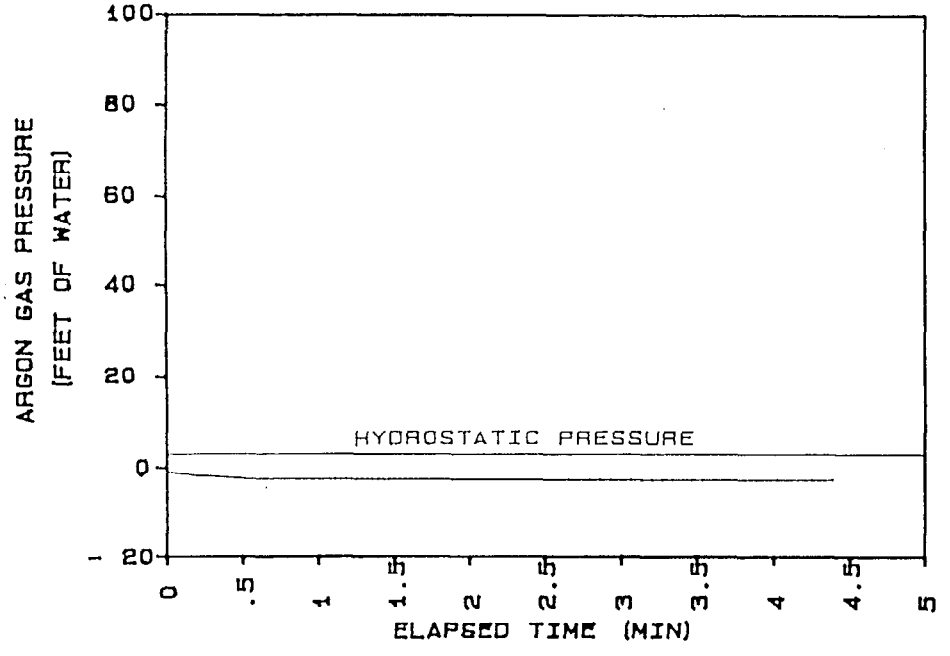
BECHTEL PARRIS ISLAND
LOCATION... 6E-37
TEST DATE
16: 43: 53 06-19-1996

SAMPLE DEPTH (FT) 37
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



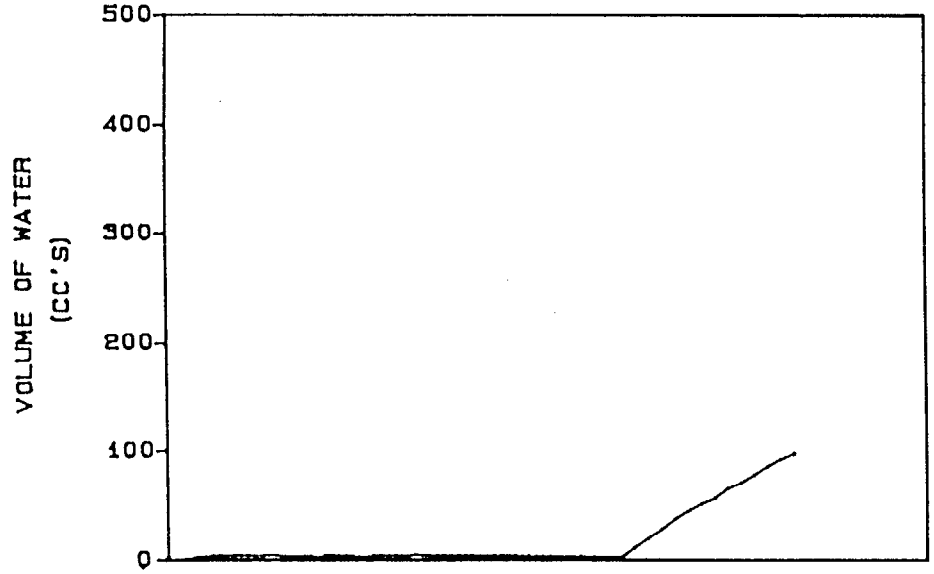


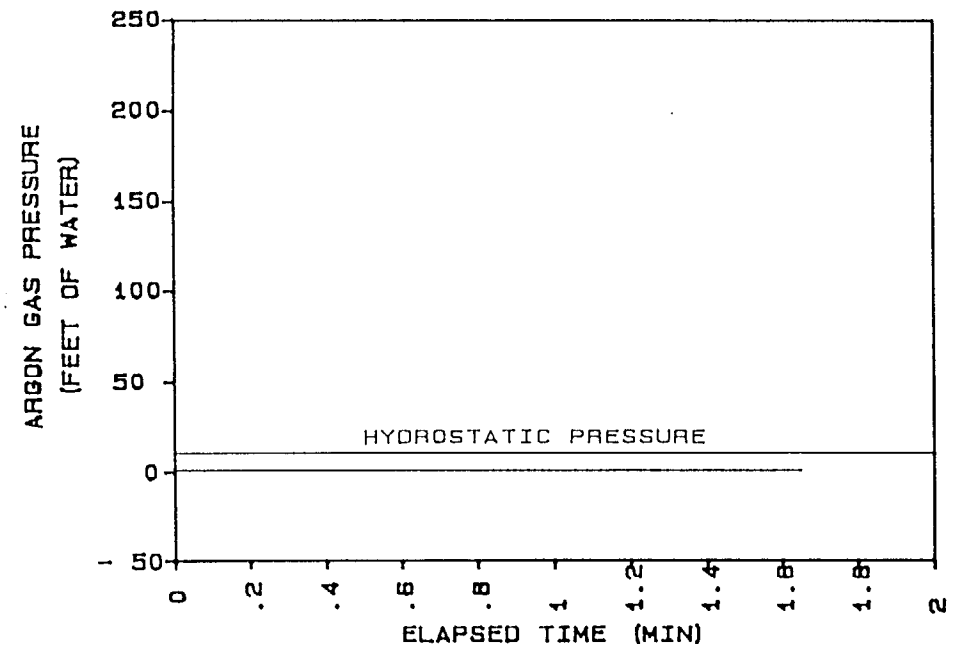


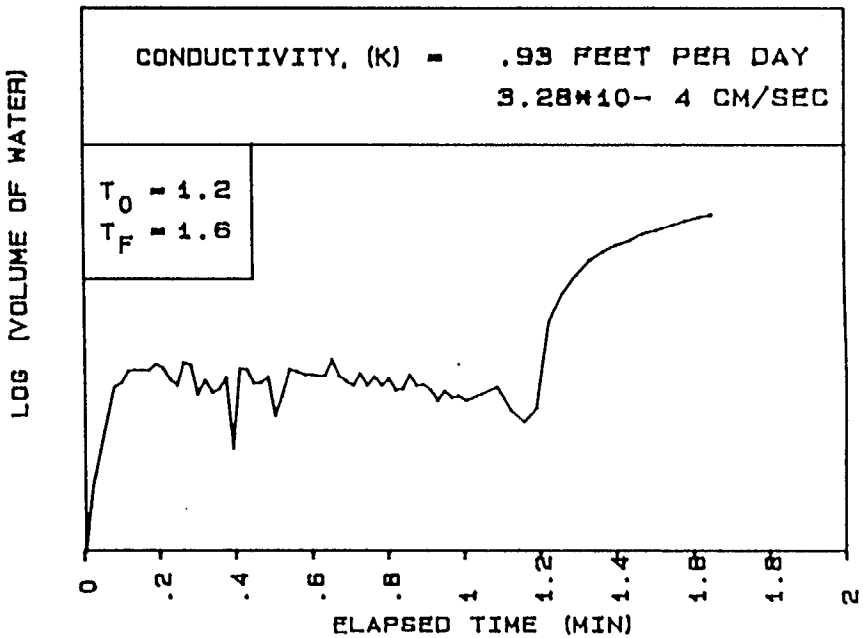
BECHTEL PARRIS ISLAND
LOCATION... 7E-7
TEST DATE
16: 00: 33 06-24-1996

SAMPLE DEPTH (FT) 7
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



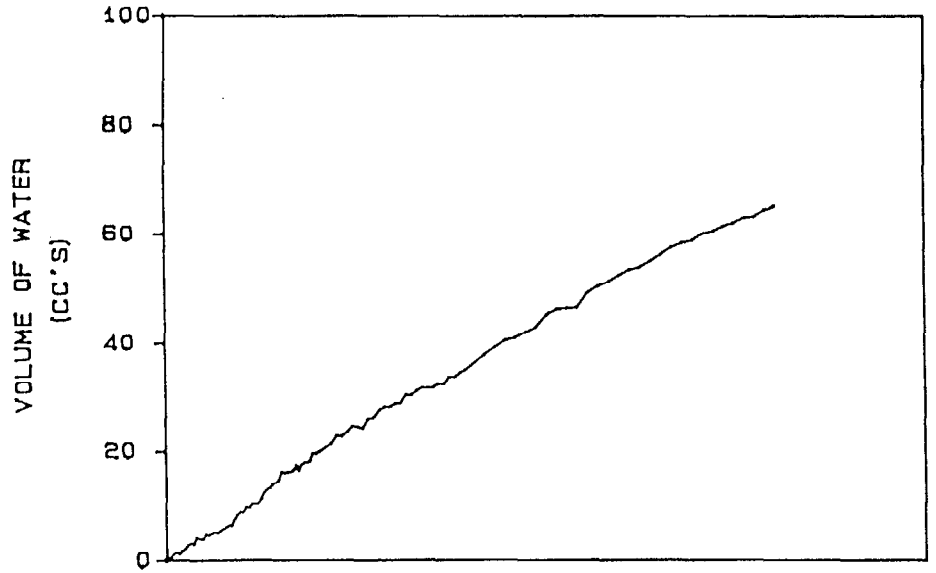


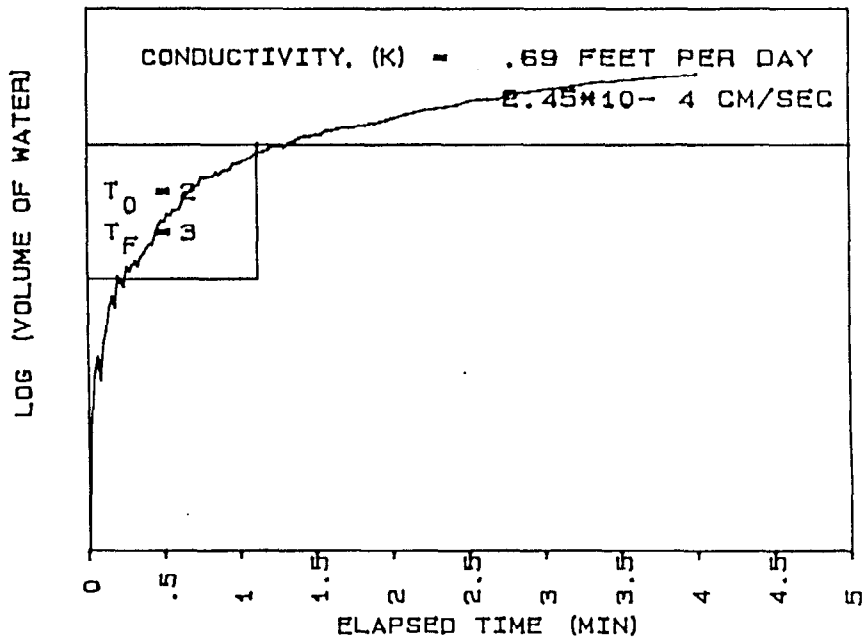


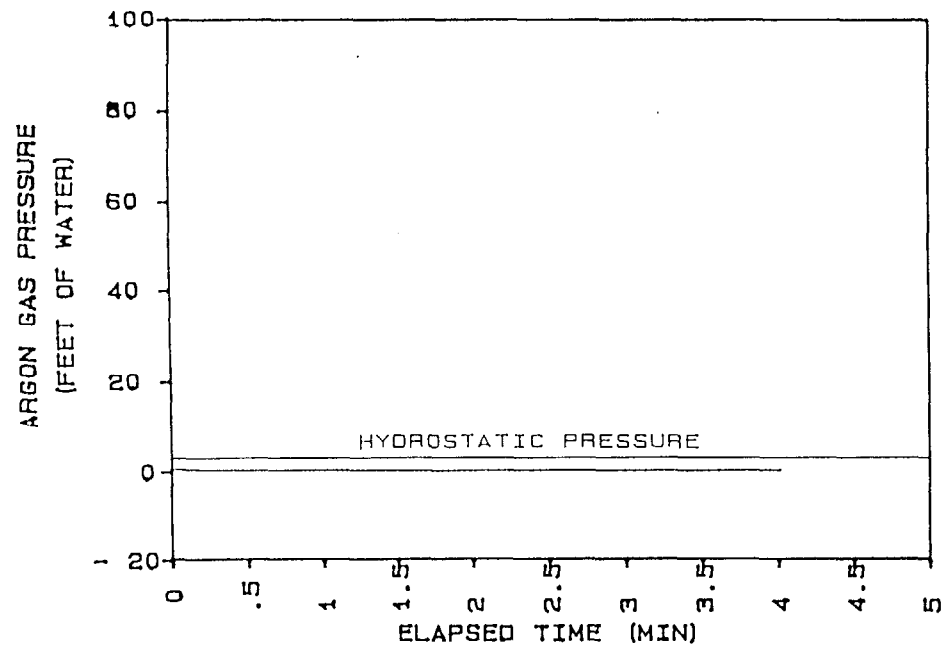
BECHTEL PARRIS ISLAND
LOCATION... 7E-14
TEST DATE
16: 51: 46 06-24-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



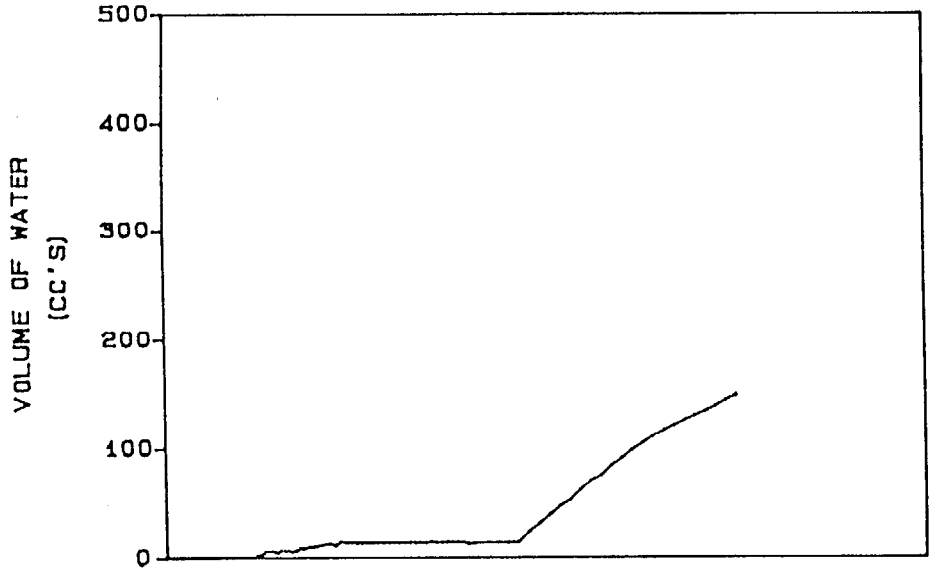


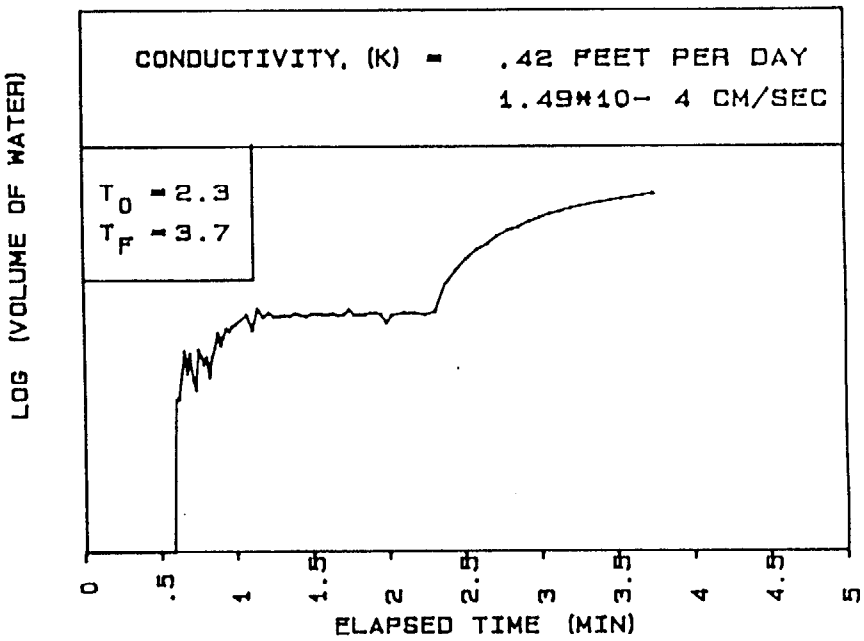


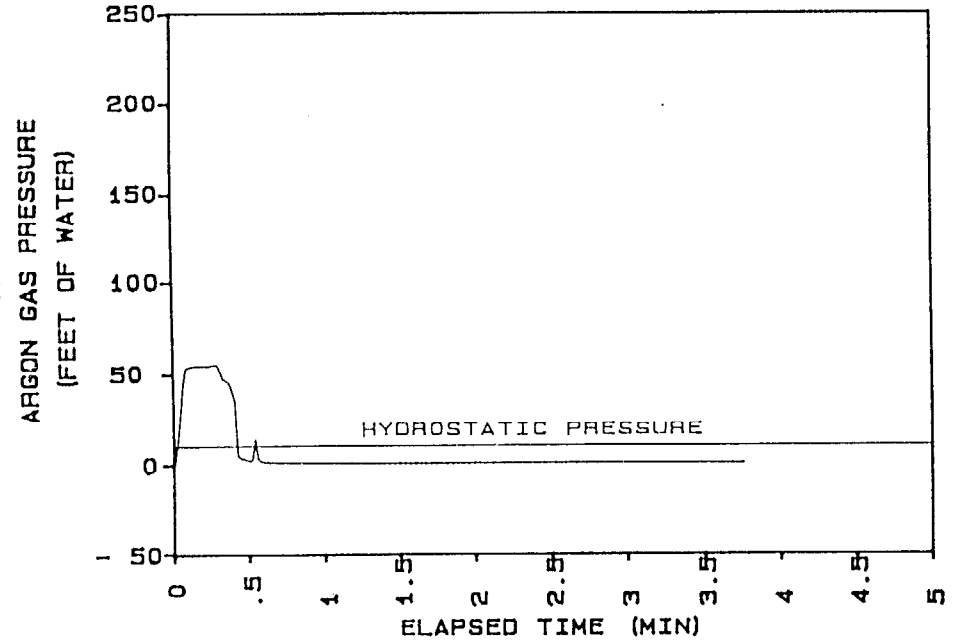
BECHTEL PARRIS ISLAND
LOCATION... 1F-7
TEST DATE
16: 04: 40 06-29-1996

SAMPLE DEPTH (FT) 7
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



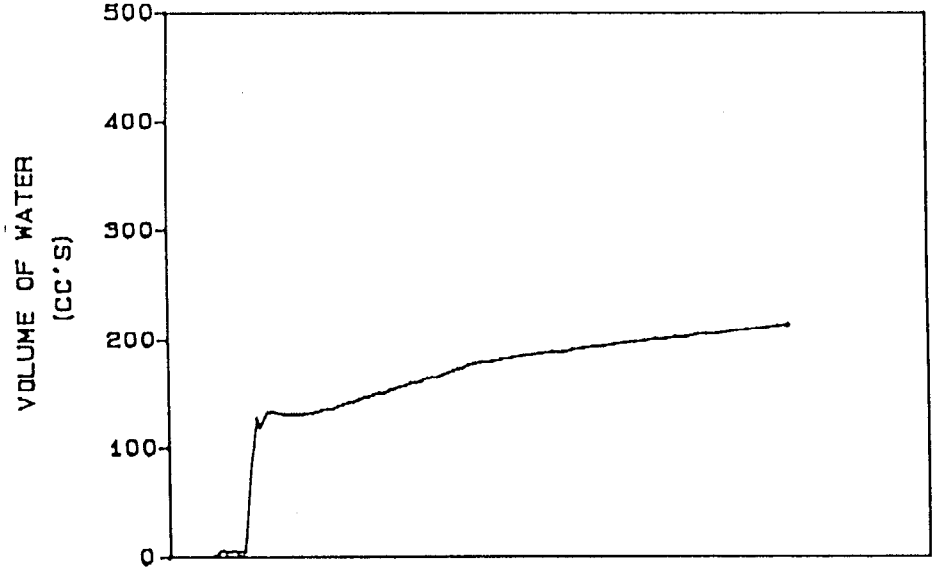


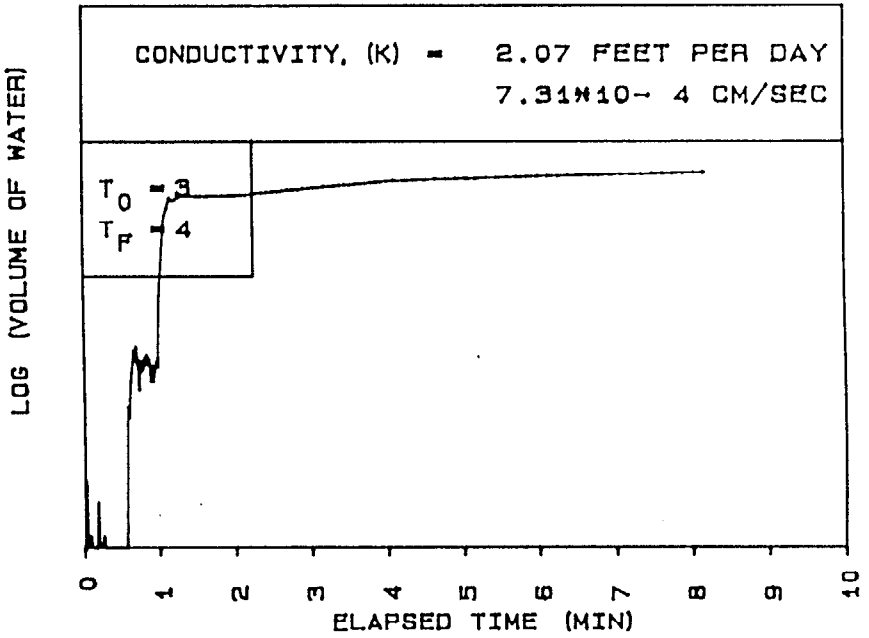


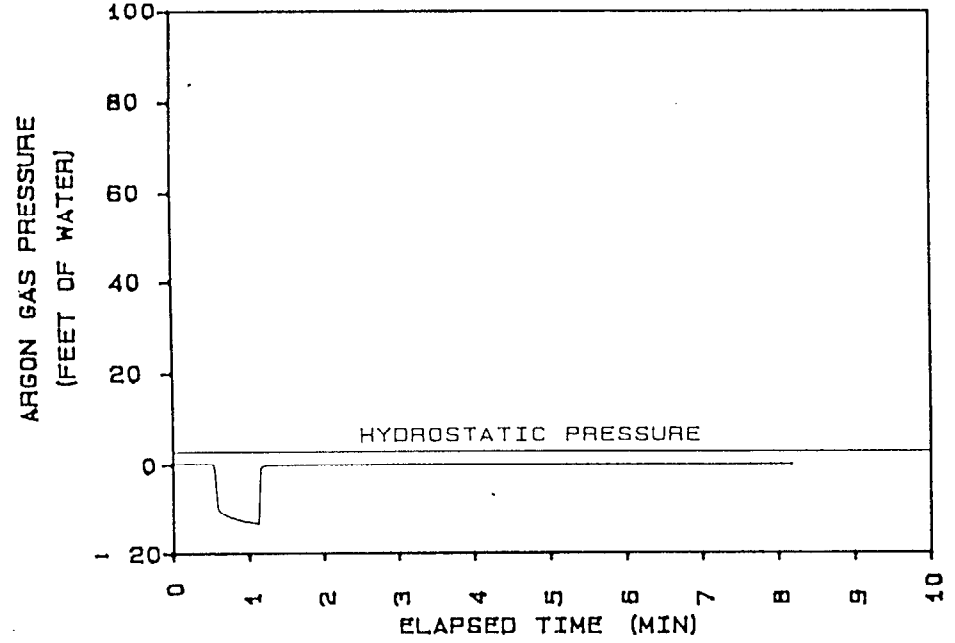
BECHTEL PARRIS ISLAND
LOCATION... BE-14
TEST DATE
09: 05: 17 06-24-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



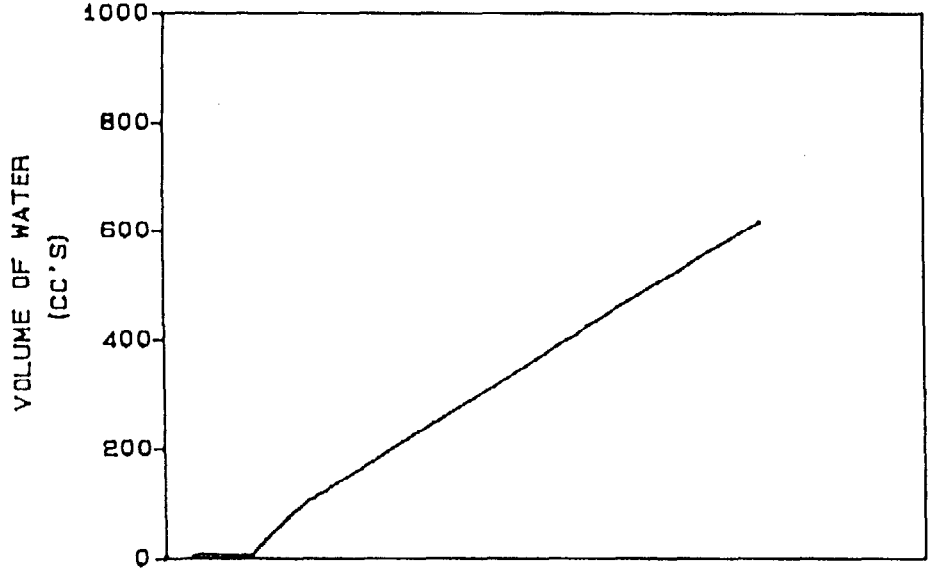


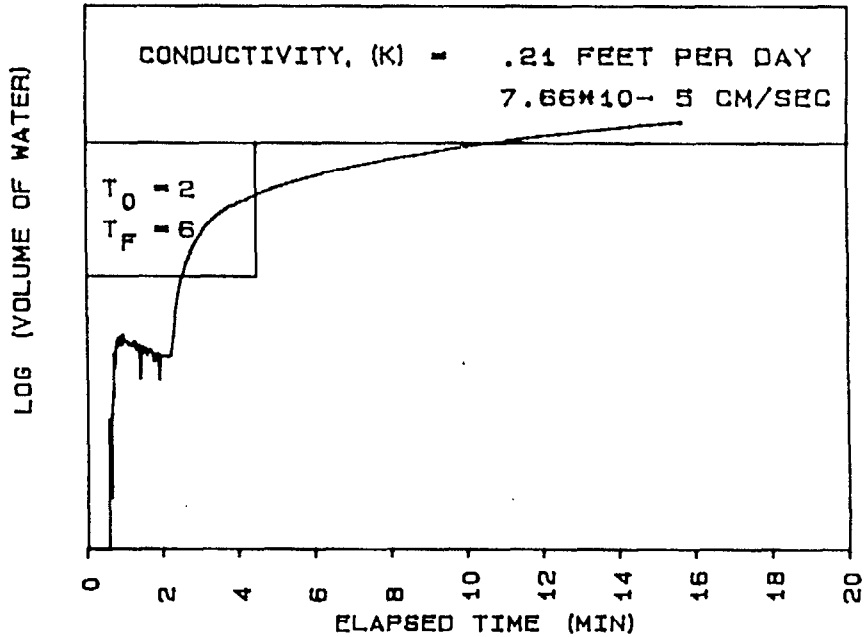


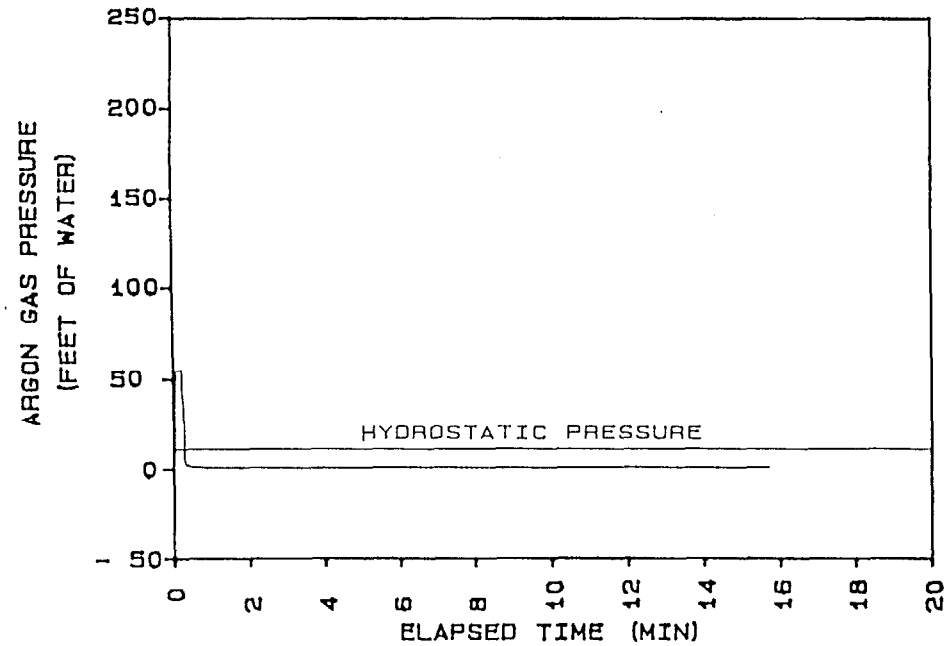
BECHTEL PARRIS ISLAND
LOCATION... 6C-7
TEST DATE
15: 05: 49 06-20-1996

SAMPLE DEPTH (FT) 7
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



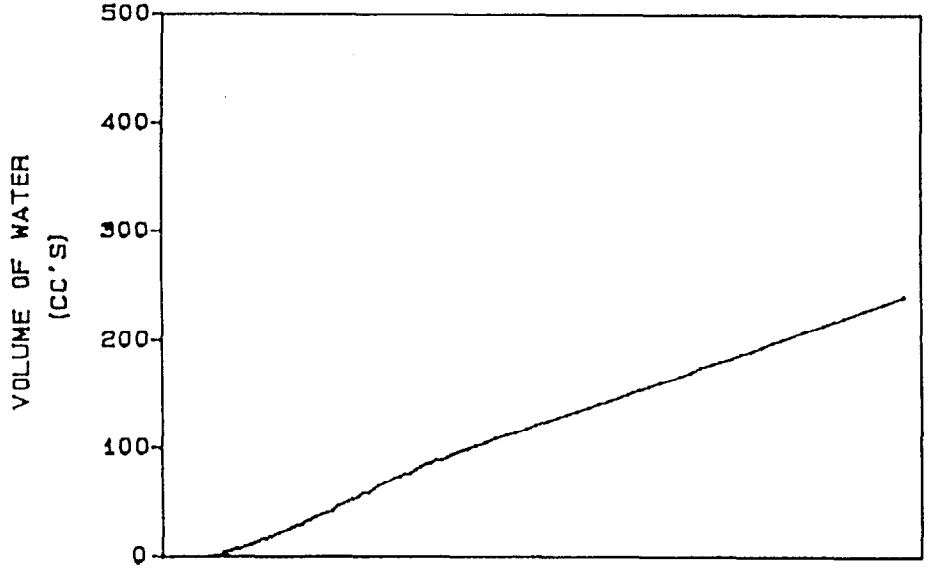


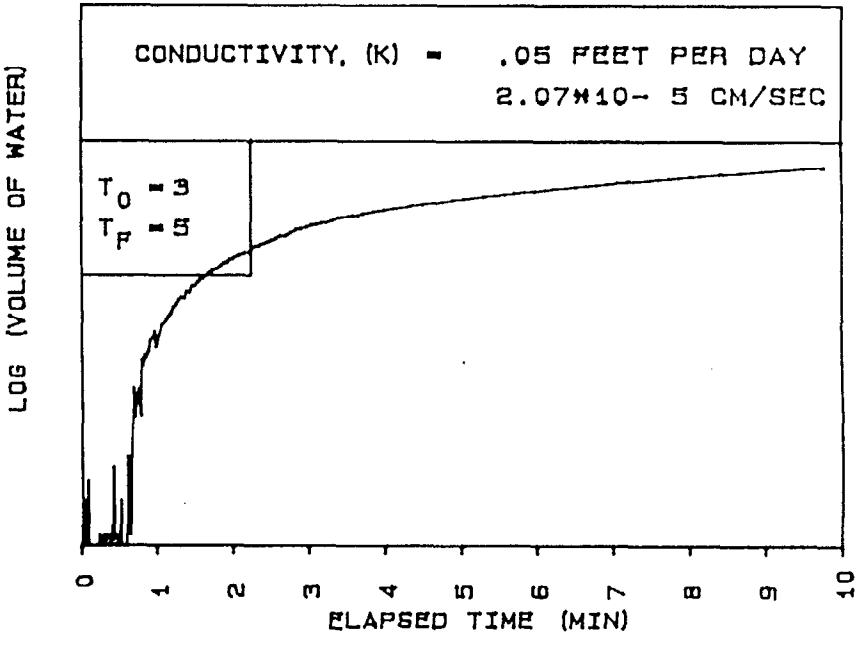


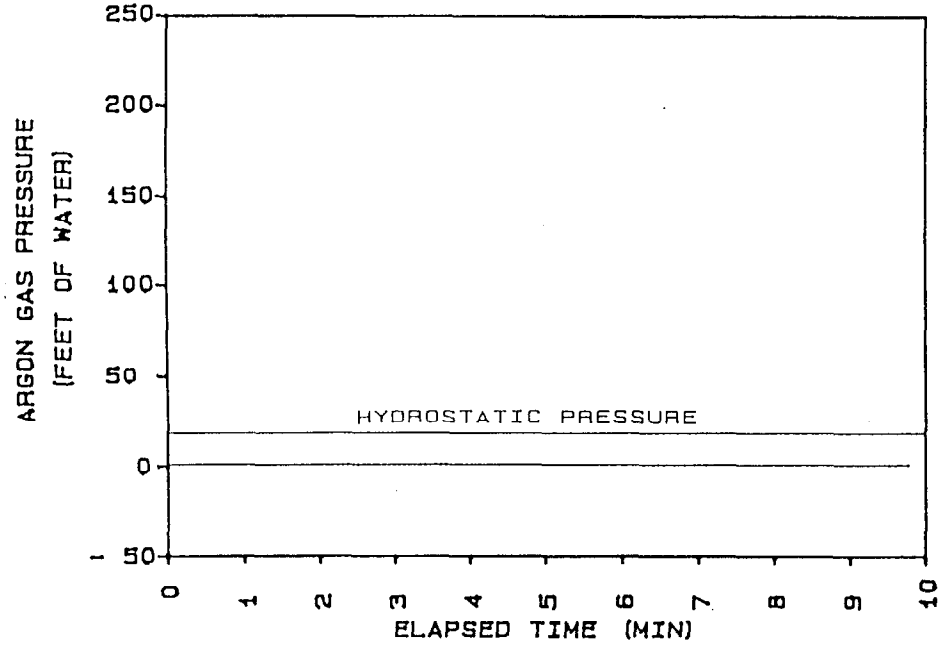
BECHTEL PARRIS ISLAND
LOCATION... 6C-14
TEST DATE
15: 42: 13 06-20-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4

HYDROCONE TEST



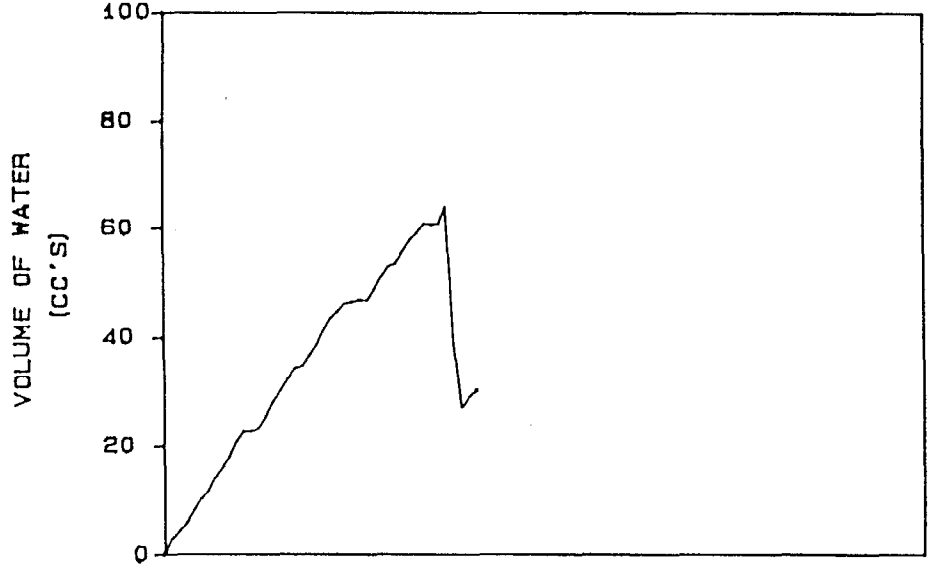


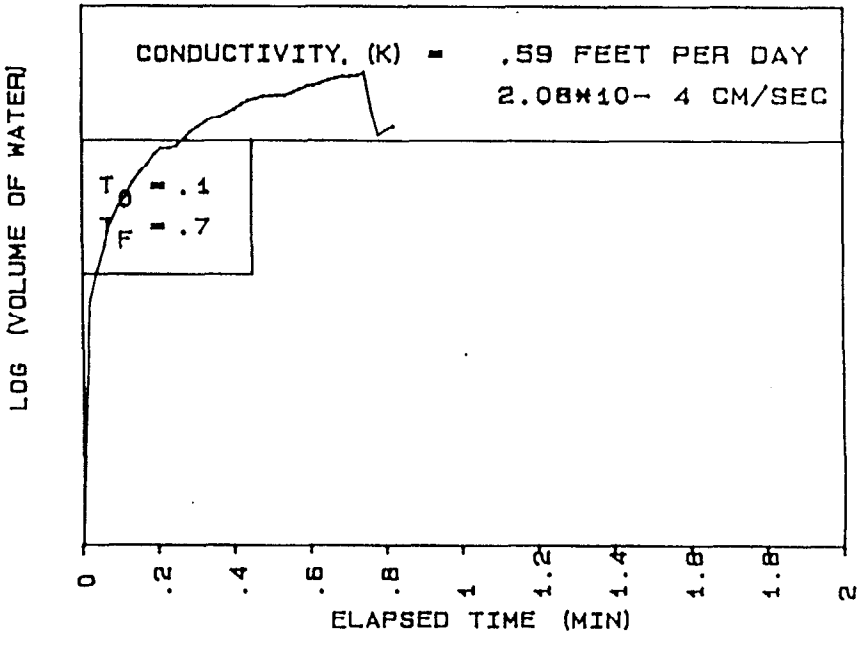


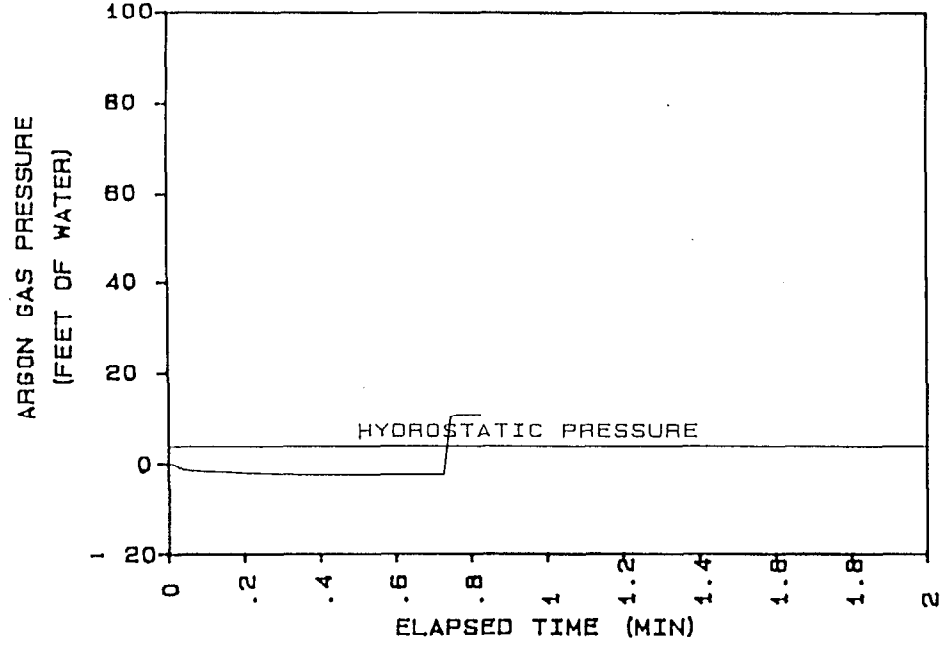
BECHTEL PARRIS ISLAND
LOCATION... 6C-21
TEST DATE
16: 49: 33 06-20-1996

SAMPLE DEPTH (FT) 21
GROUNDWATER DEPTH (FT) 4

HYDROCONE TEST



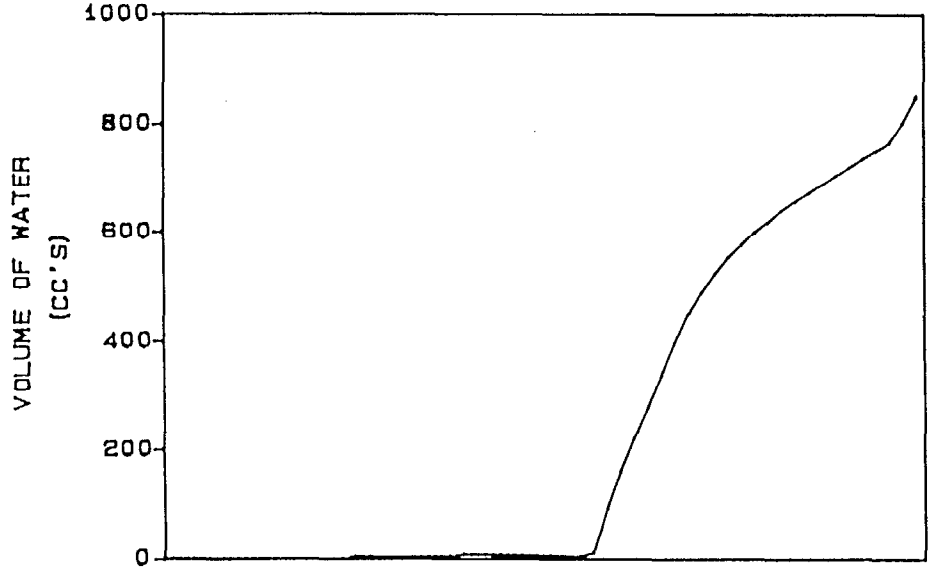


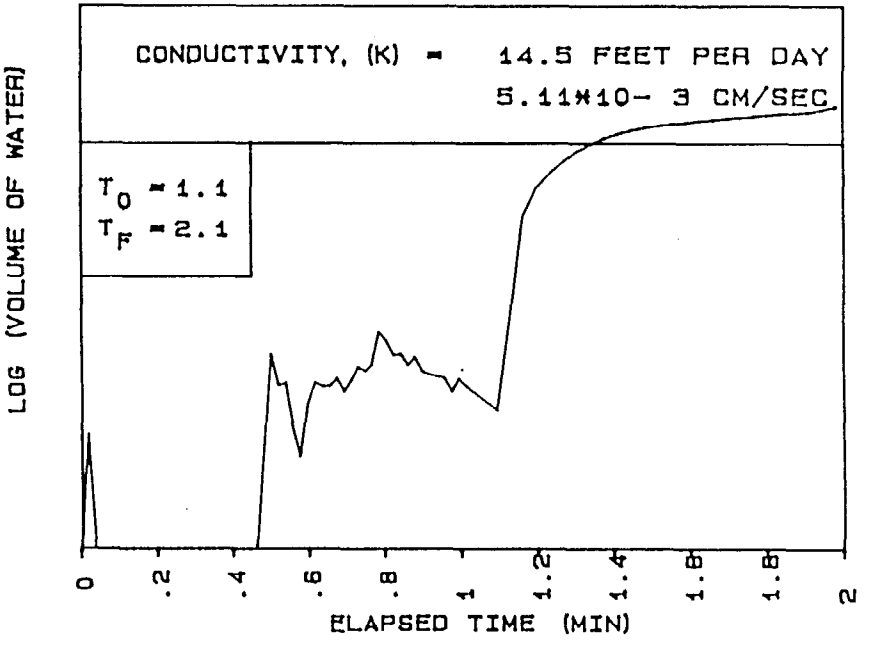


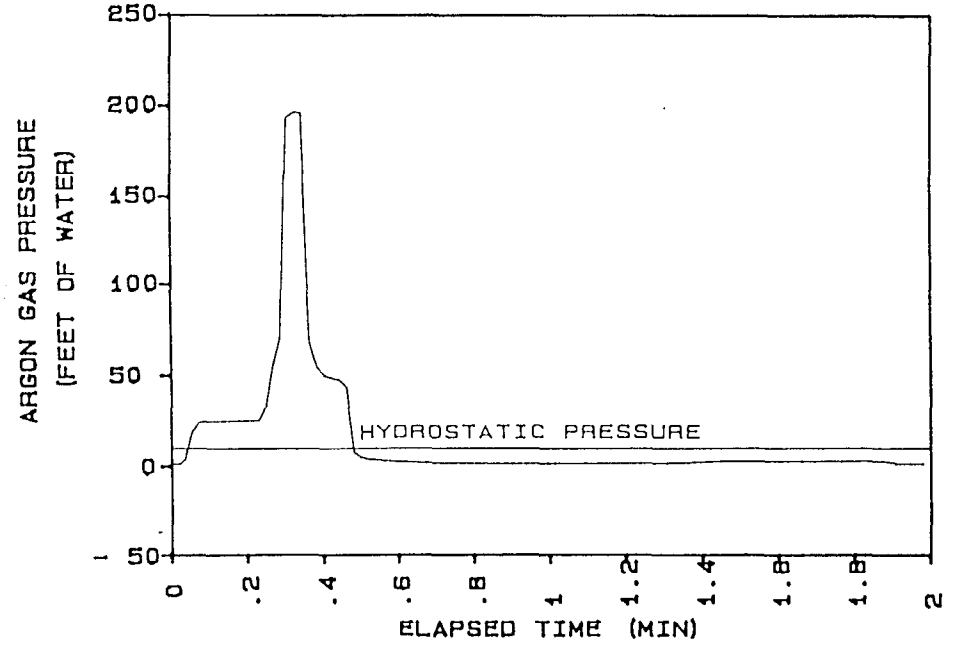
BECHTEL PARRIS ISLAND
LOCATION... 30-7.5
TEST DATE
10: 25: 23 06-20-1996

SAMPLE DEPTH (FT) 7.5
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



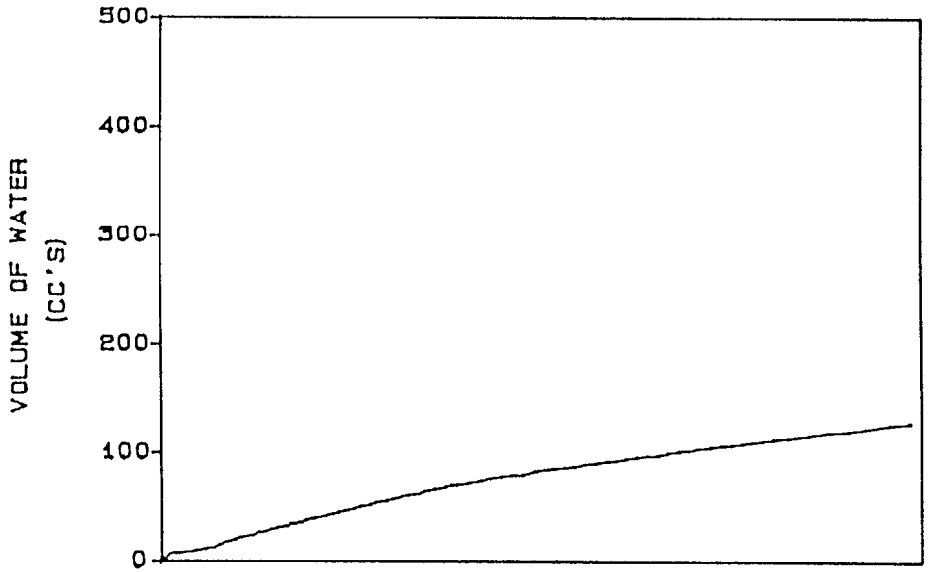


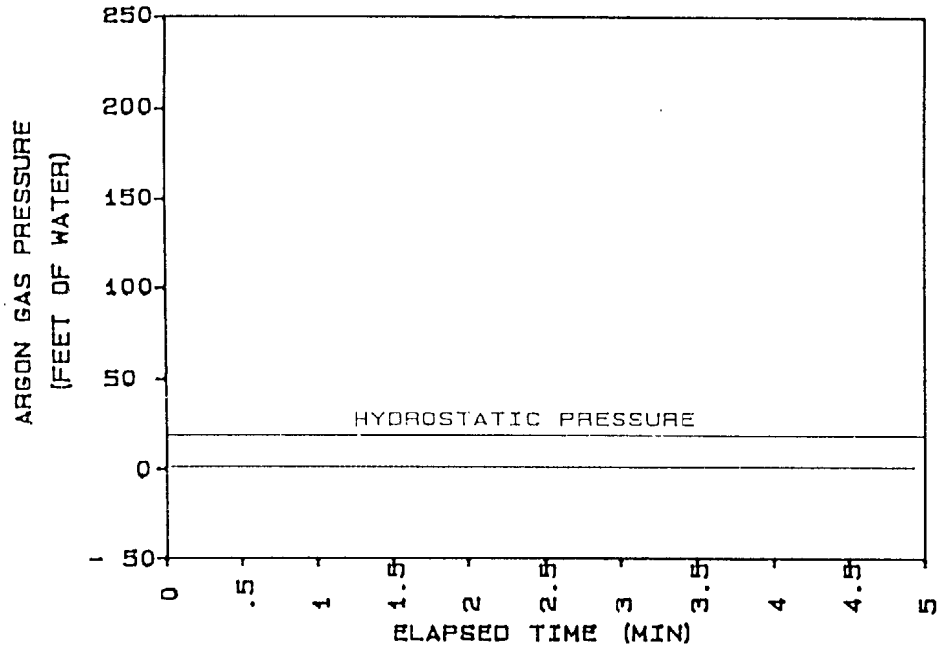


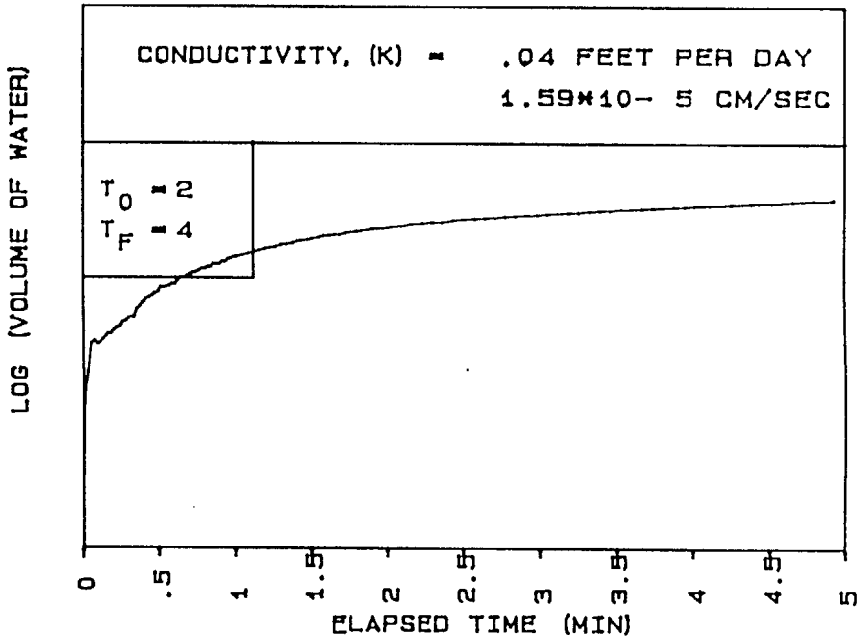
BECHTEL PARRIS ISLAND
LOCATION... 3D-13
TEST DATE
10: 50: 07 06-20-1996

SAMPLE DEPTH (FT) 13
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



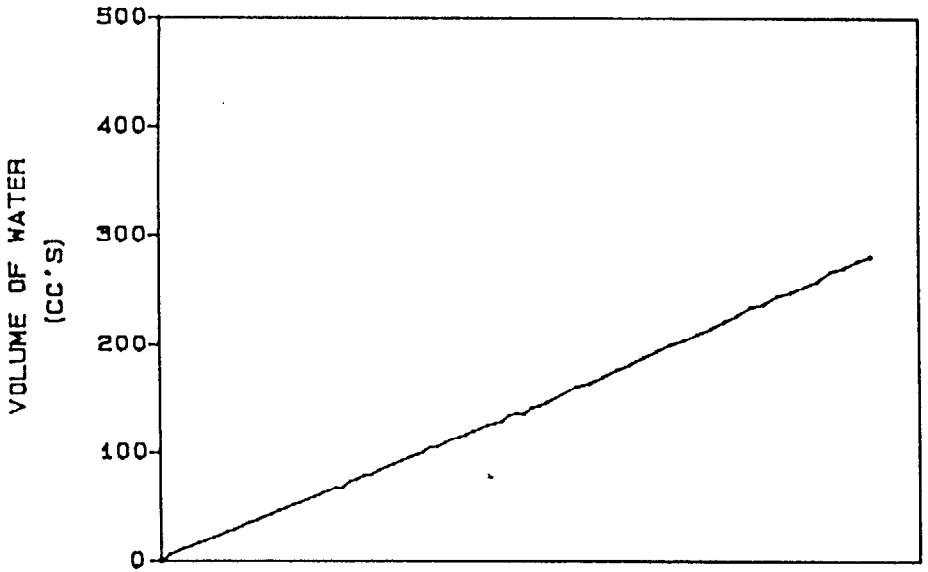


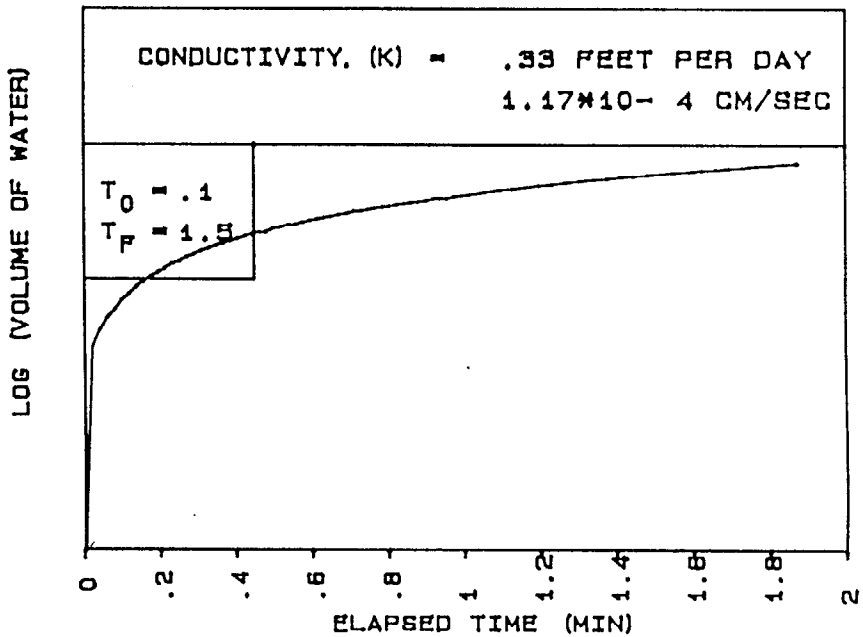


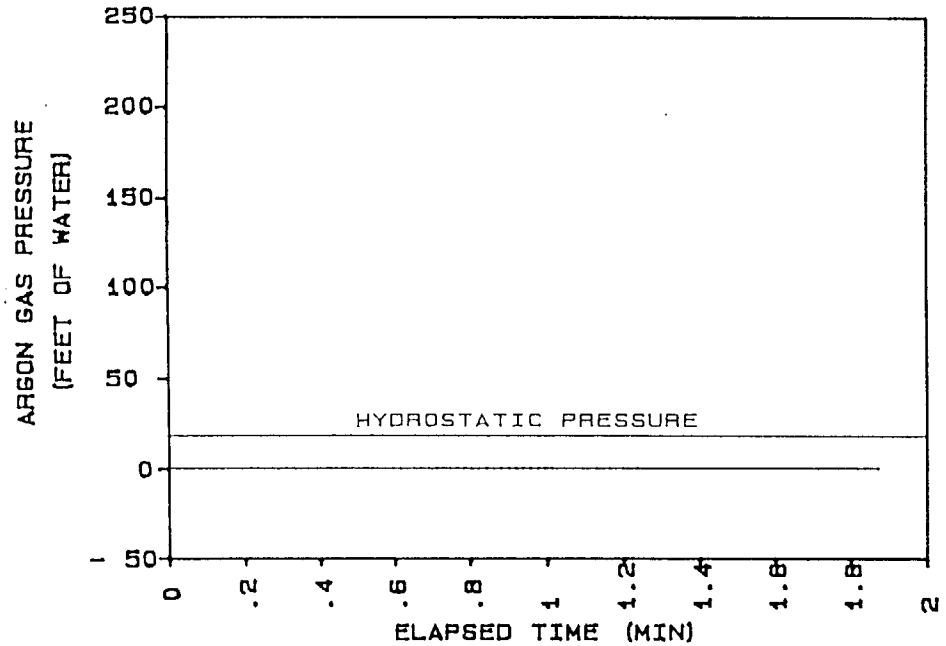
BECHTEL PARRIS ISLAND
LOCATION... 3D-22
TEST DATE
11: 40: 16 06-20-1996

SAMPLE DEPTH (FT) 22
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



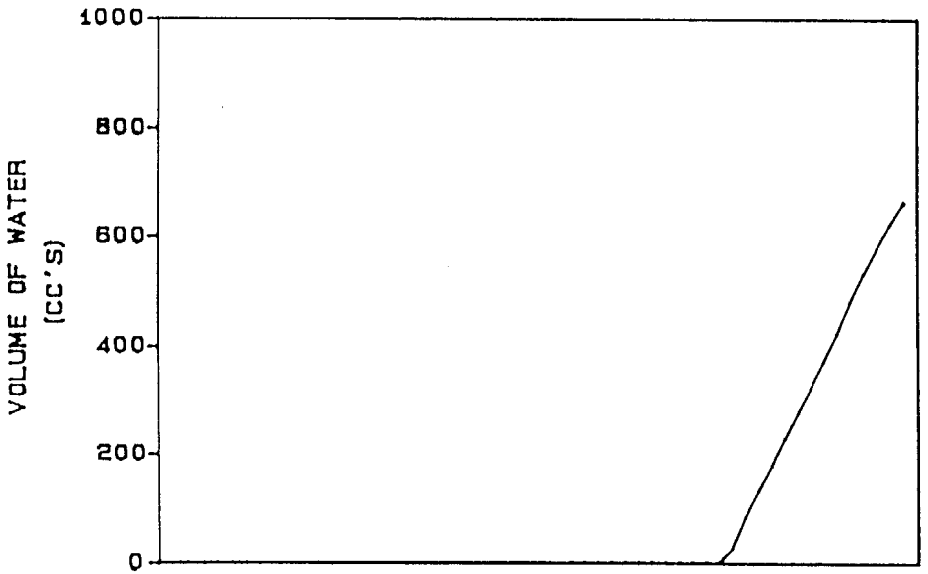


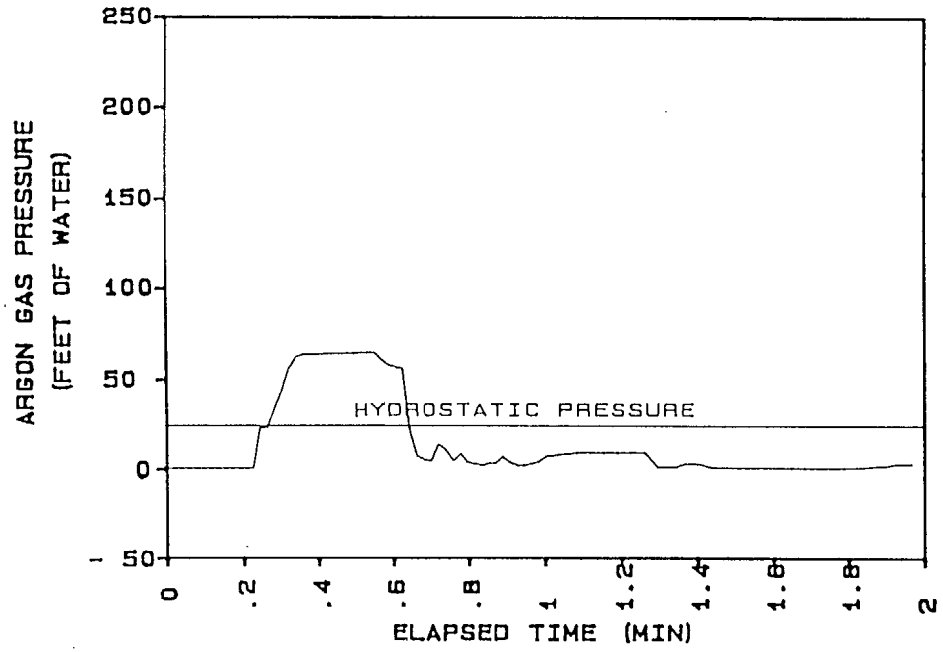


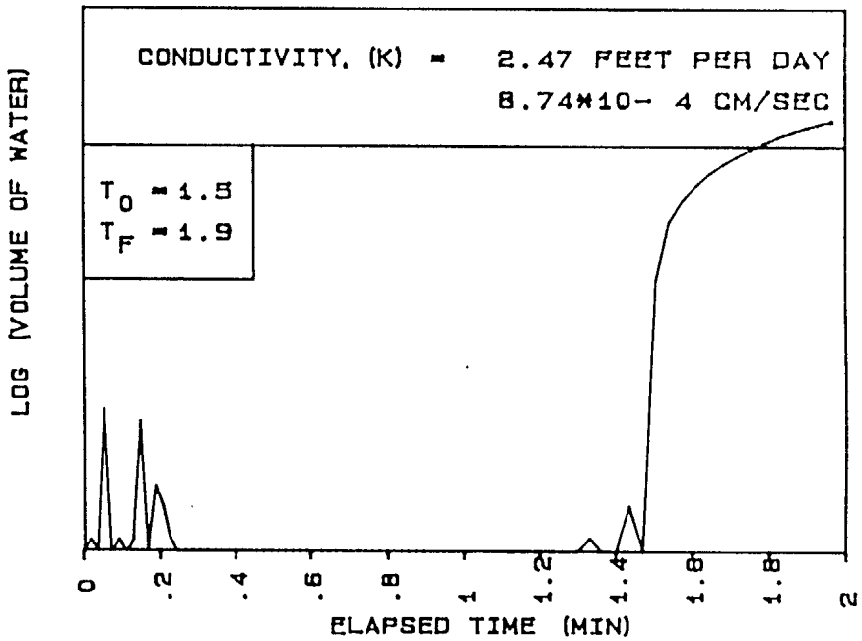
BECHTEL PARRIS ISLAND
LOCATION... 7E-22
TEST DATE
08: 32: 44 06-25-1996

SAMPLE DEPTH (FT) 22
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



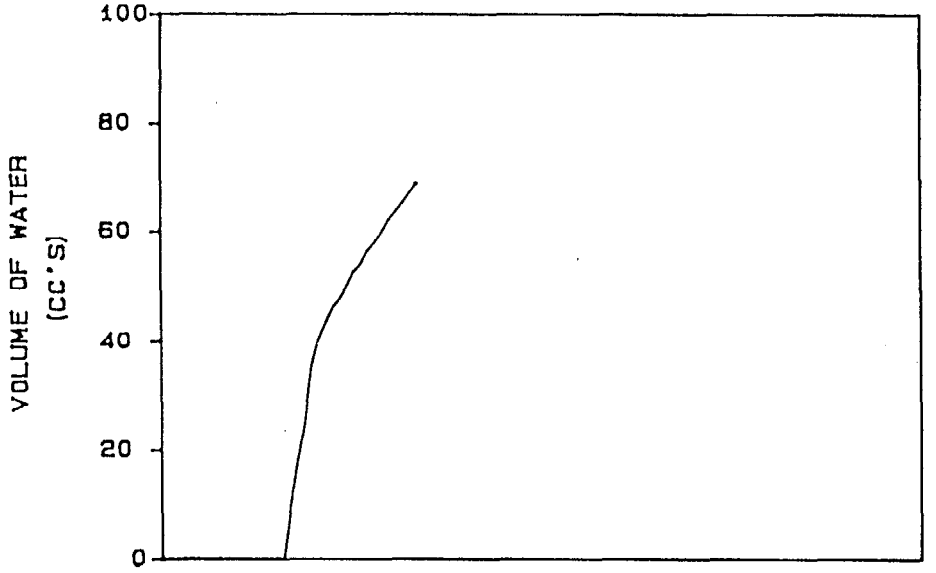


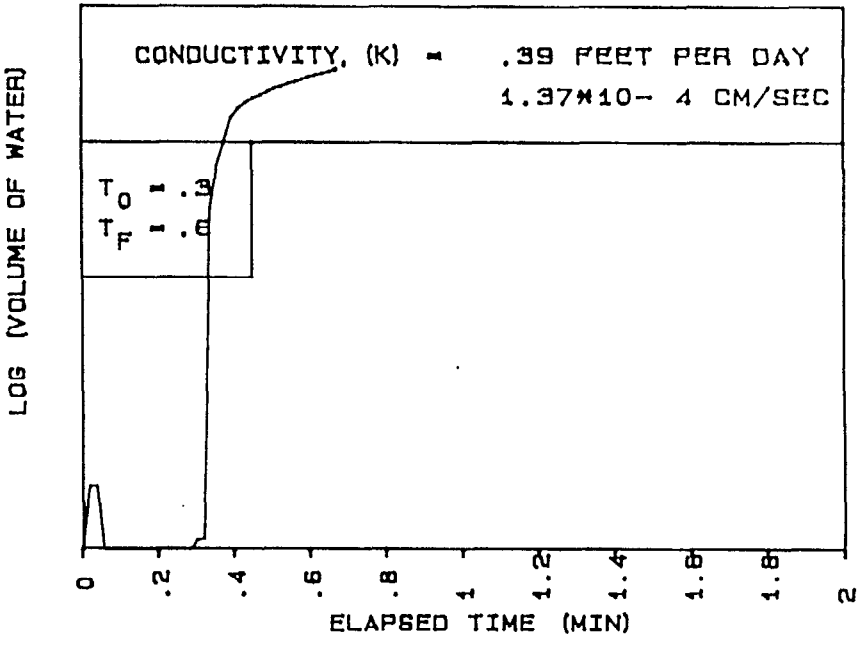


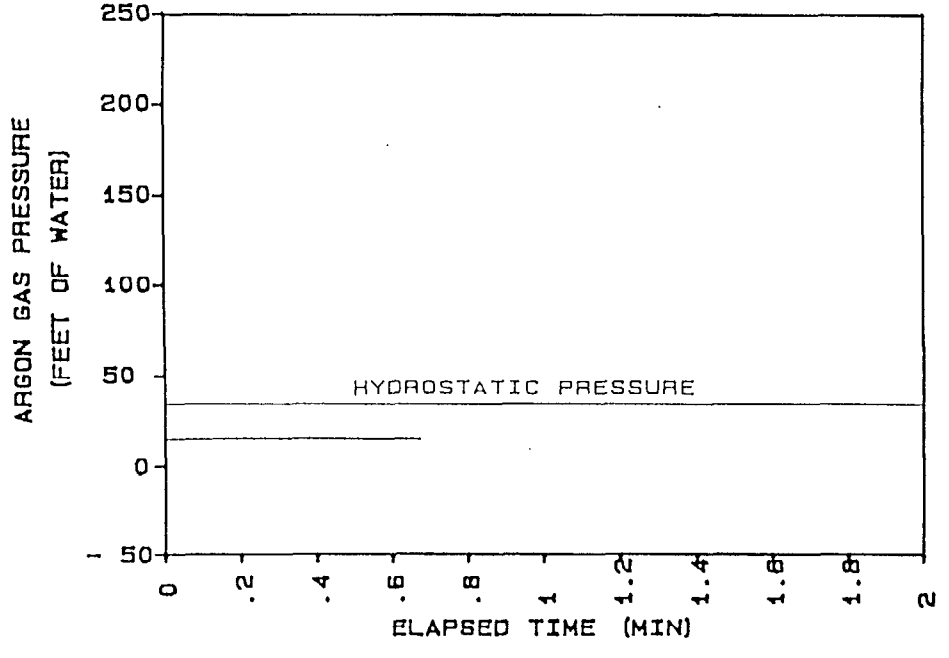
BECHTEL PARRIS ISLAND
LOCATION... 7E-28
TEST DATE
09: 46: 30 06-25-1996

SAMPLE DEPTH (FT) 28
@ROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



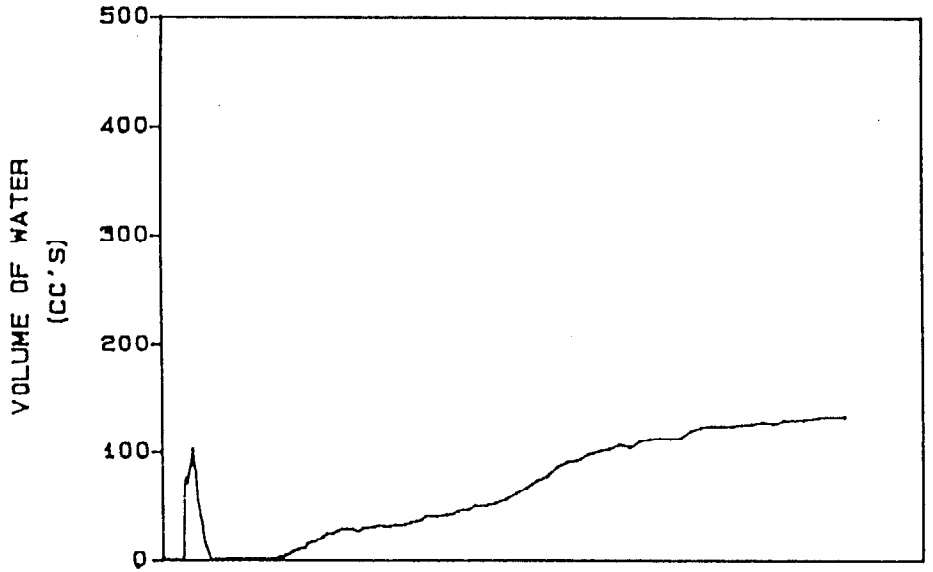


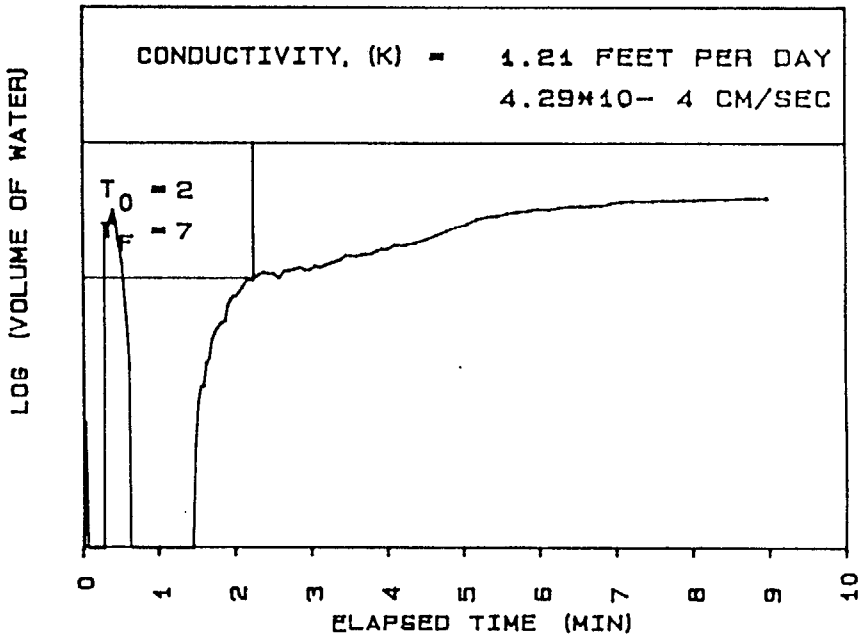


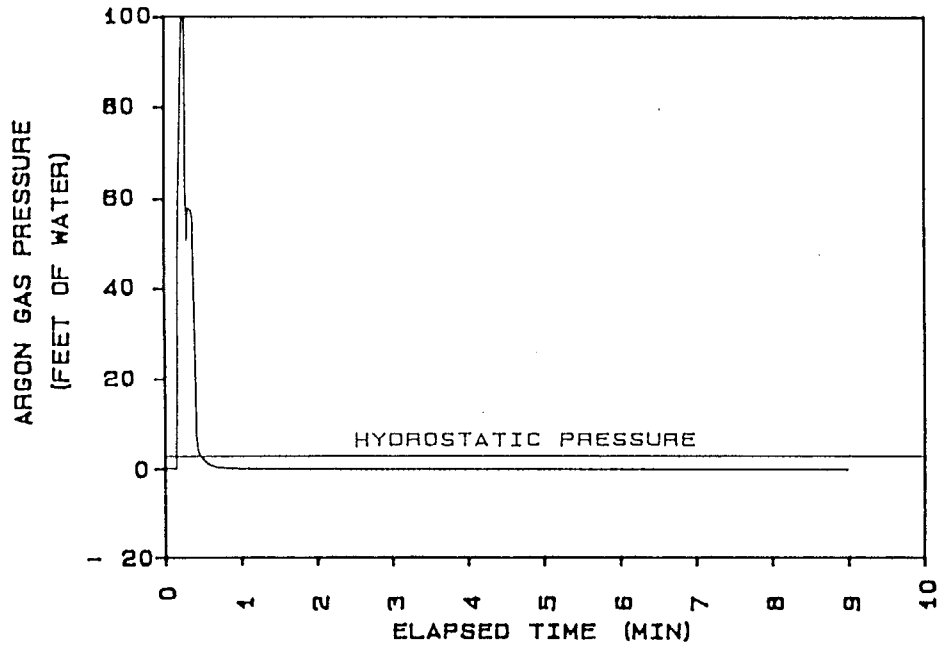
BECHTEL PARRIS ISLAND
LOCATION... 7E-38
TEST DATE
16: 57: 31 06-25-1996

SAMPLE DEPTH (FT) 38
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



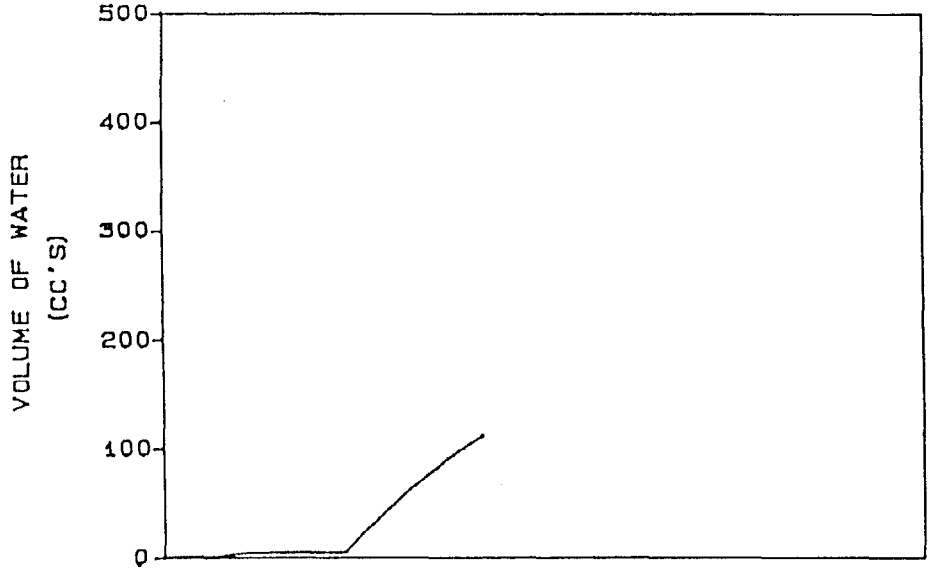


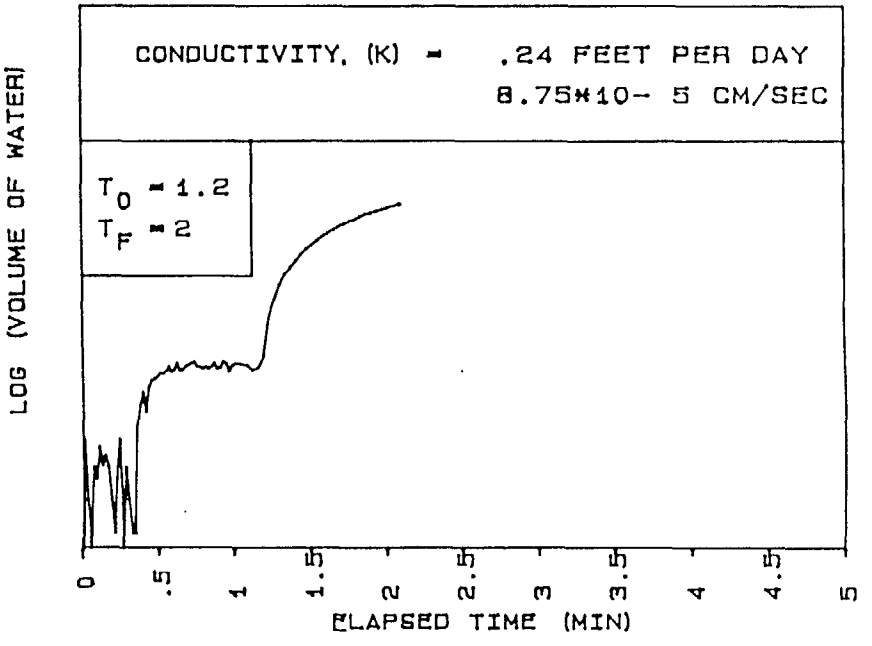


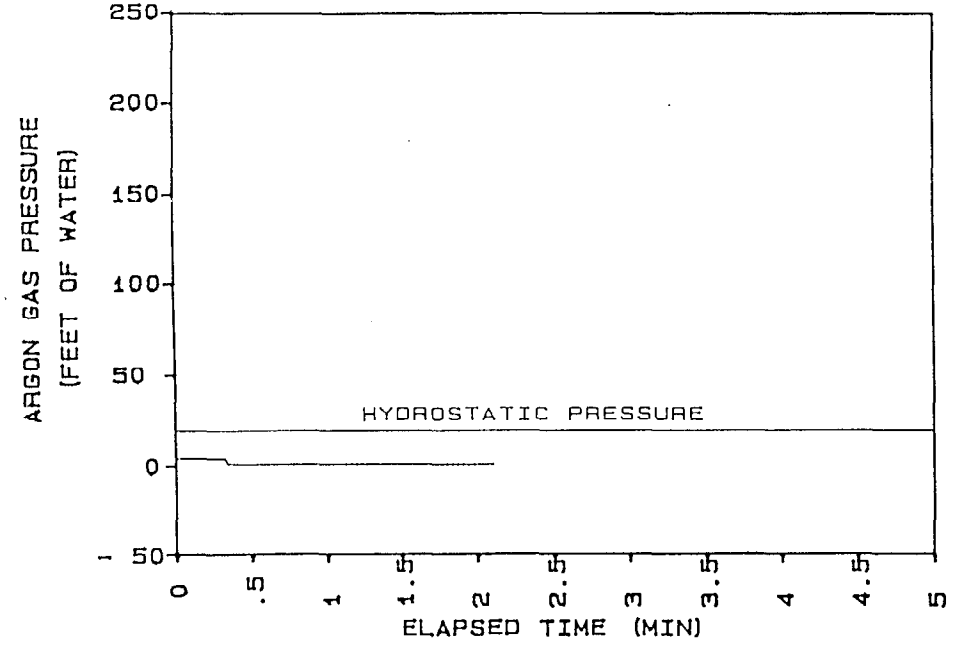
BECHTEL PARRIS ISLAND
LOCATION... 8E-7
TEST DATE
08: 36: 23 06-24-1996

SAMPLE DEPTH (FT) 7
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



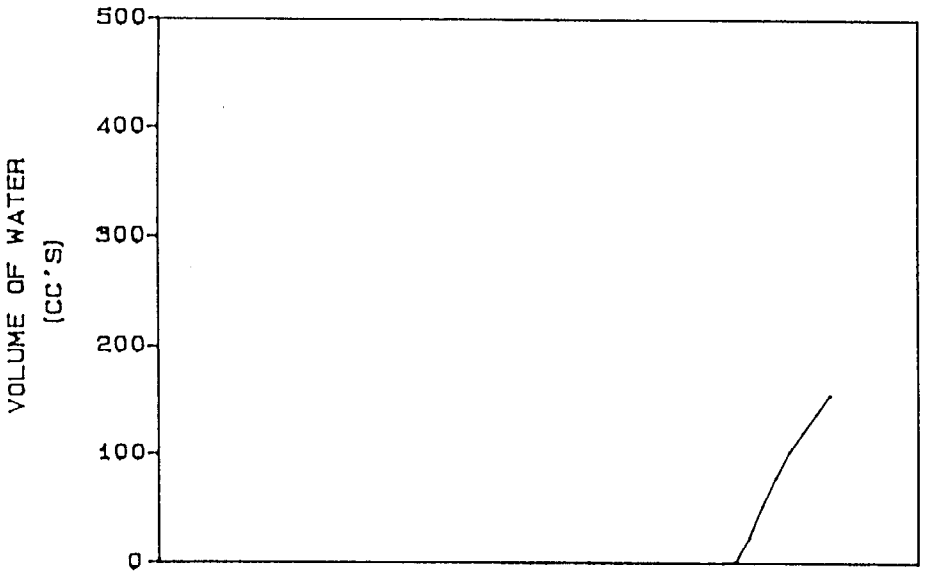


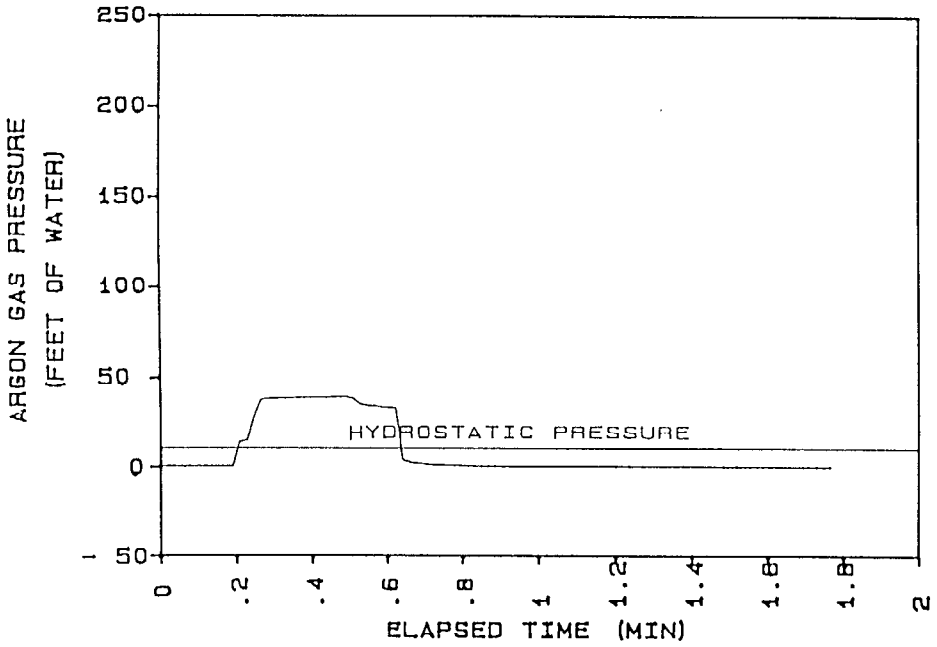


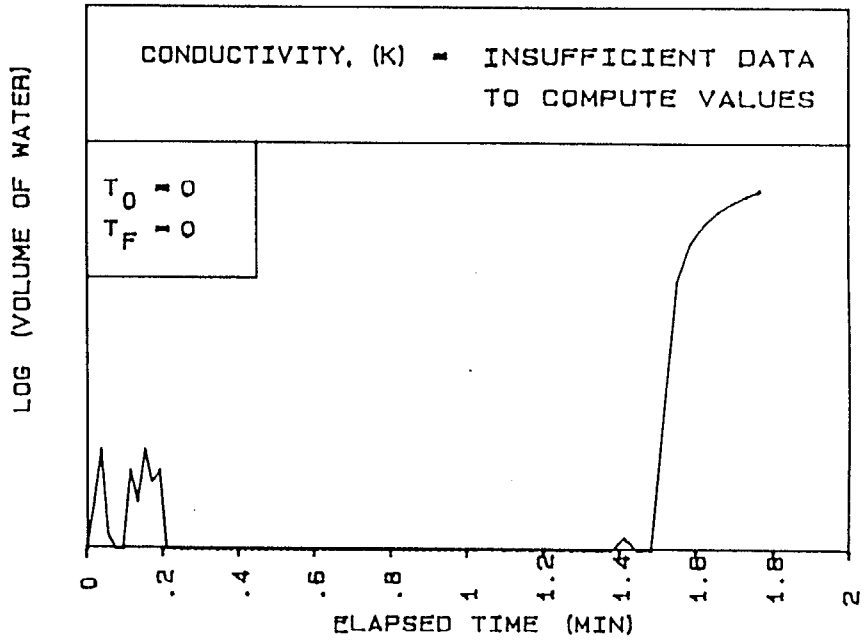
BECHTEL PARRIS ISLAND
LOCATION... 1F-23
TEST DATE
10: 33: 55 06-28-1996

SAMPLE DEPTH (FT) 23
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



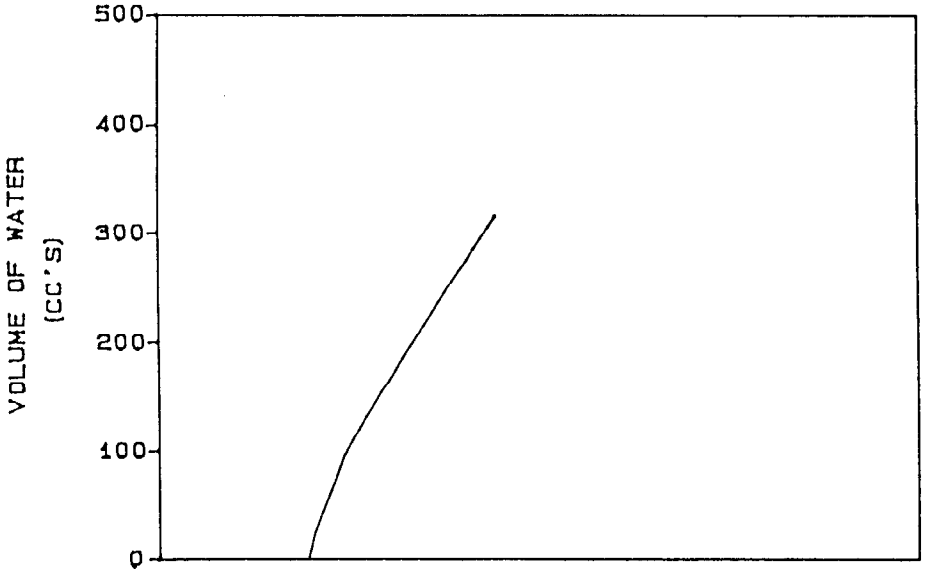


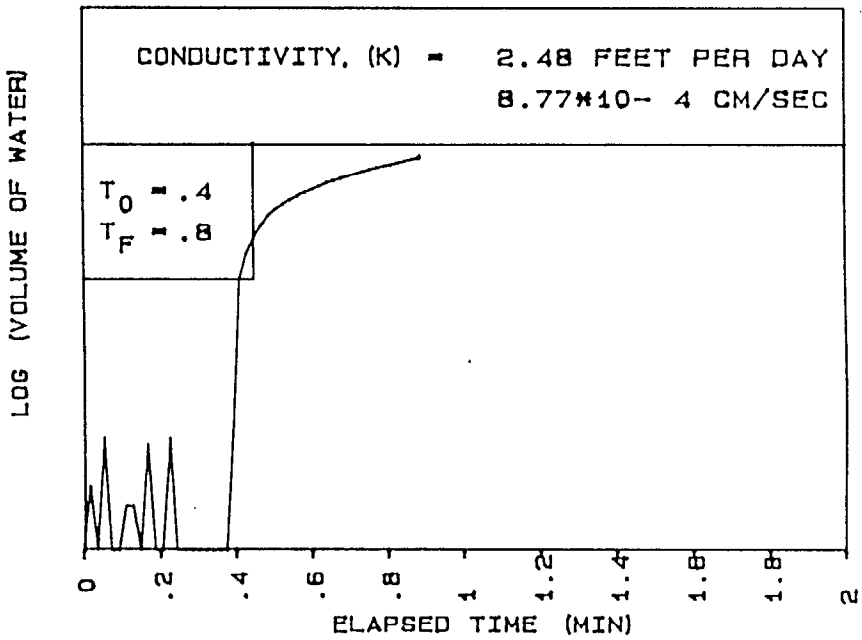


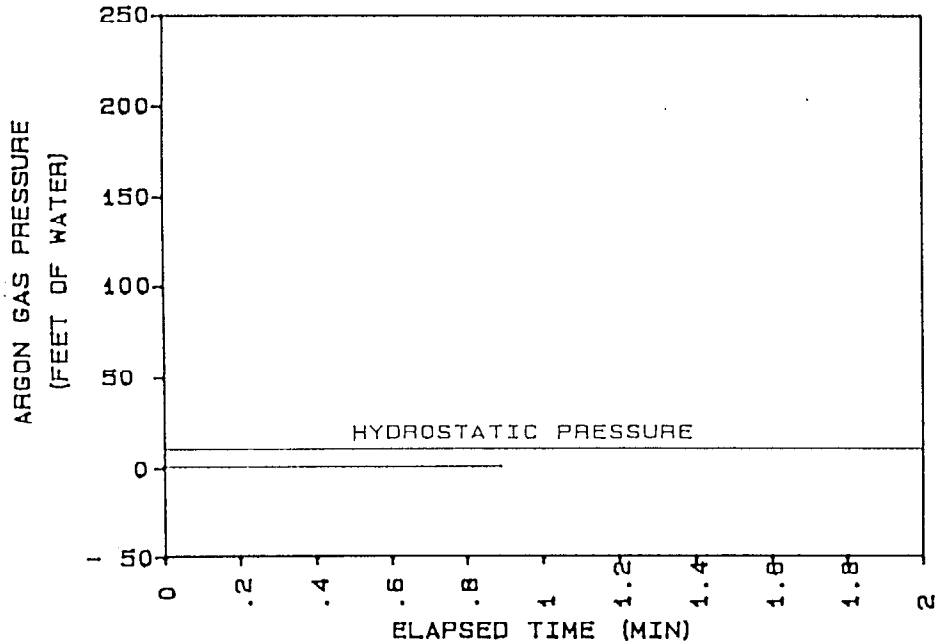
BECHTEL PARRIS ISLAND
LOCATION... 1F-14
TEST DATE
15: 08: 13 06-27-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



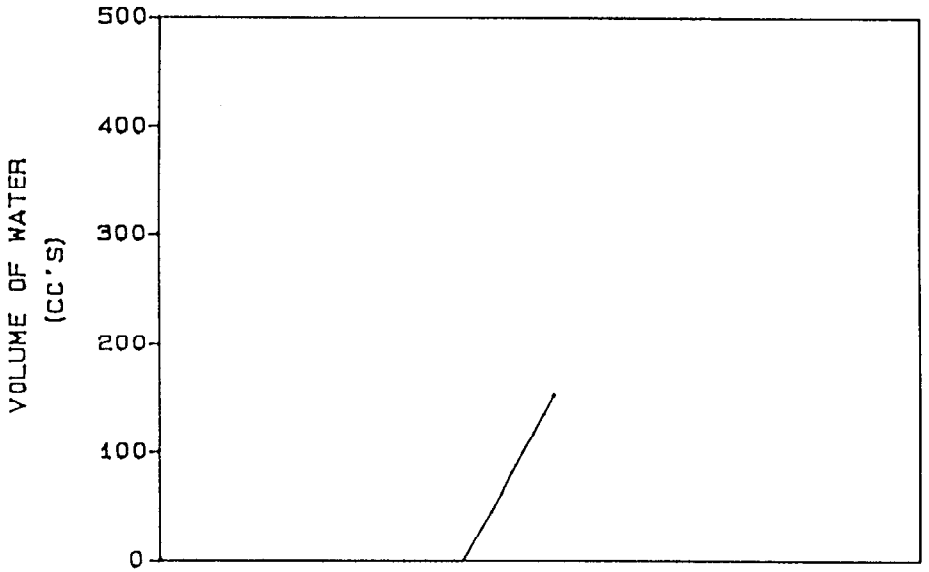


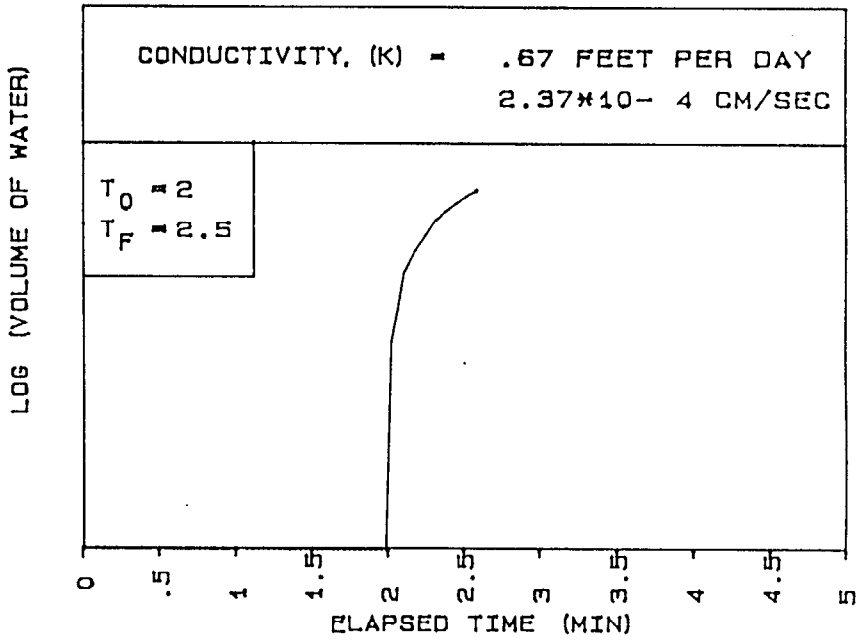


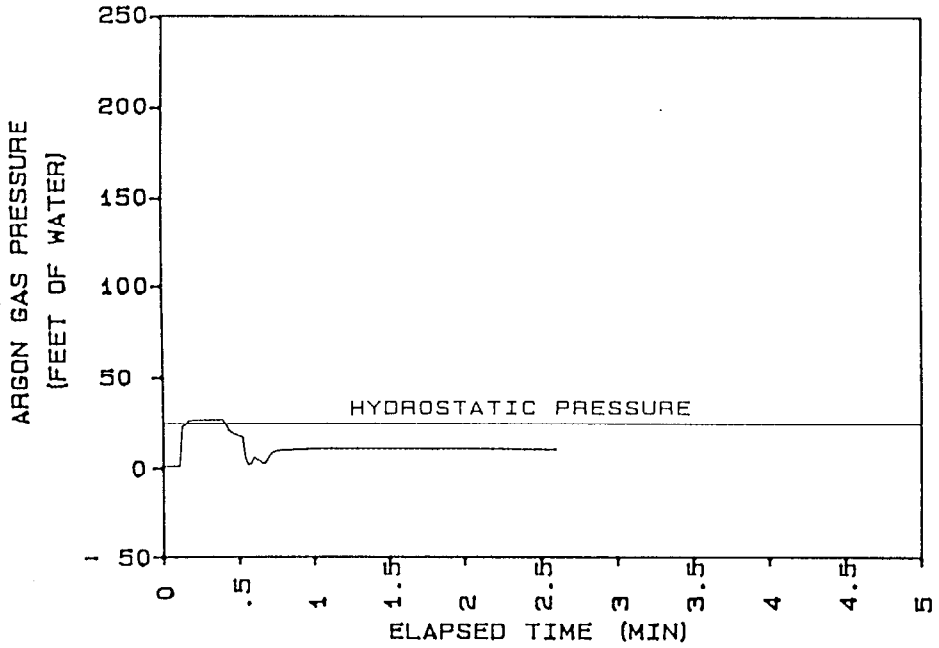
BECHTEL PARRIS ISLAND
LOCATION... 1G-14
TEST DATE
11: 38: 51 06-27-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



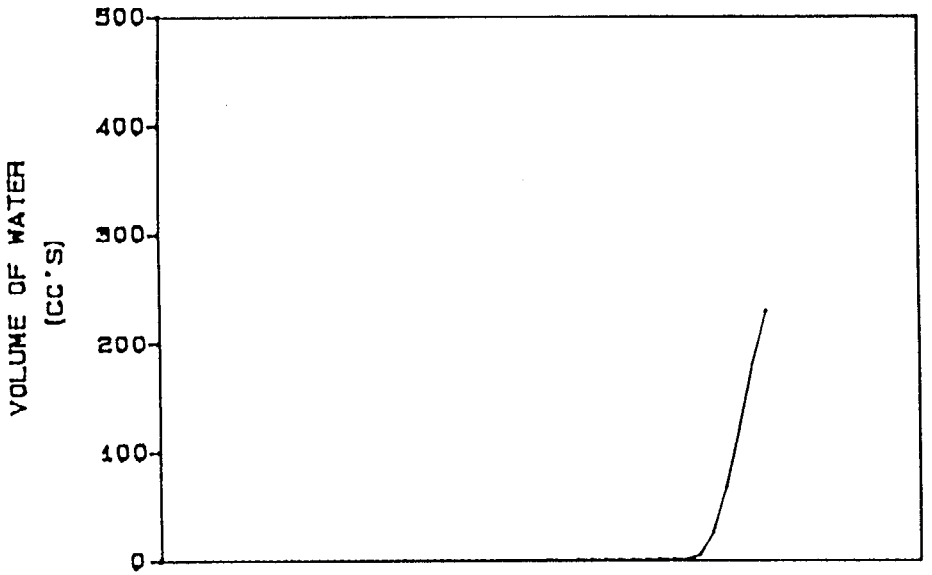


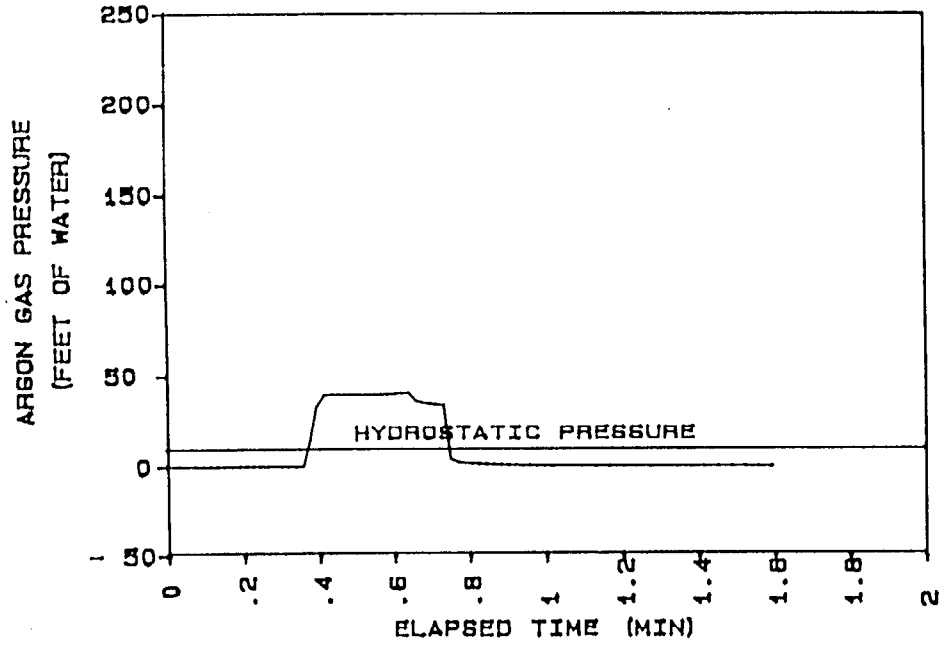


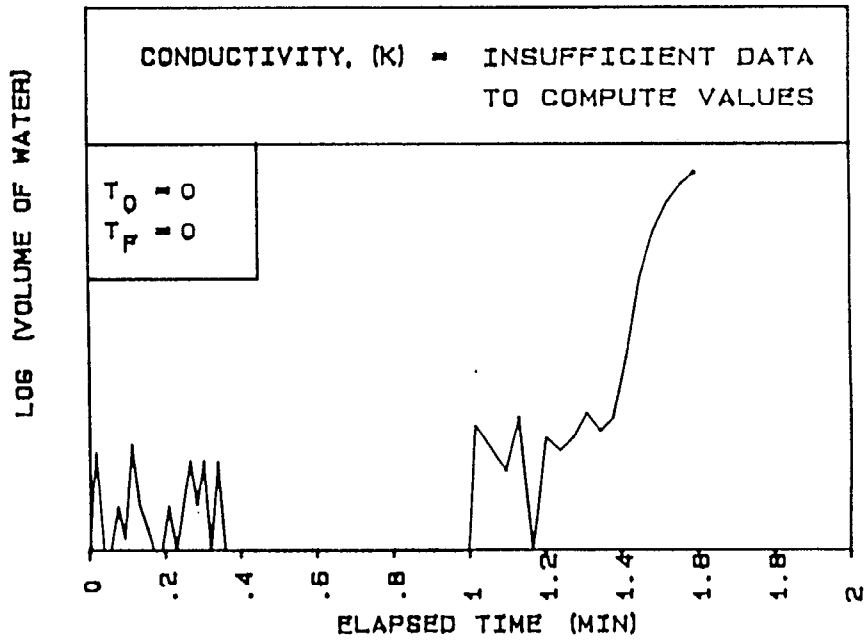
BECHTEL PARRIS ISLAND
LOCATION... 1F-28
TEST DATE
11: 19: 26 06-28-1996

SAMPLE DEPTH (FT) 28
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



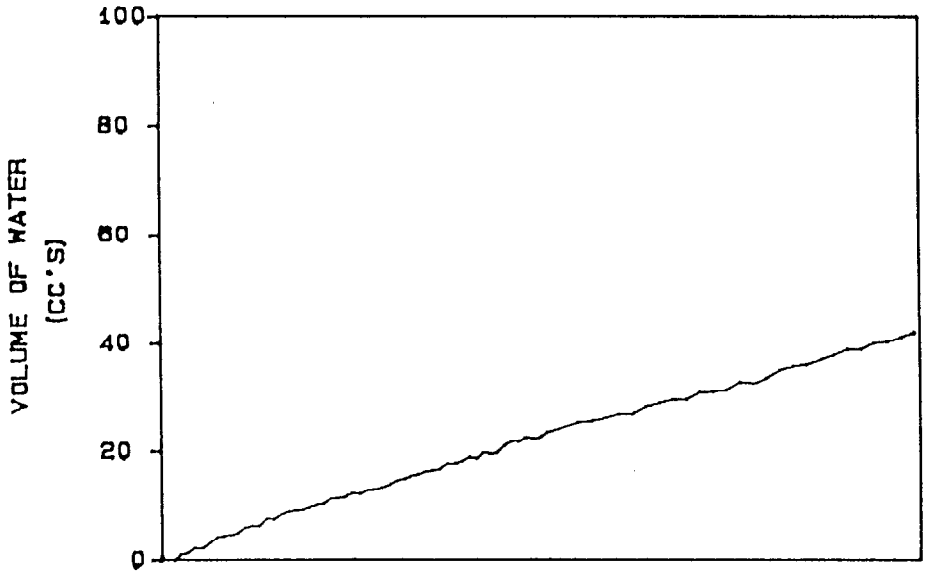


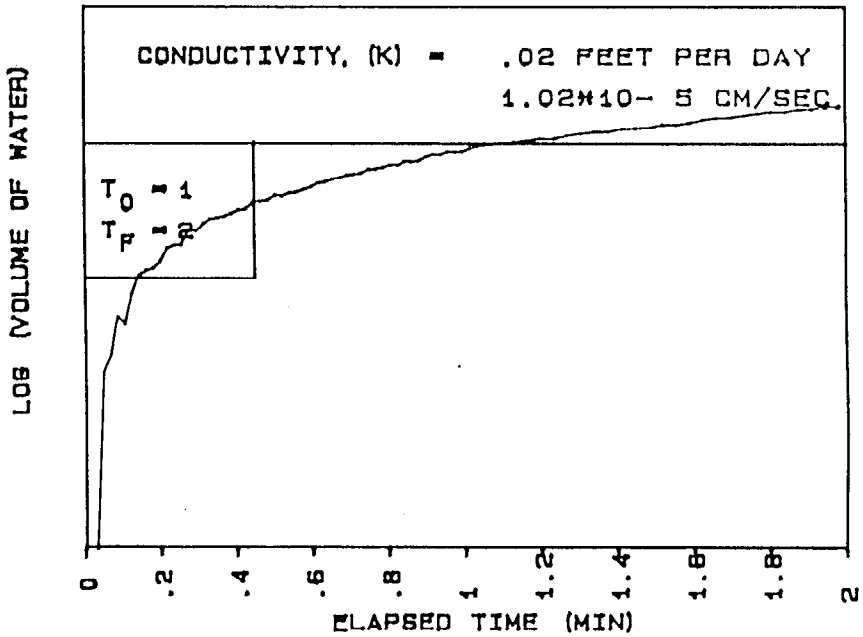


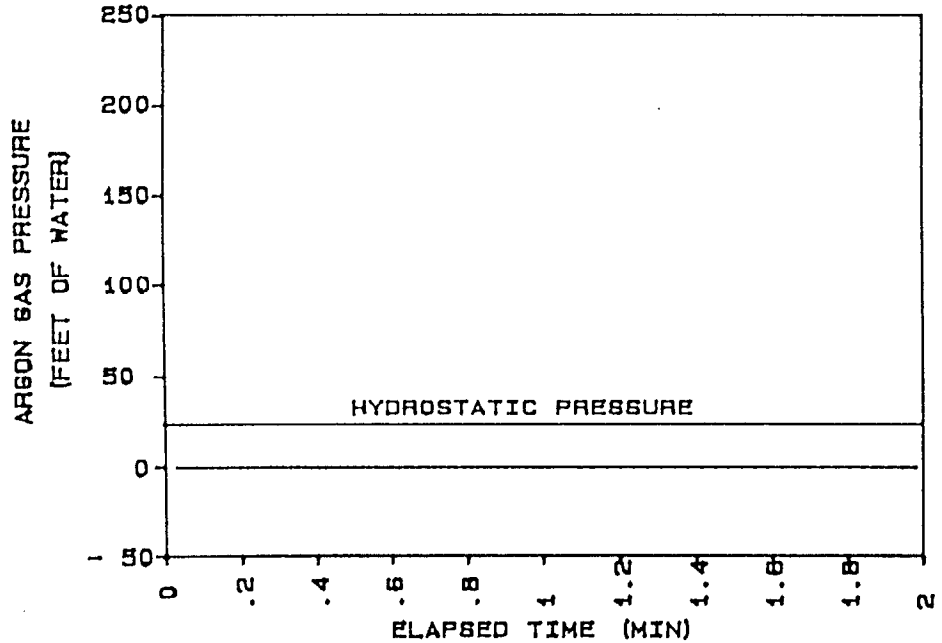
BECHTEL PARRIS ISLAND
LOCATION... -1G-14
TEST DATE
12: 31: 49 08-27-1998

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



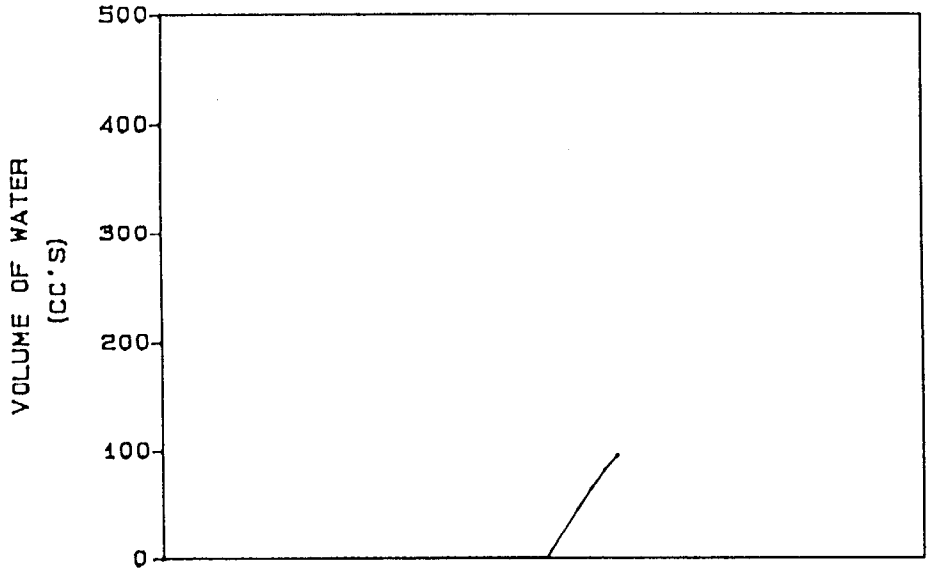


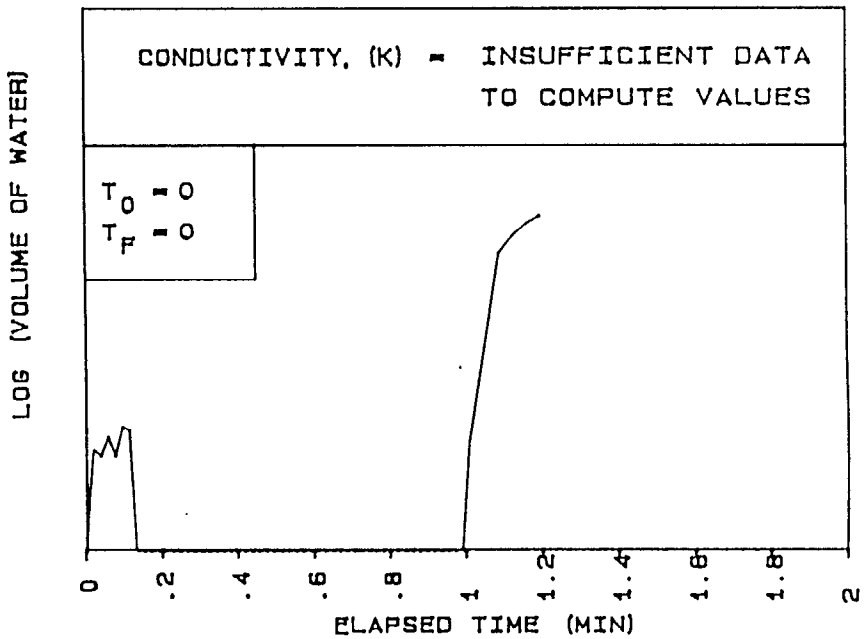


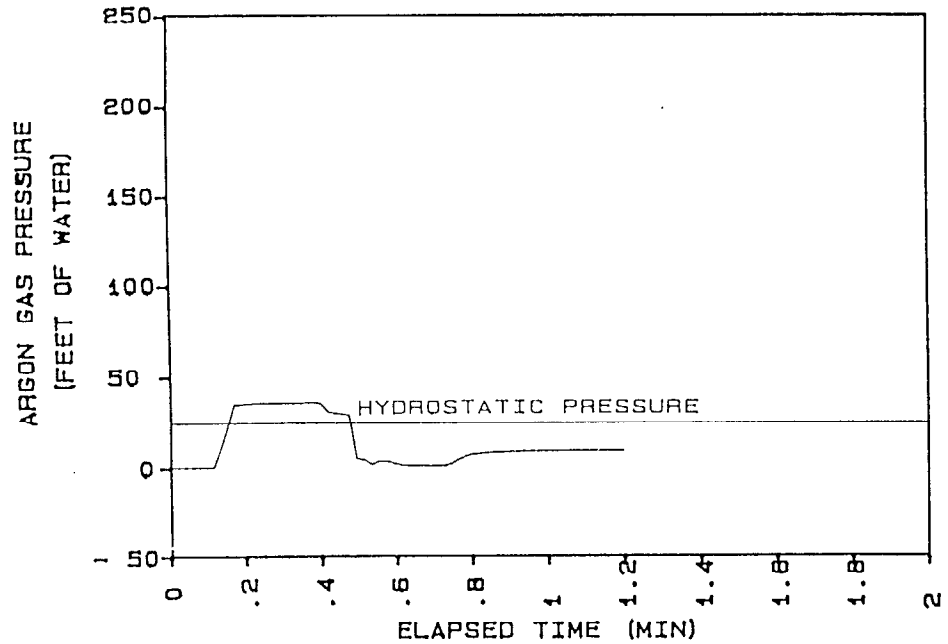
BECHTEL PARRIS ISLAND
LOCATION... -10-28
TEST DATE
11: 29: 39 06-30-1998

SAMPLE DEPTH (FT) 28
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



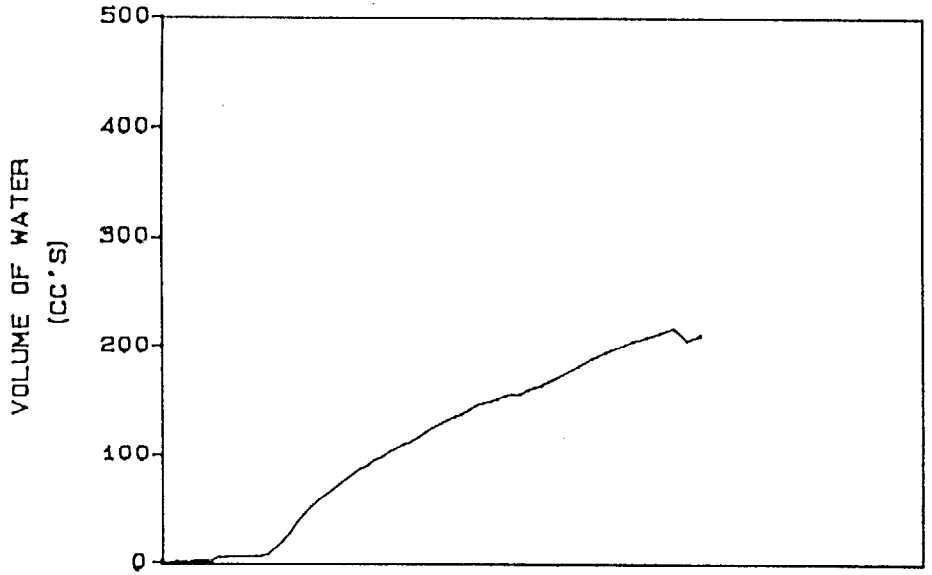


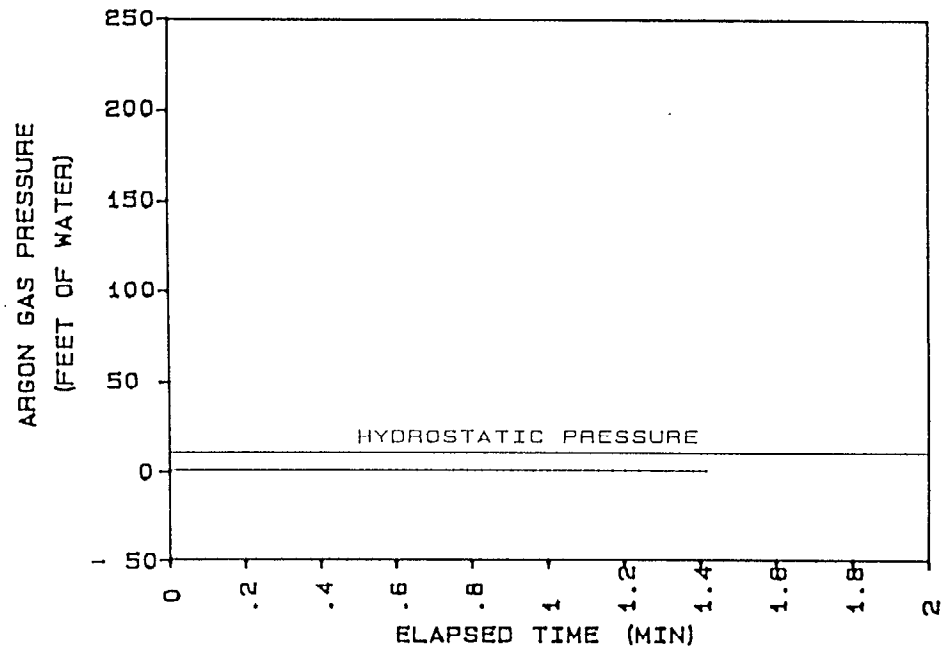


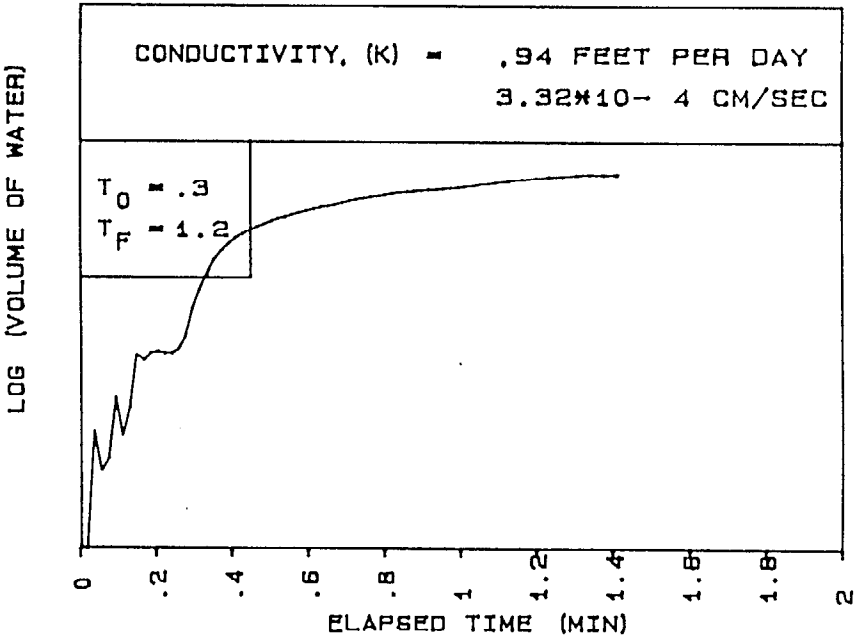
BECHTEL PARRIS ISLAND
LOCATION... 2G-28
TEST DATE
16: 32: 34 06-26-1996

SAMPLE DEPTH (FT) 28
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



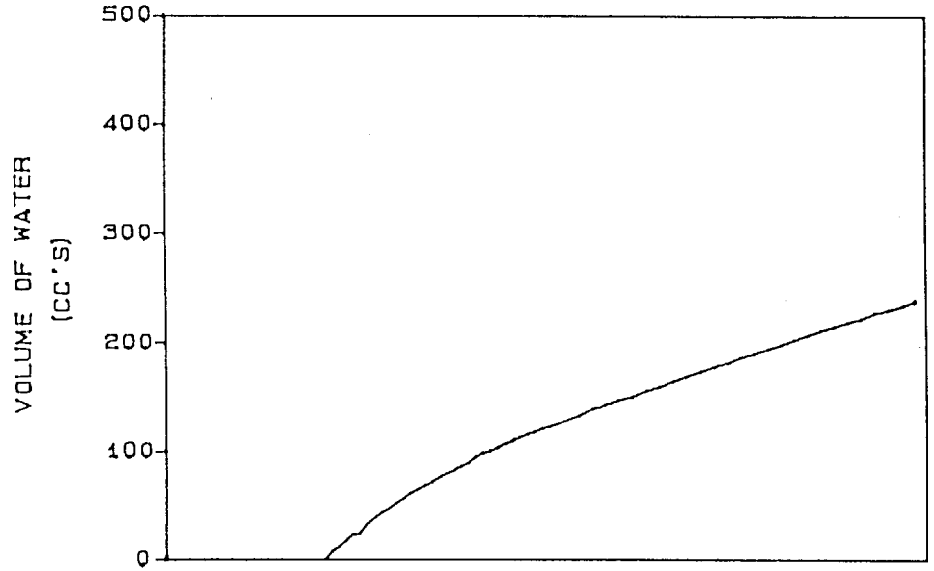


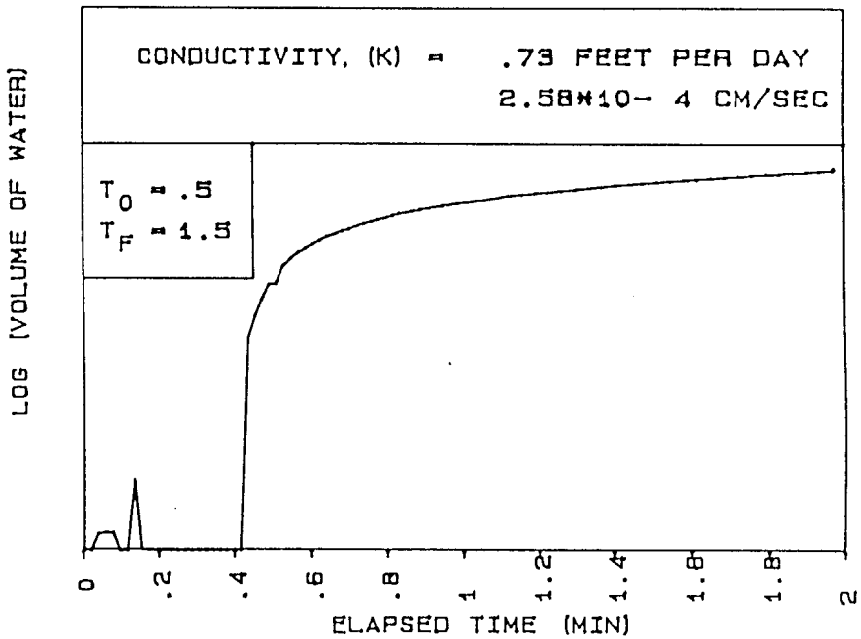


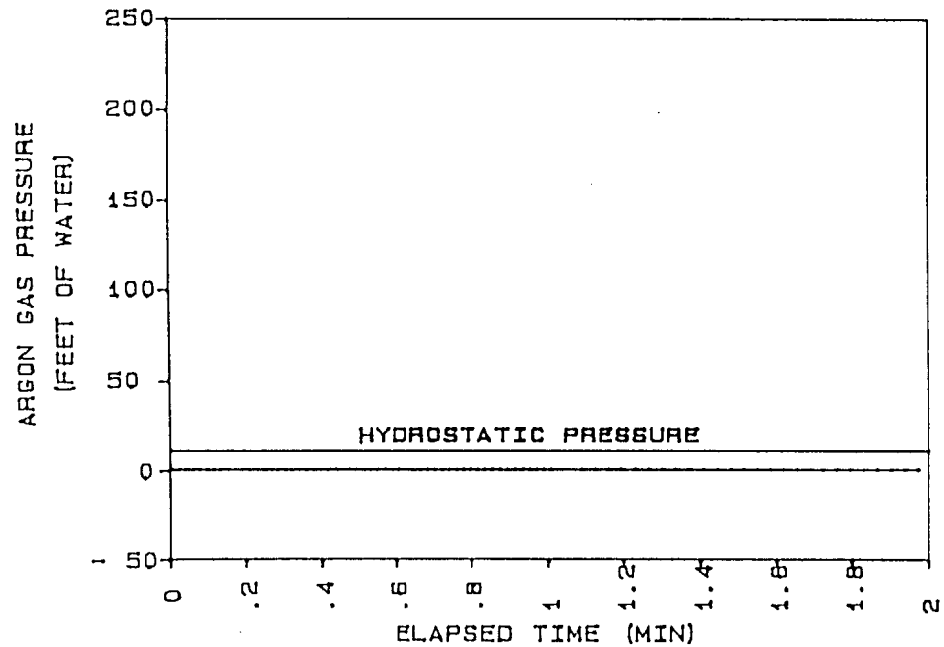
BECHTEL PARRIS ISLAND
LOCATION... 2G-14
TEST DATE
16: 00: 42 06-26-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



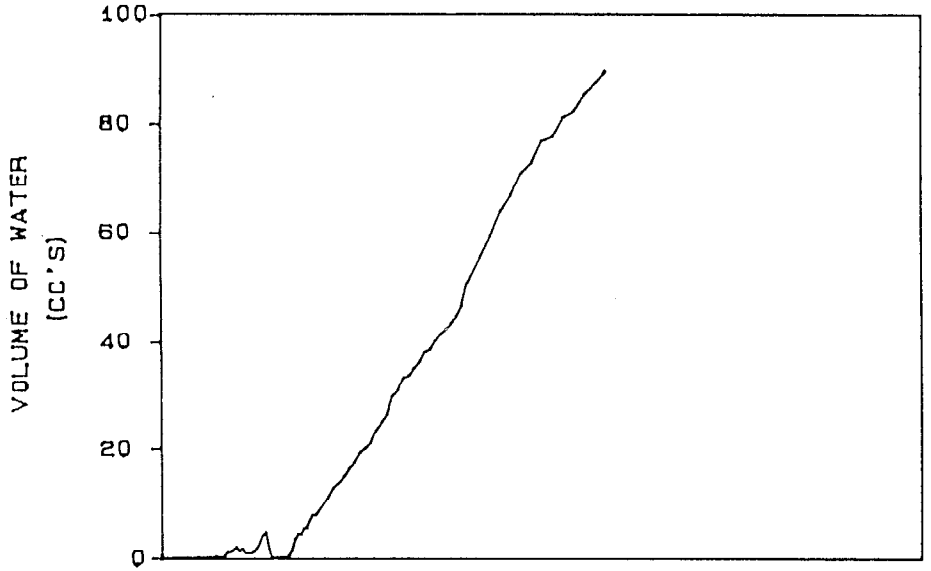


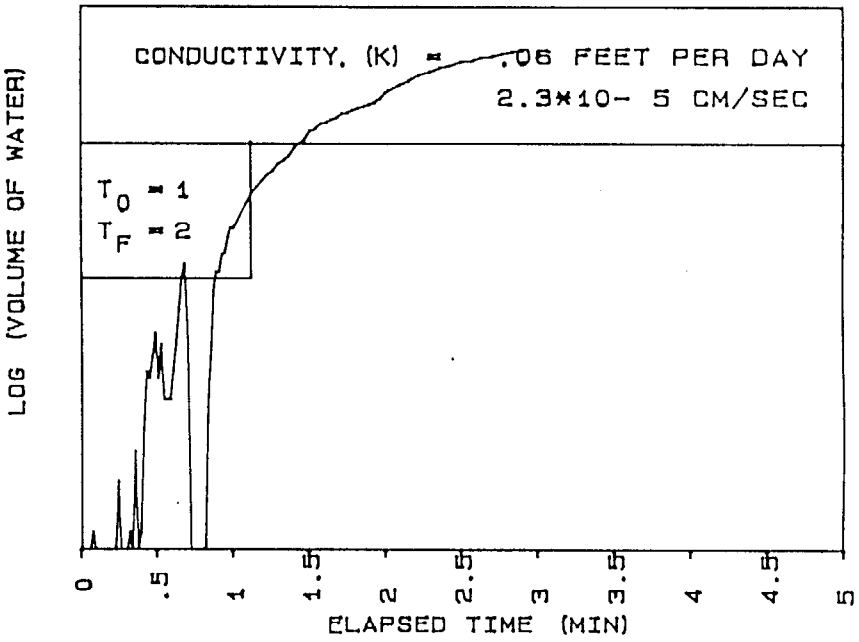


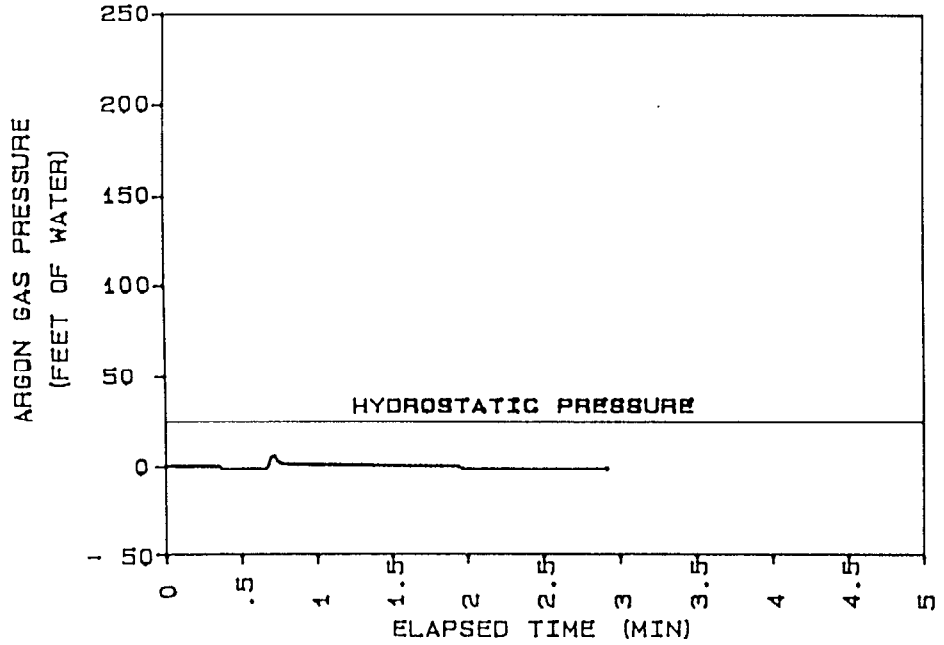
BECHTEL PARRIS ISLAND
LOCATION... -2G-14
TEST DATE
08: 04: 02 06-28-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



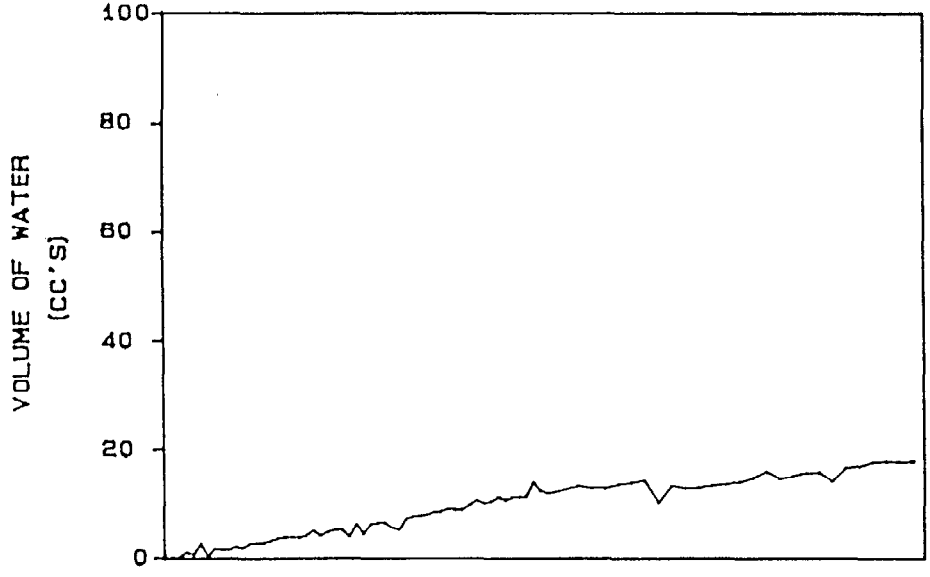


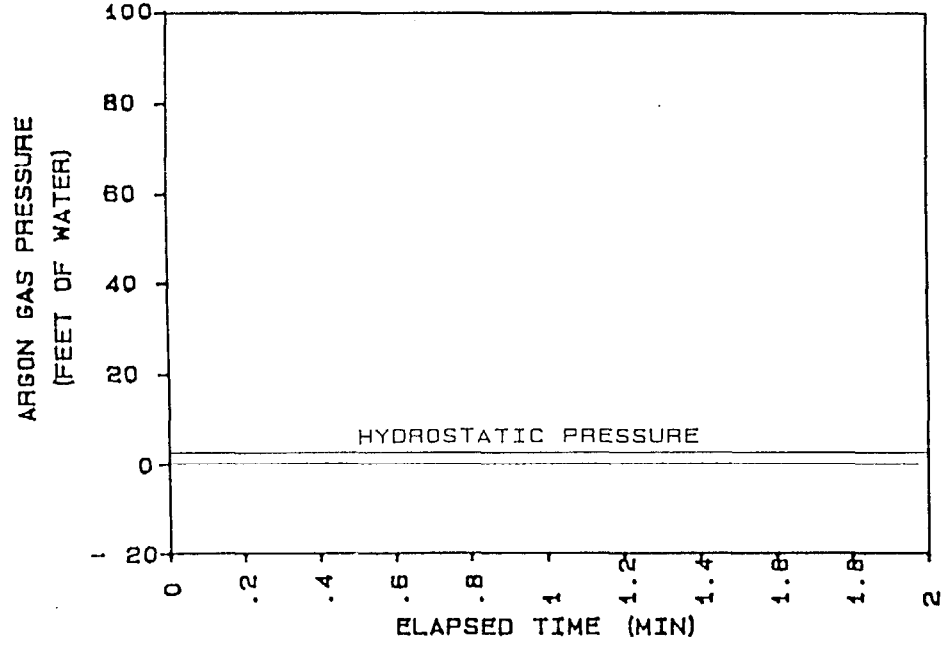


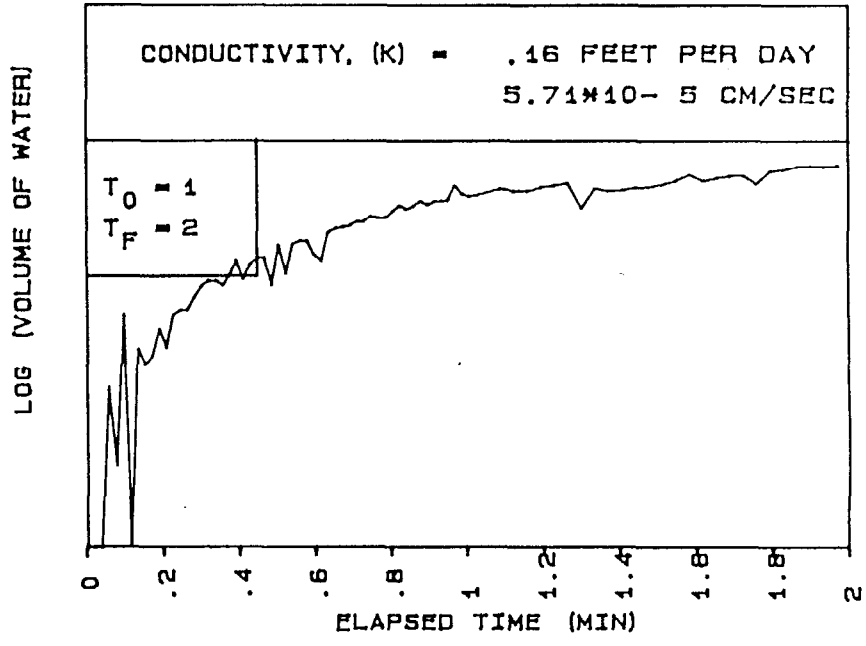
BECHTEL PARRIS ISLAND
LOCATION... -2G-28
TEST DATE
19: 02: 45 06-28-1996

SAMPLE DEPTH (FT) 28
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



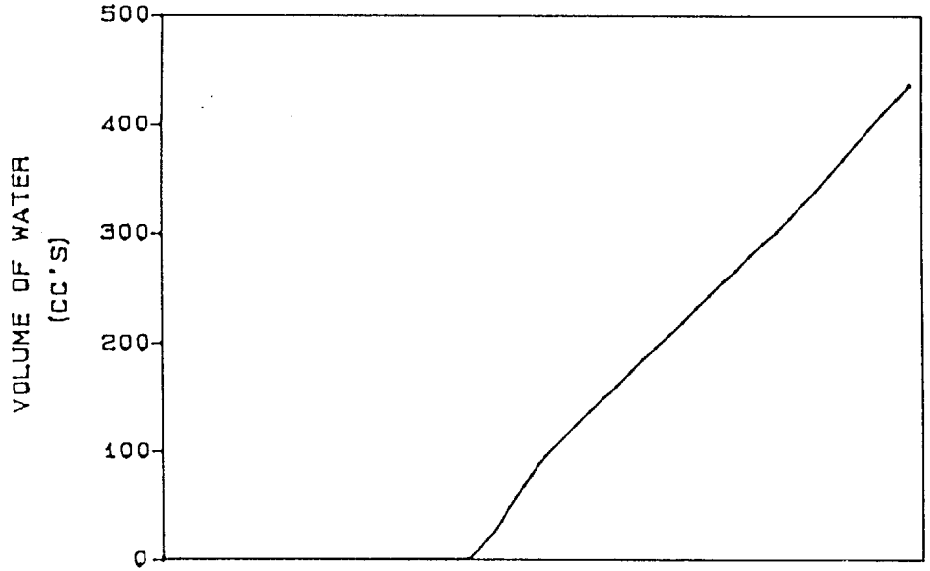


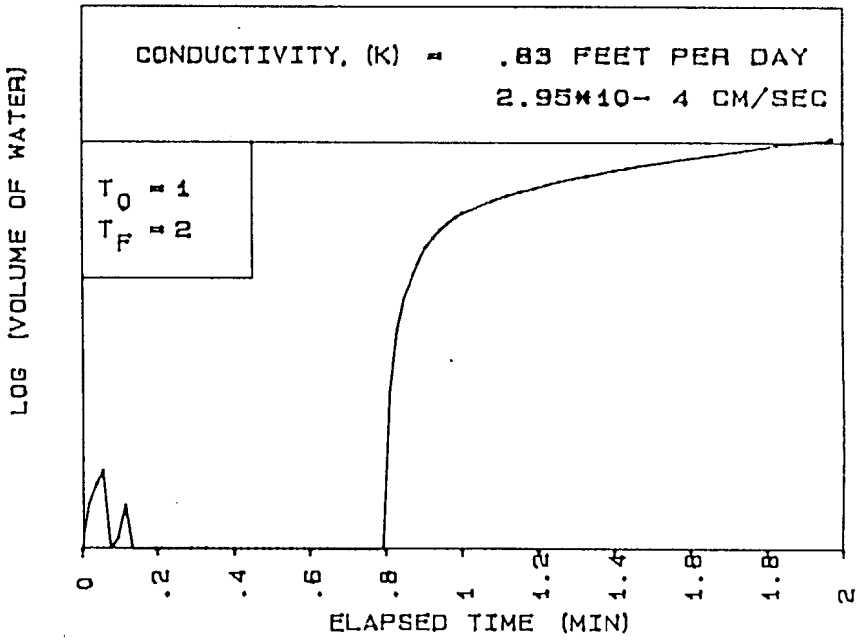


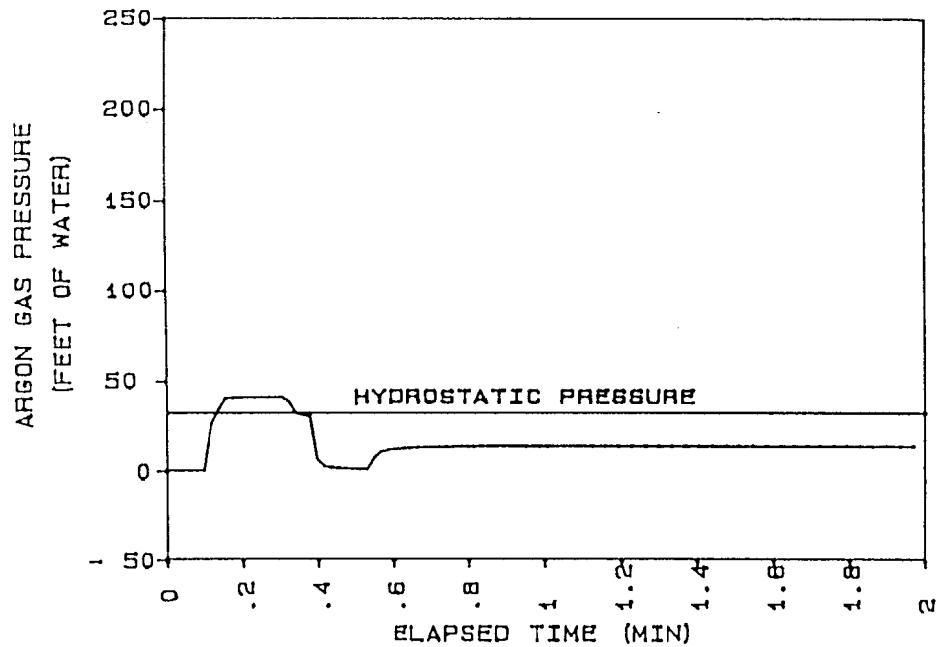
BECHTEL PARRIS ISLAND
LOCATION... 4G-7
TEST DATE
10: 14: 03 06-26-1996

SAMPLE DEPTH (FT) 7
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



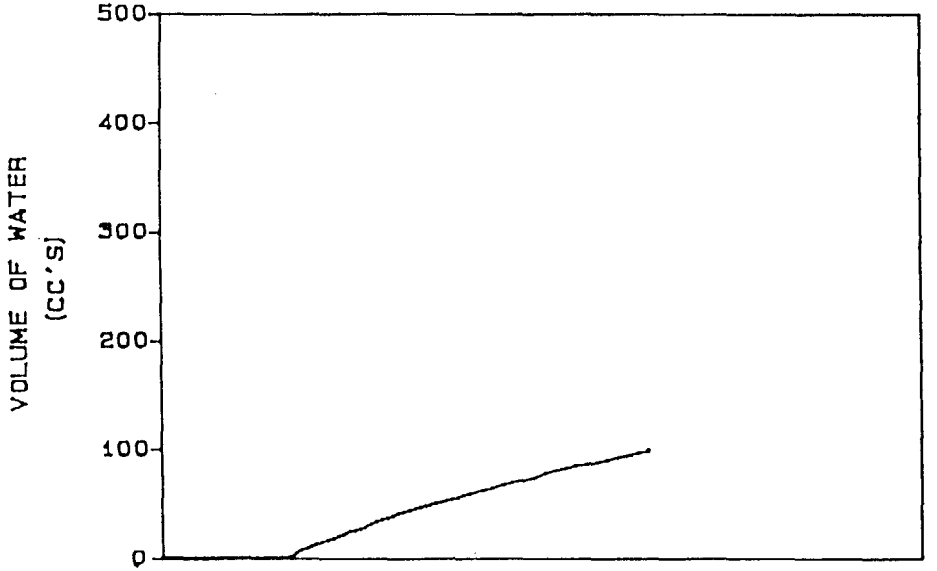


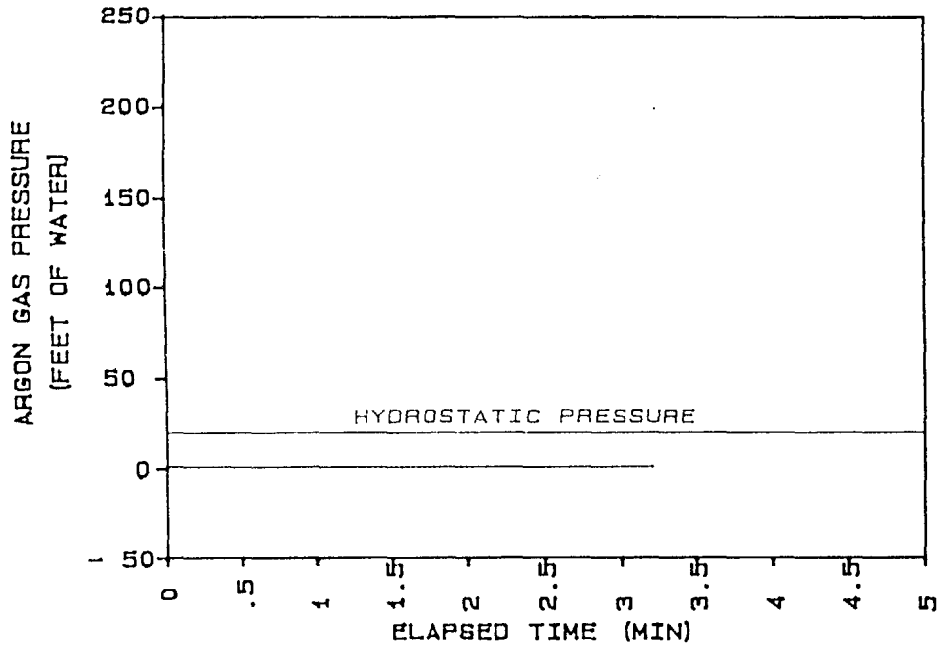


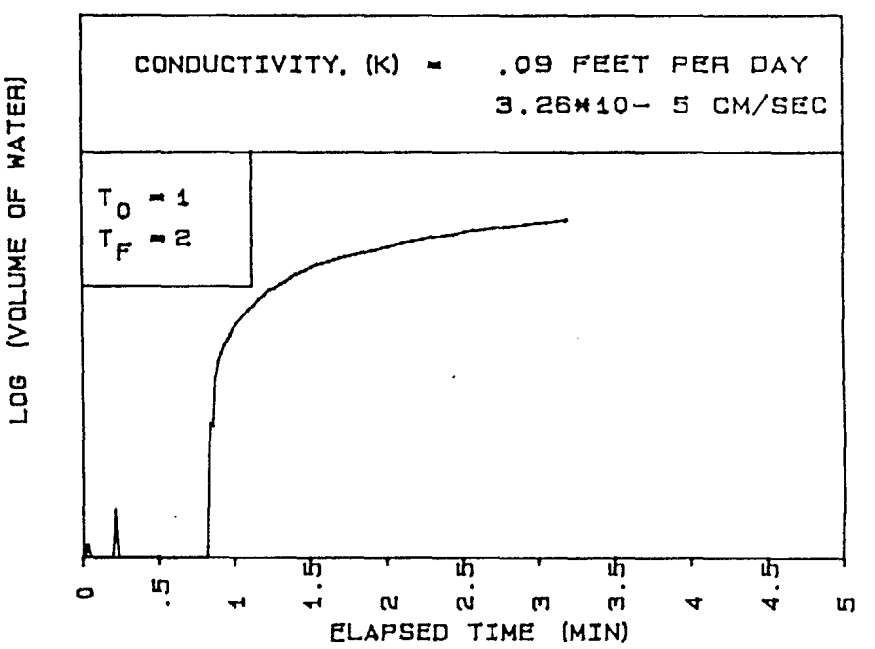
BECHTEL PARRIS ISLAND
LOCATION... -2G-36
TEST DATE
19: 56: 40 06-28-1996

SAMPLE DEPTH (FT) 36
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



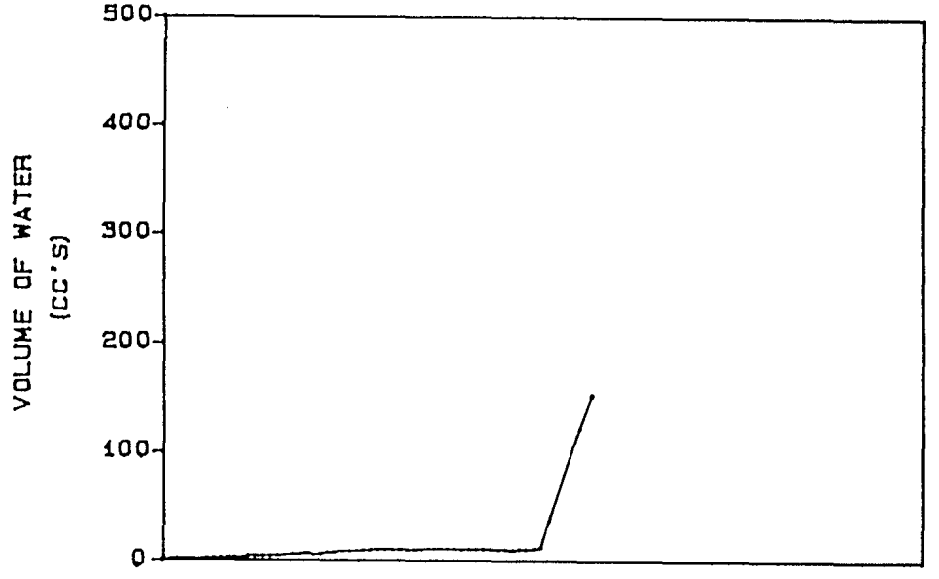


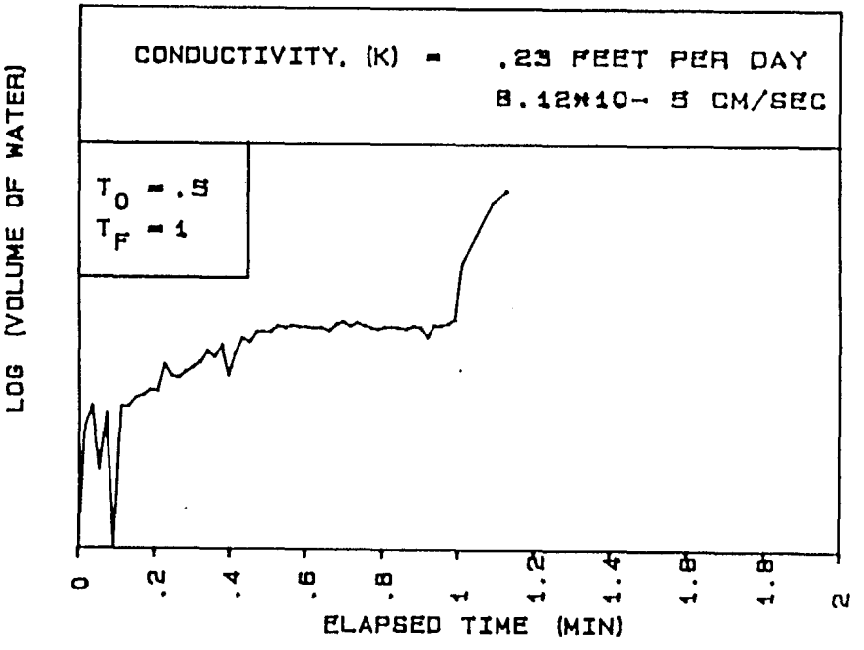


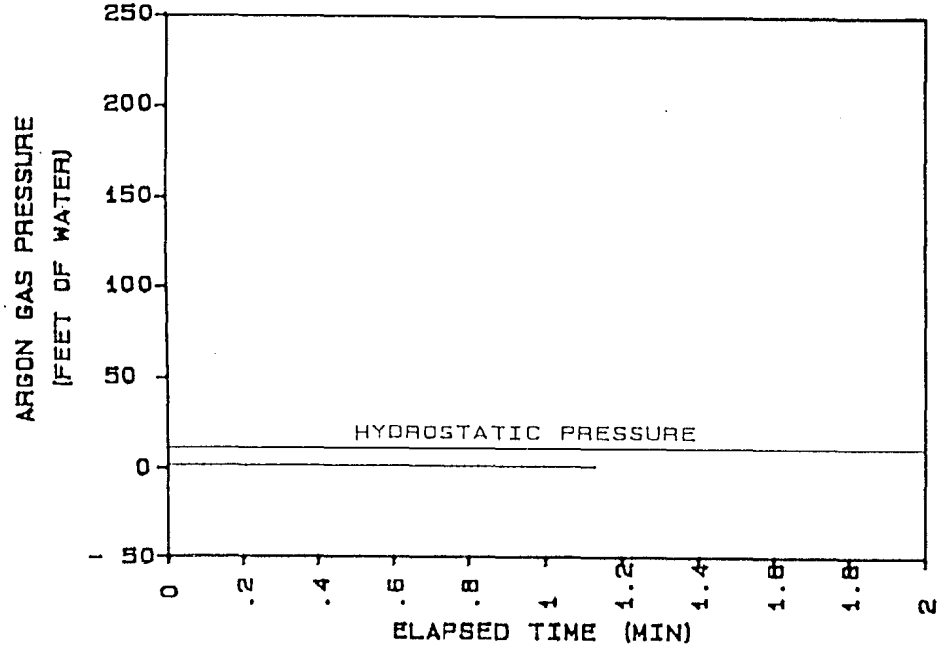
BECHTEL PARRIS ISLAND
LOCATION... 4G-23
TEST DATE
16: 01: 19 06-27-1996

SAMPLE DEPTH (FT) 23
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



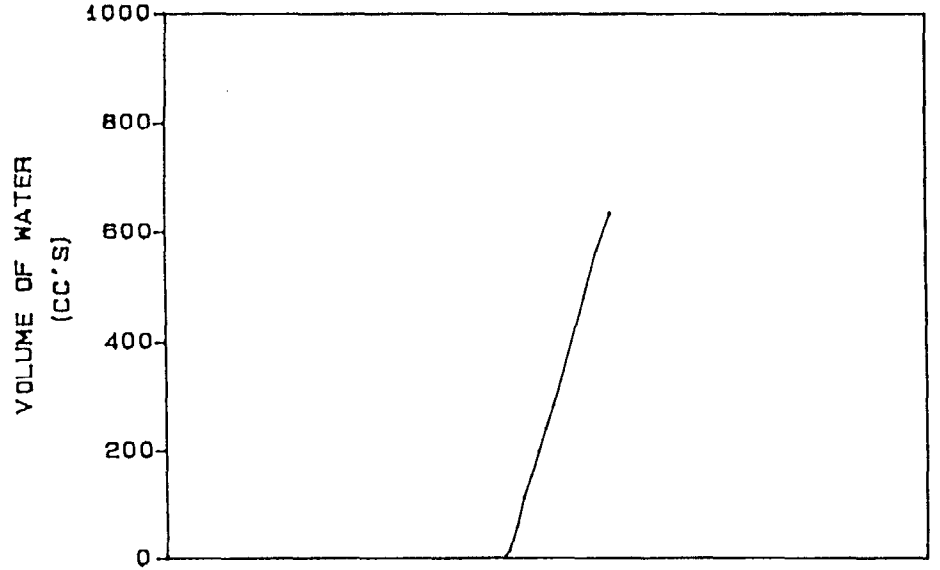


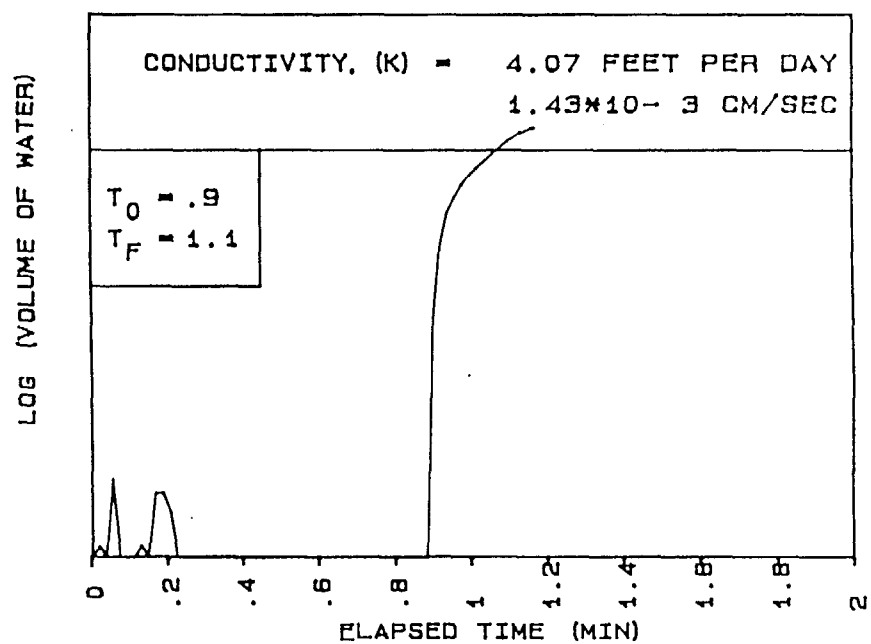


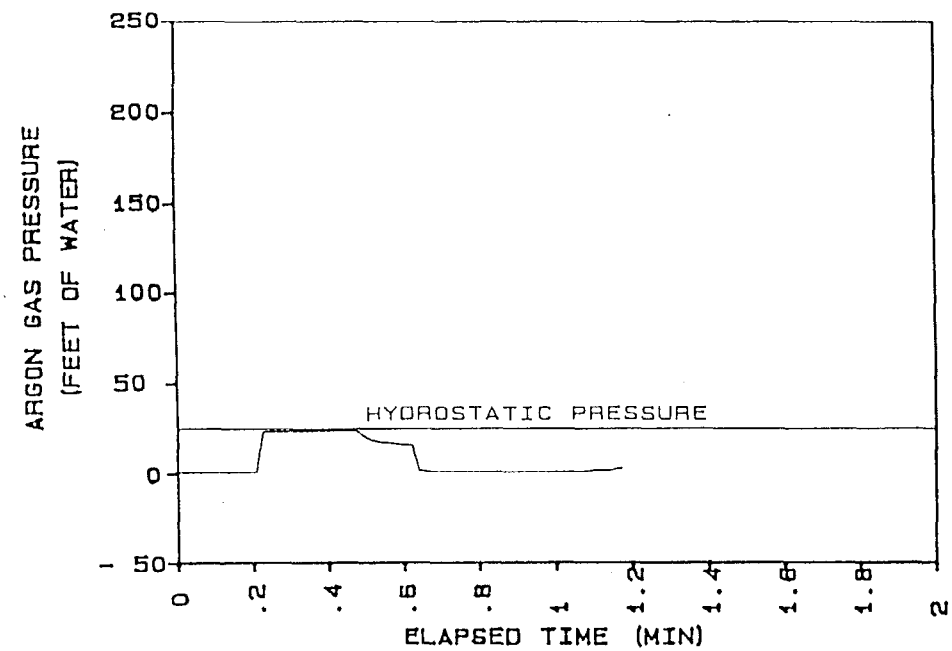
BECHTEL PARRIS ISLAND
LOCATION... 4G-14
TEST DATE
11: 06: 57 06-26-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



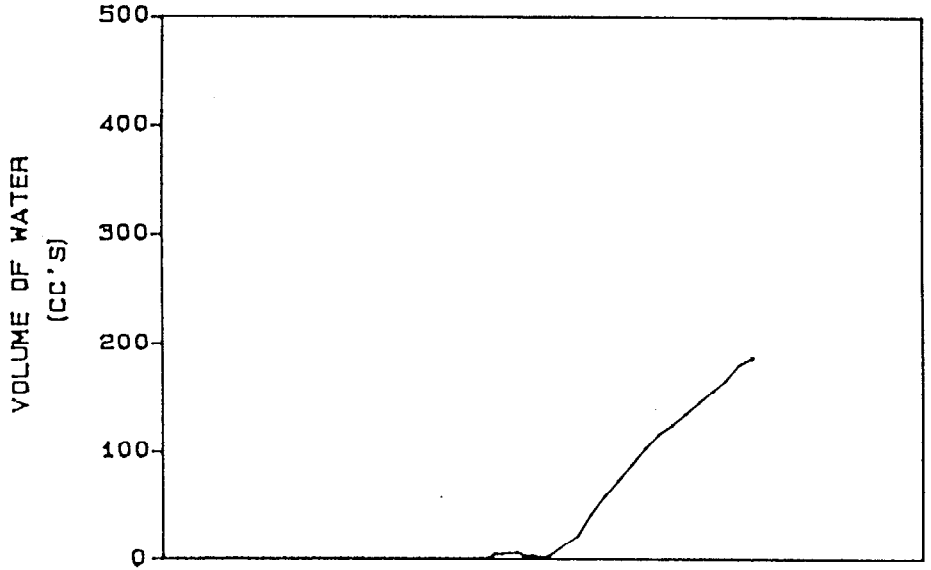


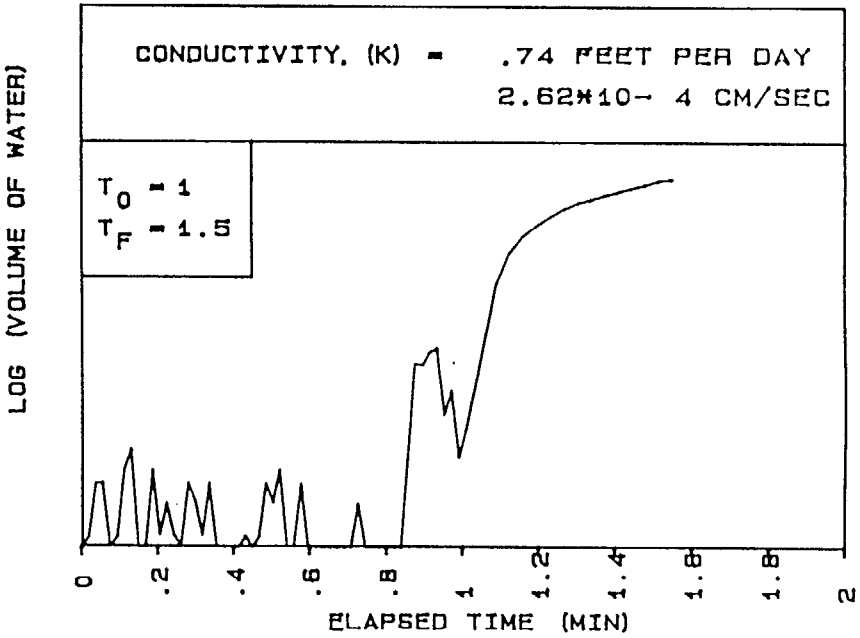


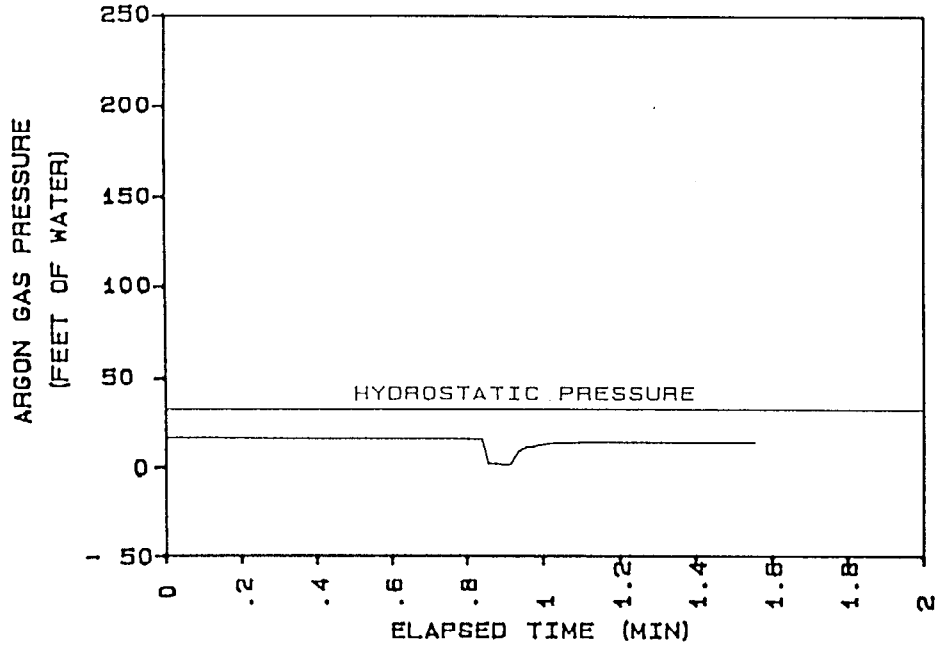
BECHTEL PARRIS ISLAND
LOCATION... 4G-28
TEST DATE
16: 47: 34 06-27-1996

SAMPLE DEPTH (FT) 28
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



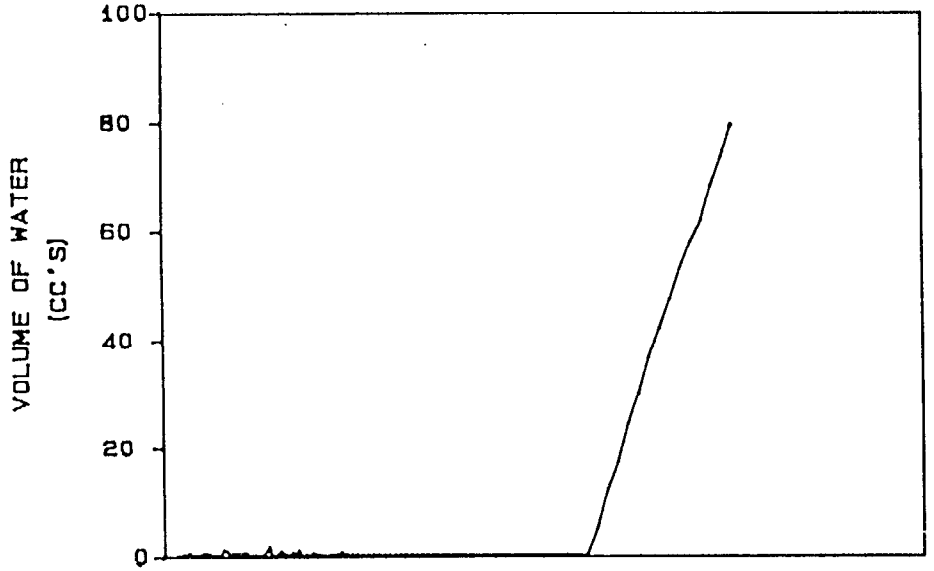


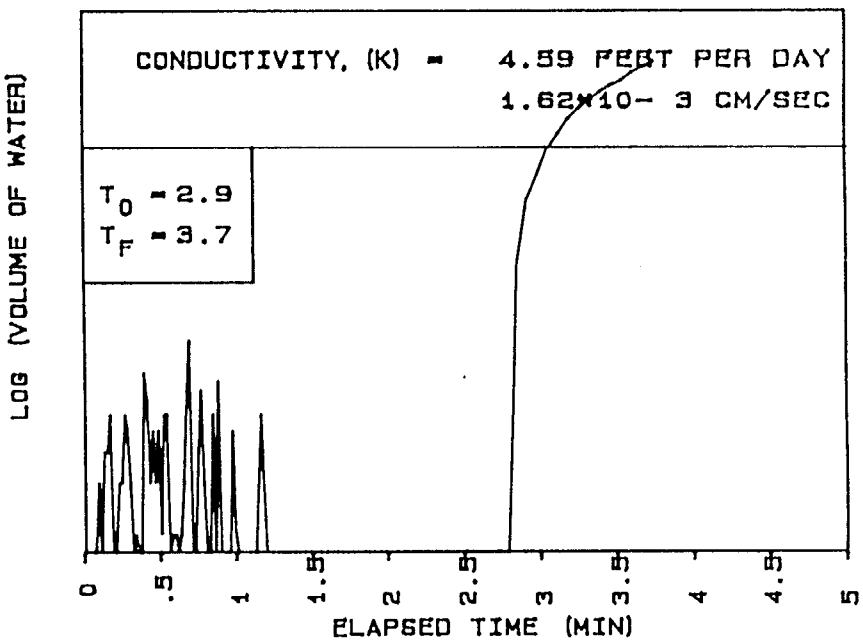


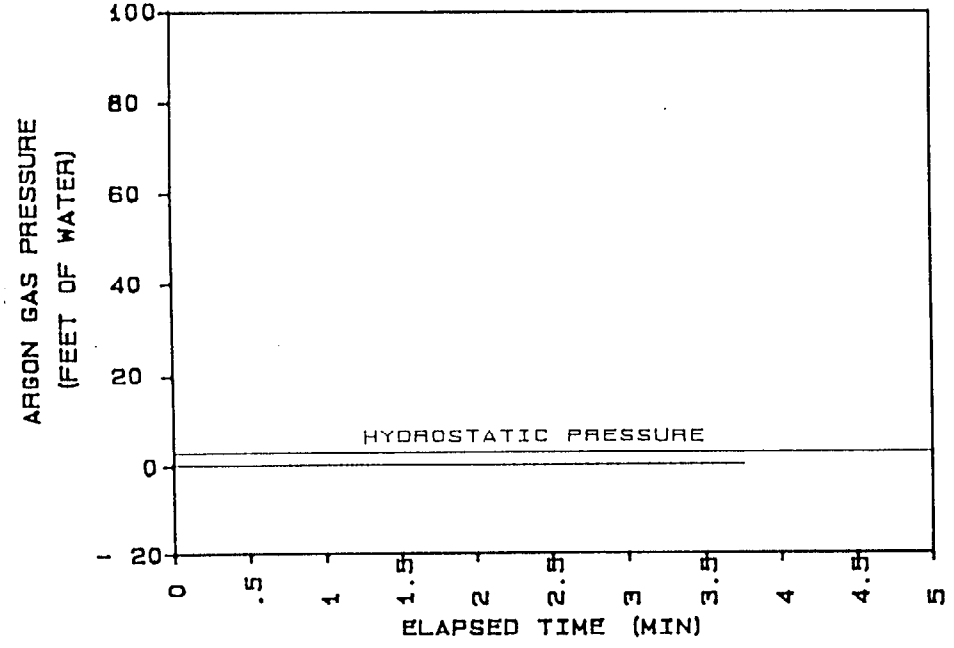
BECHTEL PARRIS ISLAND
LOCATION... 46-36
TEST DATE
17: 25: 46 06-27-1996

SAMPLE DEPTH (FT) 36
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



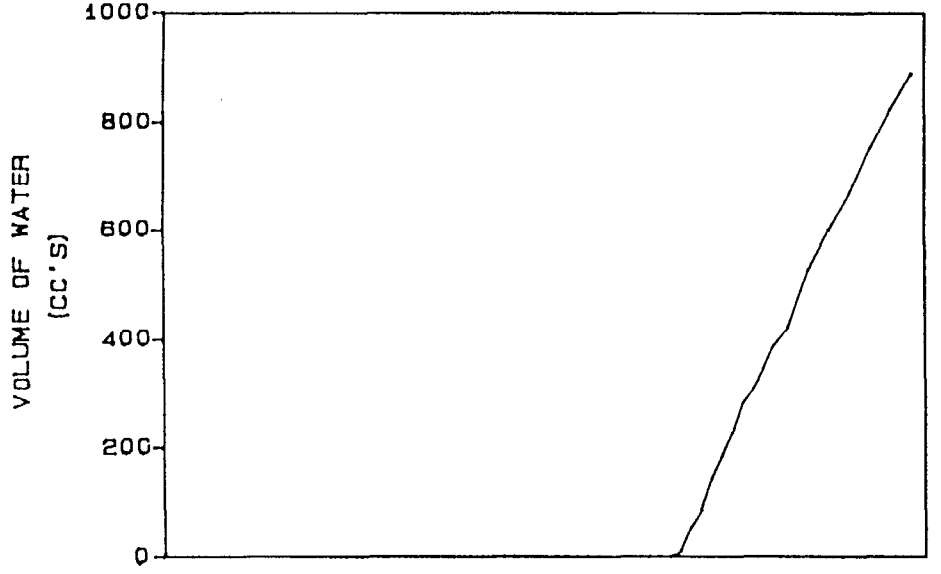


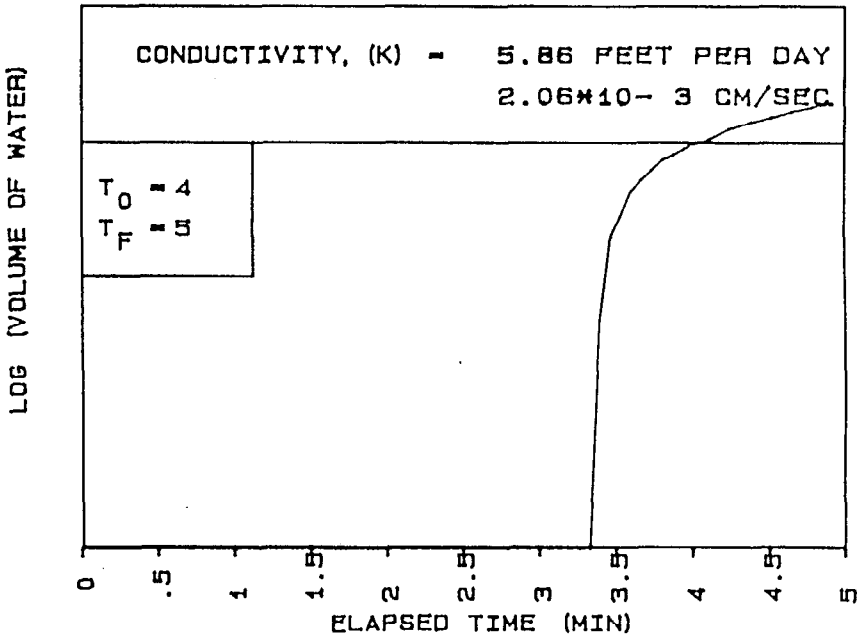


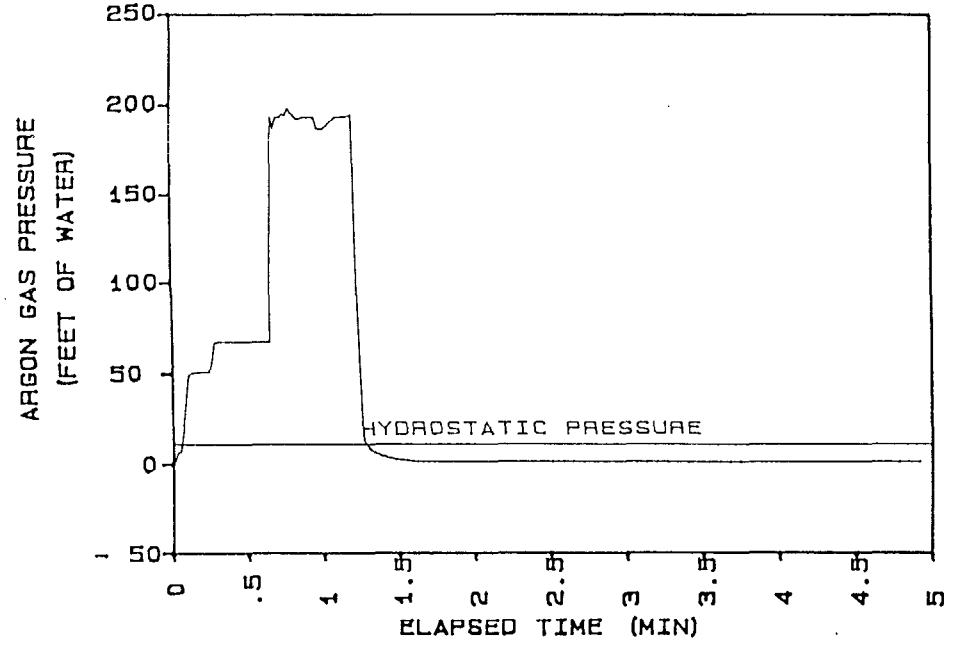
BECHTEL PARRIS ISLAND
LOCATION... SG-7
TEST DATE
14: 14: 02 06-24-1996

SAMPLE DEPTH (FT) 7
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



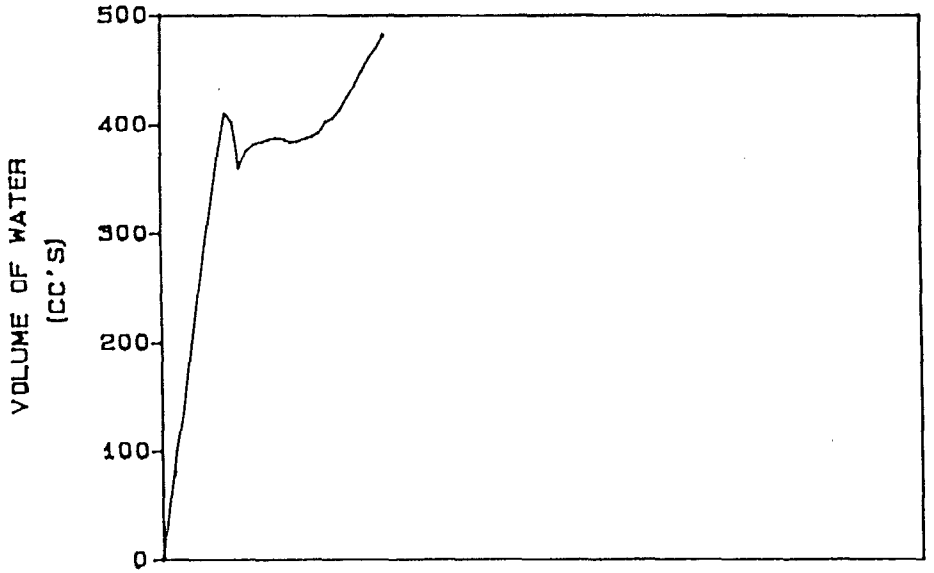


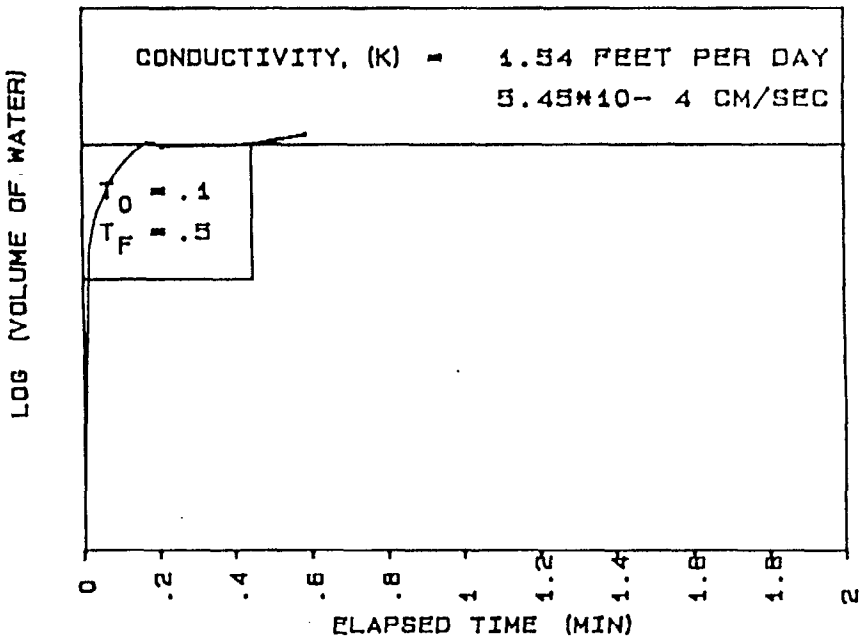


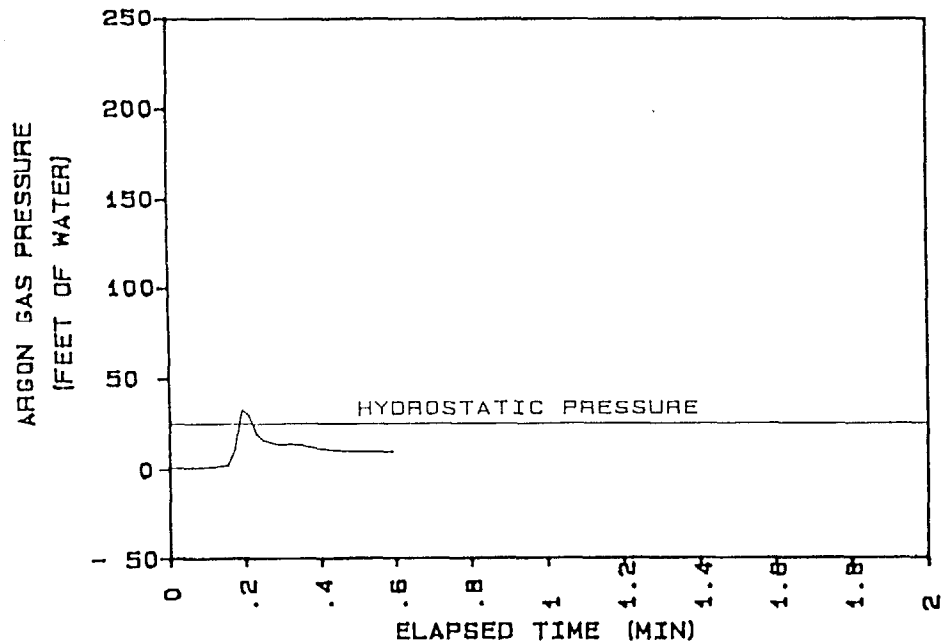
BECHTEL PARRIS ISLAND
LOCATION... SG-14
TEST DATE
14: 54: 57 06-24-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



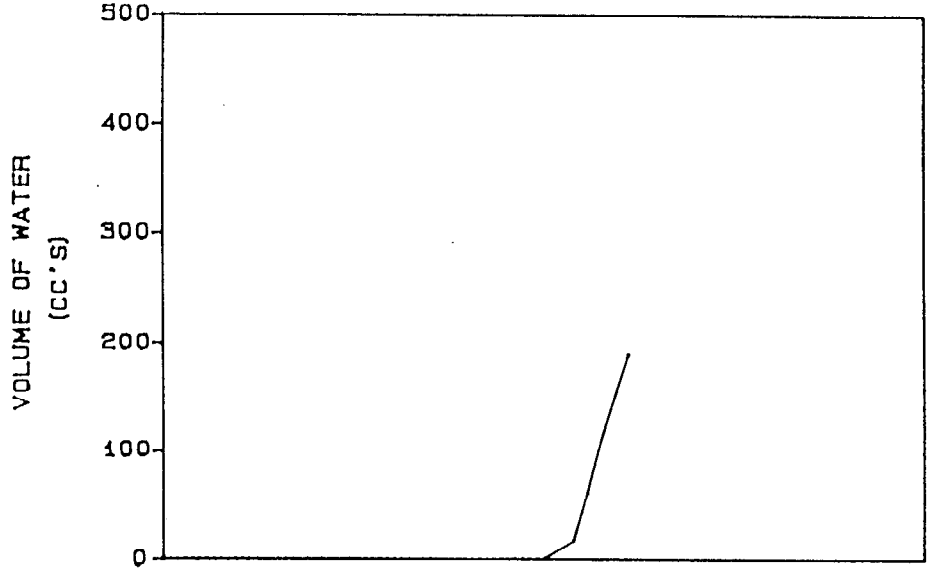


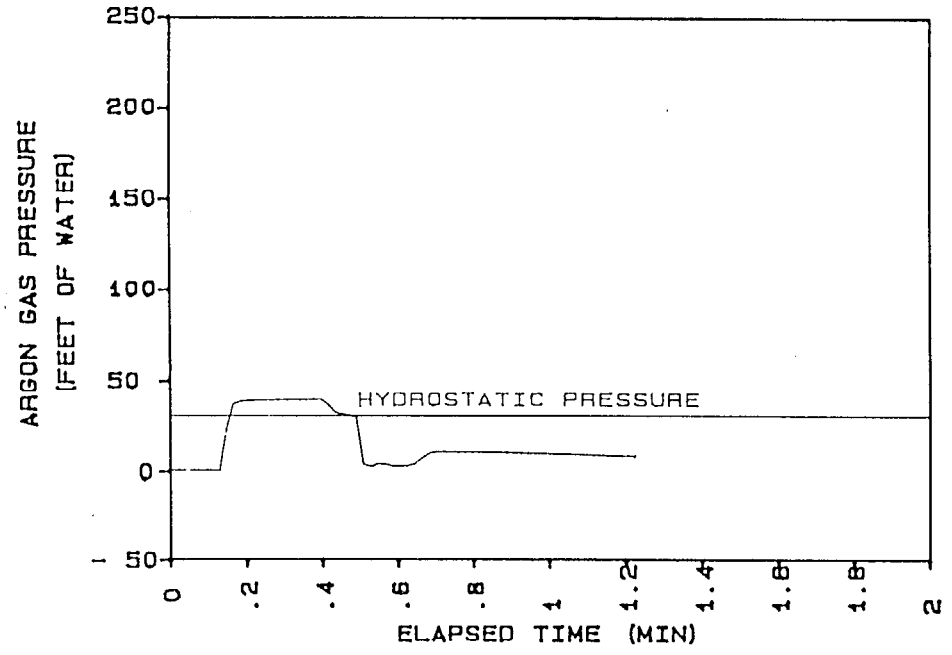


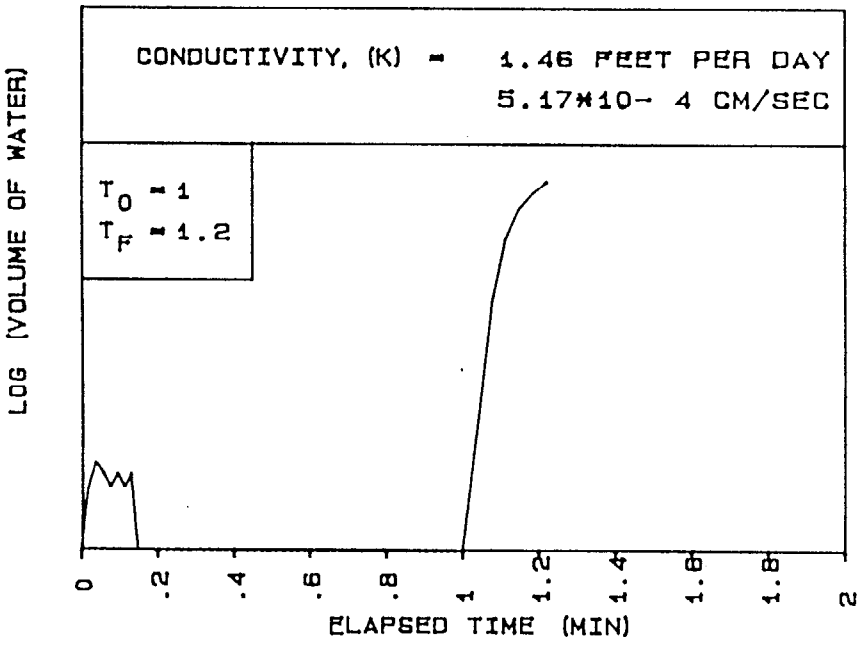
BECHTEL PARRIS ISLAND
LOCATION... SG-28
TEST DATE
14: 37: 14 06-26-1996

SAMPLE DEPTH (FT) 28
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



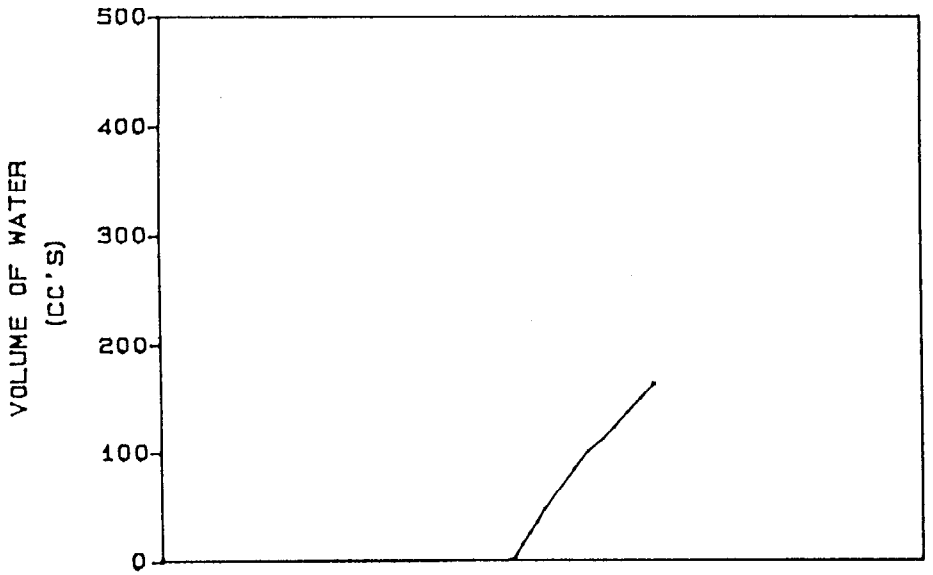


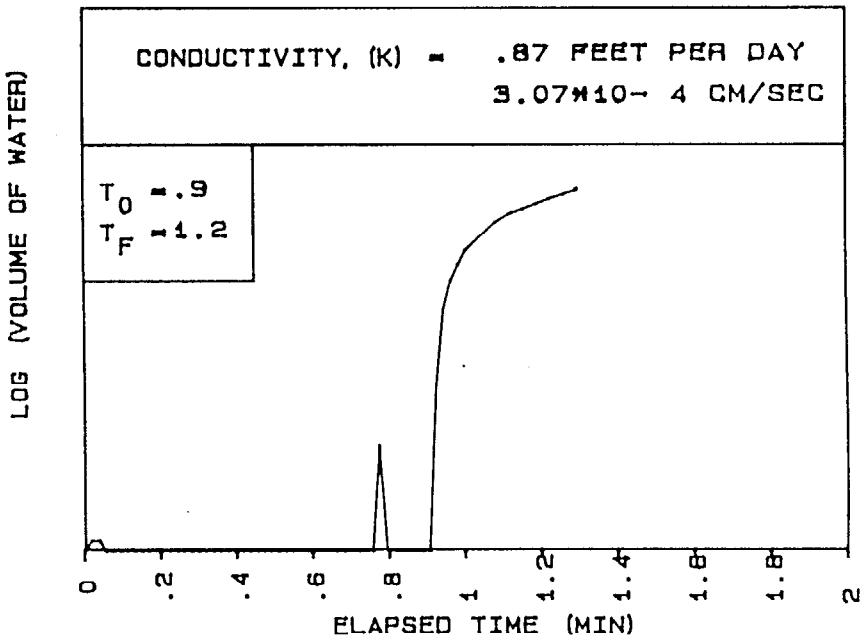


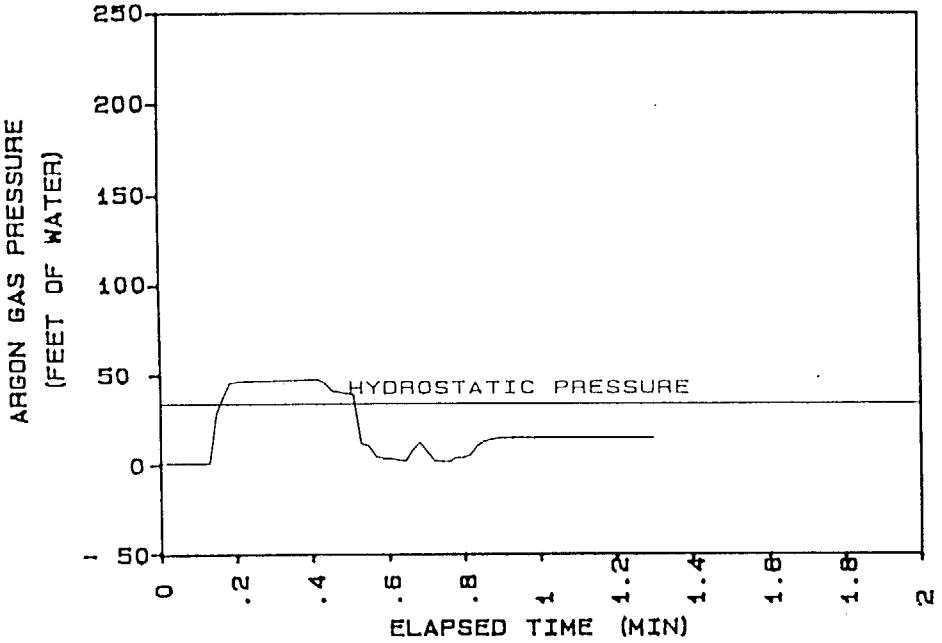
BECHTEL PARRIS ISLAND
LOCATION... SG-34
TEST DATE
15: 12: 14 06-26-1996

SAMPLE DEPTH (FT) 34
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST







BECHTEL PARRIS ISLAND
LOCATION... SG-37
TEST DATE
17: 14: 43 06-26-1996

SAMPLE DEPTH (FT) 37
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST

VOLUME OF WATER (CC'S)

DATA NOT AVAILABLE

LOG (VOLUME OF WATER)

CONDUCTIVITY, (K) =

T_0 =

T_F =

DATA NOT AVAILABLE

ELAPSED TIME (MIN)

ARGON GAS PRESSURE (FEET OF WATER)

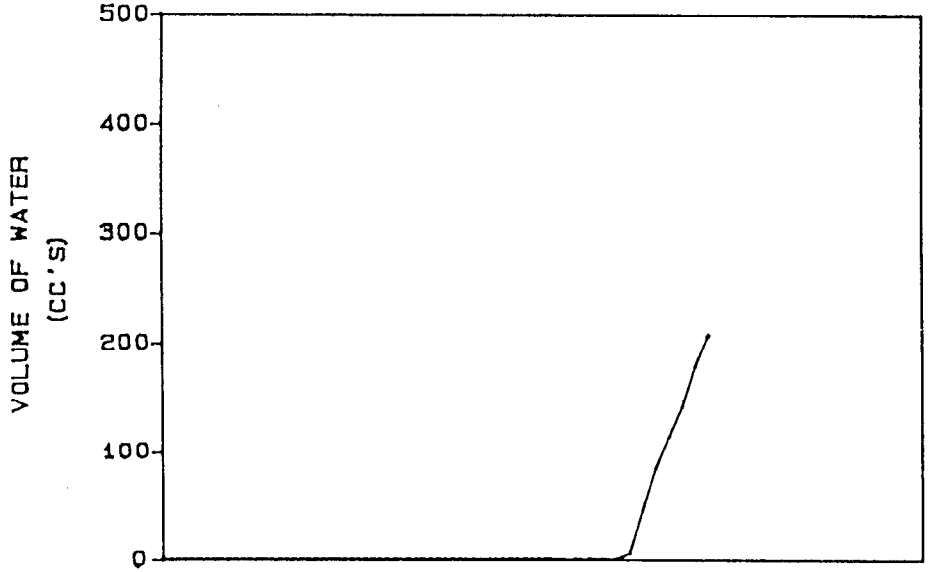
DATA NOT AVAILABLE

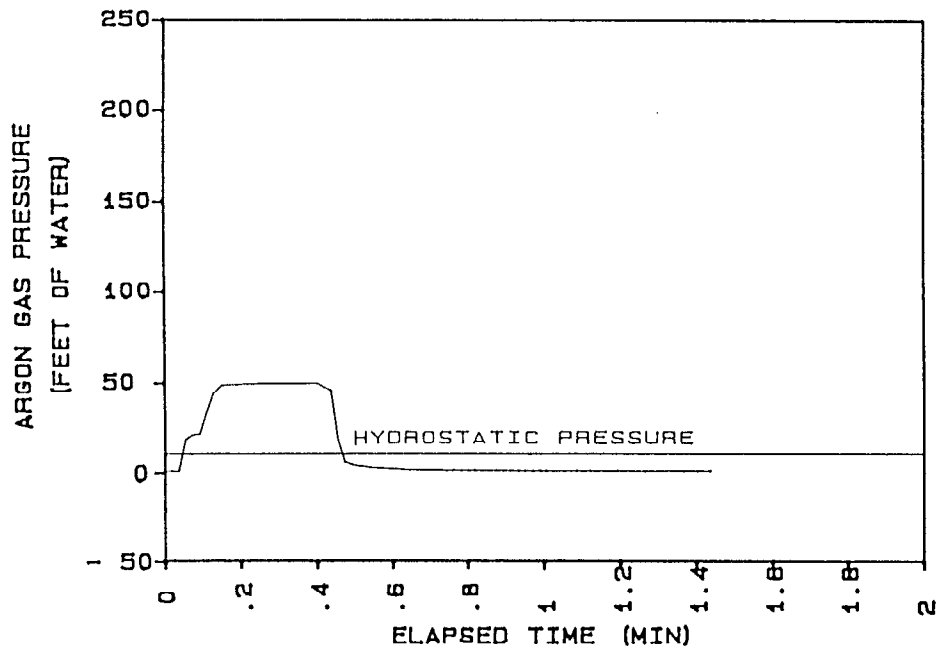
ELAPSED TIME (MIN)

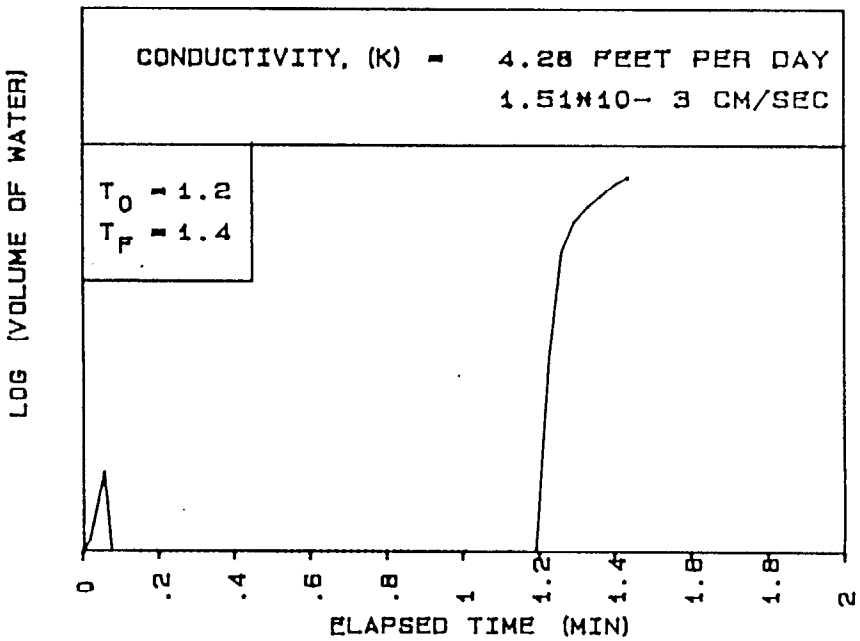
BECHTEL PARRIS ISLAND
LOCATION... 6G-7

VOLUME SAMPLE

HYDROCONE TEST







BECHTEL PARRIS ISLAND
LOCATION... 6G-14
TEST DATE
13: 54: 37 06-25-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST

VOLUME OF WATER (CC'S)

DATA NOT AVAILABLE

LOG (VOLUME OF WATER)

CONDUCTIVITY, (K) =

T_0 =

T_F =

DATA NOT AVAILABLE

ELAPSED TIME (MIN)

ARGON GAS PRESSURE (FEET OF WATER)

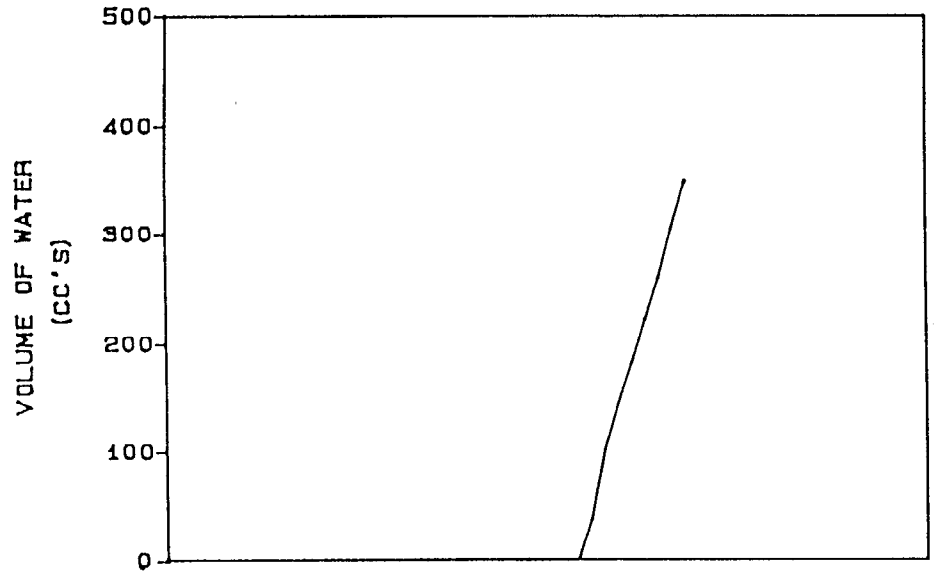
DATA NOT AVAILABLE

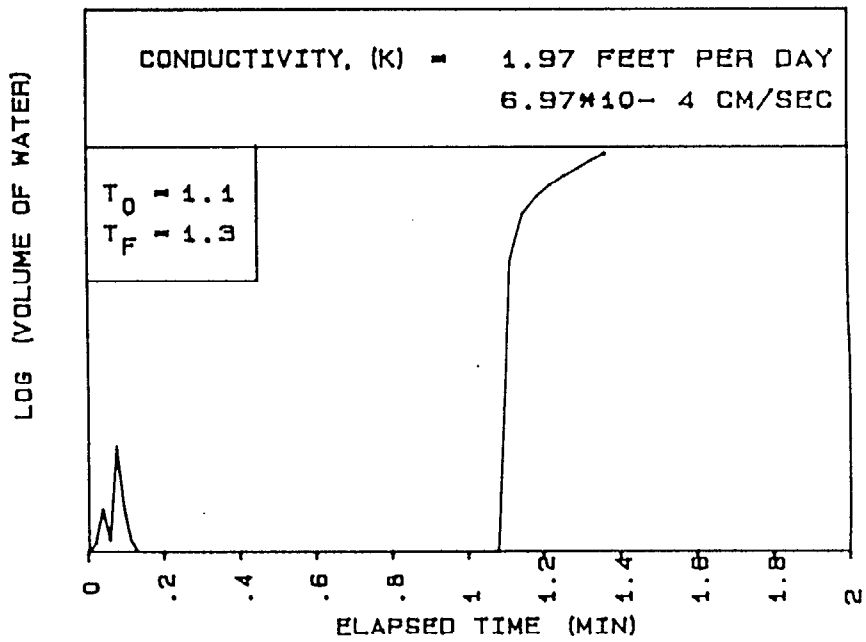
ELAPSED TIME (MIN)

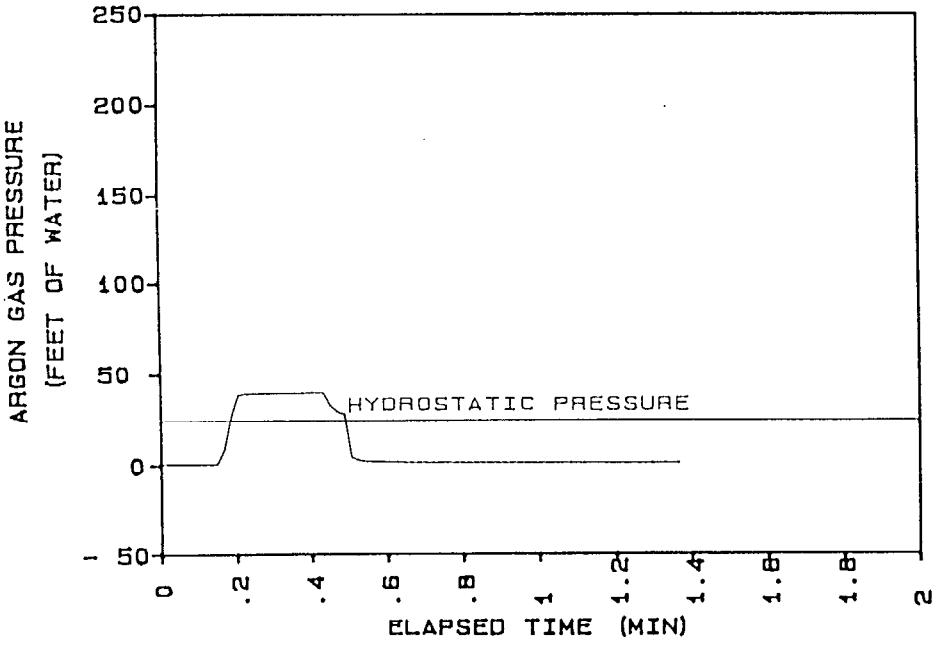
BECHTEL PARRIS ISLAND
LOCATION... 6G-21

DATA NOT AVAILABLE

HYDROCONE TEST



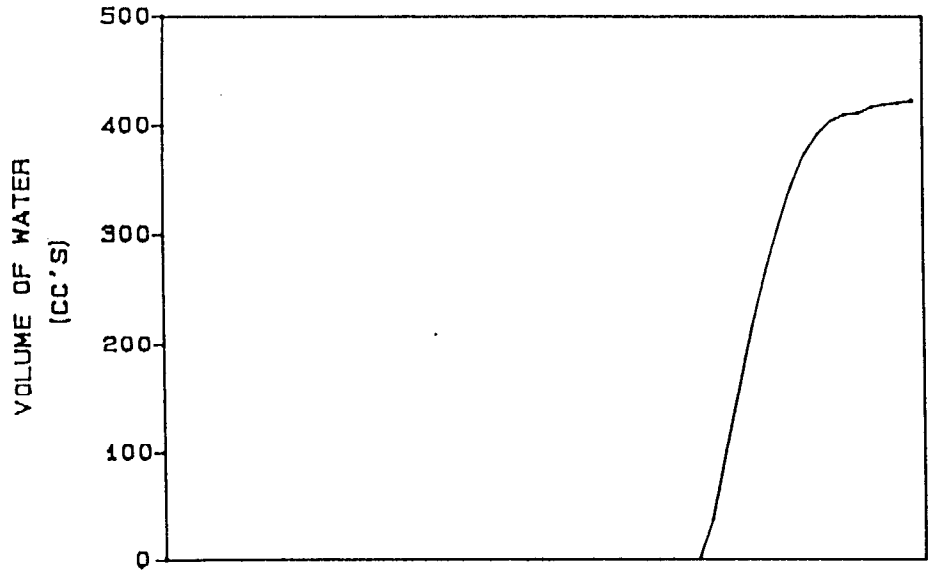


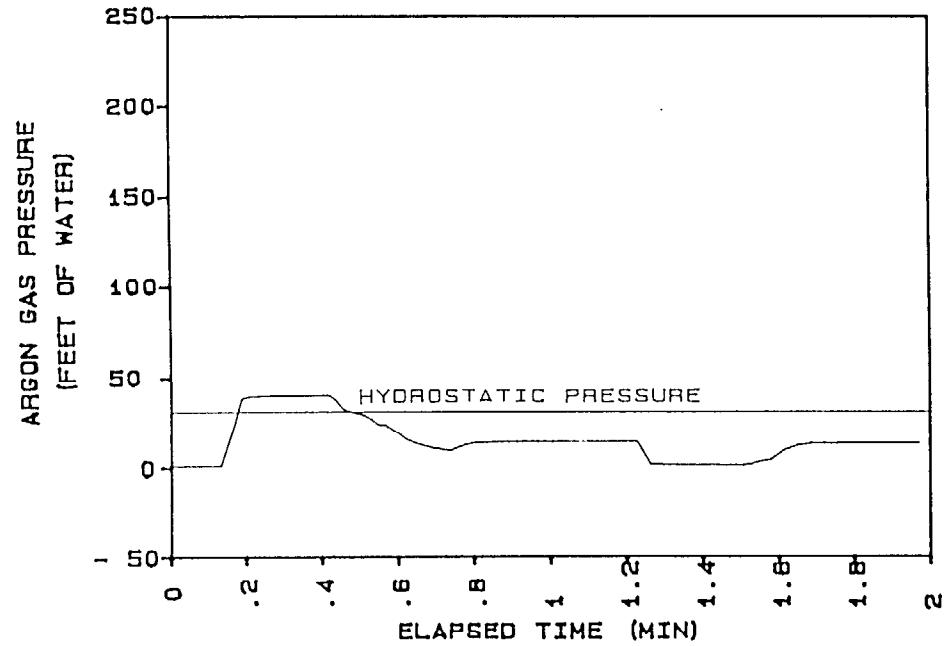


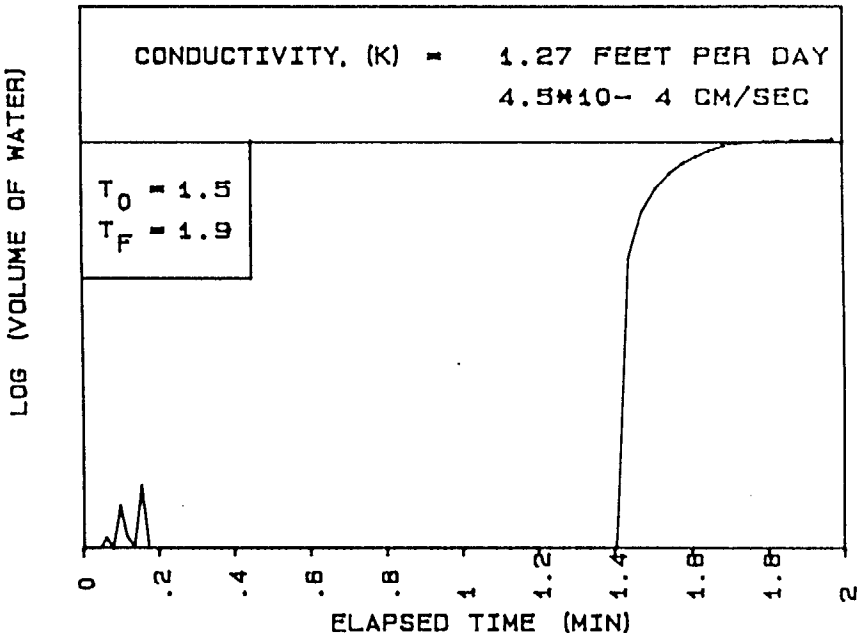
BECHTEL PARRIS ISLAND
LOCATION... 6G-28
TEST DATE
15: 25: 39 06-25-1996

SAMPLE DEPTH (FT) 28
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



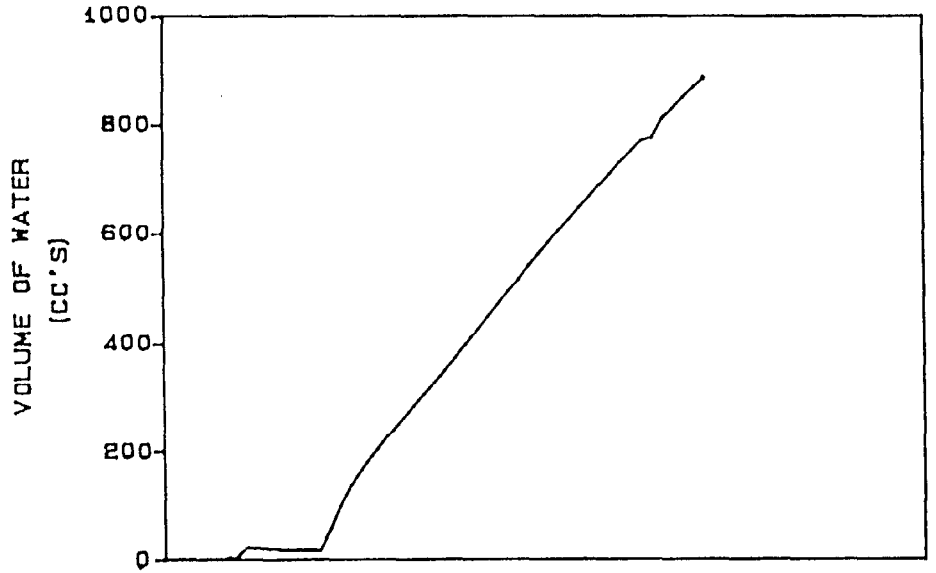


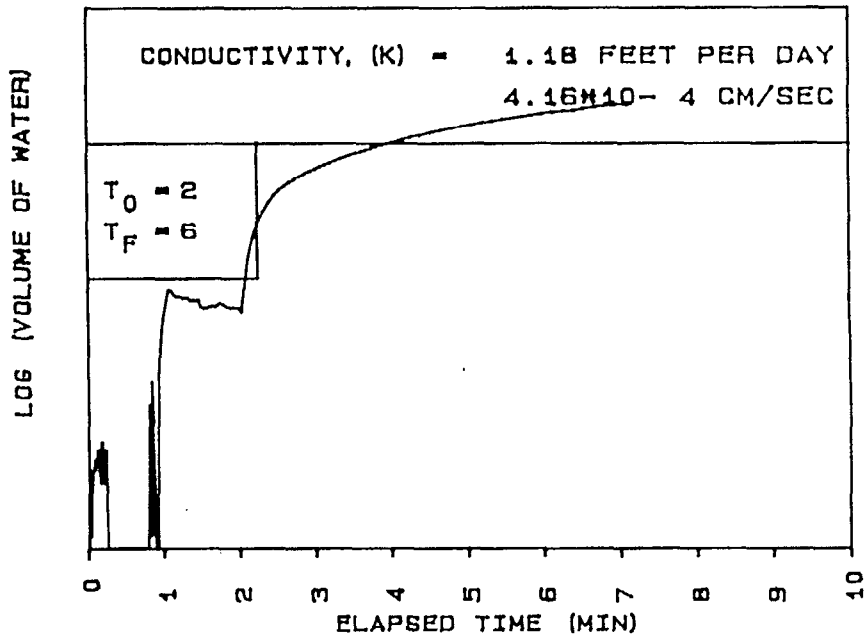


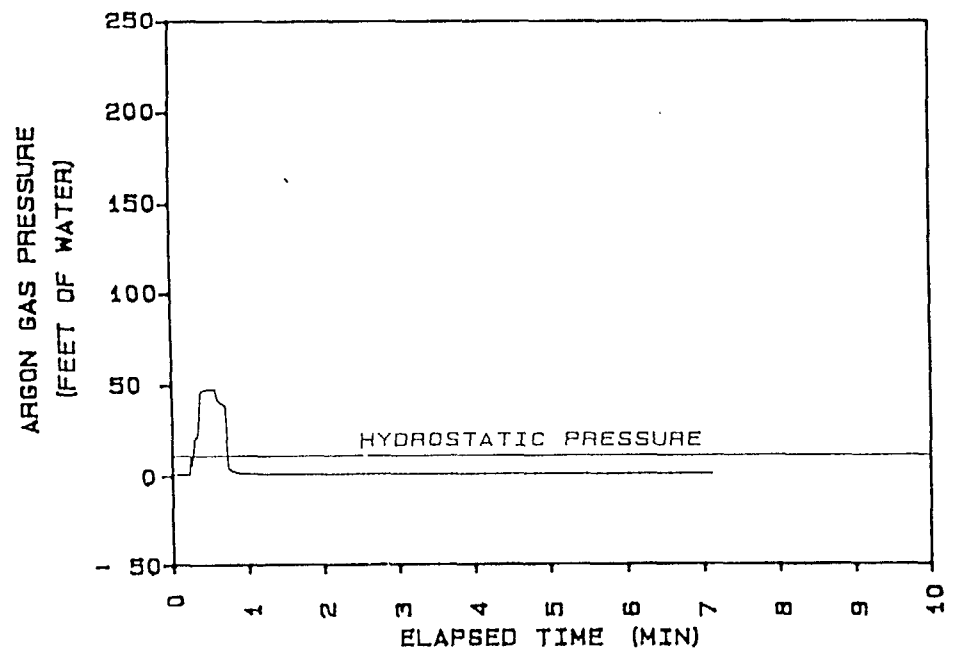
BECHTEL PARRIS ISLAND
LOCATION... 6G-34
TEST DATE
16: 08: 24 06-25-1996

SAMPLE DEPTH (FT) 34
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



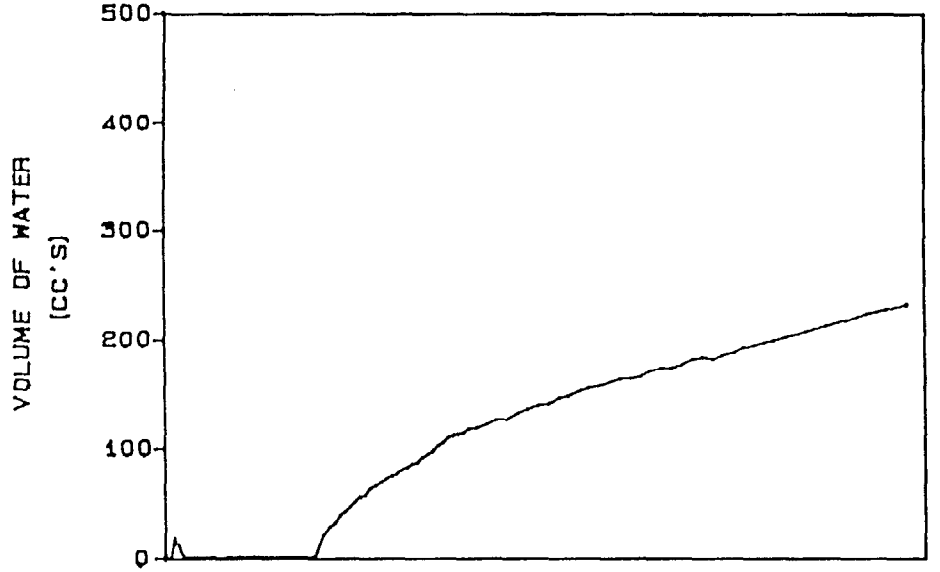


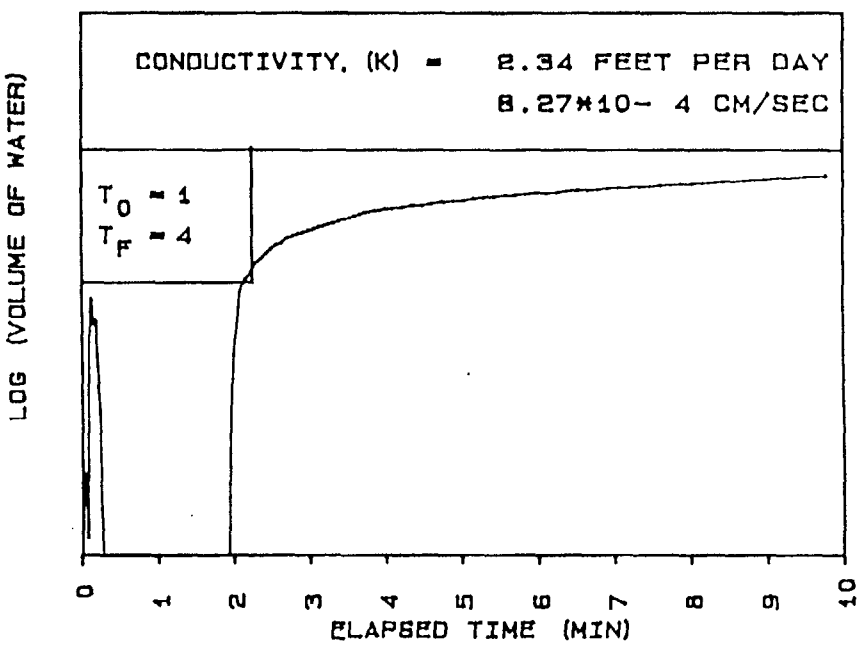


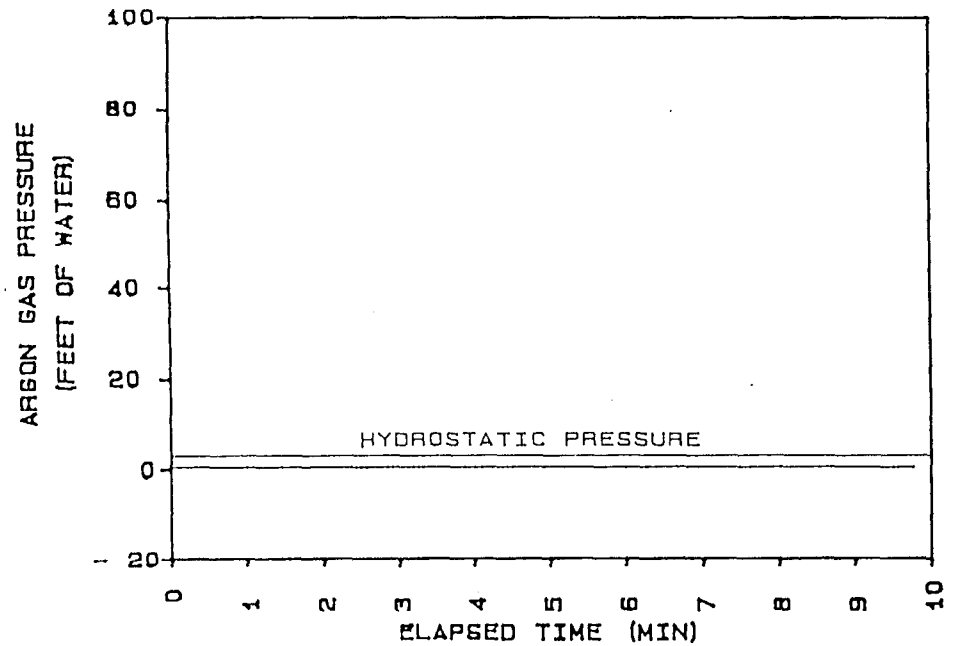
BECHTEL PARRIS ISLAND
LOCATION... BG-14
TEST DATE
10: 59: 11 06-24-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



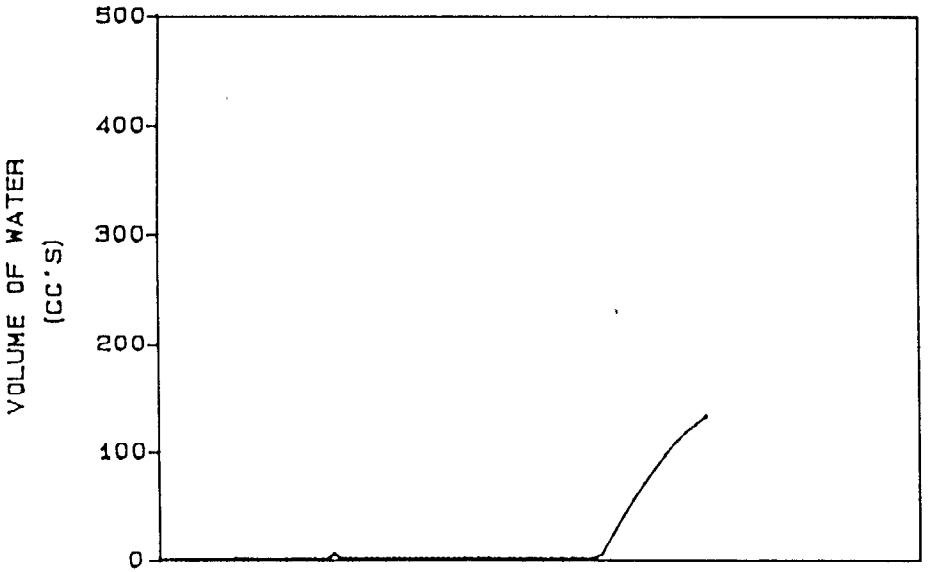


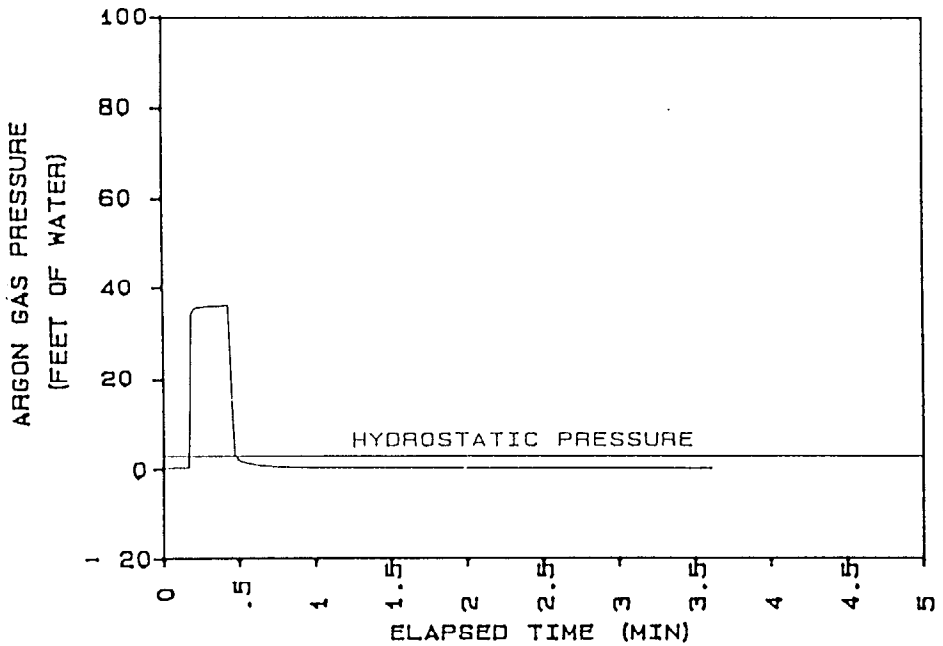


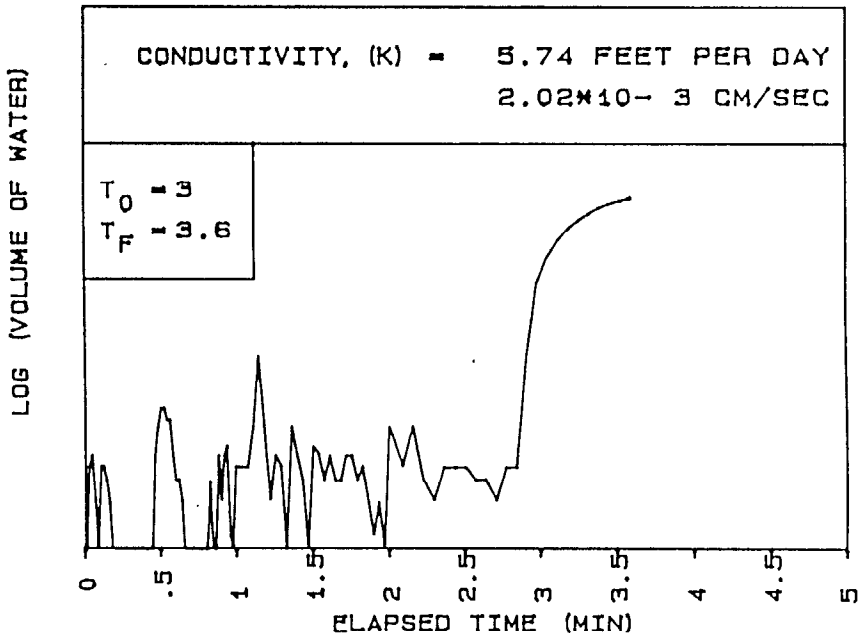
BECHTEL PARRIS ISLAND
LOCATION... BG-7
TEST DATE
10: 10: 03 06-24-1996

SAMPLE DEPTH (FT) 7
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



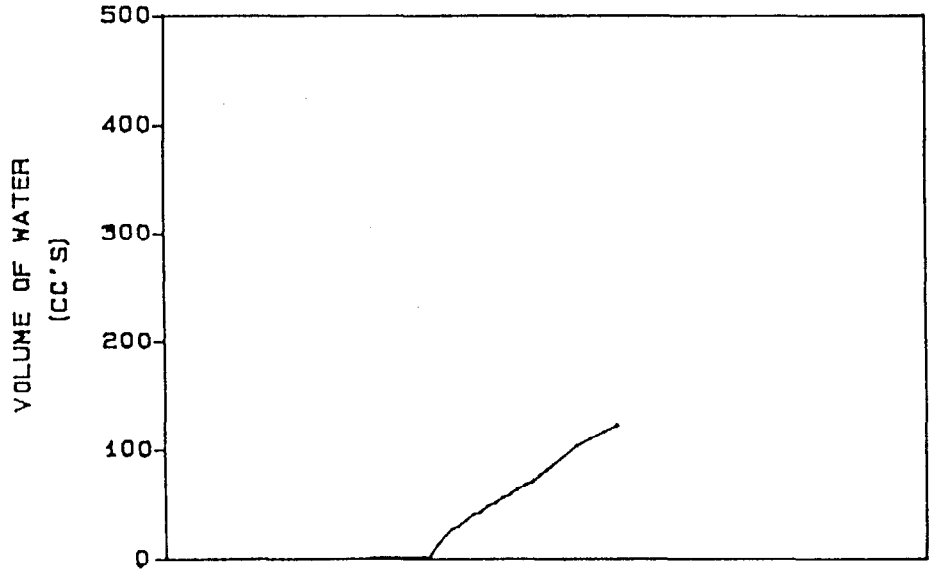


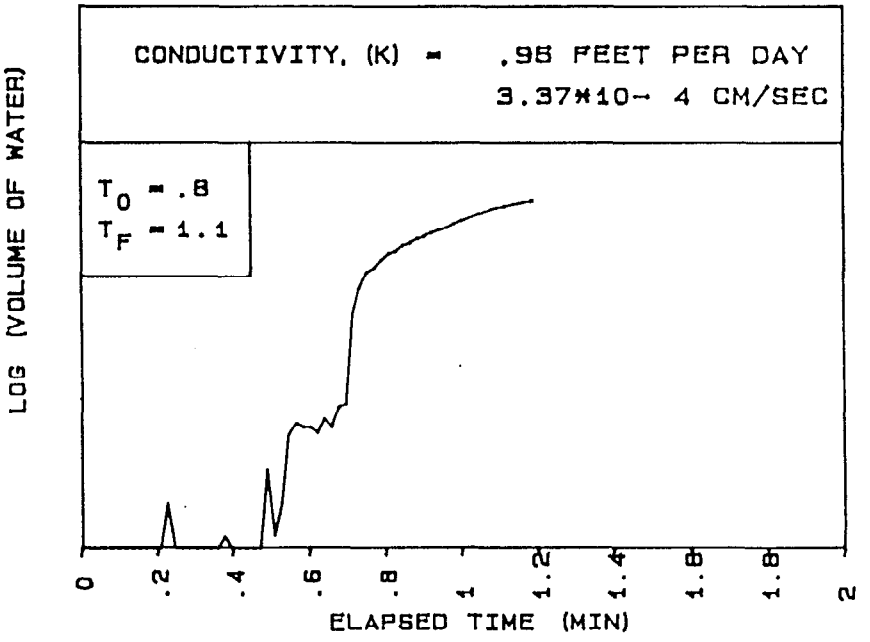


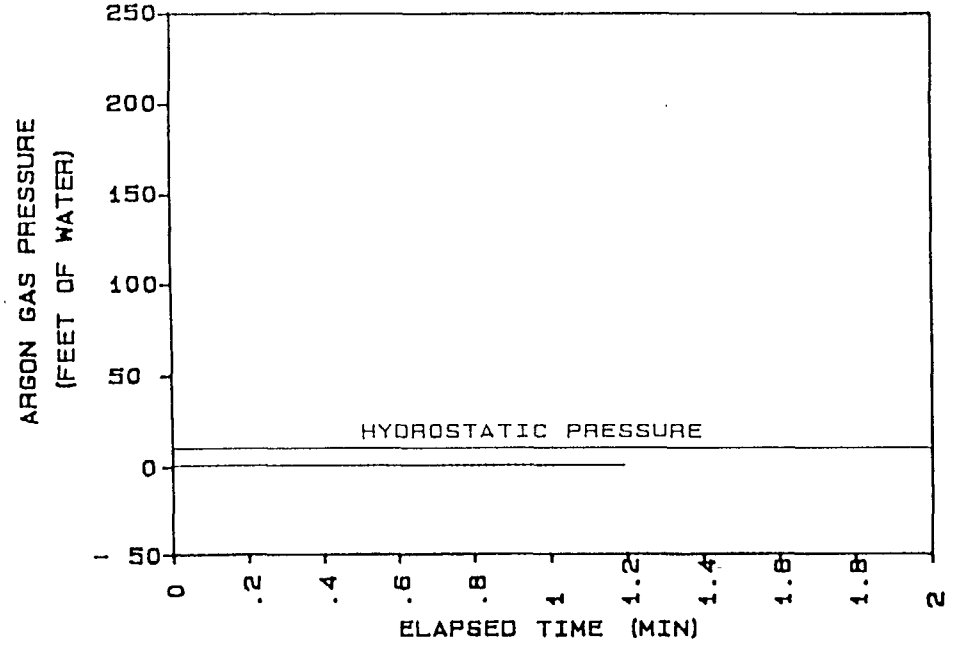
BECHTEL PARRIS ISLAND
LOCATION... 1H-7
TEST DATE
07: 52: 08 06-29-1996

SAMPLE DEPTH (FT) 7
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



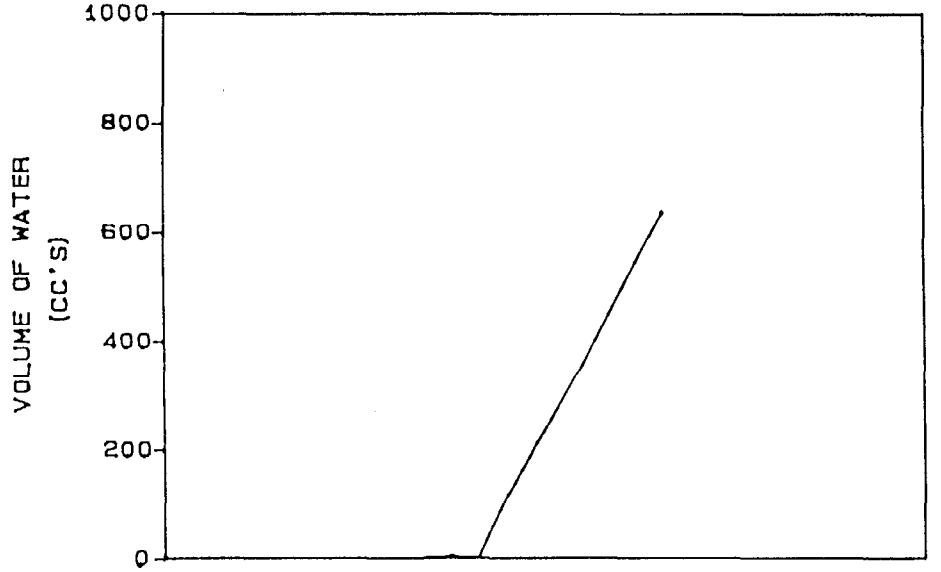


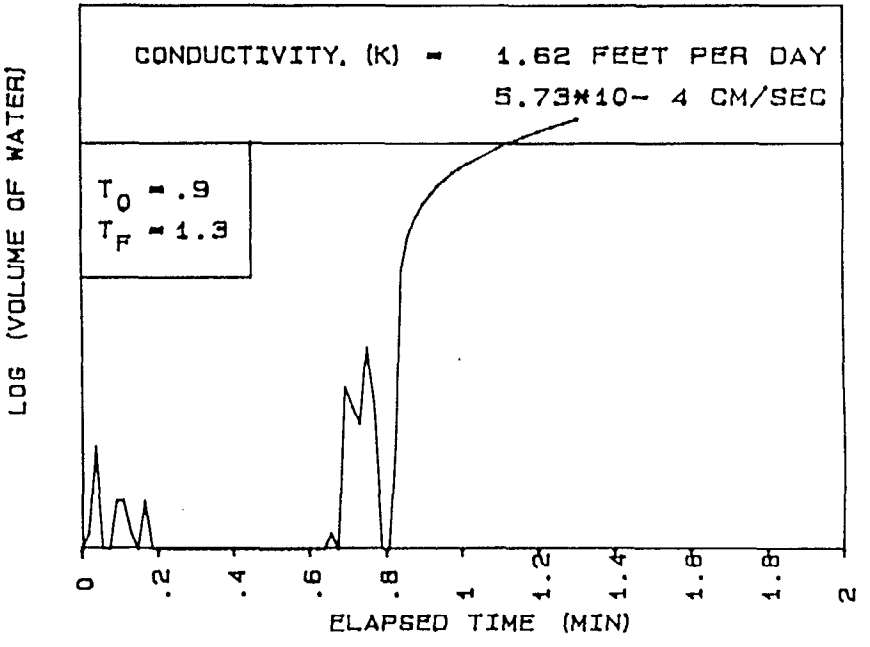


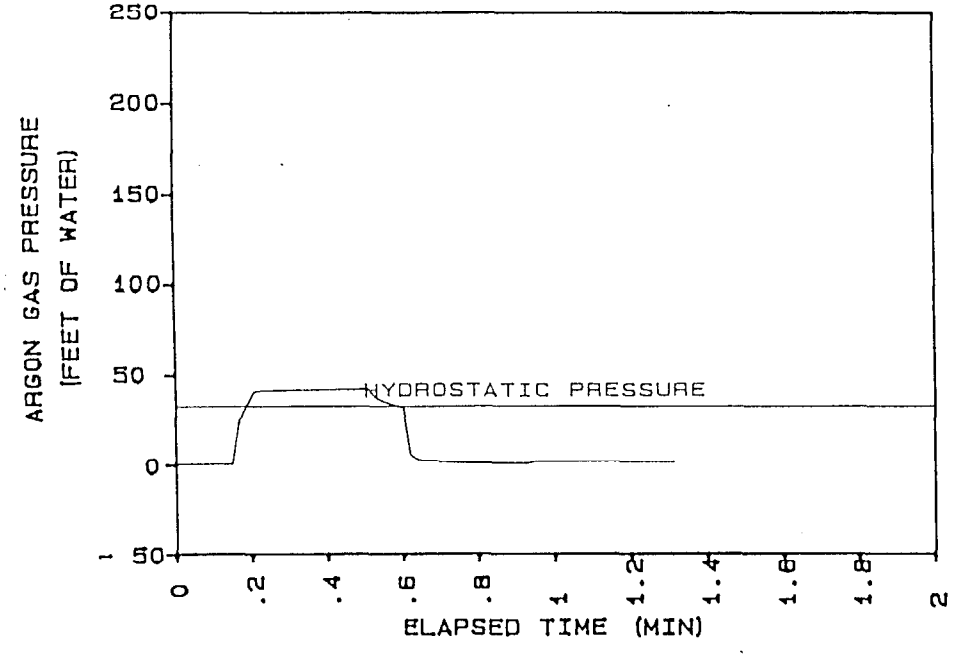
BECHTEL PARRIS ISLAND
LOCATION... 1H-14
TEST DATE
14: 16: 12 06-27-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



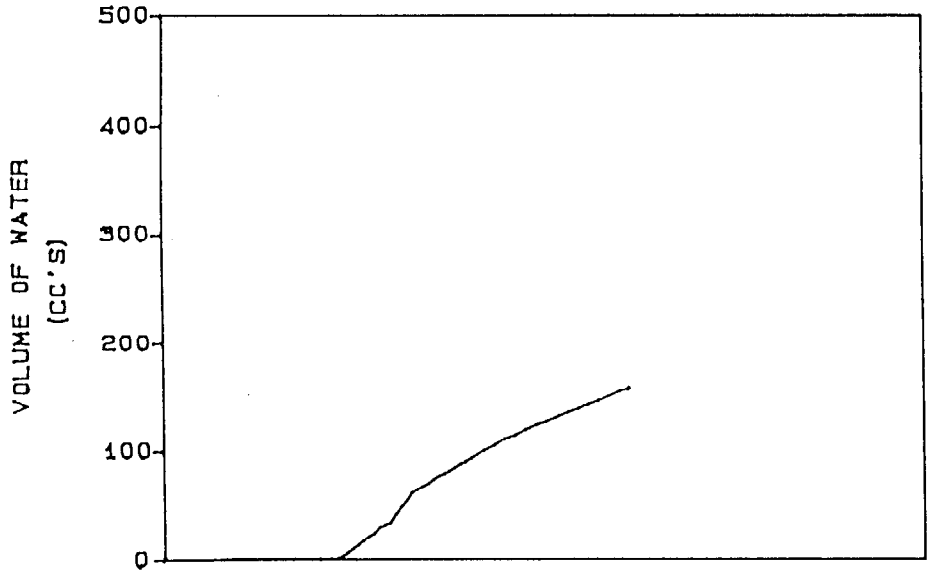


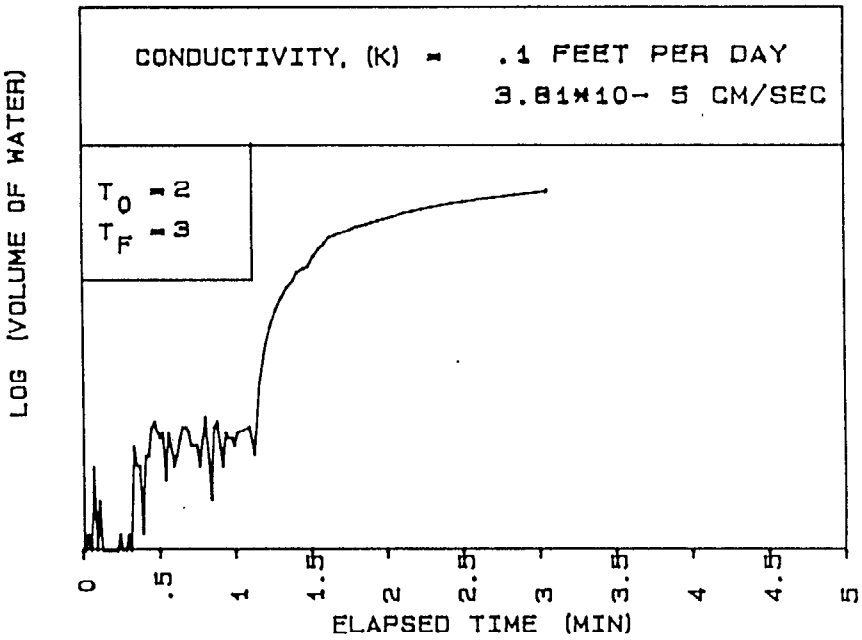


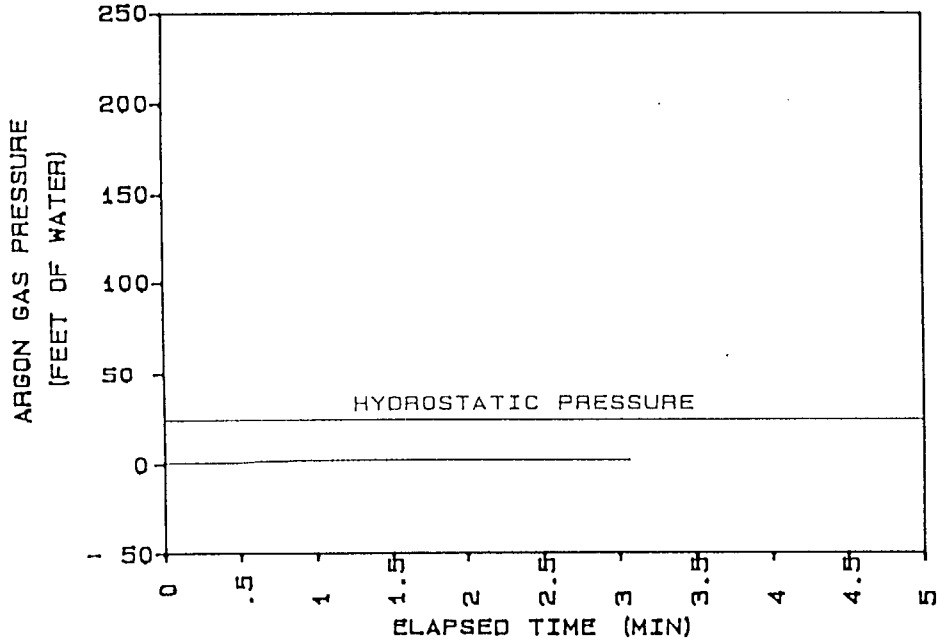
BECHTEL PARRIS ISLAND
LOCATION... 1H-36
TEST DATE
09: 45: 09 06-29-1996

SAMPLE DEPTH (FT) 36
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



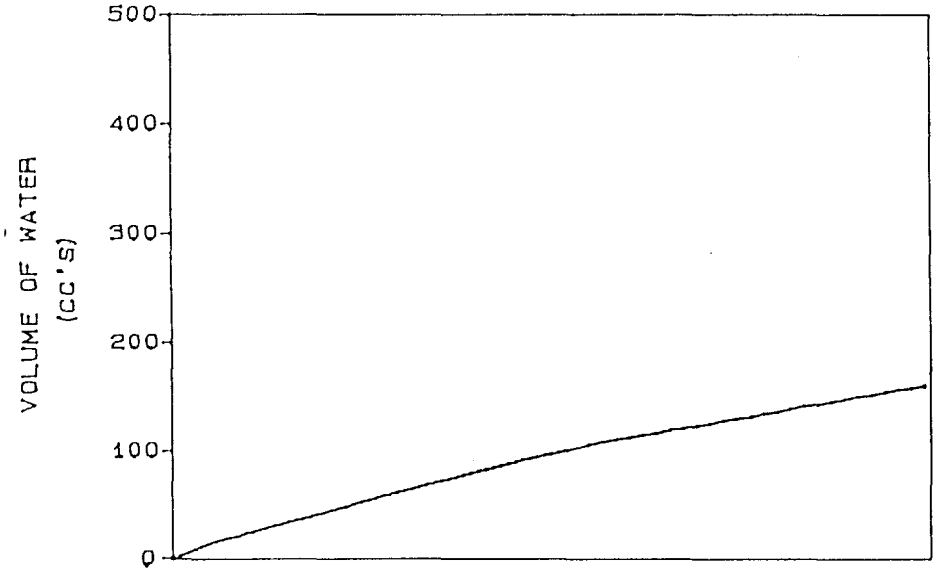


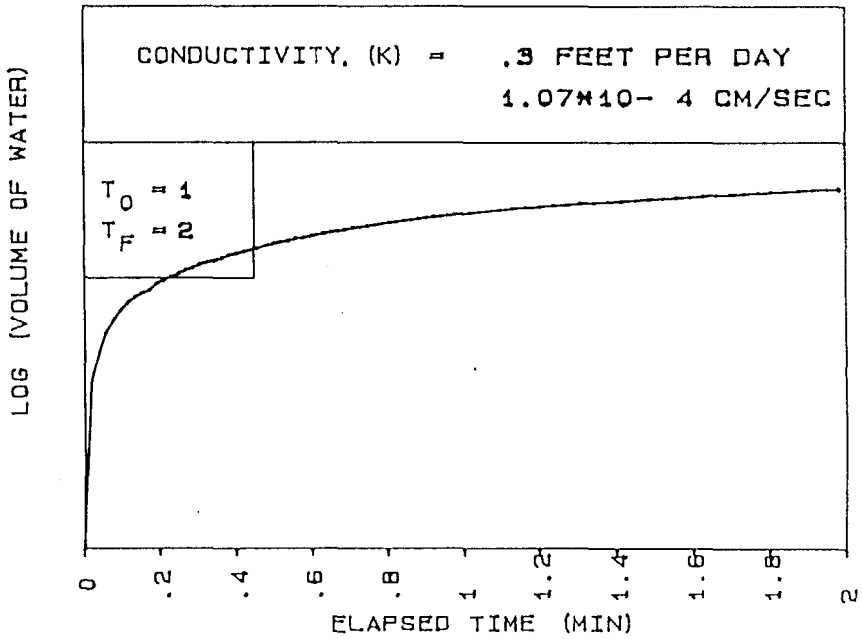


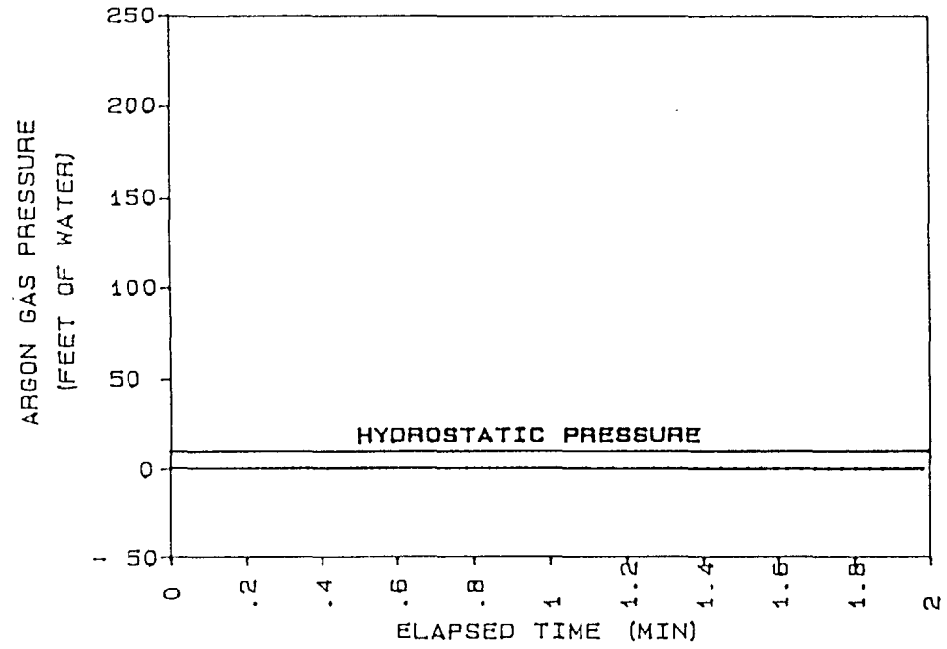
BECHTEL PARRIS ISLAND
LOCATION... 1H-28
TEST DATE
08: 47: 23 06-29-1996

SAMPLE DEPTH (FT) 28
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST





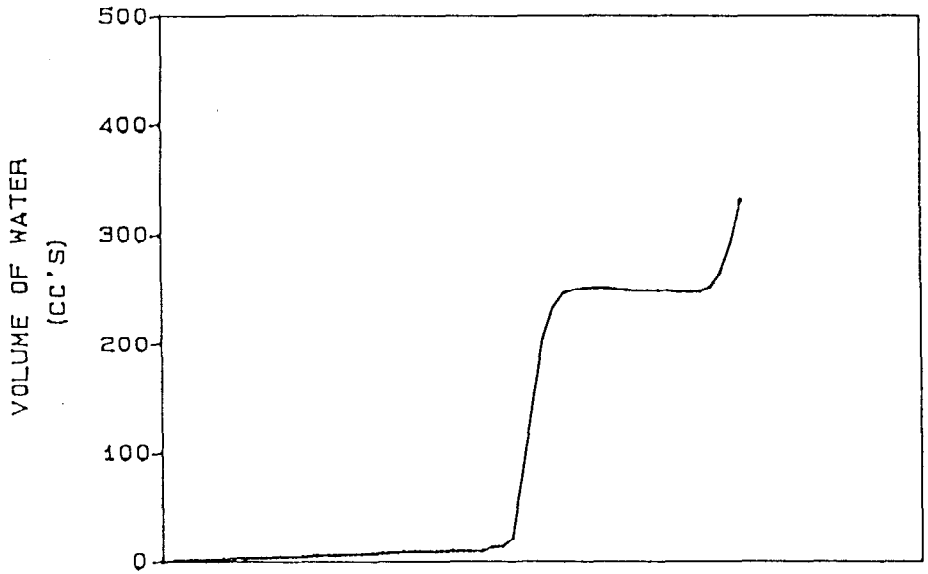


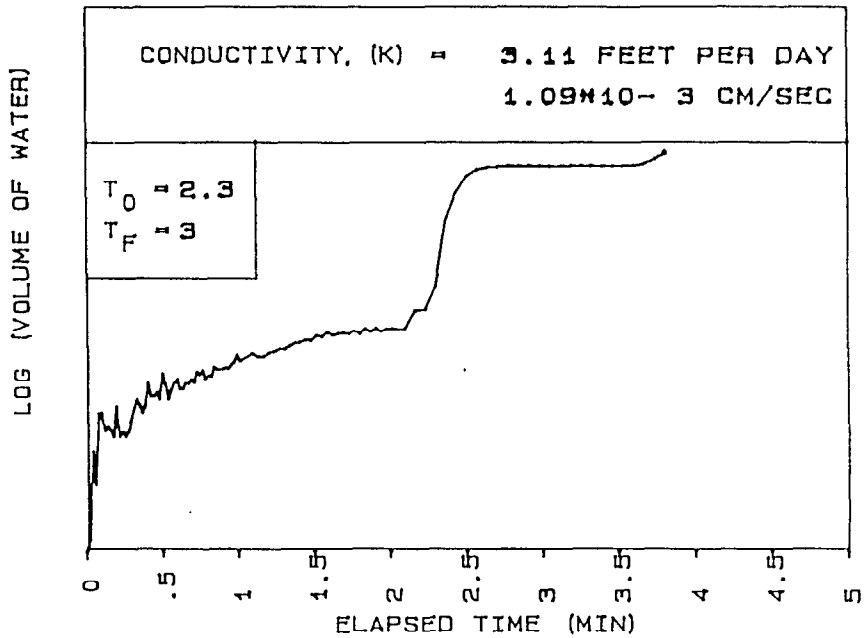
BECHTEL PARRIS ISLAND
LOCATION... -1H-14
TEST DATE
14: 02: 36 06-28-1996

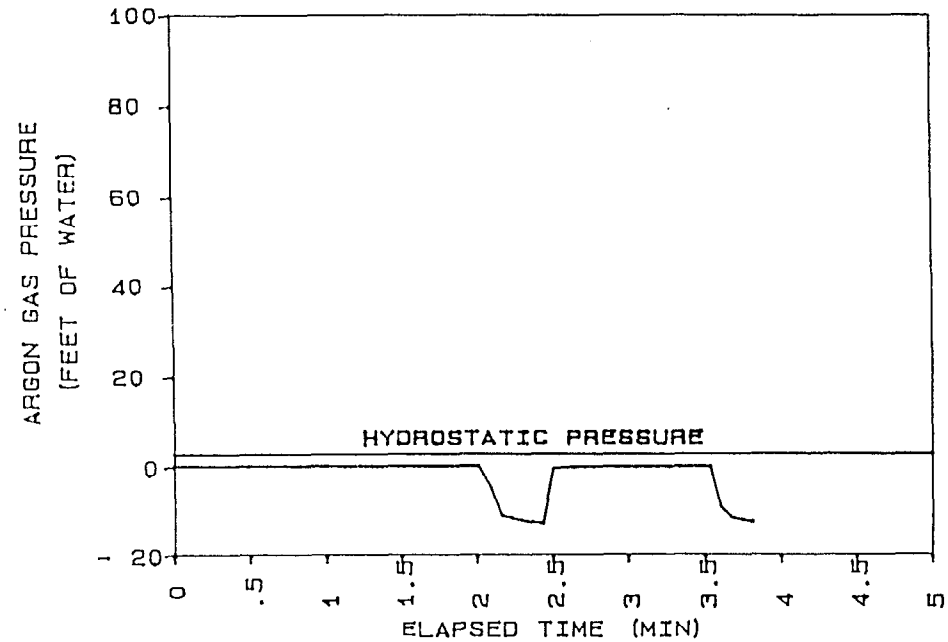
SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

APPENDIX D
COPIES OF FIELD GC LOGS

HYDROCONE TEST



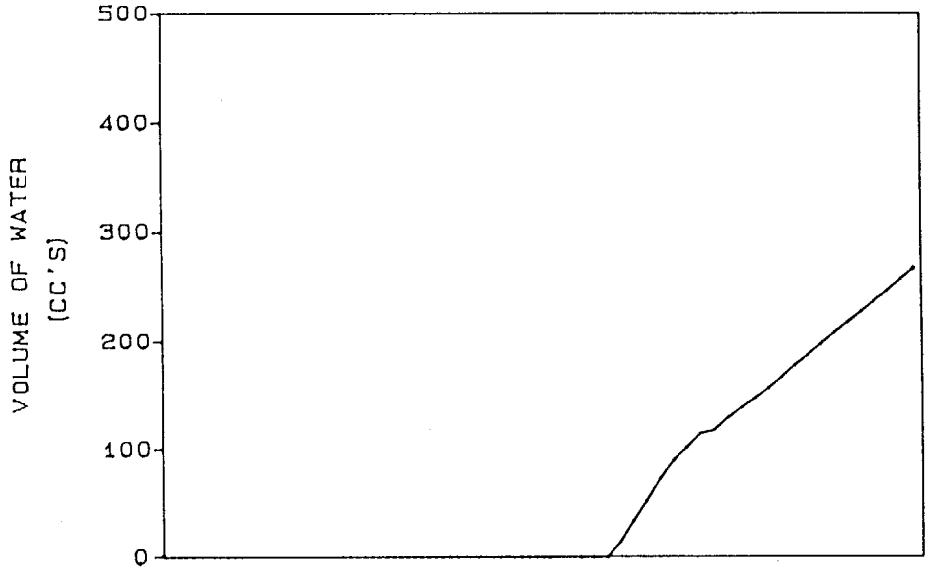


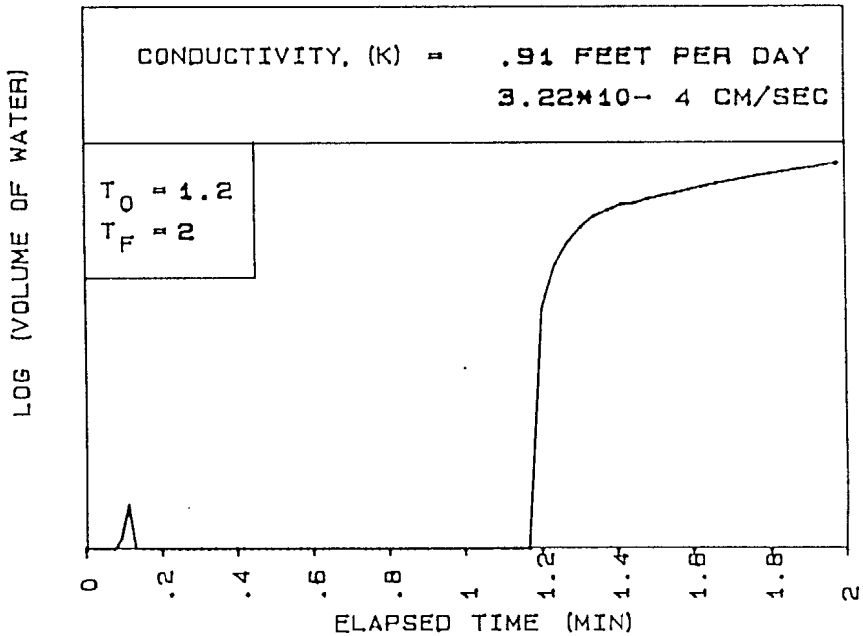


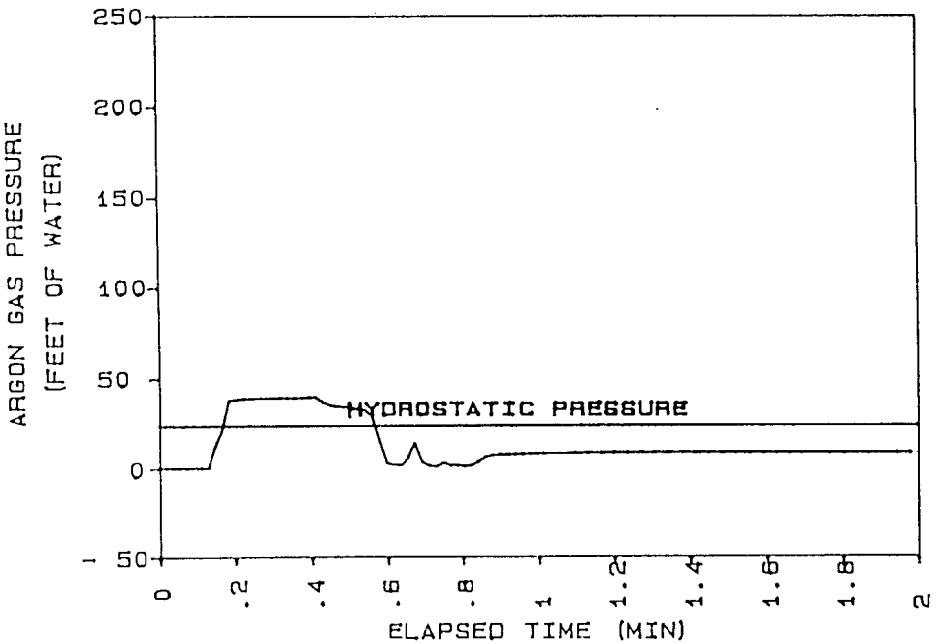
BECHTEL PARRIS ISLAND
LOCATION... -1H-7
TEST DATE
13: 32: 23 06-28-1996

SAMPLE DEPTH (FT) 7
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



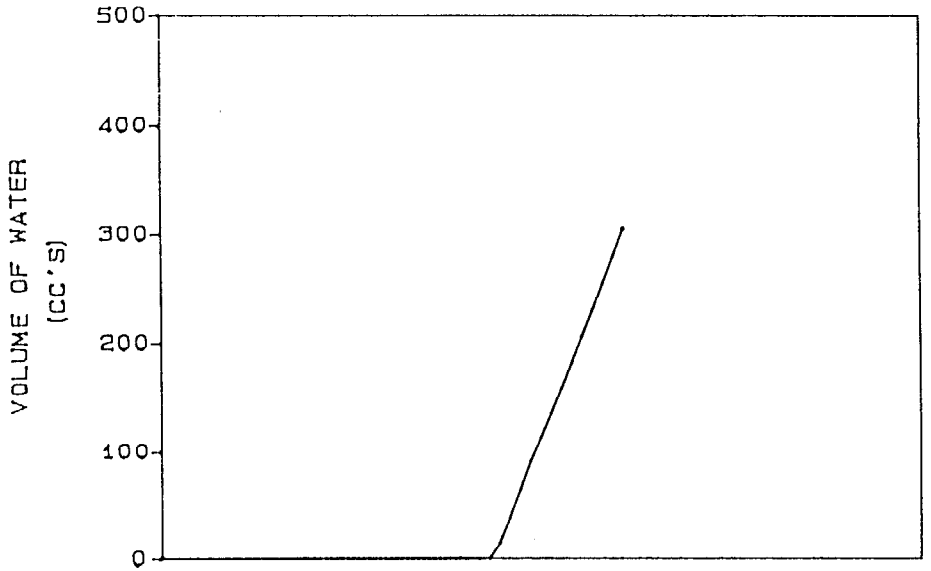


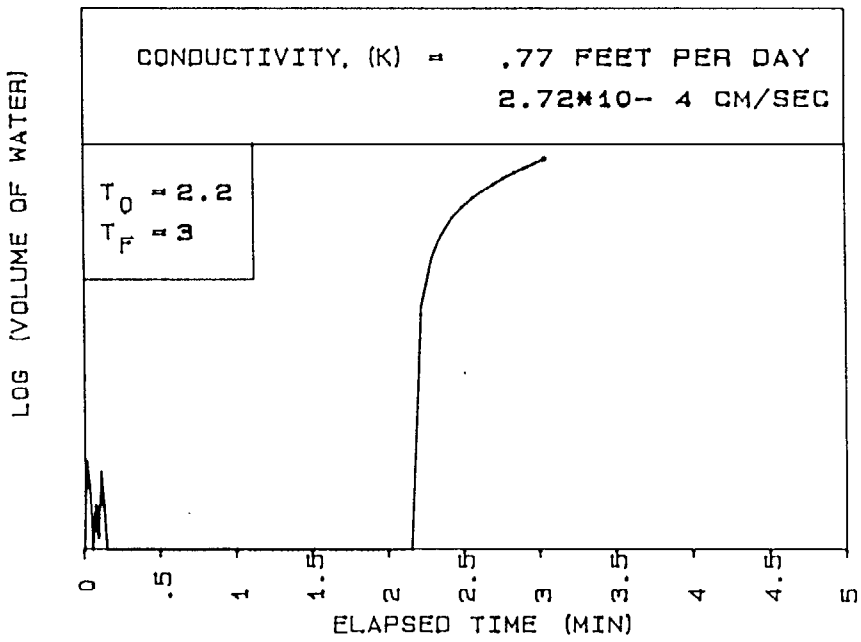


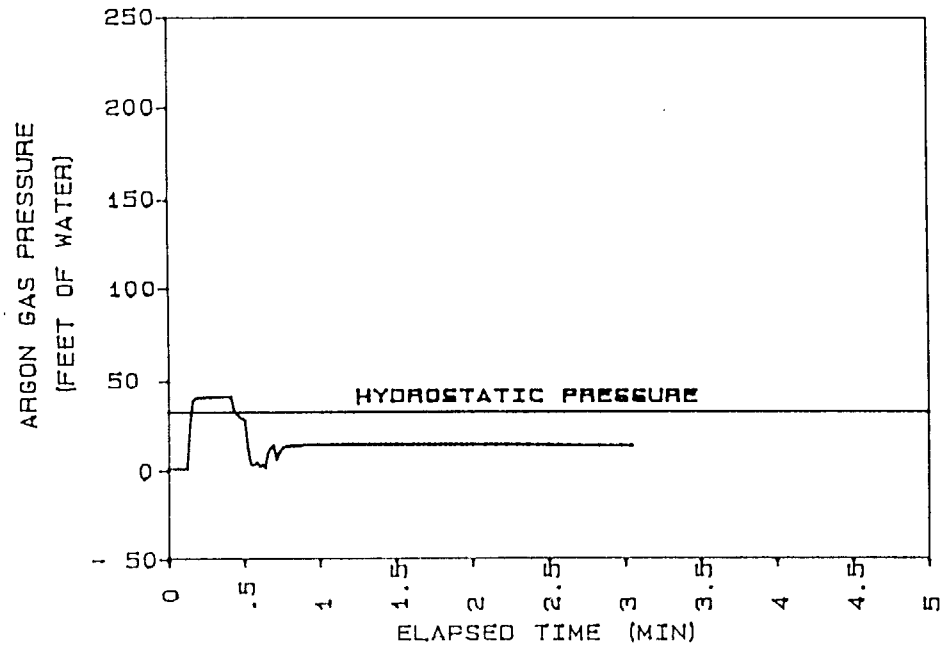
BECHTEL PARRIS ISLAND
LOCATION... -1H-28
TEST DATE
14: 55: 43 06-28-1996

SAMPLE DEPTH (FT) 28
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



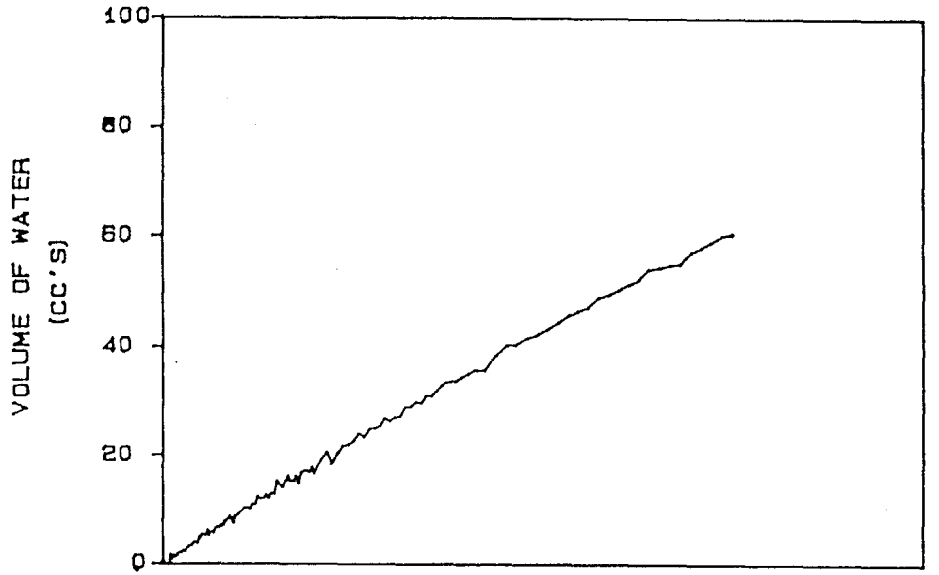


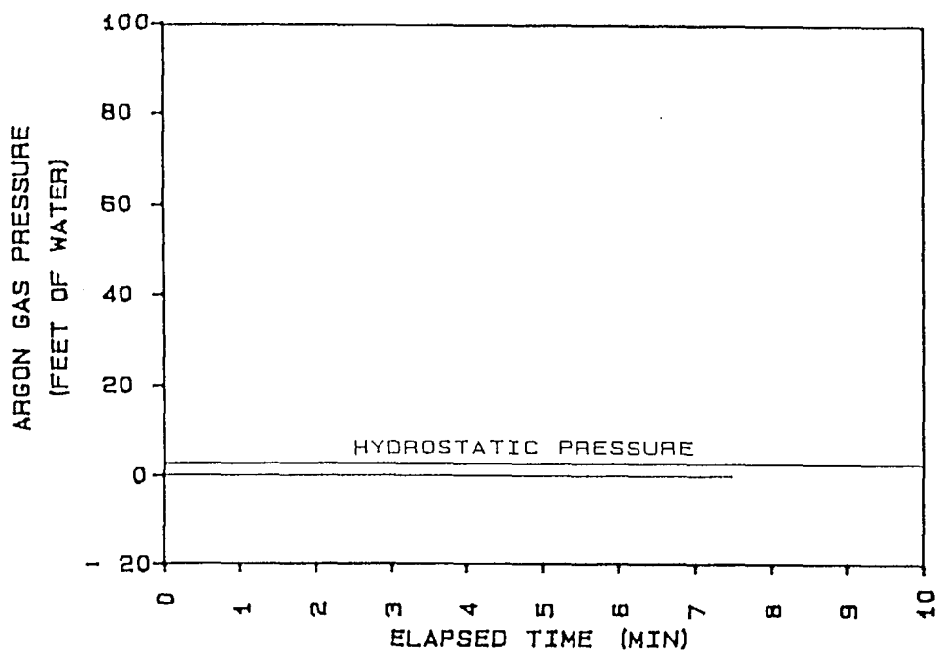


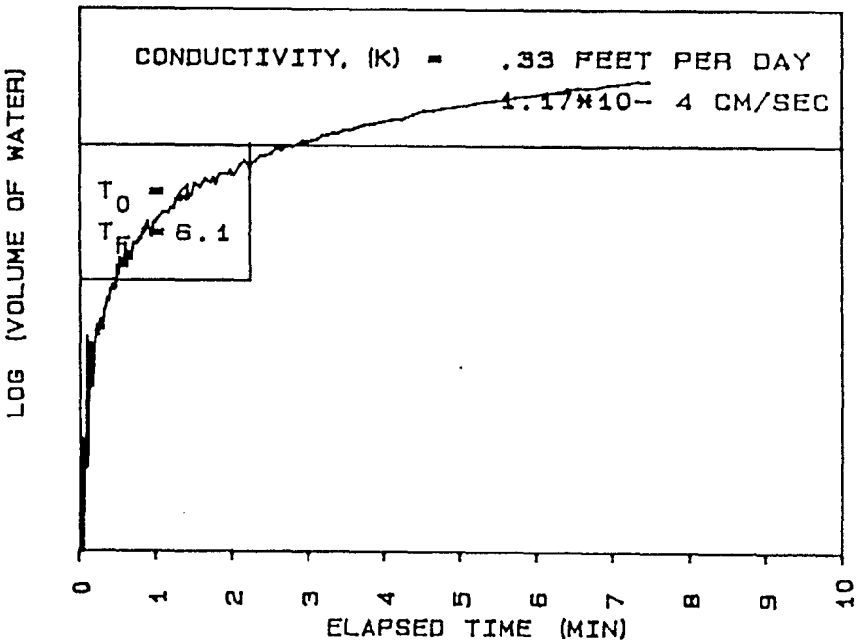
BECHTEL PARRIS ISLAND
LOCATION... -1H-36
TEST DATE
15: 37: 07 06-28-1996

SAMPLE DEPTH (FT) 36
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



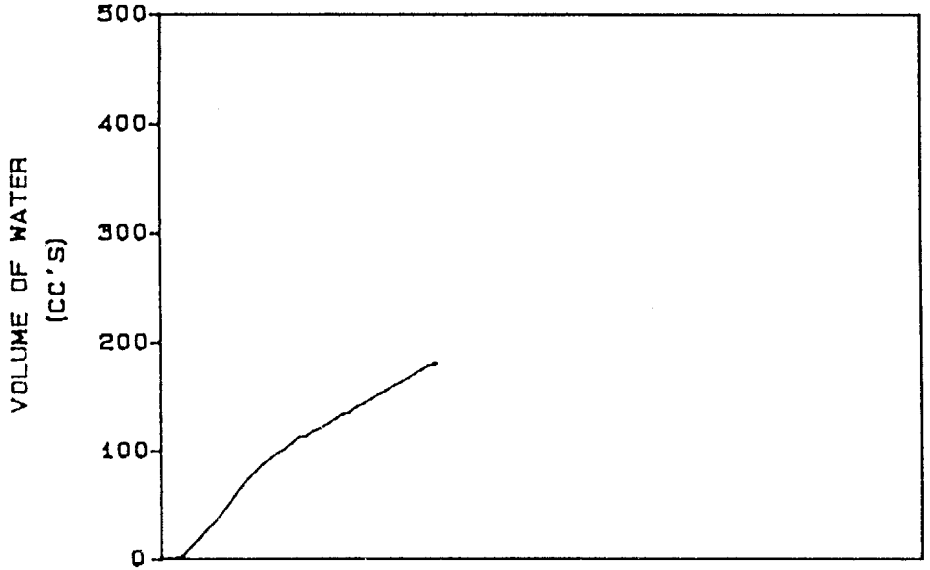


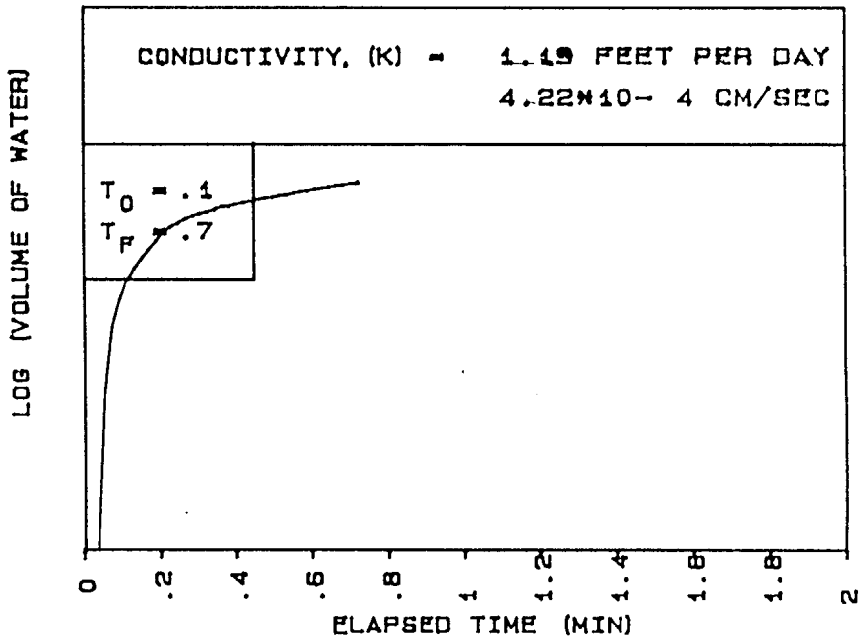


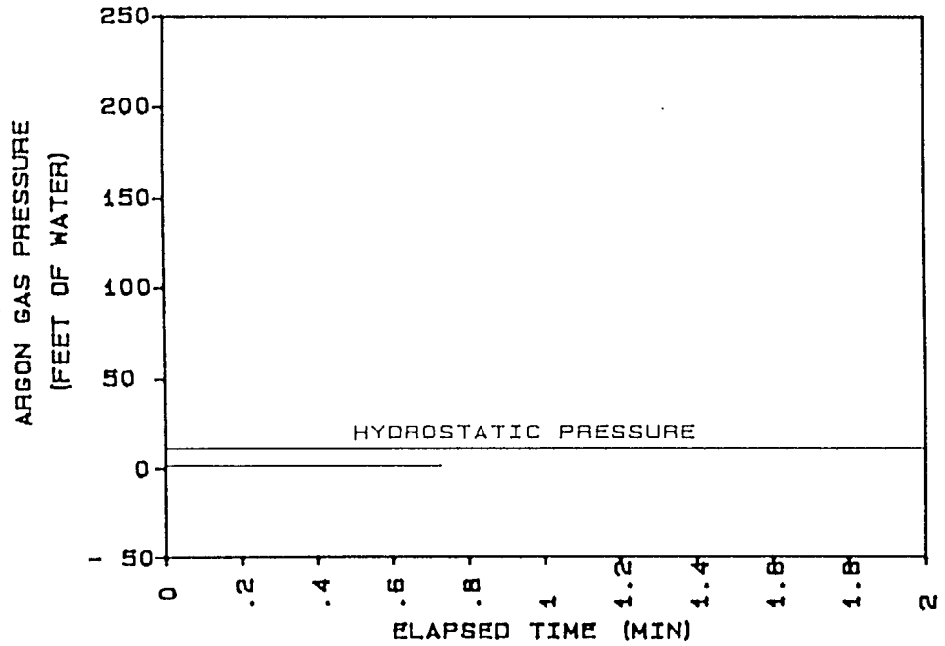
BECHTEL PARRIS ISLAND
LOCATION... 4H-7
TEST DATE
08: 31: 24 06-26-1996

SAMPLE DEPTH (FT) 7
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



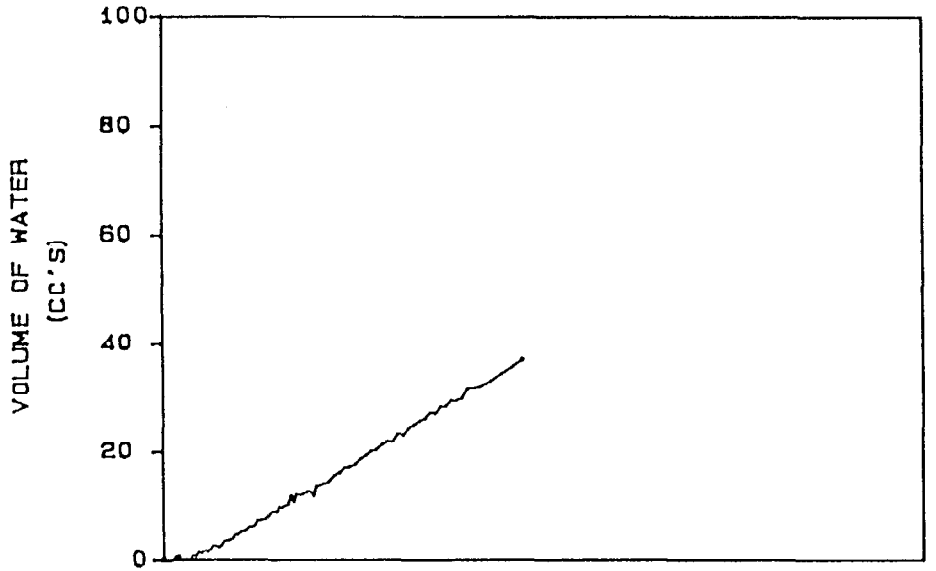


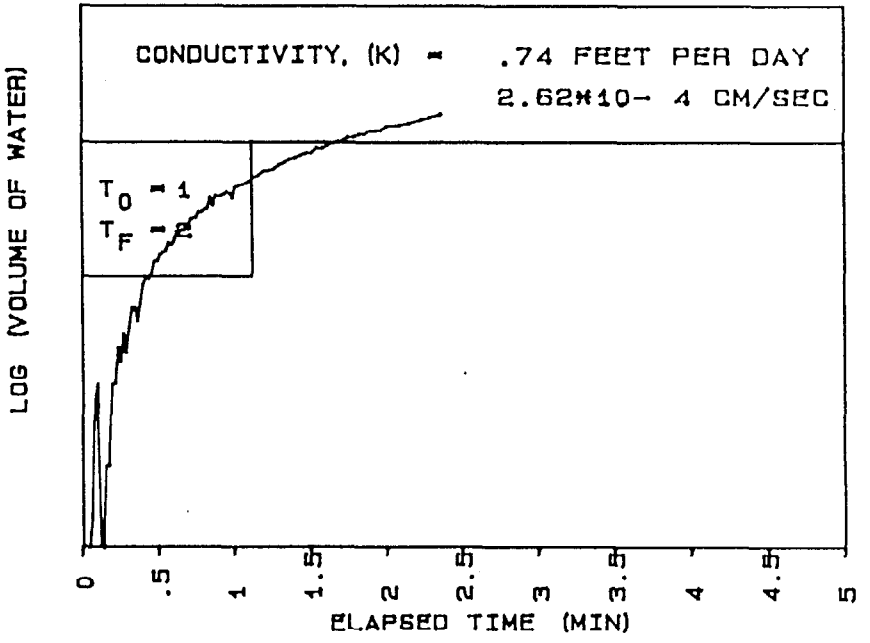


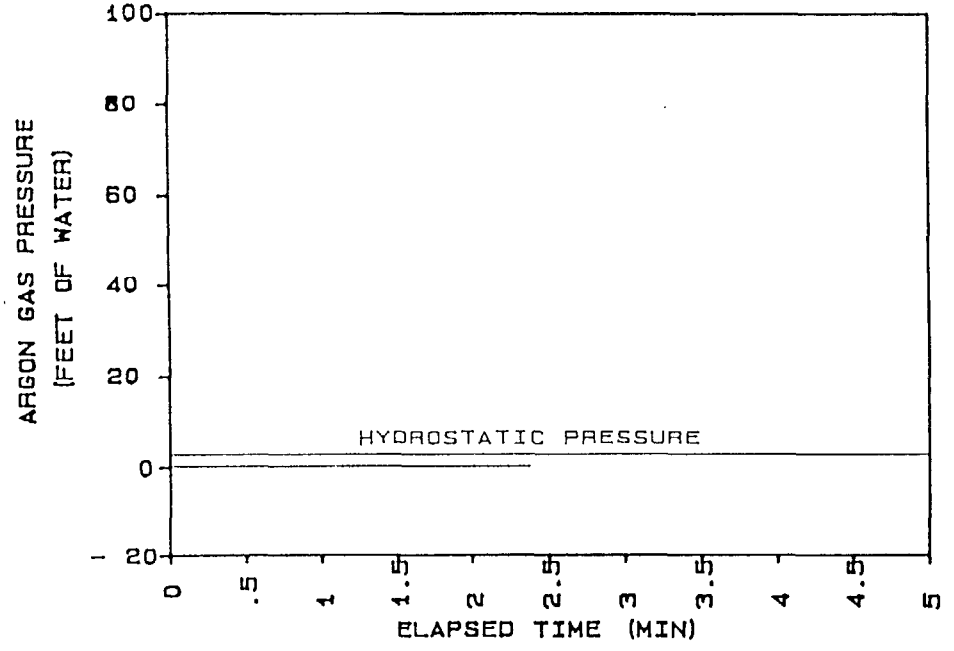
BECHTEL PARRIS ISLAND
LOCATION... 4H-14
TEST DATE
09: 02: 53 06-26-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



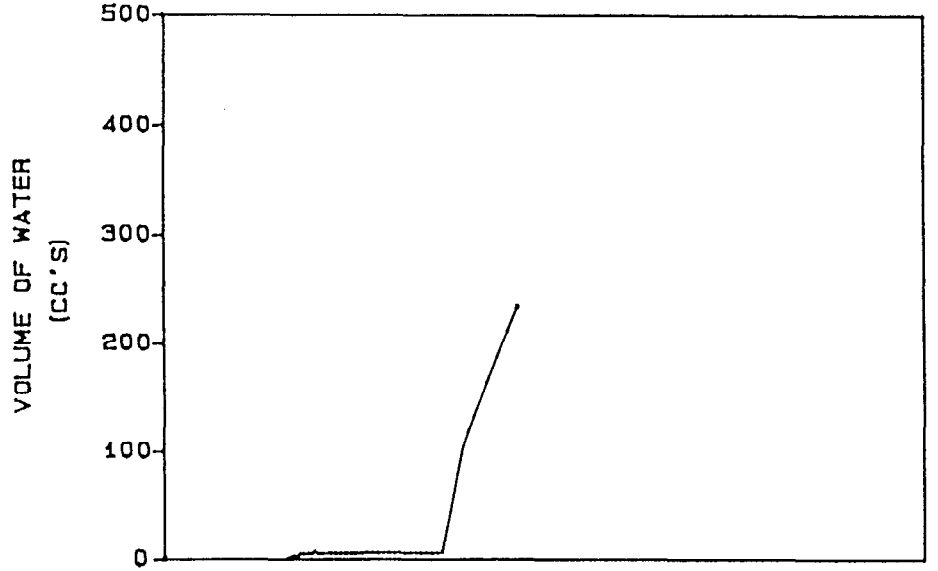


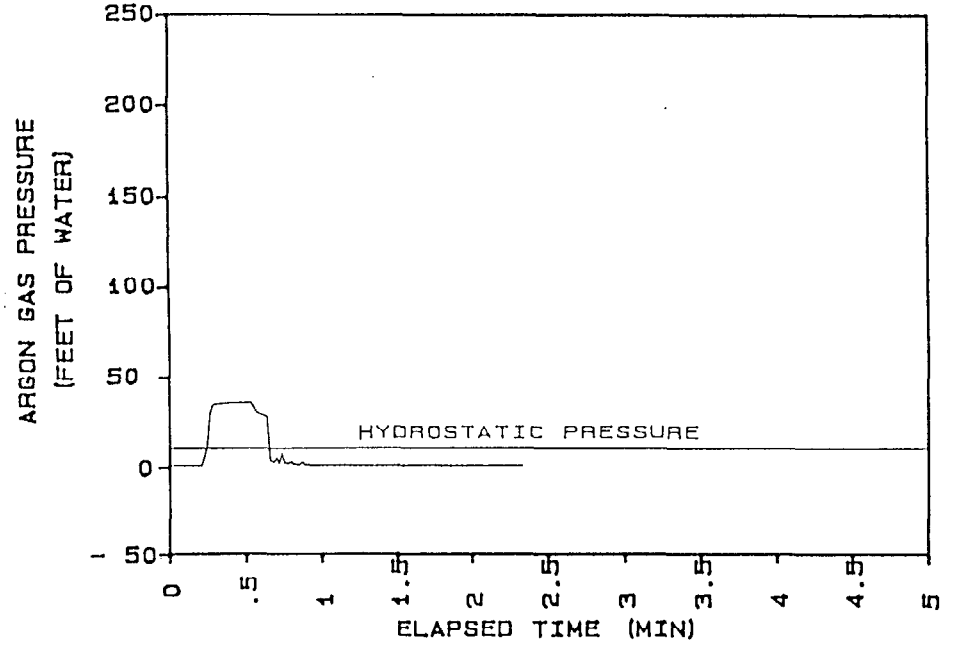


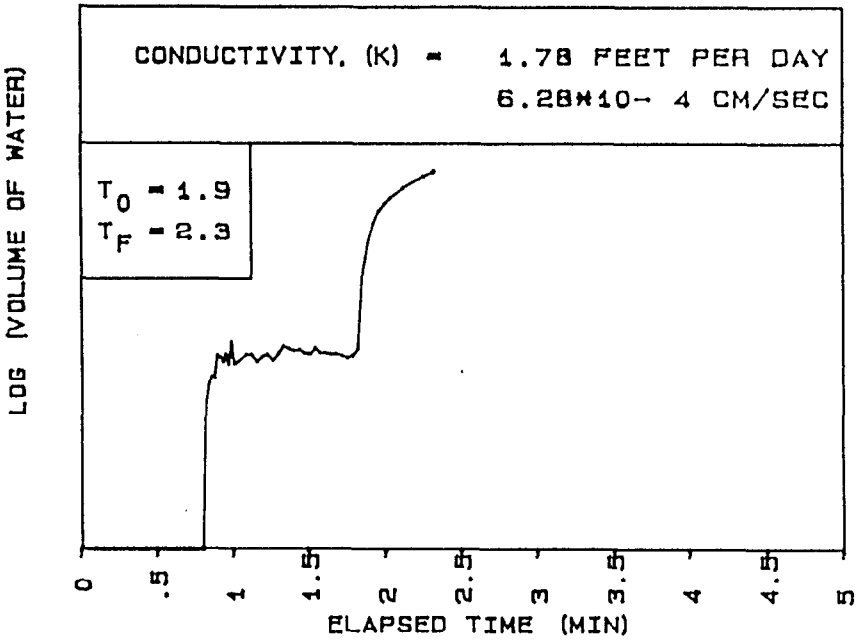
BECHTEL PARRIS ISLAND
LOCATION... 6H-7
TEST DATE
11: 52: 41 06-26-1996

SAMPLE DEPTH (FT) 7
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



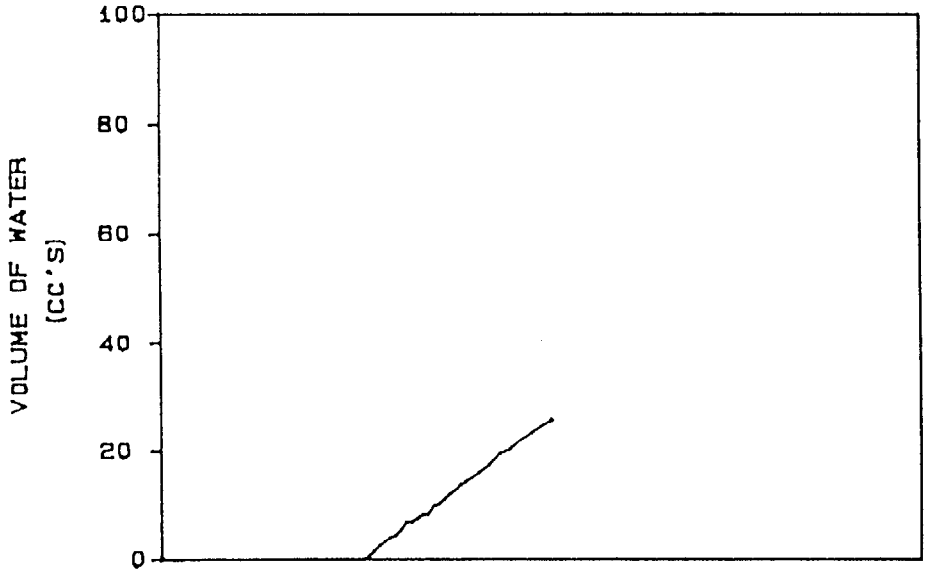


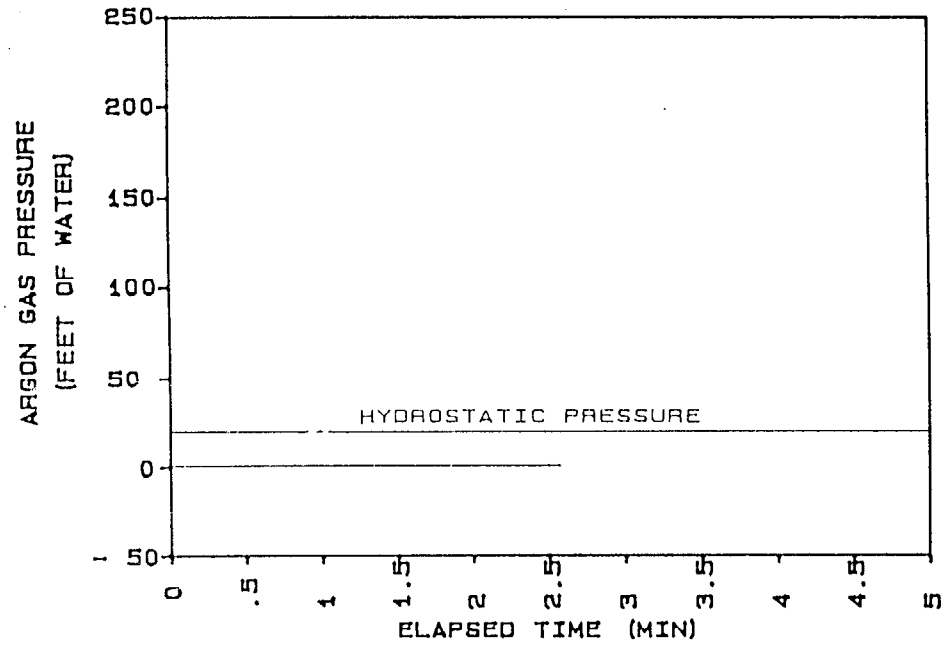


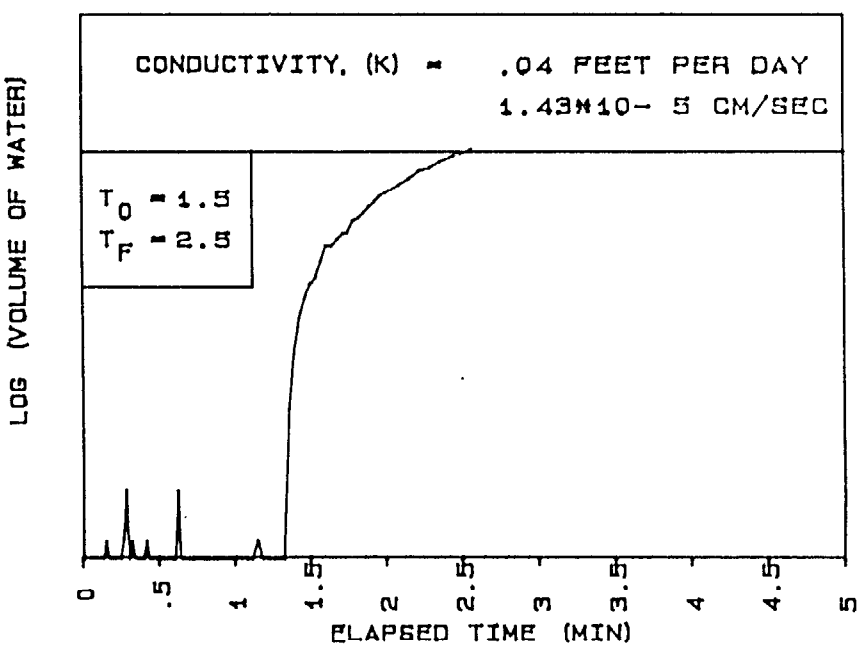
BECHTEL PARRIS ISLAND
LOCATION... 6H-14
TEST DATE
13: 38: 01 06-26-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



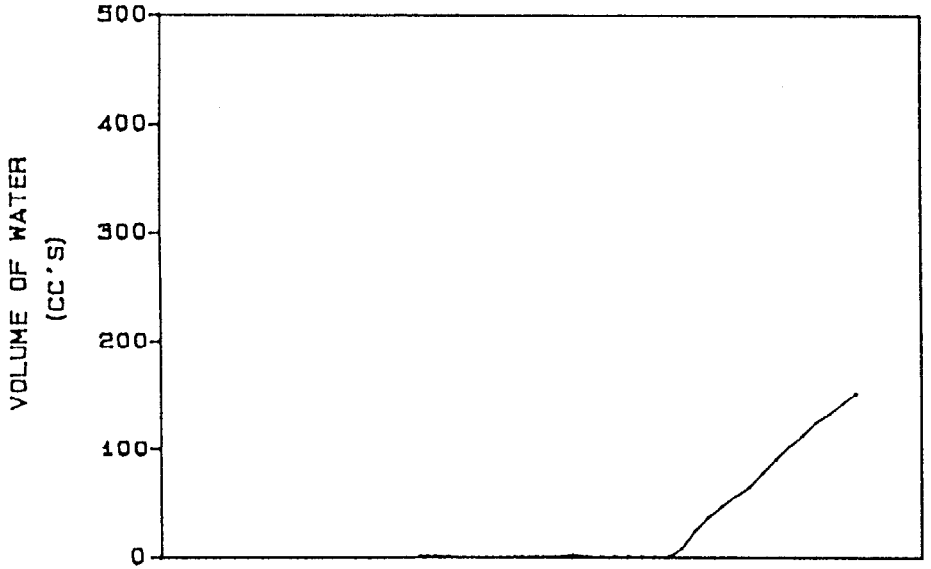


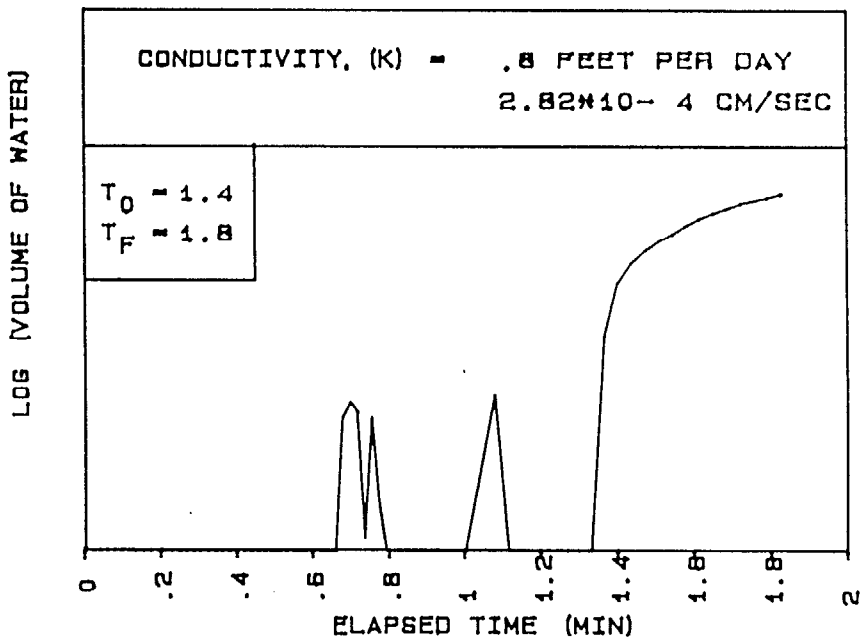


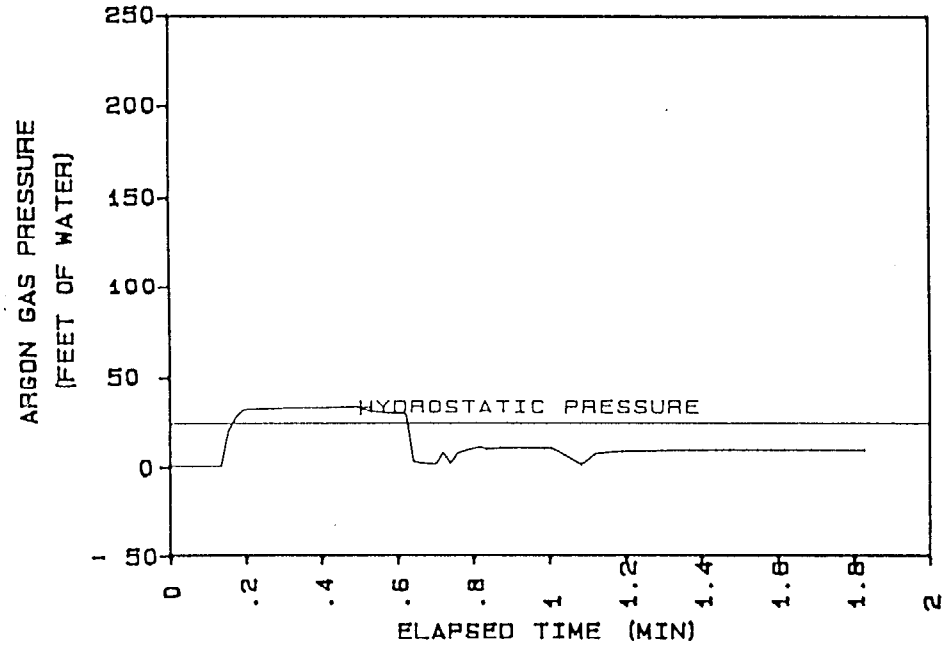
BECHTEL PARRIS ISLAND
LOCATION... 6H-23
TEST DATE
08: 14: 21 06-27-1996

SAMPLE DEPTH (FT) 23
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



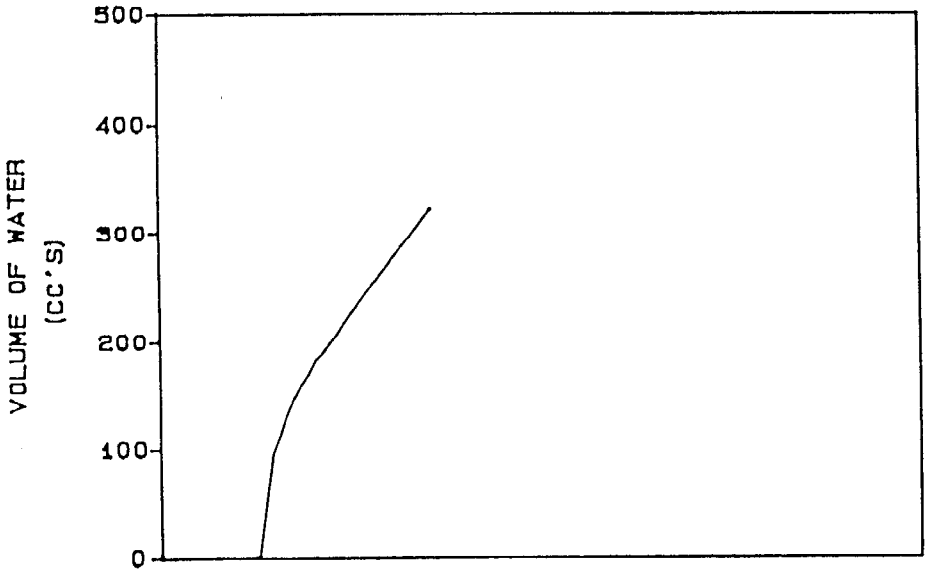


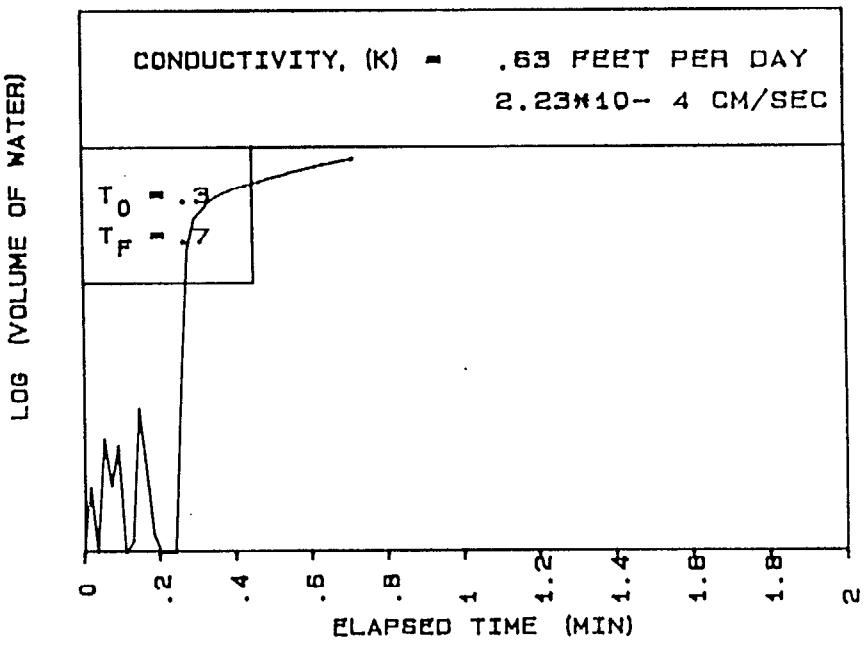


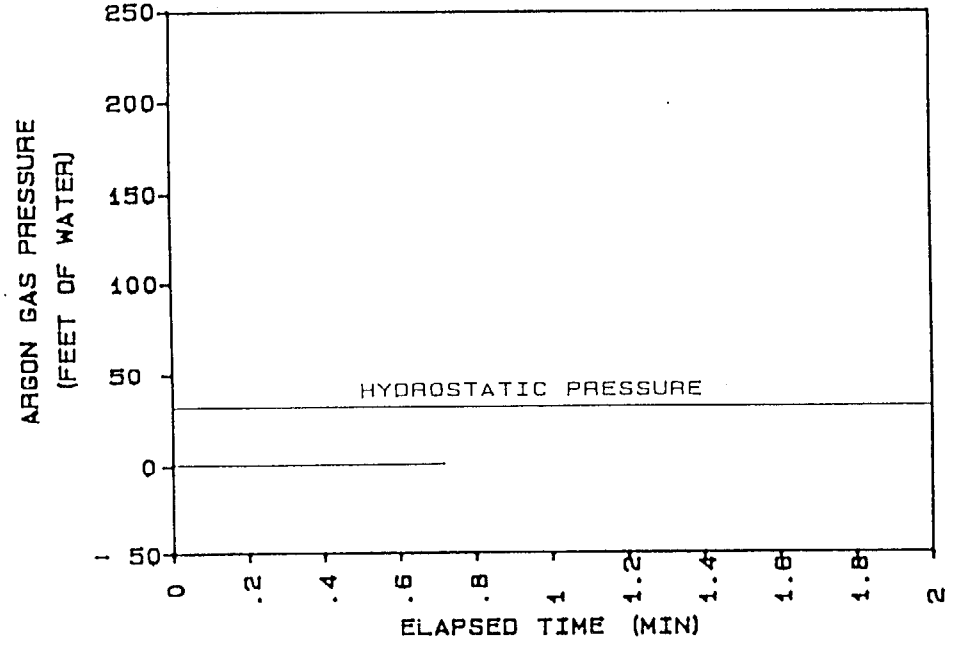
BECHTEL PARRIS ISLAND
LOCATION... 6H-28
TEST DATE
09: 15: 18 06-27-1996

SAMPLE DEPTH (FT) 28
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



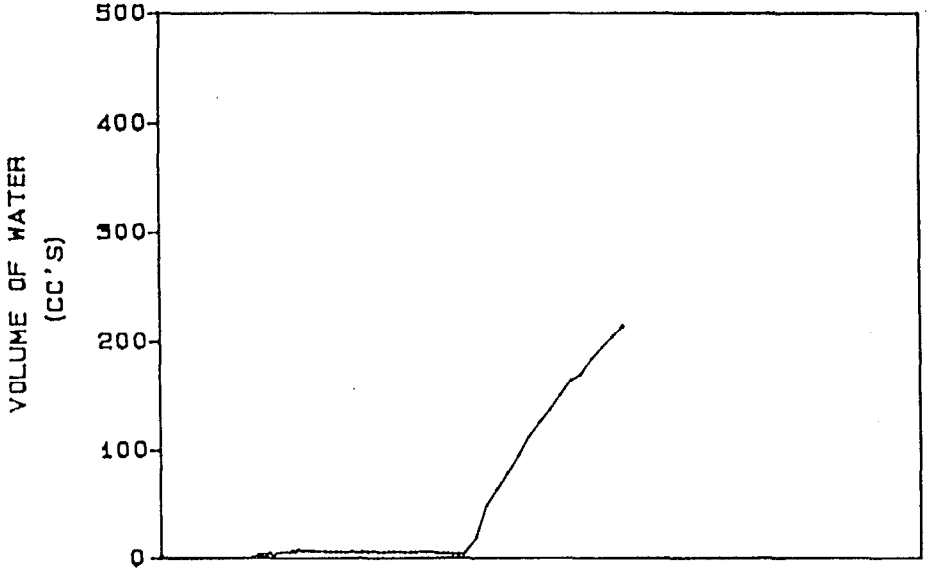


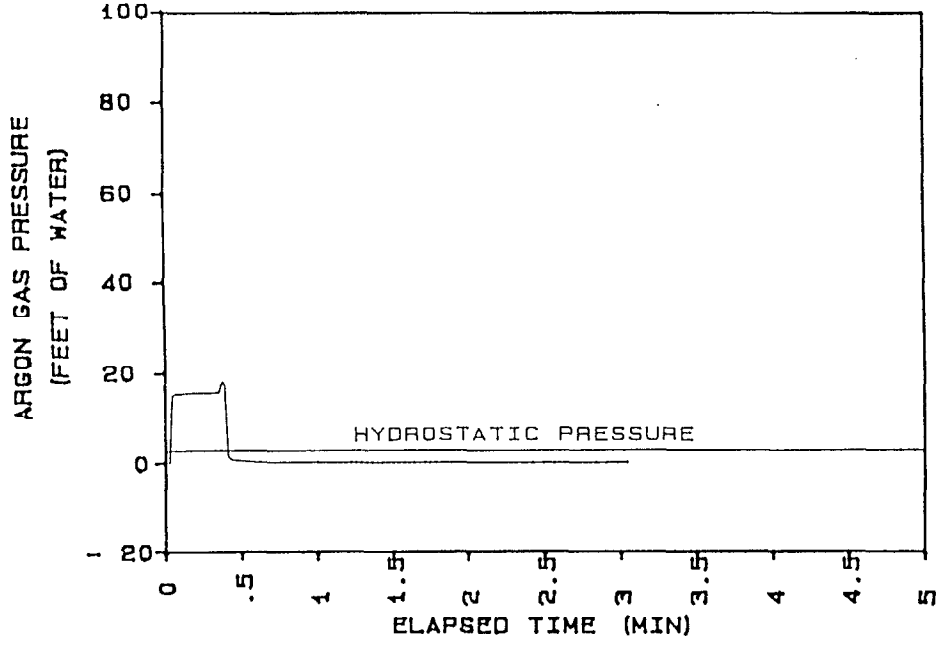


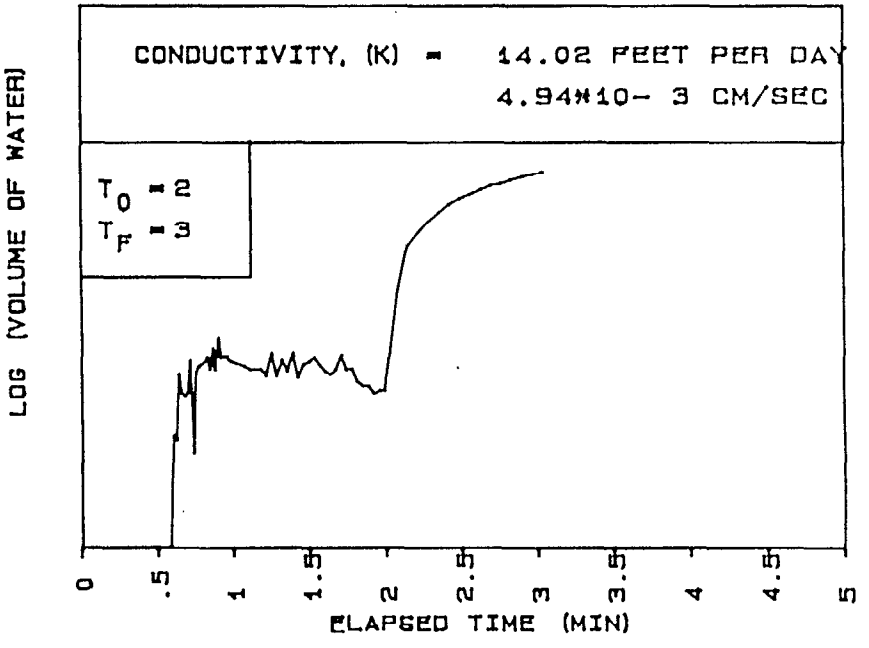
BECHTEL PARRIS ISLAND
LOCATION... 6H-36
TEST DATE
10: 13: 40 06-27-1996

SAMPLE DEPTH (FT) 36
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



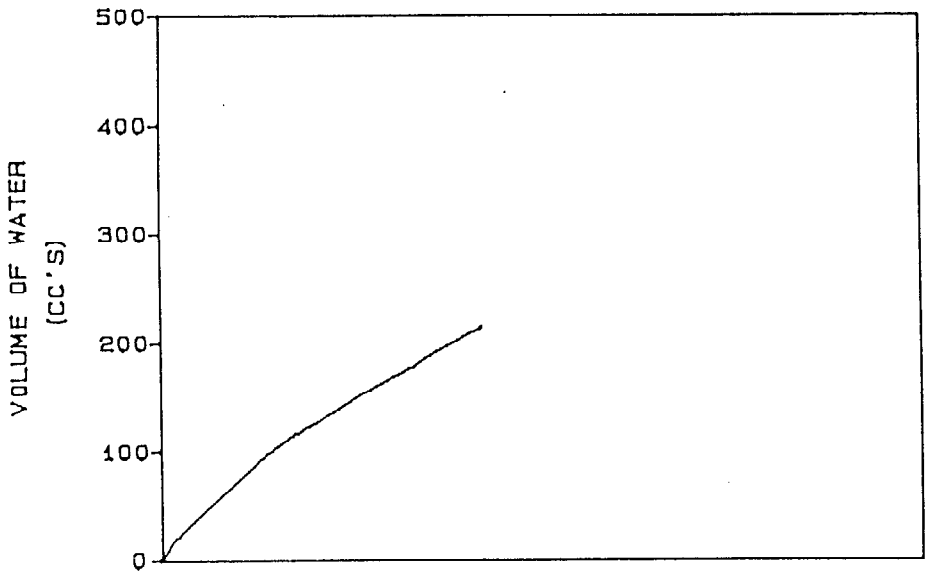


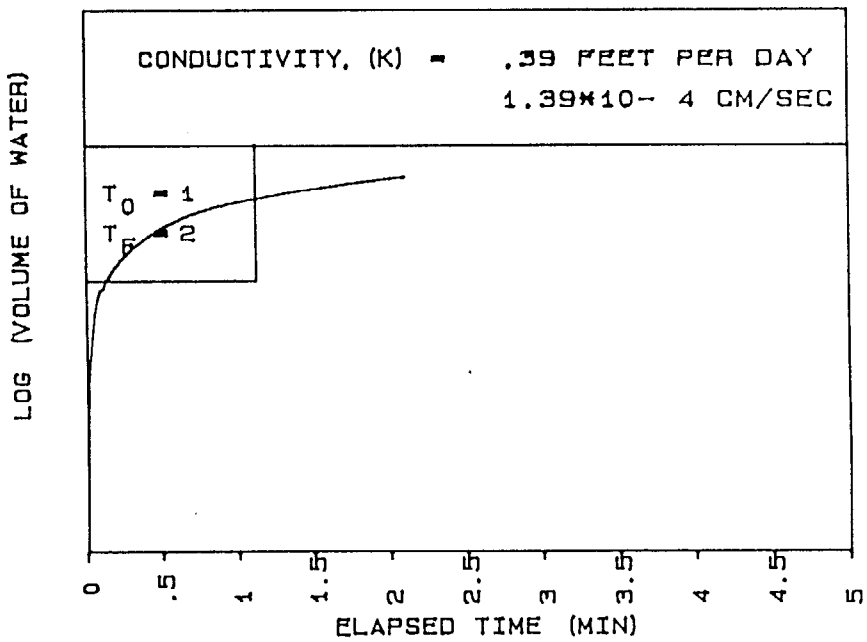


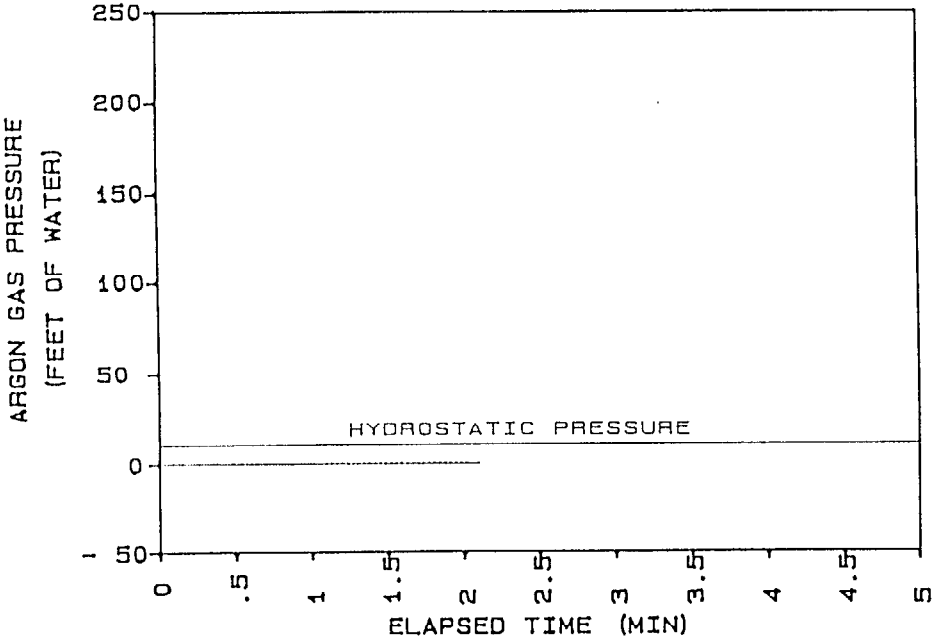
BECHTEL PARRIS ISLAND
LOCATION... 7H-7
TEST DATE
11: 45: 44 06-24-1996

SAMPLE DEPTH (FT) 7
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



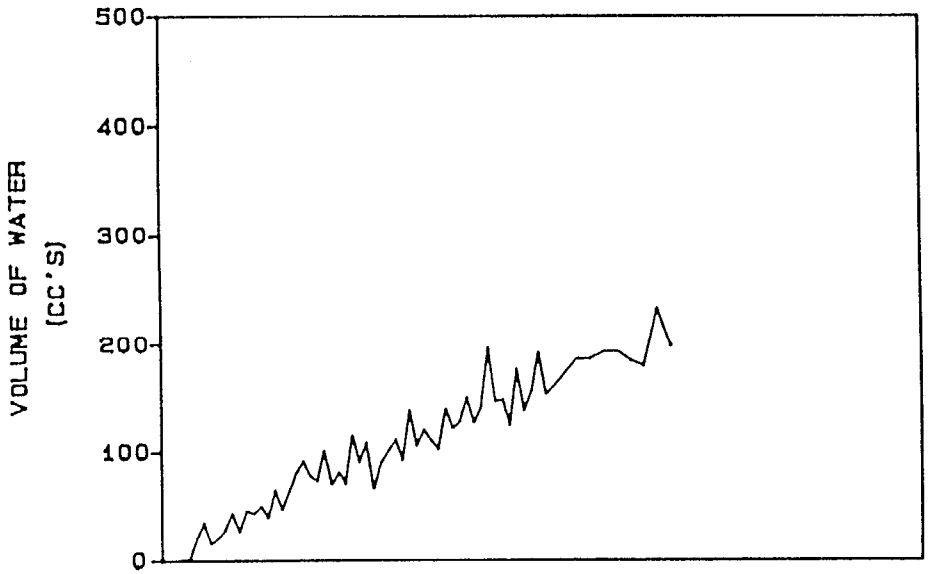


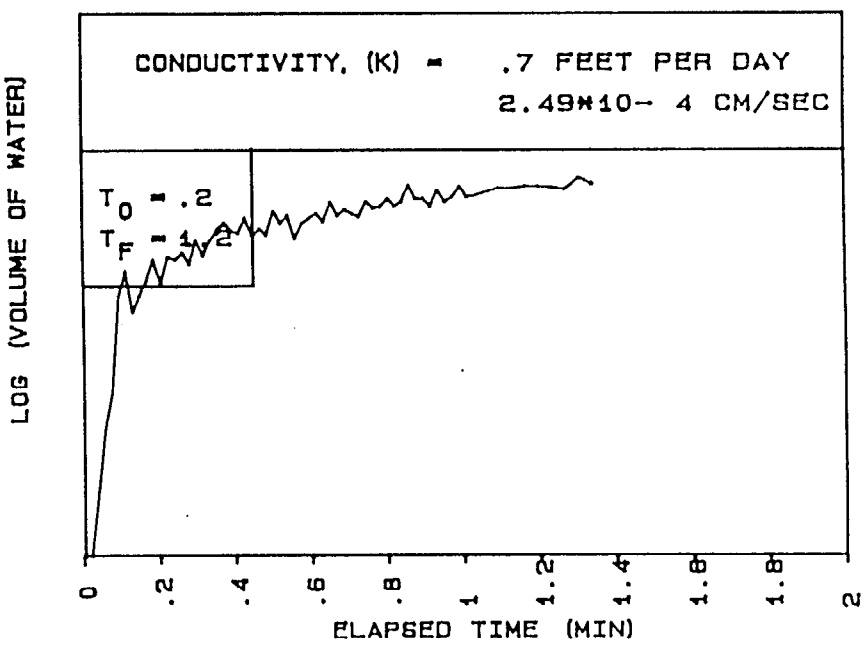


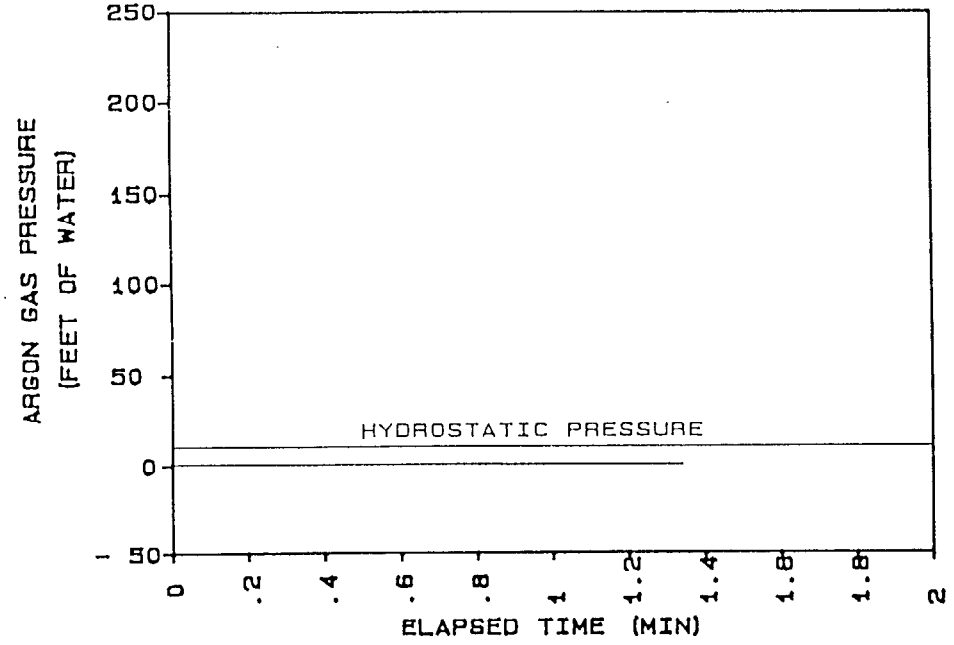
BECHTEL PARRIS ISLAND
LOCATION... OJ-14
TEST DATE
09: 08: 40 06-28-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



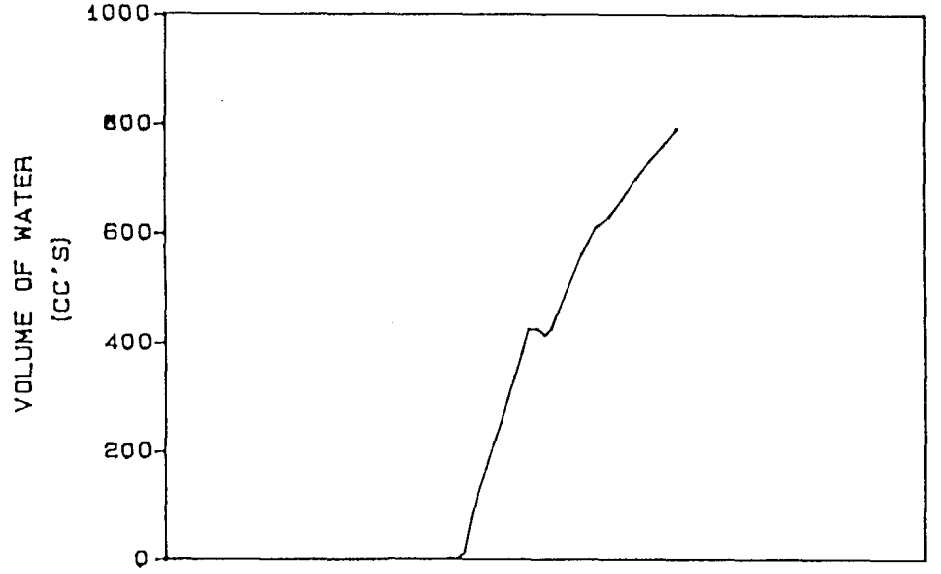


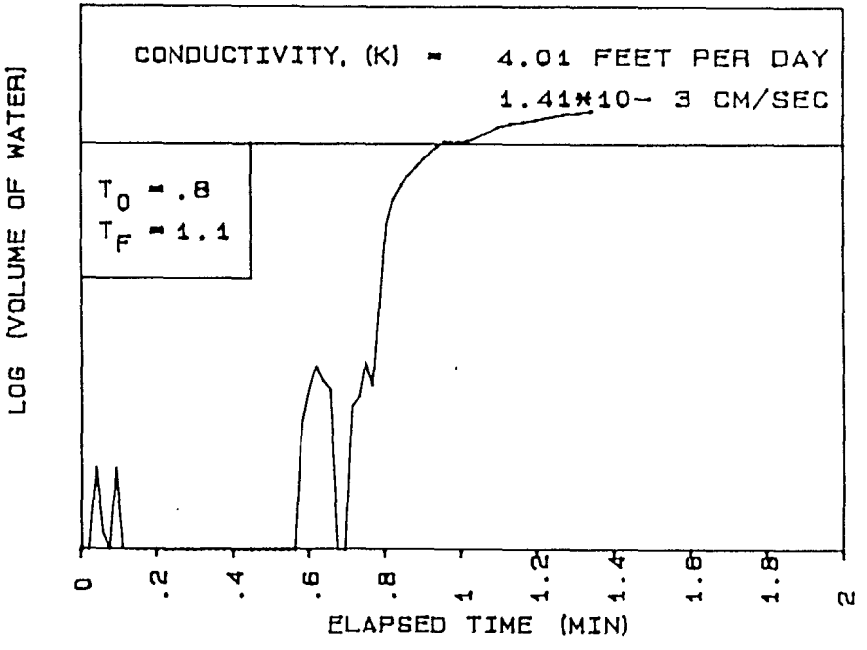


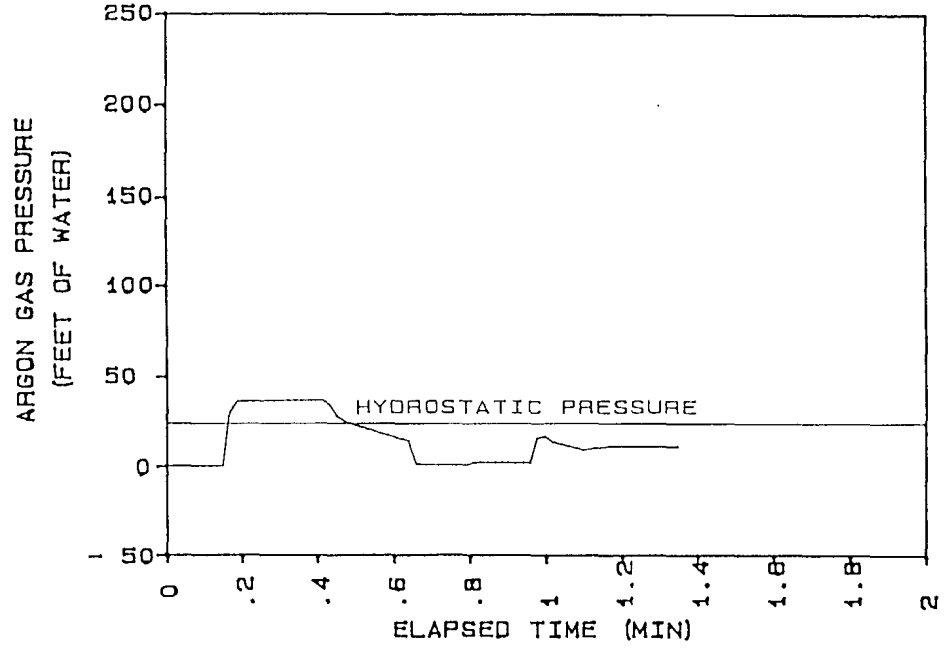
BECHTEL PARRIS ISLAND
LOCATION... 7H-14
TEST DATE
12: 29: 20 06-24-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



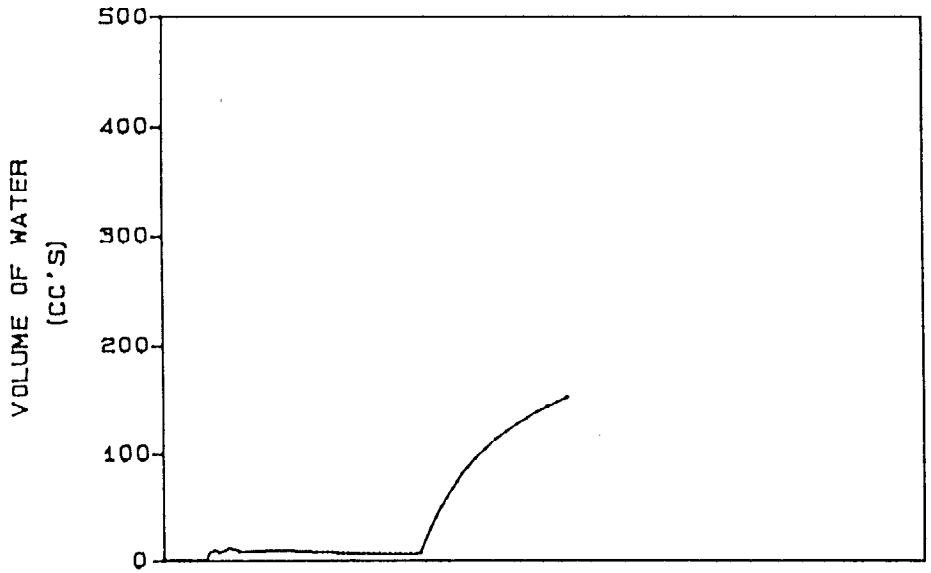


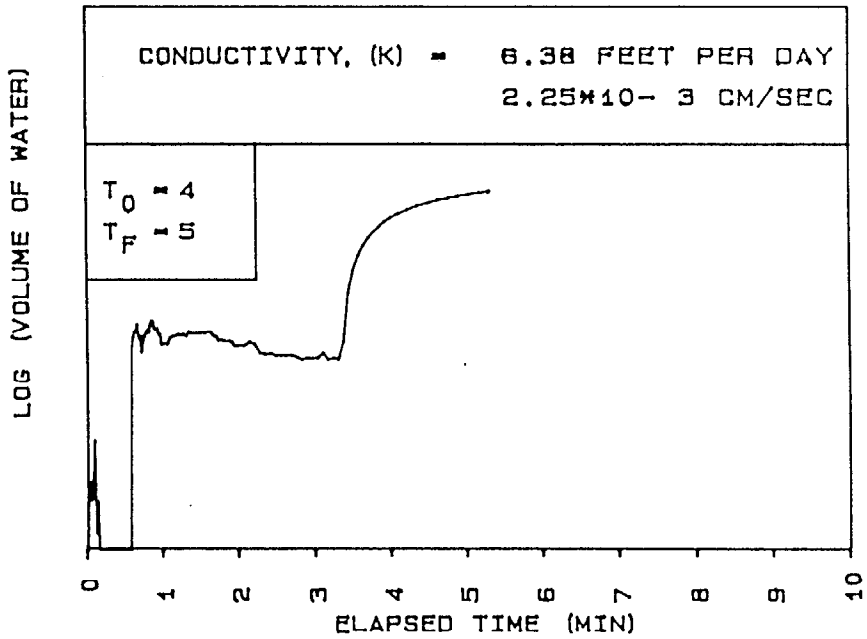


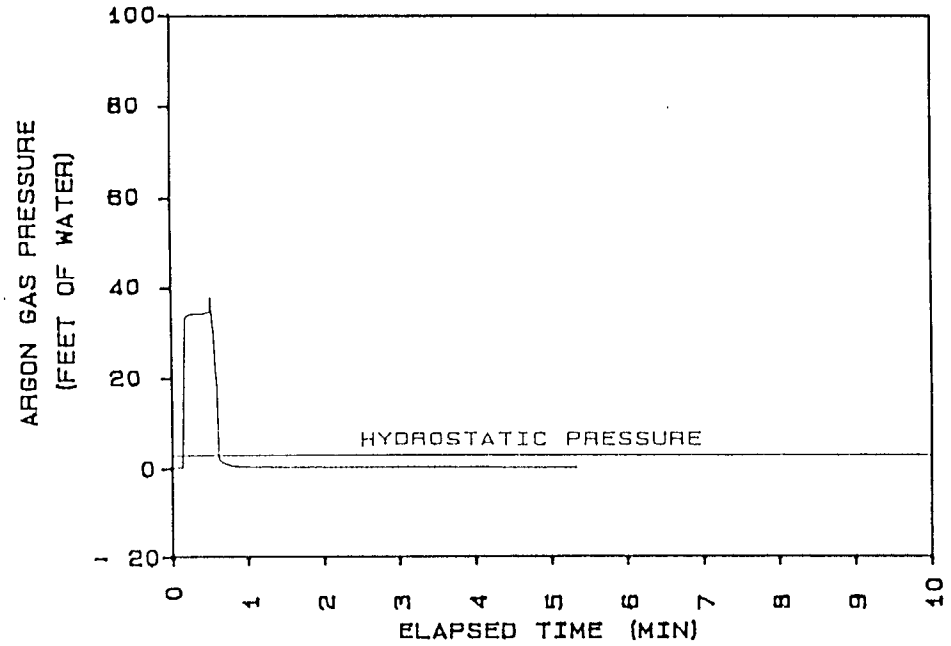
BECHTEL PARRIS ISLAND
LOCATION... OJ-28
TEST DATE
10: 21: 03 06-30-1996

SAMPLE DEPTH (FT) 28
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



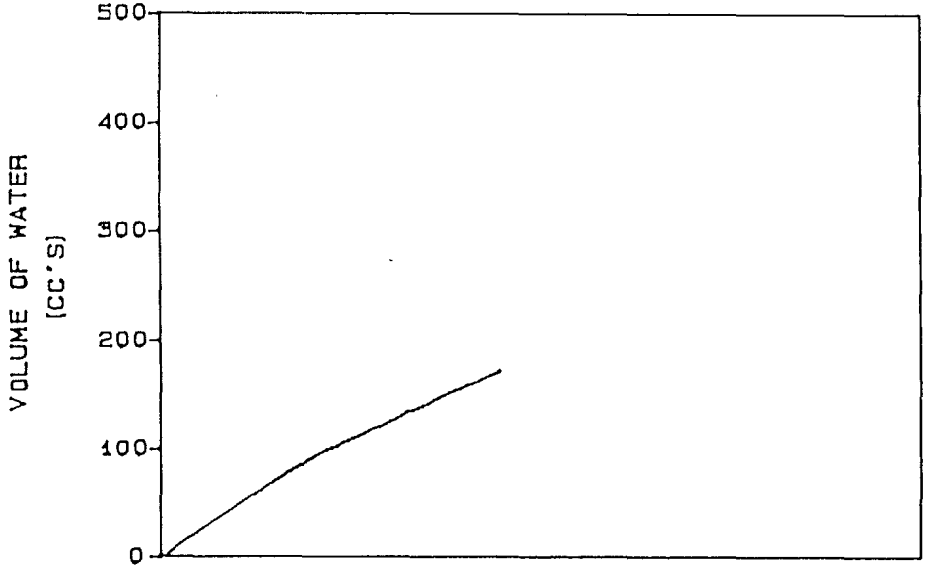


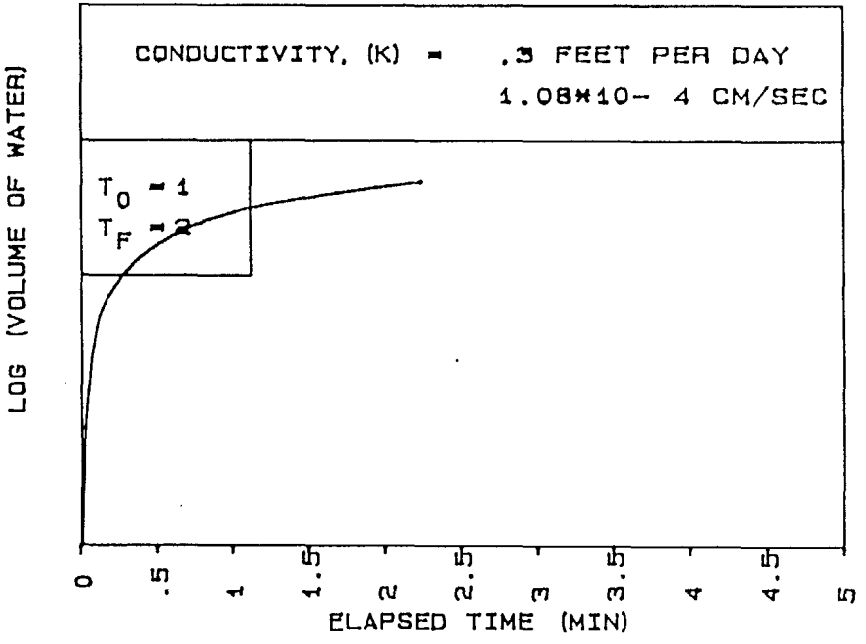


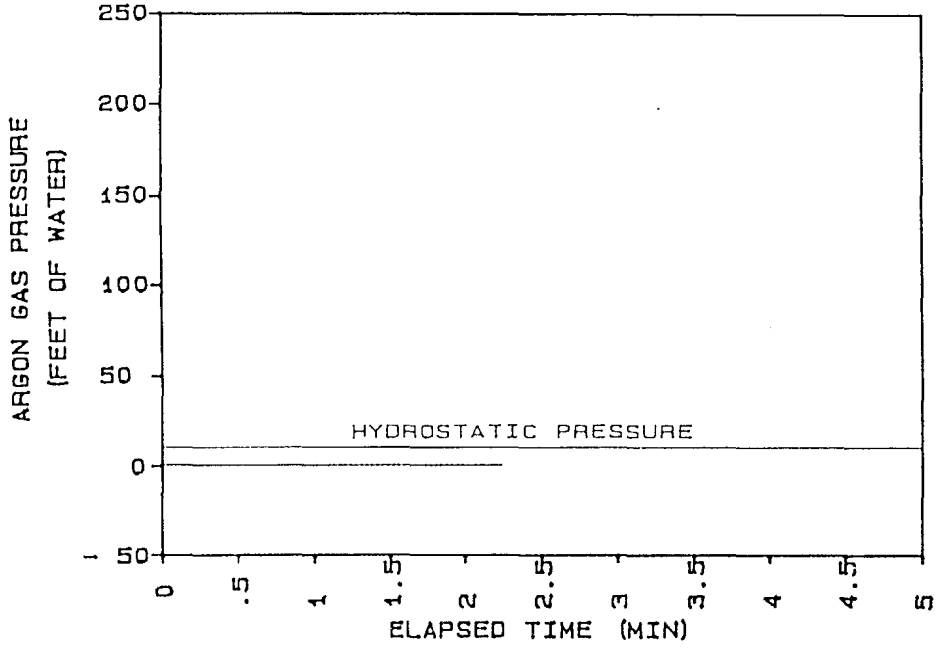
BECHTEL PARRIS ISLAND
LOCATION... 1J-7
TEST DATE
14: 00: 33 06-29-1996

SAMPLE DEPTH (FT) 7
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



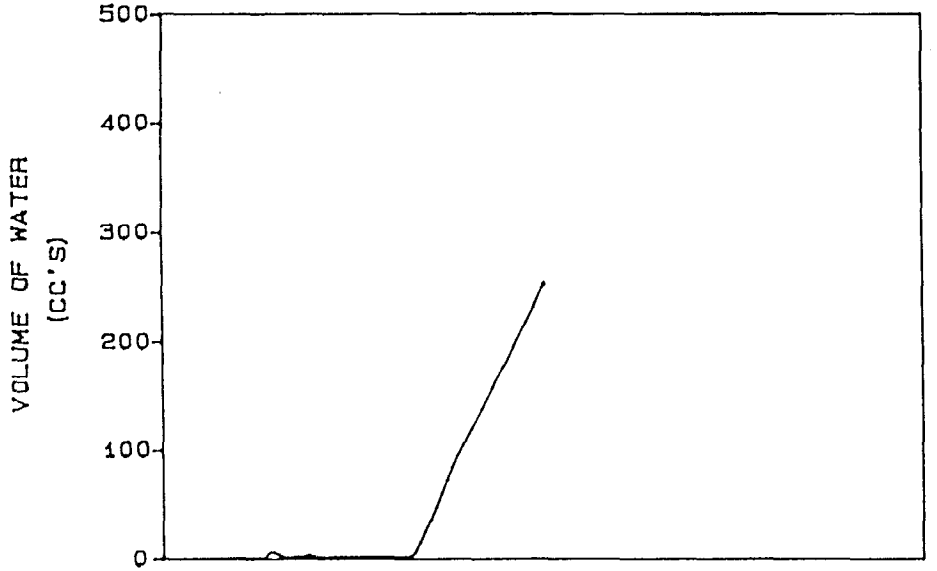


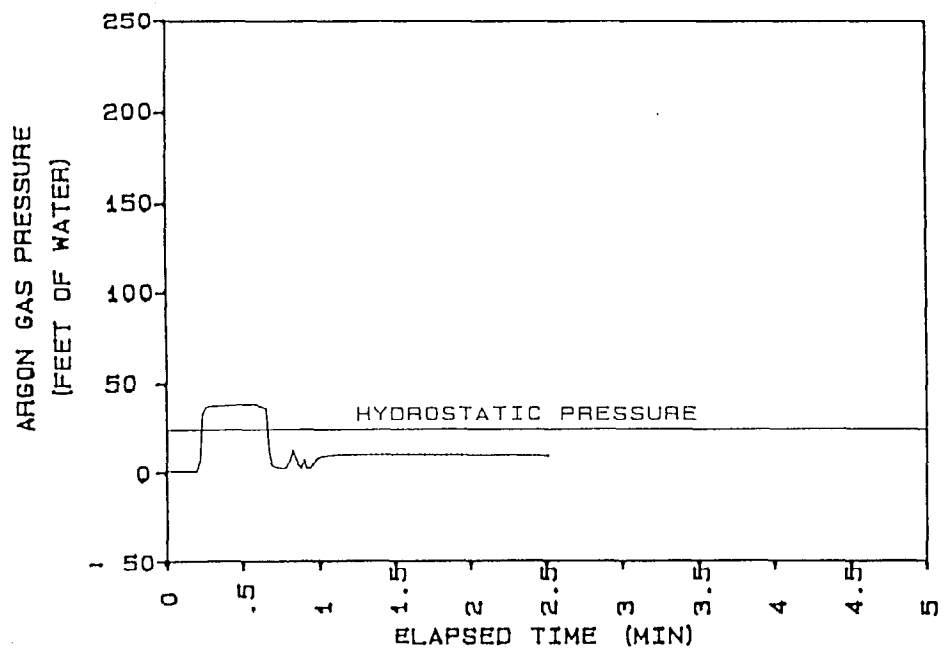


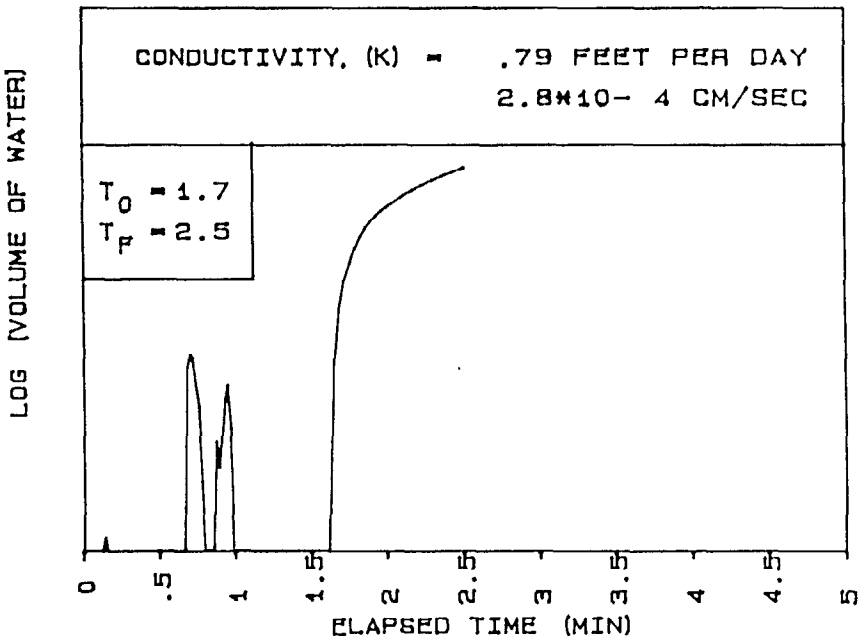
BECHTEL PARRIS ISLAND
LOCATION... 1J-14
TEST DATE
12: 20: 12 06-29-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



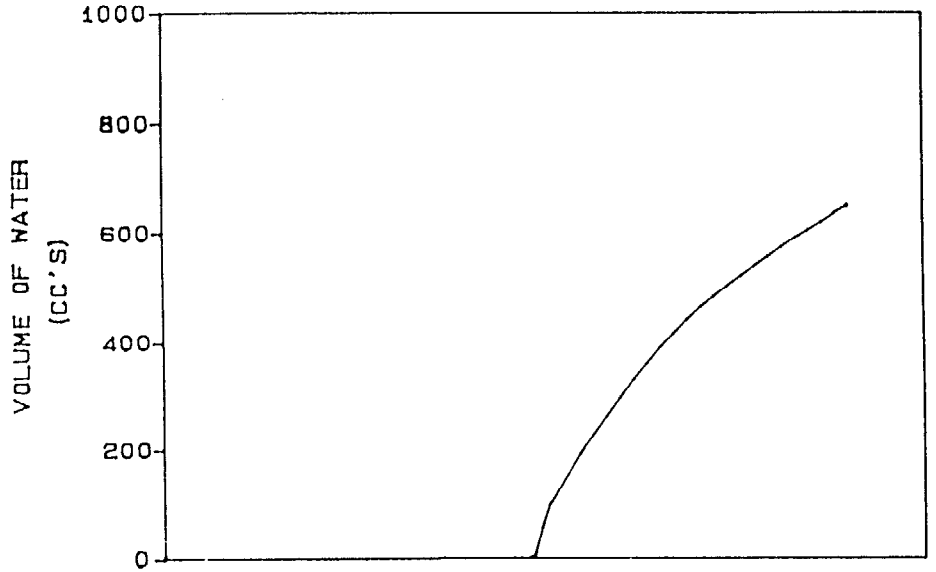


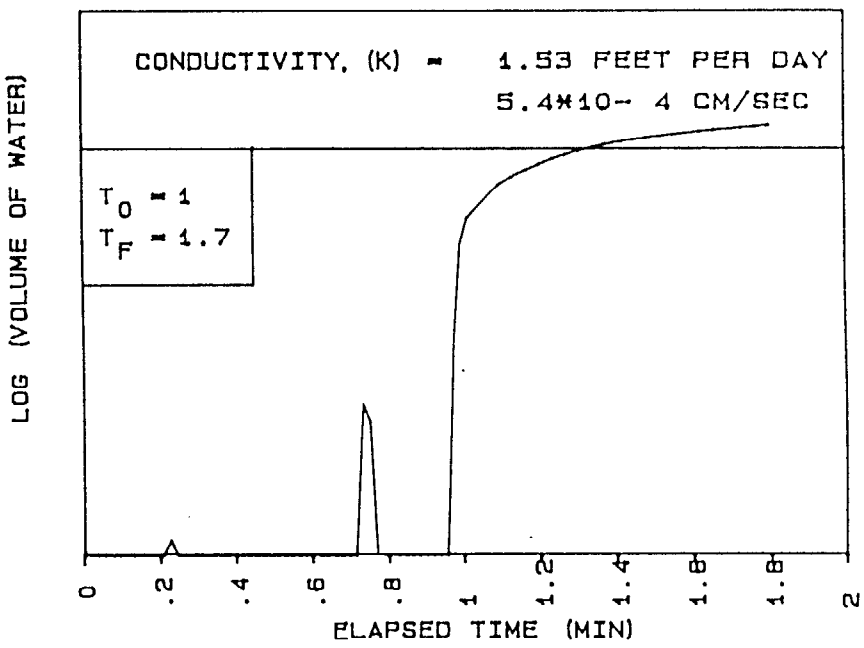


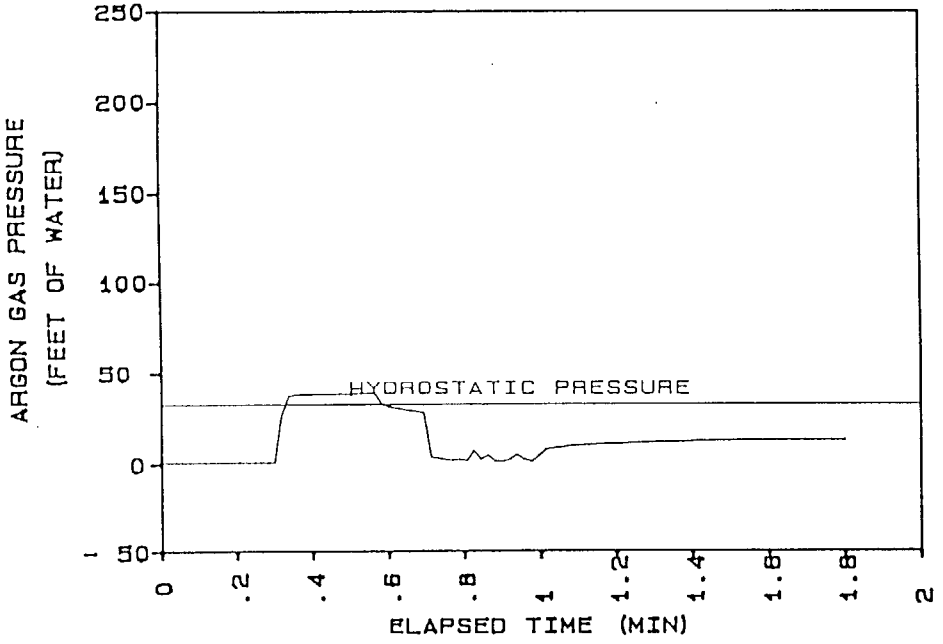
BECHTEL PARRIS ISLAND
LOCATION... 1J-28
TEST DATE
14: 33: 21 06-29-1996

SAMPLE DEPTH (FT) 28
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



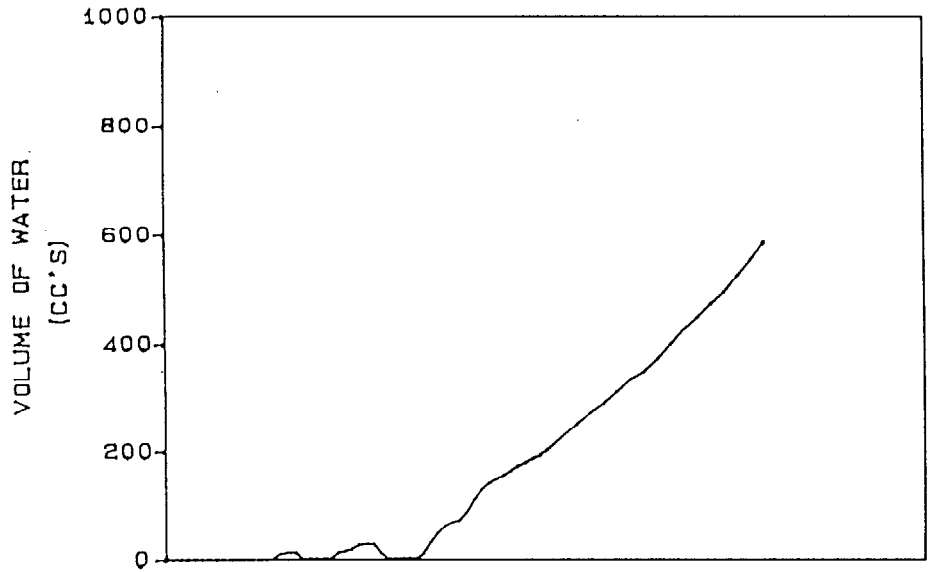


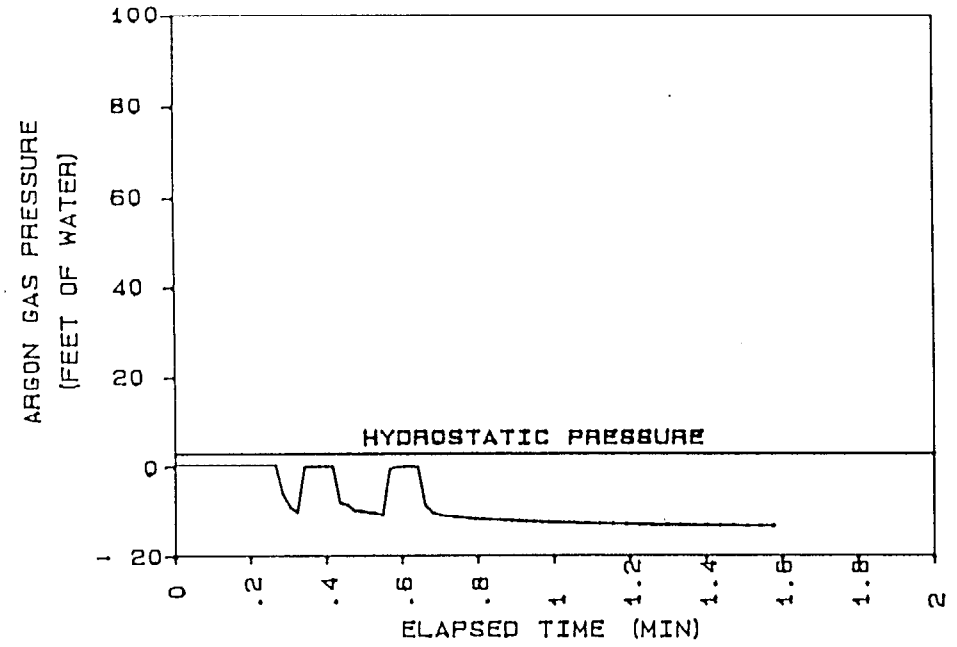


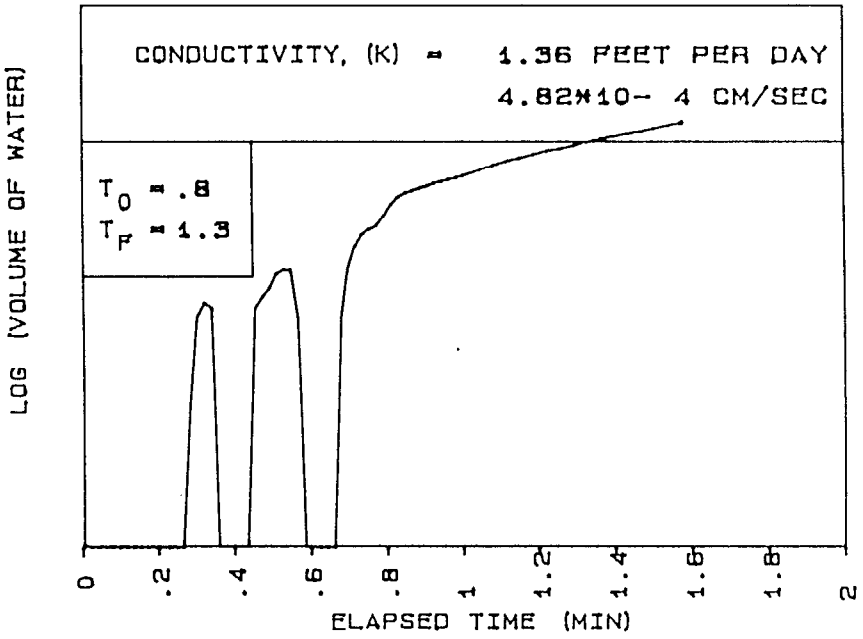
BECHTEL PARRIS ISLAND
LOCATION... 1J-36
TEST DATE
15: 08: 41 06-29-1996

SAMPLE DEPTH (FT) 38
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



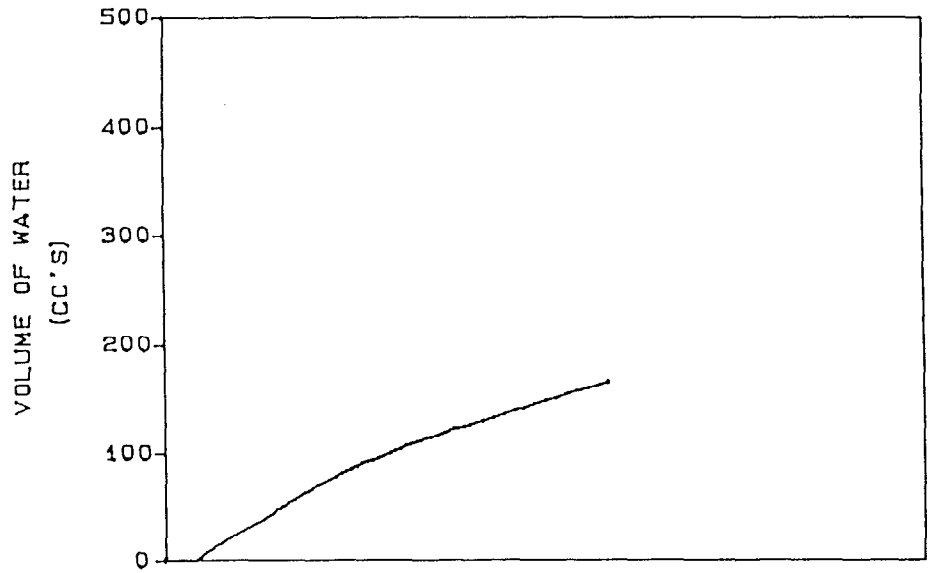


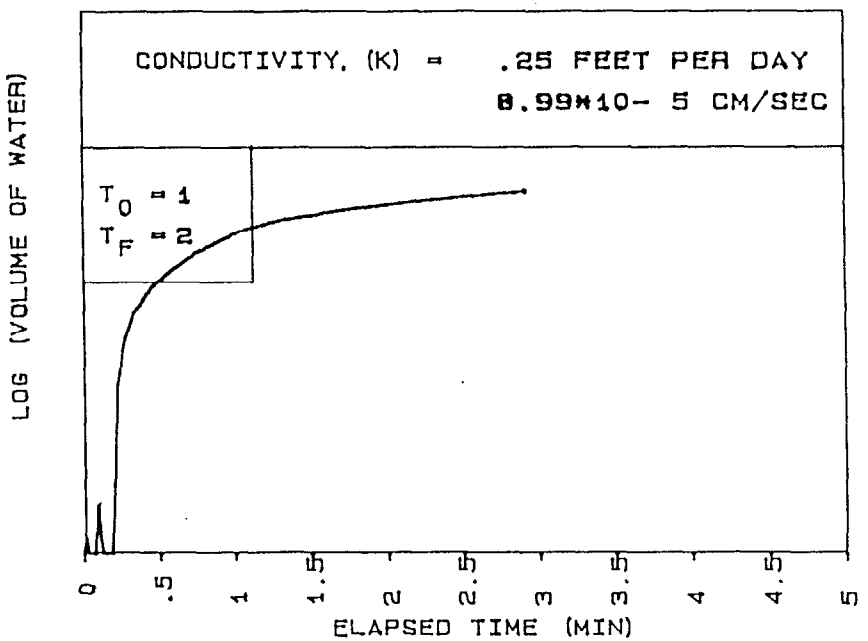


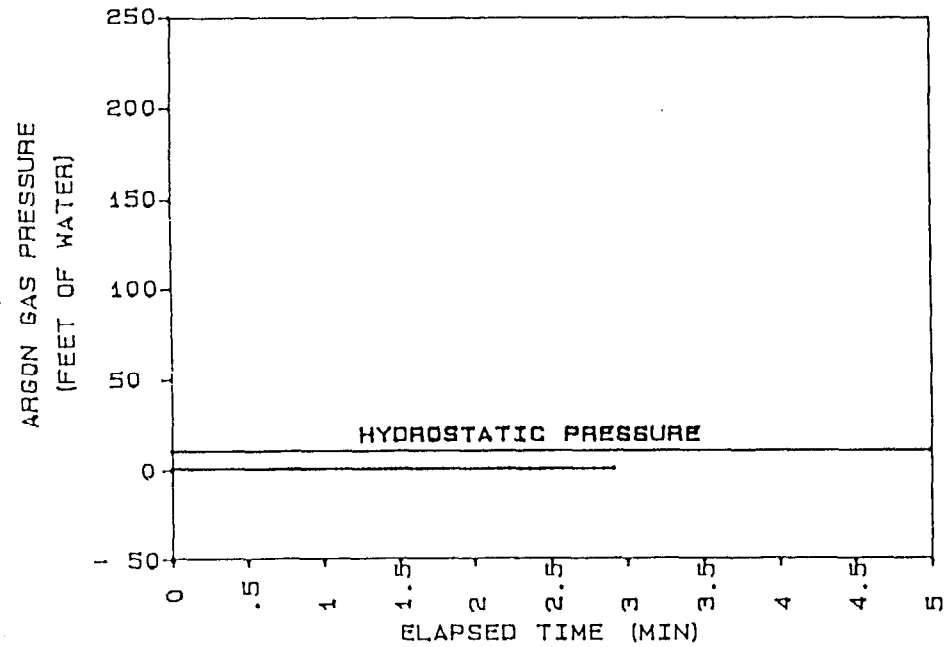
BECHTEL PARRIS ISLAND
LOCATION... -1J-7
TEST DATE
19: 06: 10 06-29-1996

SAMPLE DEPTH (FT) 7
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



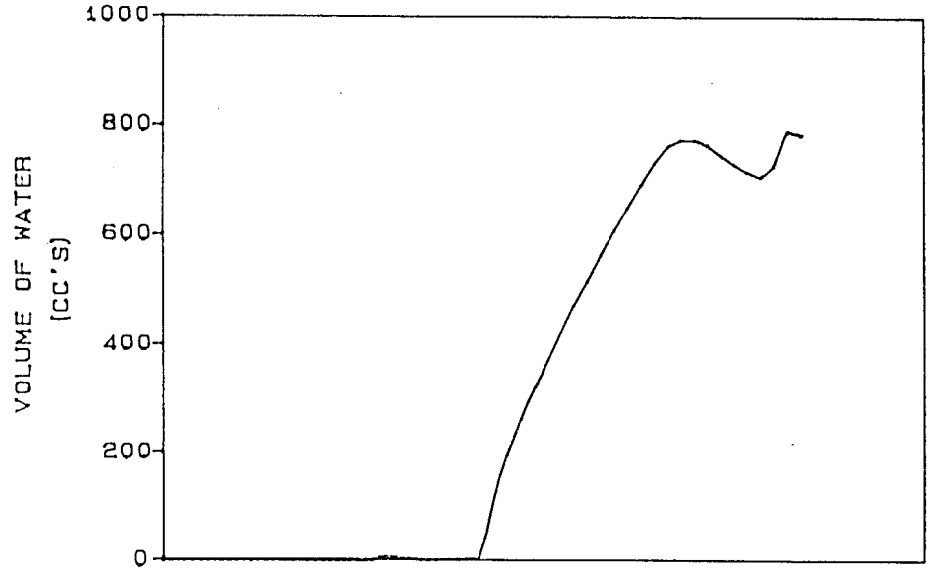


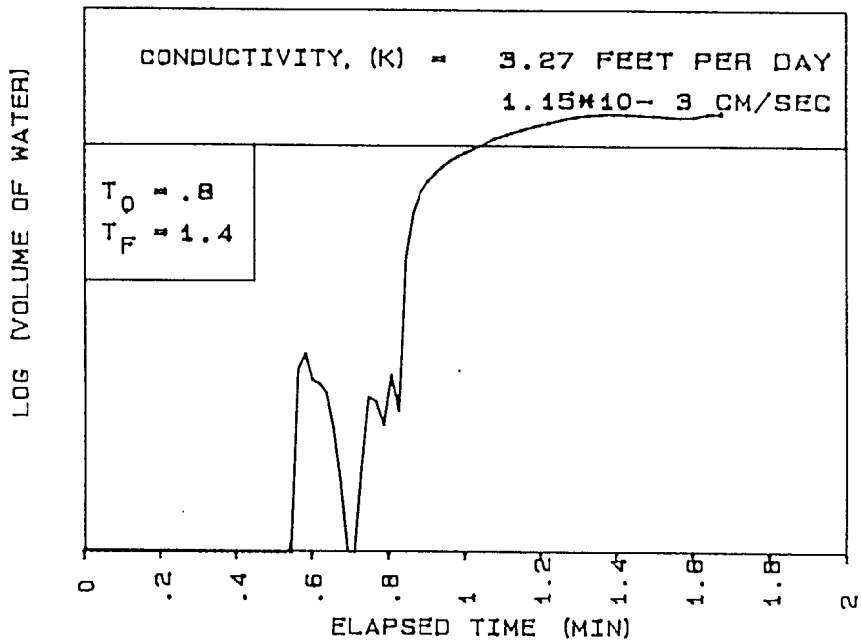


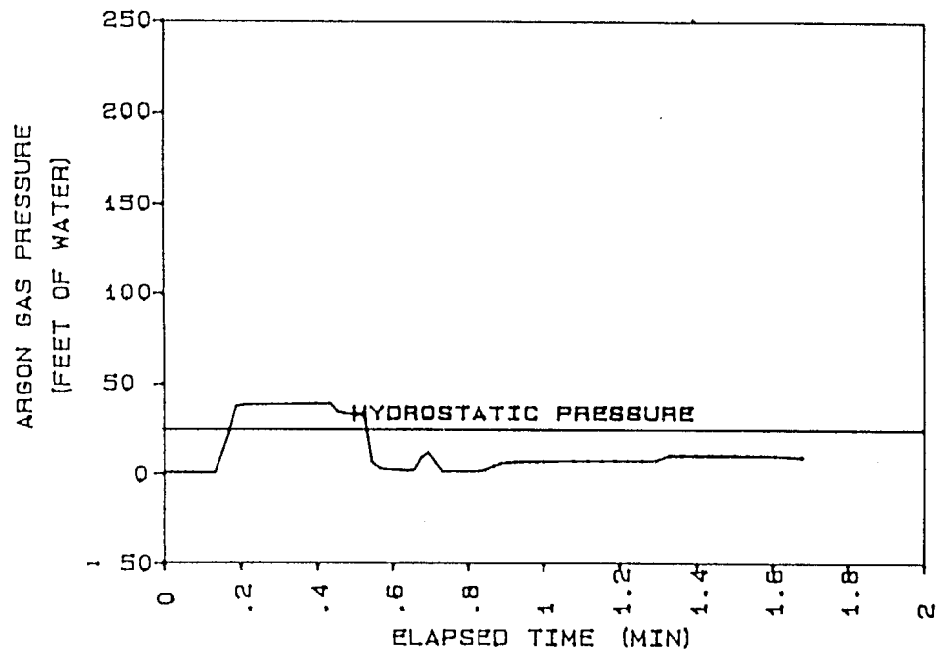
BECHTEL PARRIS ISLAND
LOCATION... -1J-14
TEST DATE
10: 25: 58 06-29-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



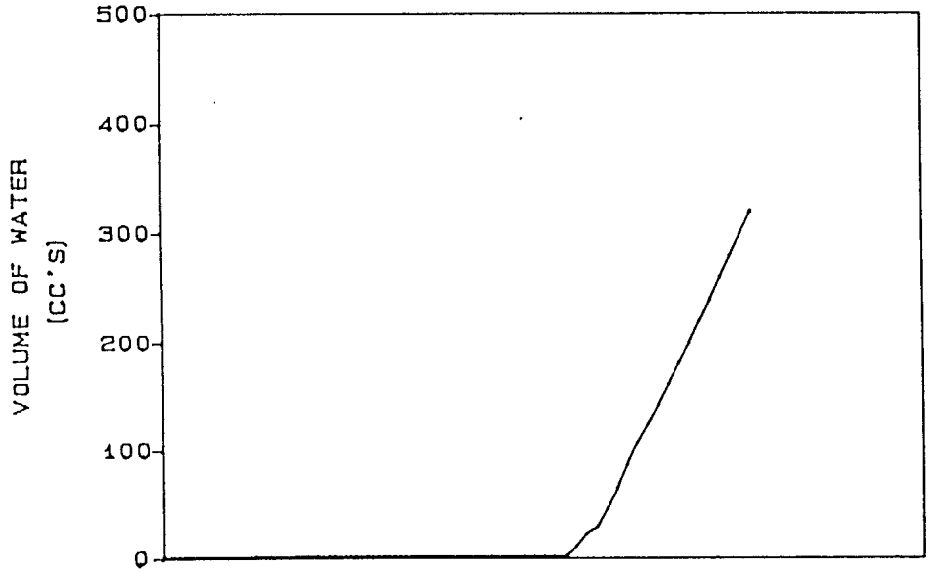


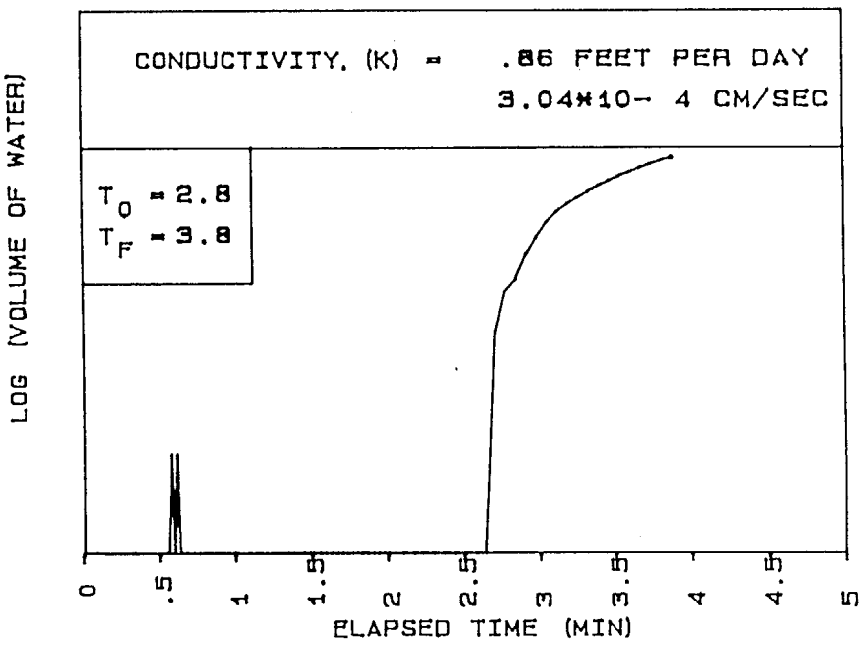


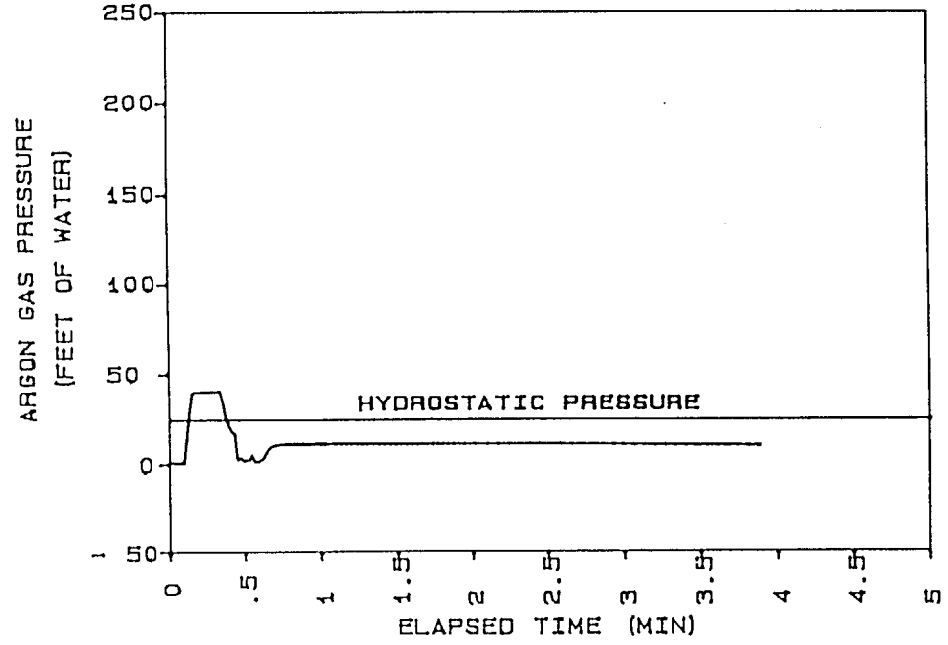
BECHTEL PARRIS ISLAND
LOCATION... -1J-28
TEST DATE
11: 25: 34 06-29-1996

SAMPLE DEPTH (FT) 28
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



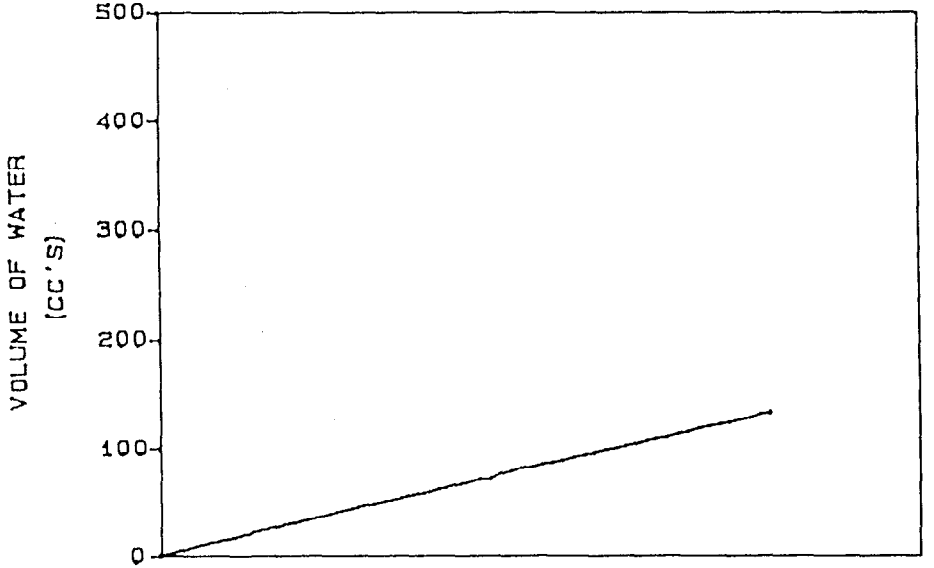


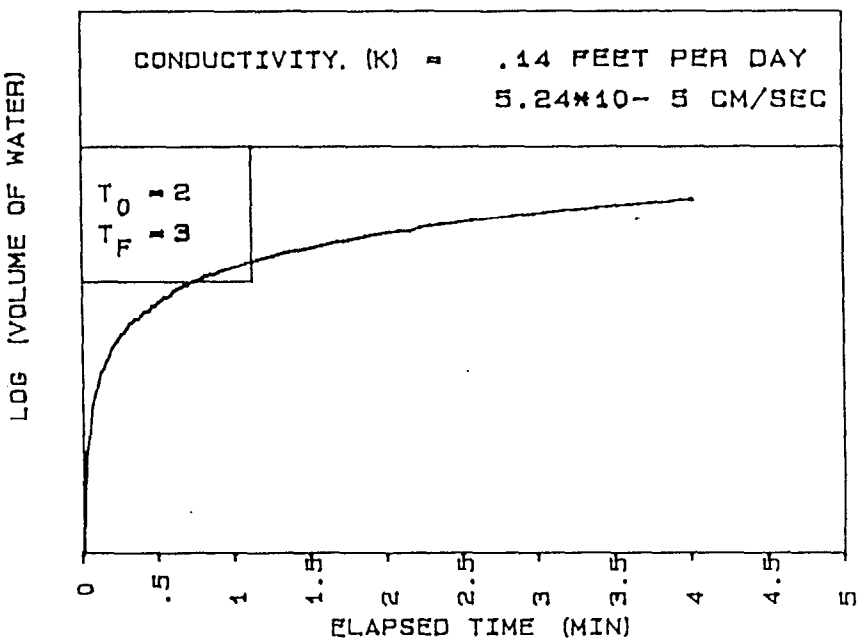


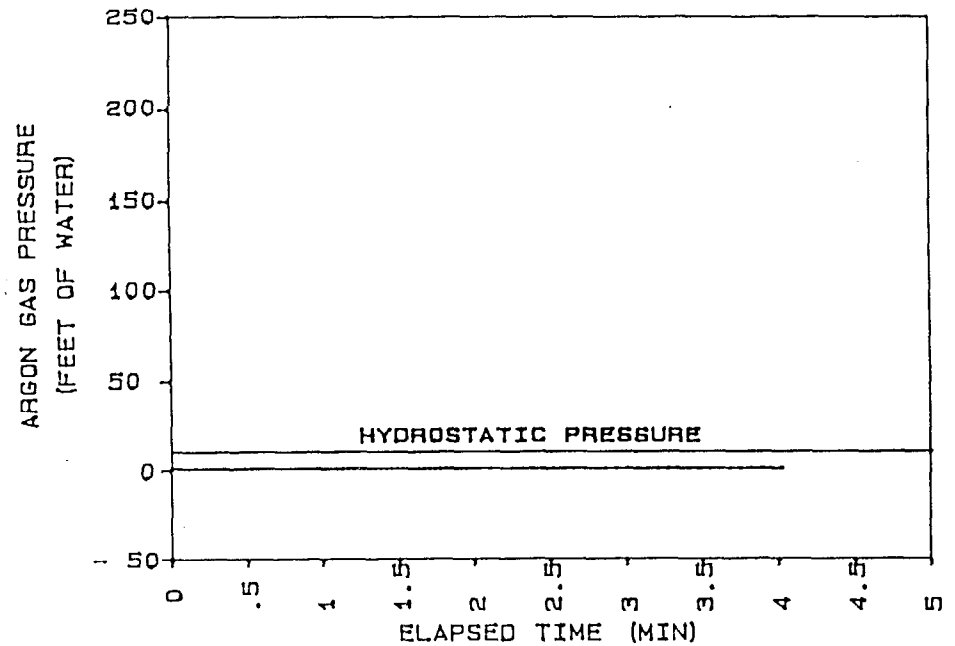
BECHTEL PARRIS ISLAND
LOCATION... -2J-28
TEST DATE
17: 41: 54 06-28-1996

SAMPLE DEPTH (FT) 28
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



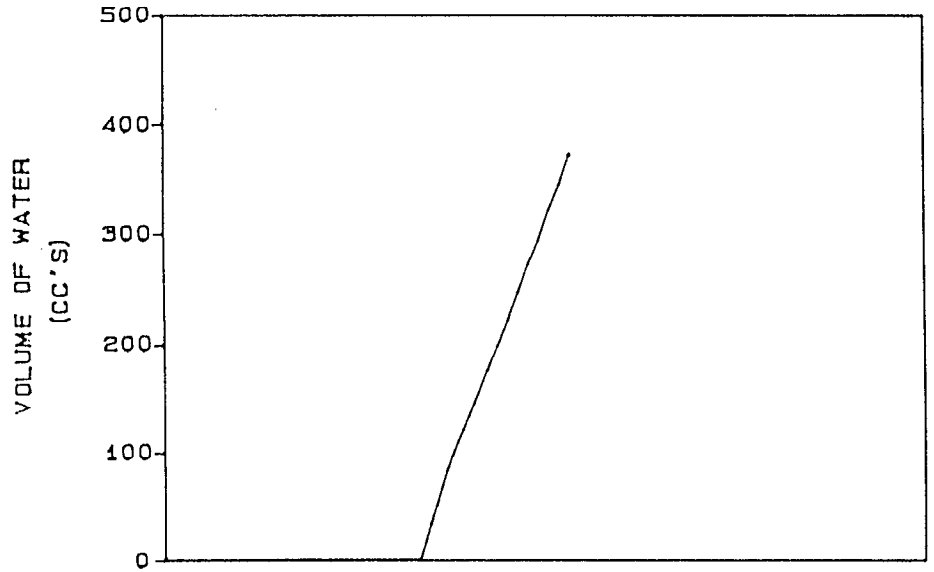


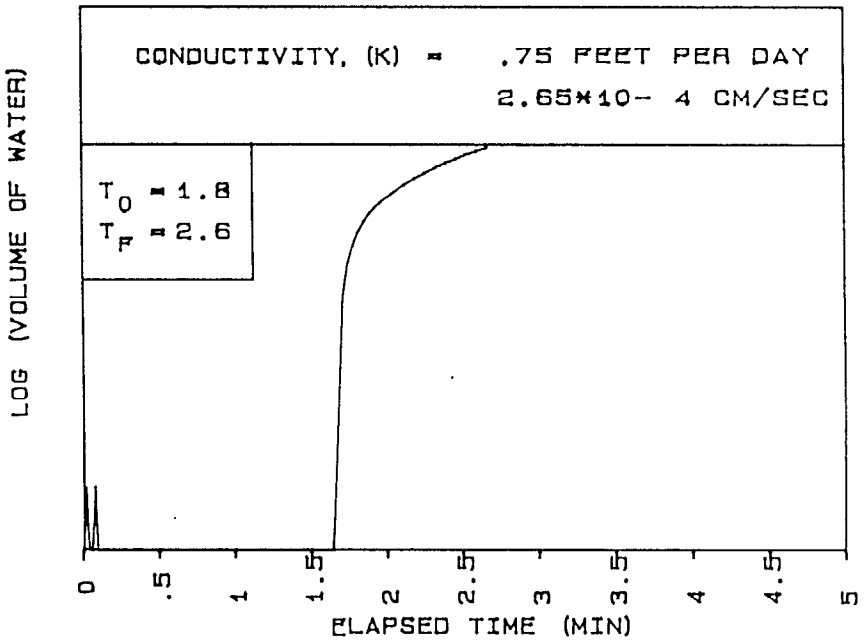


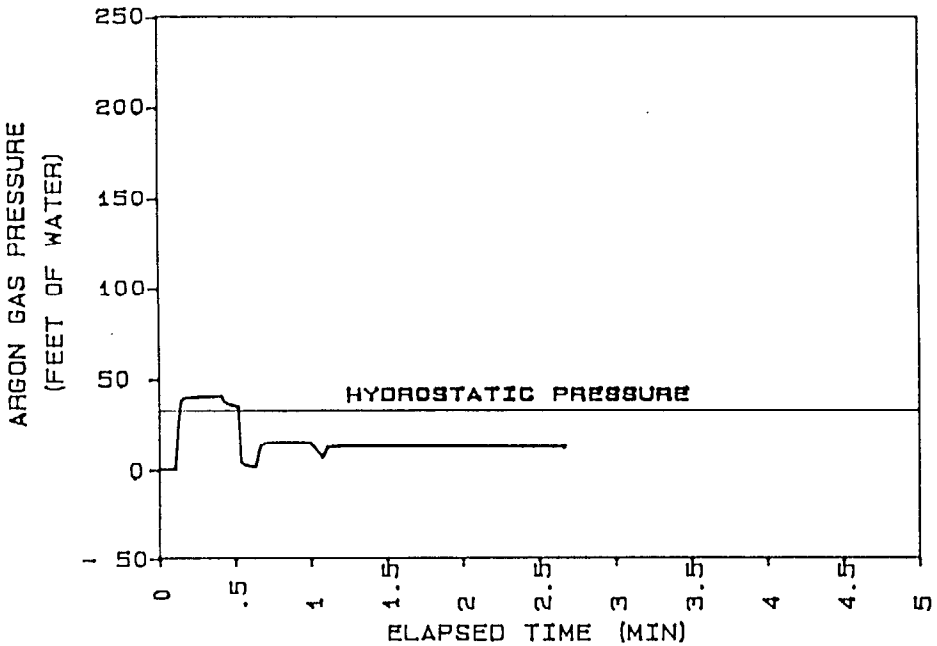
BECHTEL PARRIS ISLAND
LOCATION... -2J-14
TEST DATE
16: 41: 03 06-28-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



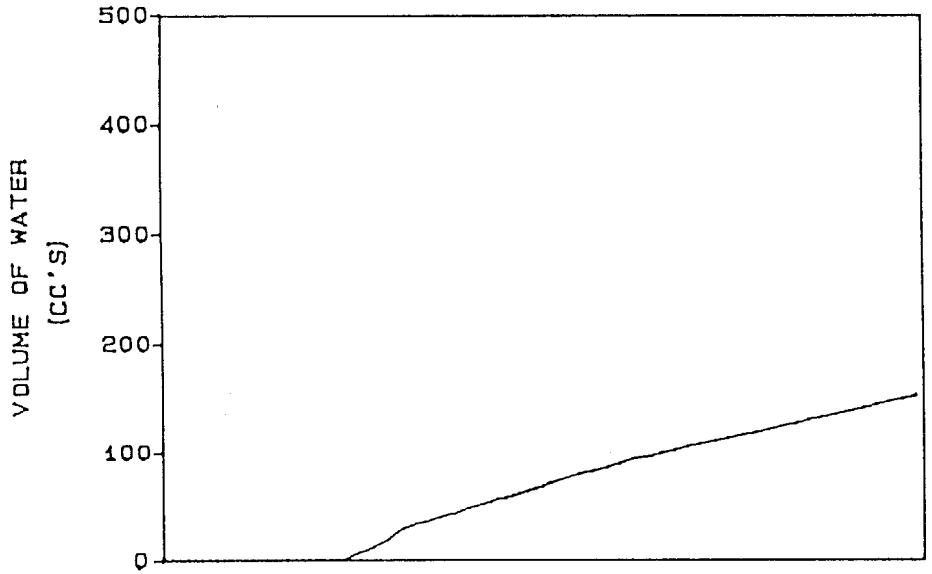


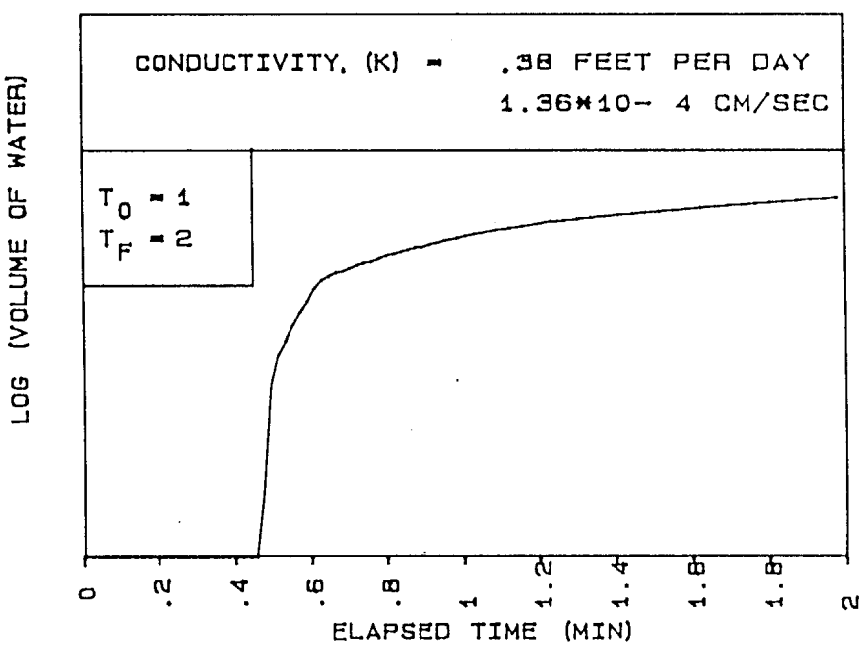


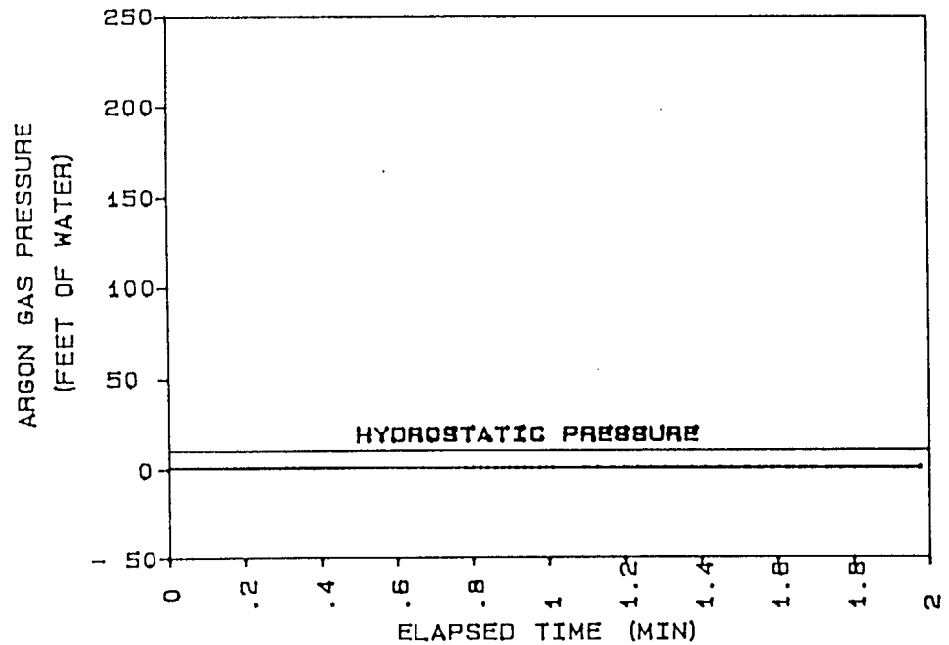
BECHTEL PARRIS ISLAND
LOCATION... -2J-36
TEST DATE
18: 20: 03 06-28-1996

SAMPLE DEPTH (FT) 38
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



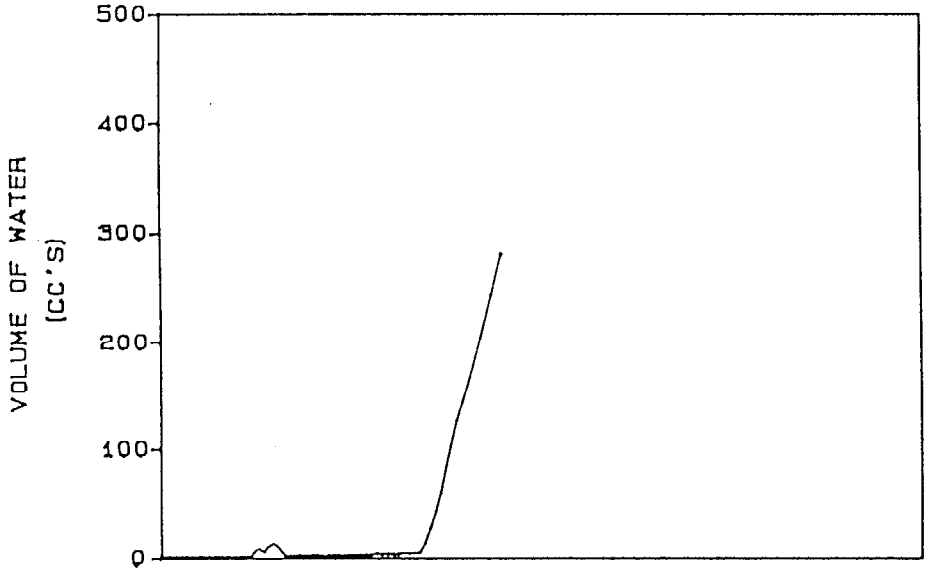


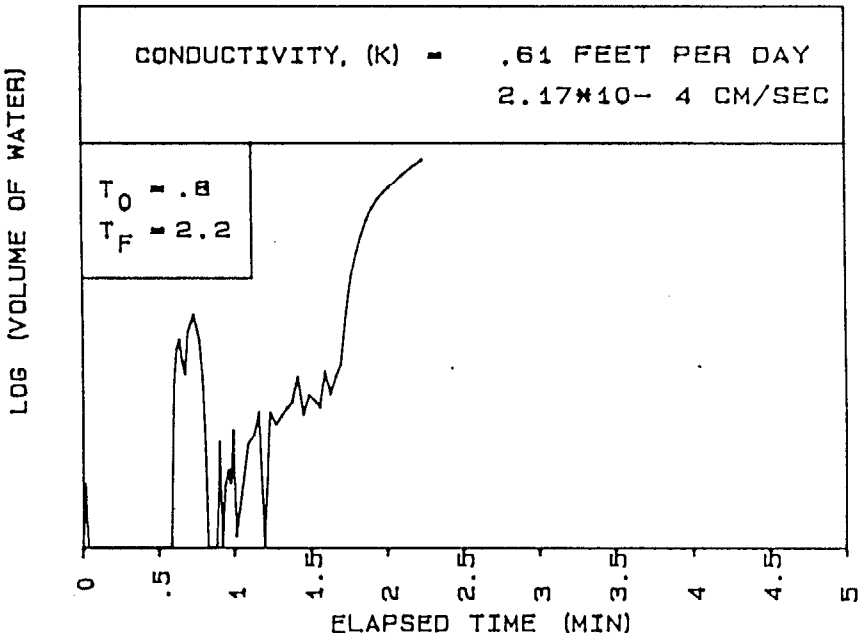


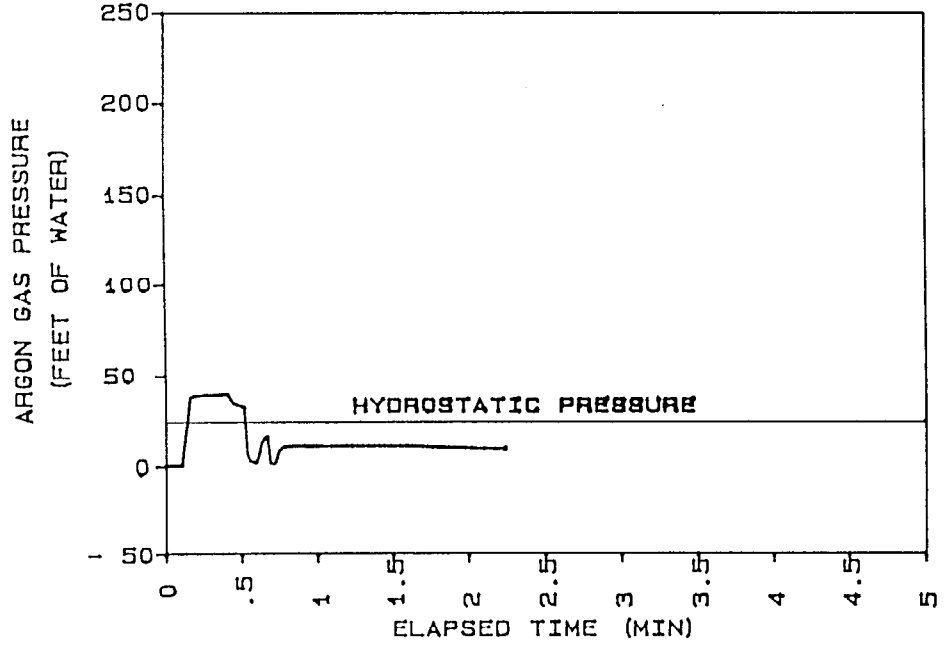
BECHTEL PARRIS ISLAND
LOCATION... -3J-14
TEST DATE
17: 05: 02 06-29-1996

SAMPLE DEPTH (FT) 14
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST



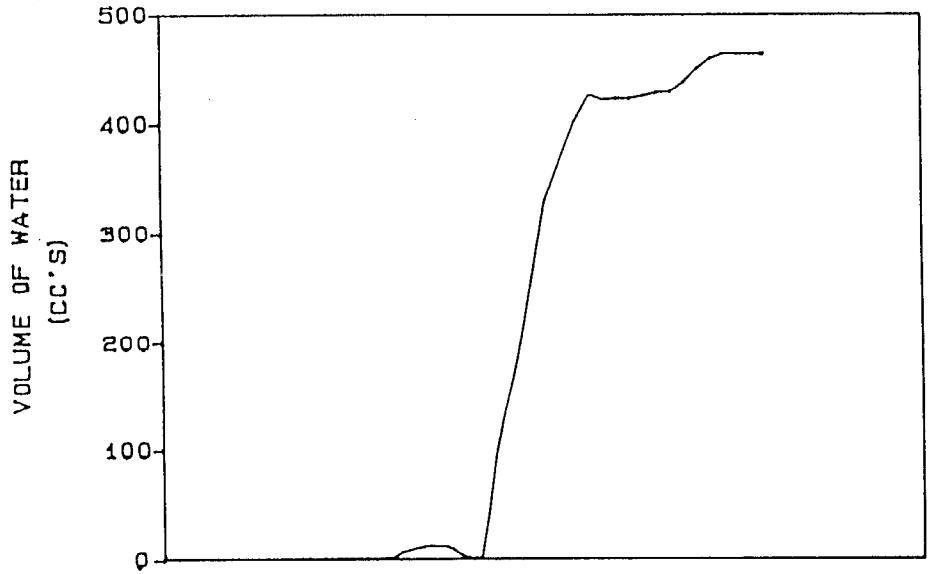


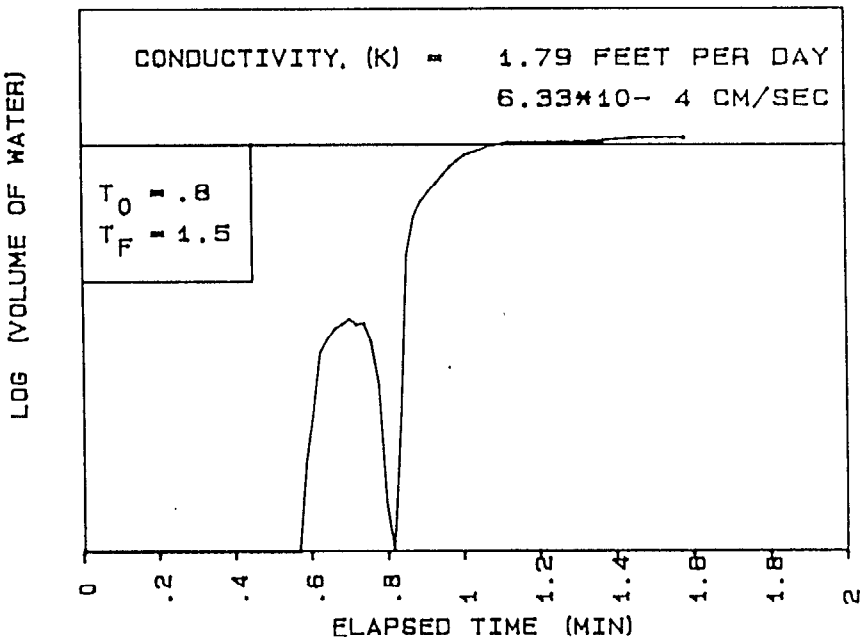


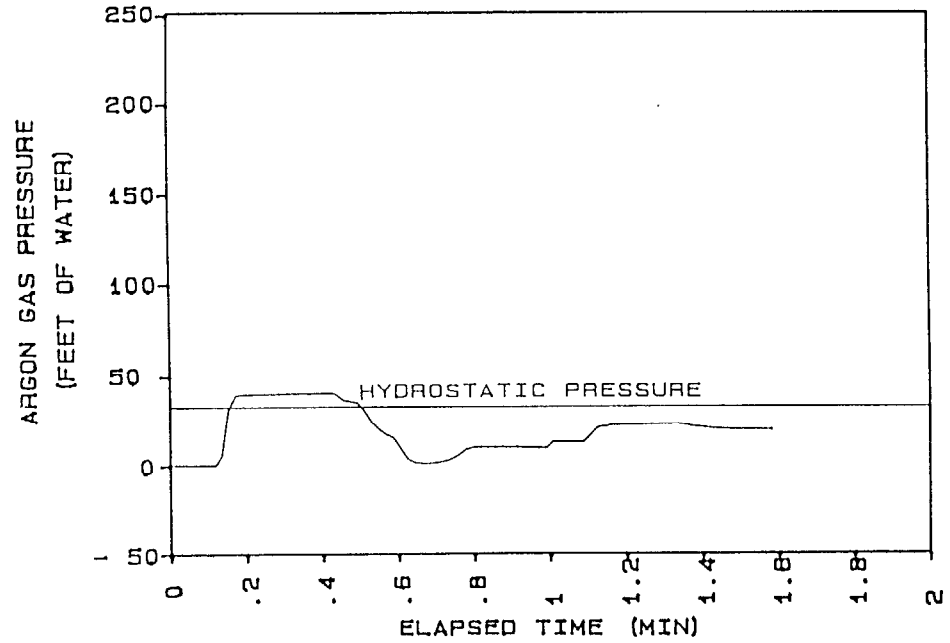
BECHTEL PARRIS ISLAND
LOCATION... -3J-28
TEST DATE
17: 48: 06 06-29-1996

SAMPLE DEPTH (FT) 28
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST







BECHTEL PARRIS ISLAND
LOCATION... -3J-36
TEST DATE
18: 26: 33 06-29-1996

SAMPLE DEPTH (FT) 36
GROUNDWATER DEPTH (FT) 4.5

HYDROCONE TEST

VOLUME OF WATER (CC'S)

DATA NOT AVAILABLE

LOG (VOLUME OF WATER)

CONDUCTIVITY, (K) =

T_0 =

T_F =

DATA NOT AVAILABLE

ELAPSED TIME (MIN)

ARGON GAS PRESSURE (FEET OF WATER)

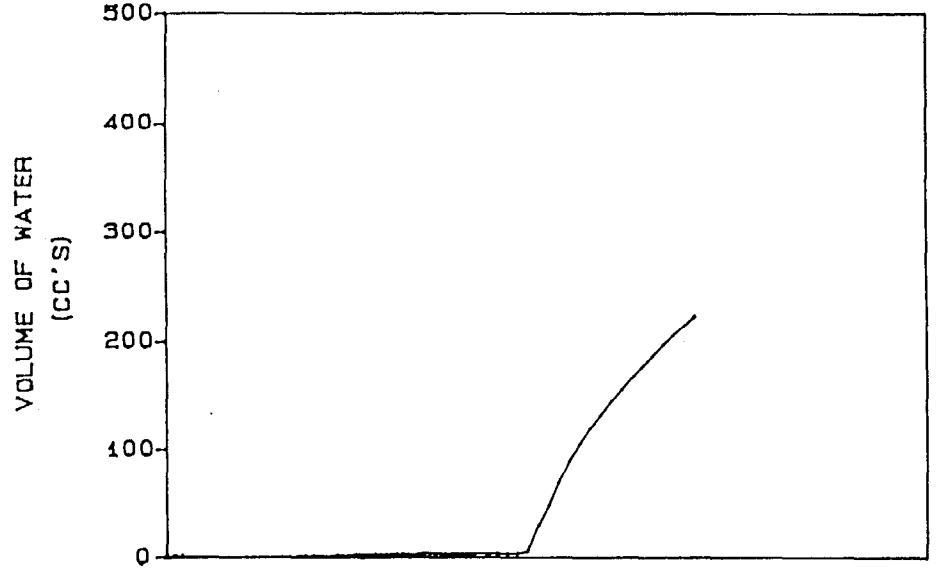
DATA NOT AVAILABLE

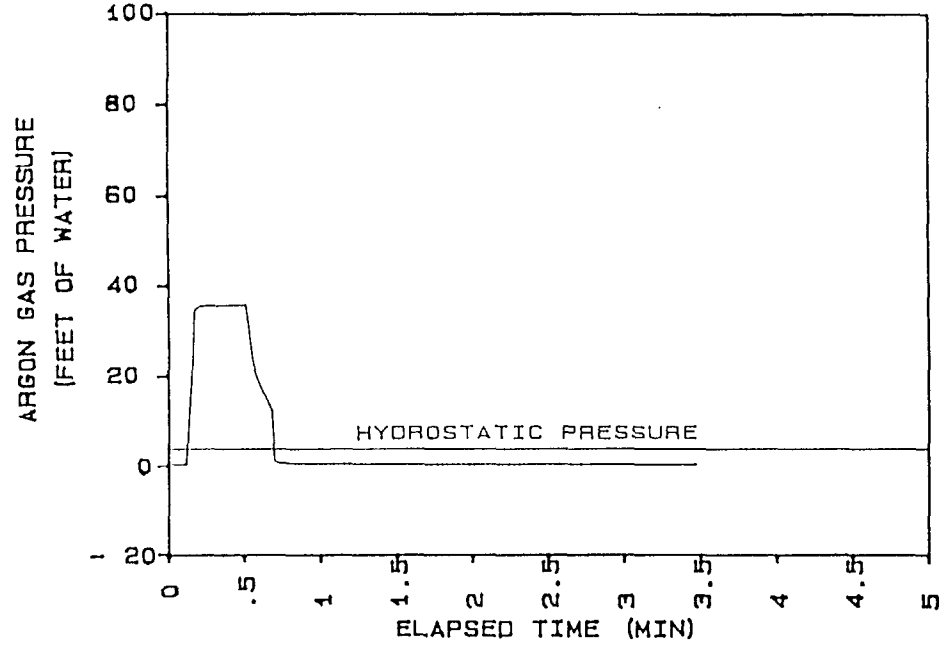
ELAPSED TIME (MIN)

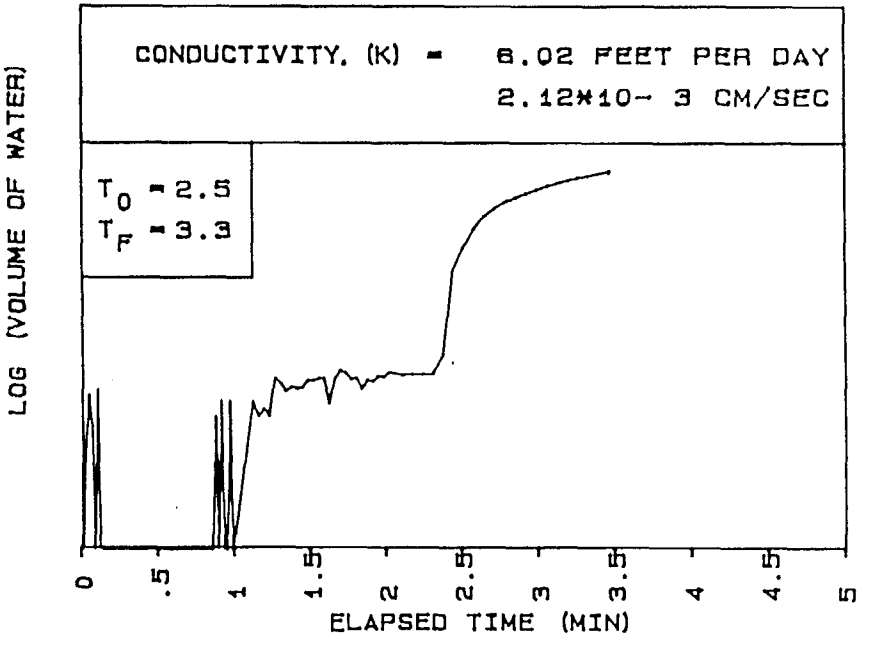
BECHTEL PARRIS ISLAND
LOCATION... 6K-14

VOLUME SAMPLE

HYDROCONE TEST



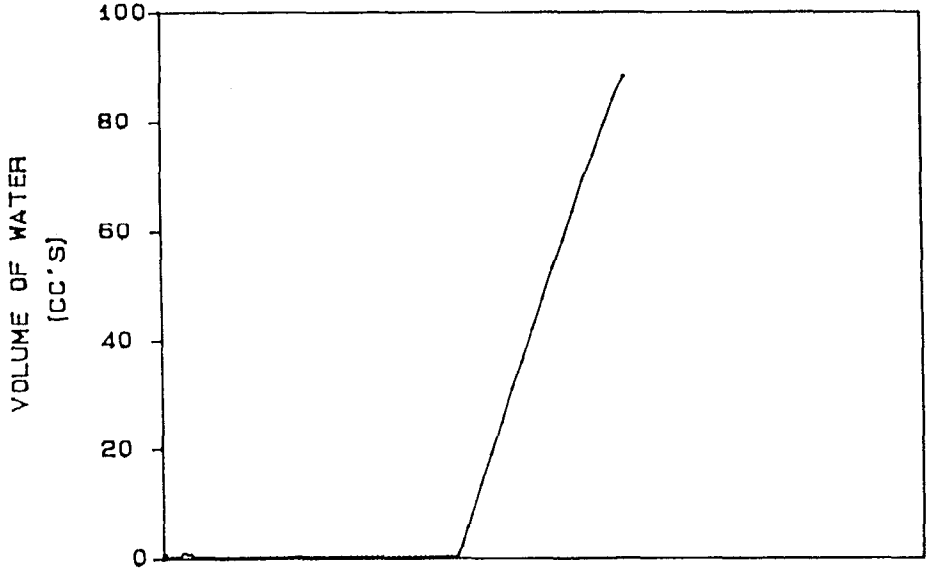


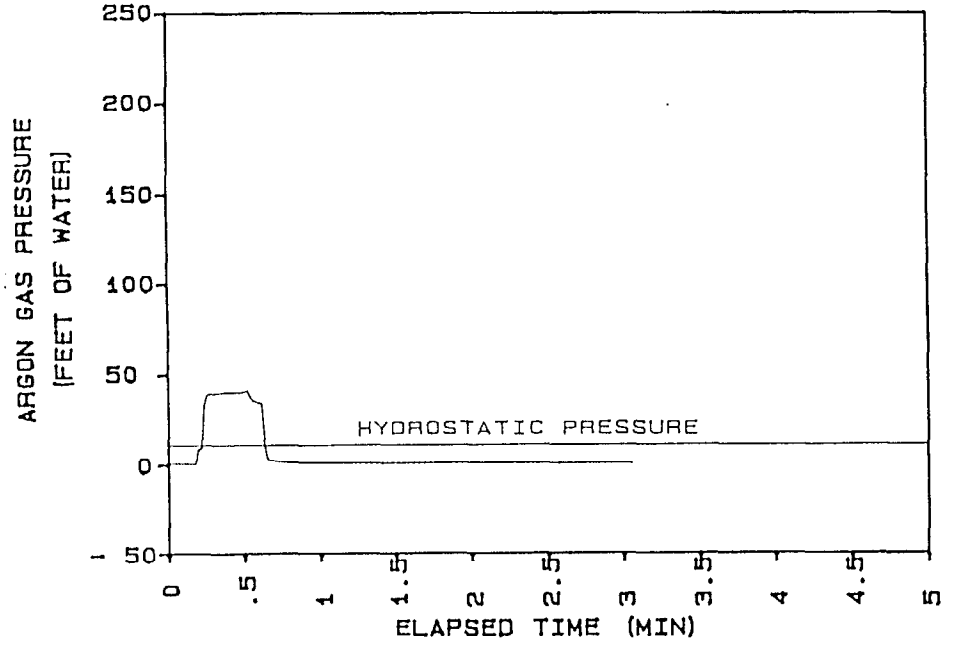


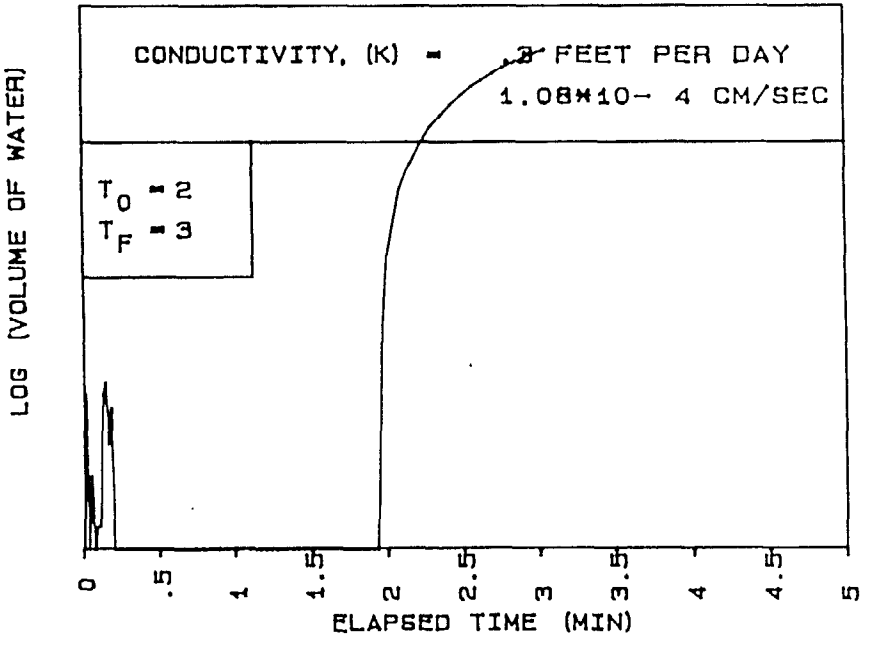
BECHTEL PARRIS ISLAND
LOCATION... 2L-9
TEST DATE
08: 10: 31 06-30-1996

SAMPLE DEPTH (FT) 9
GROUNDWATER DEPTH (FT) 5.5

HYDROCONE TEST



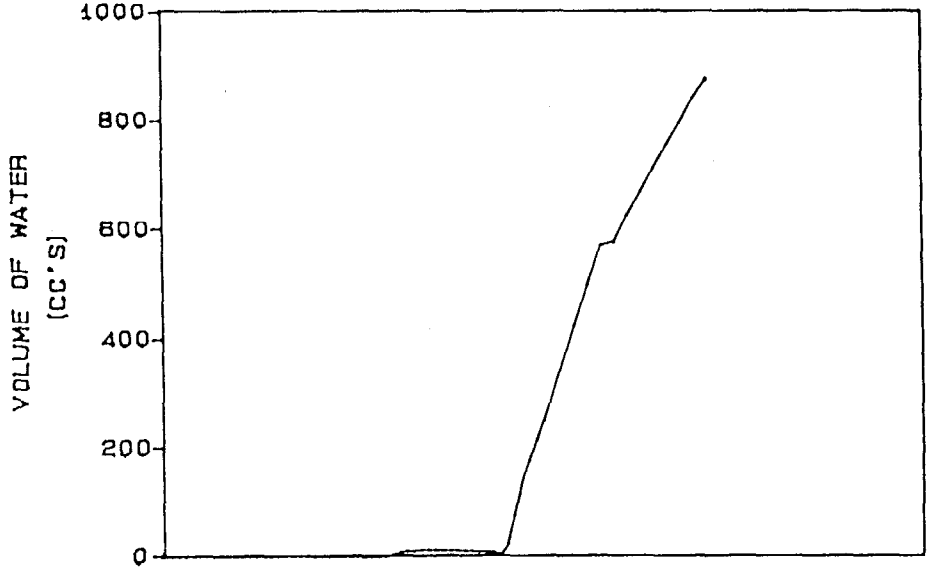


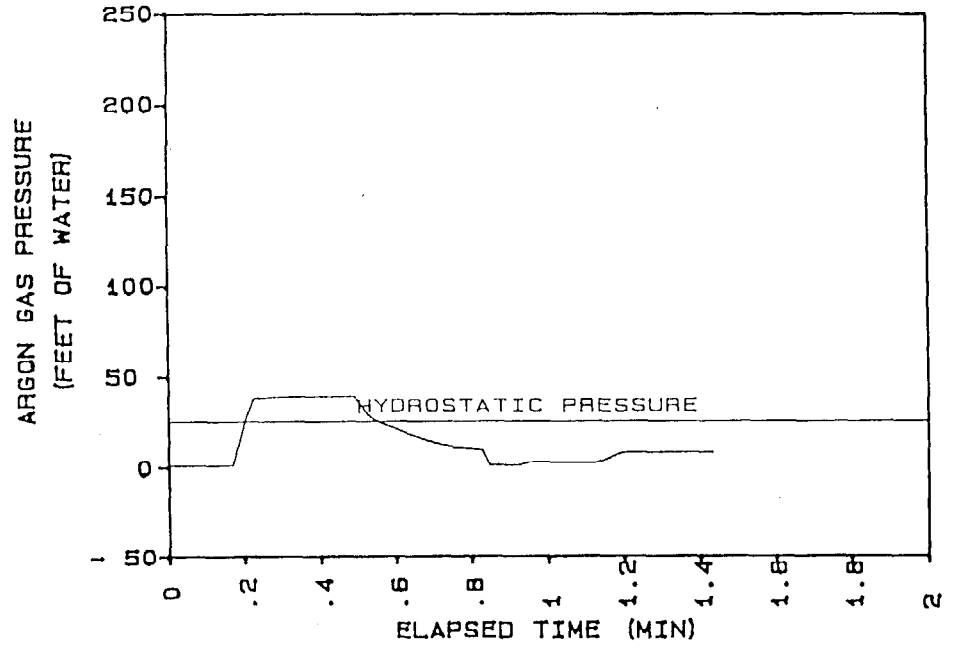


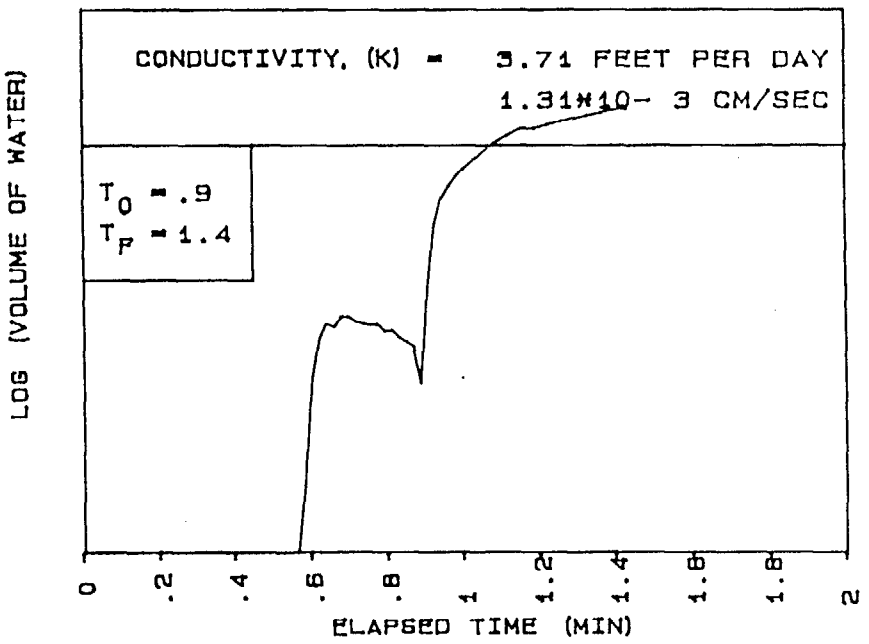
BECHTEL PARRIS ISLAND
LOCATION... 2L-16
TEST DATE
08: 45: 01 06-30-1996

SAMPLE DEPTH (FT) 18
GROUNDWATER DEPTH (FT) 5.5

HYDROCONE TEST



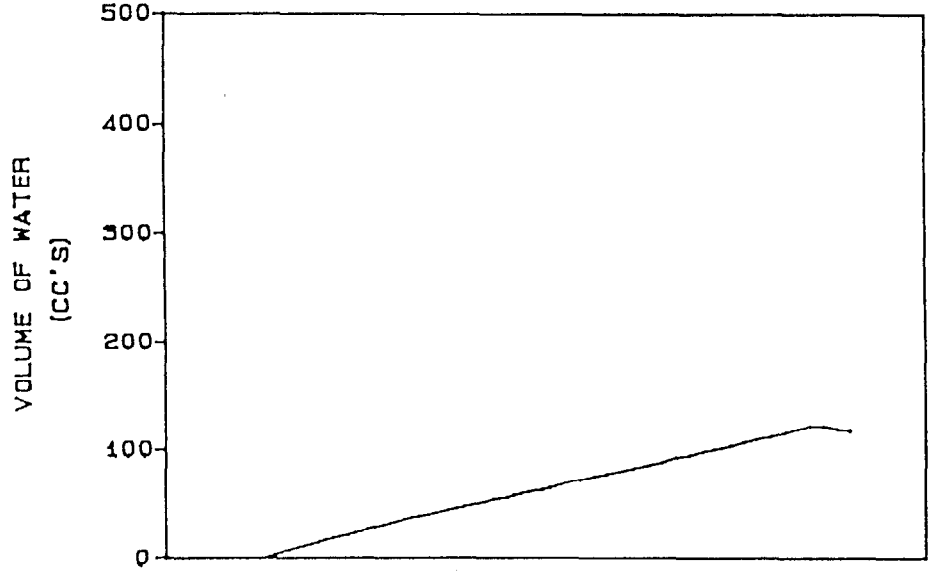


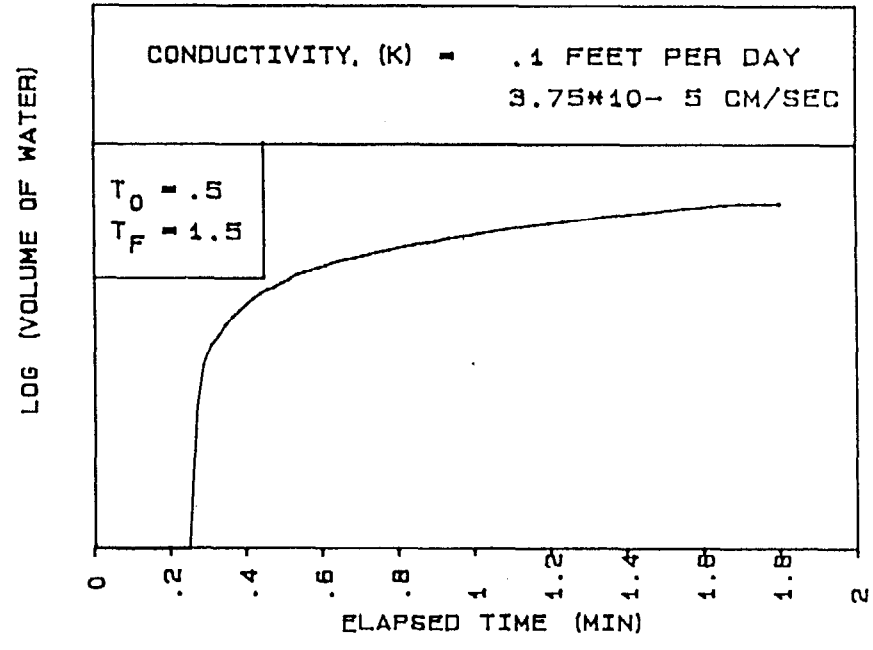


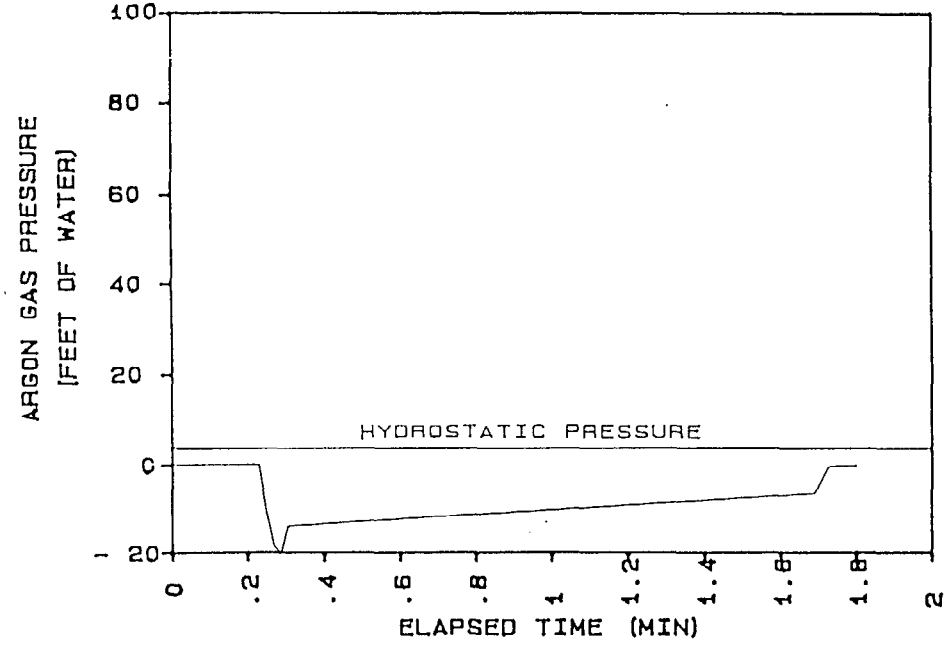
BECHTEL PARRIS ISLAND
LOCATION... 2L-30
TEST DATE
09: 27: 55 06-30-1996

SAMPLE DEPTH (FT) 30
GROUNDWATER DEPTH (FT) 5.5

HYDROCONE TEST







BECHTEL PARRIS ISLAND
LOCATION... 2M-9
TEST DATE
14: 03: 52 06-30-1996

SAMPLE DEPTH (FT) 9
GROUNDWATER DEPTH (FT) 5.5

PARRIS ISLAND MWR DRY CLEANER

GC Field VOA analysis

Analysis of VOAs from the groundwater at the Parris Island MCRD Dry Cleaner Facility was preformed using a HNU 311 portable gas chromatograph (GC) equipped with a 11.7 eV photo ionization detector (PID). The GC along with required supporting equipment was set up in a climate controlled office provided by the ROICC. A summary of the process is outlined below.

EQUIPMENT PREPARATION

Prior to using the GC for analysis, the following checks were performed. A new septa was installed in the injector port. This is done the previous night to allow for the septa to condition. The column head pressure was checked by means of the head pressure gage on the HNU, it read 8 psi for the MXT 502.2 capillary column being used for this analysis which is correct. The helium flow that exits the carbon trap was checked for a flow rate of 10 ml/min. All heat zones were checked, injector and detector were set to 100°C and the column oven was set to 60°C (when using the 11.7 eV PID do not exceed 125°C) to reach equilibrium. The retention time (Rt) windows were set from the Rt study for all compounds of interest. Base line was checked for stability. Printer paper was installed along with the printer pen. This check was preformed daily at a minimum, and any time a confirmation of an analytical result was felt necessary.

INDIVIDUAL SOLVENT PEAK IDENTIFICATION

Retention times (Rt's) of individual known solvent compounds were used as a baseline to identify each groundwater sample peak. These Rt's were determined by injecting a fixed amount of a known compound into 20 ml of ultra pure water contained in a 40 ml VOA vial. The vial was capped and shaken for one minute. The VOA vile was then placed into a water bath set to 35°C for 30 minutes to establish equilibrium between the head space and liquid phase. After the 30 minute equilibrium time was completed, a 1 ml head space sample was taken from the VOA vial and injected into the HNU GC. The Rt of the compound was then recorded. This procedure was repeated for all compounds of interest and fluorobenzene (surrogate). The Rt study was repeated once more on the next day. After the Rts were established for all compounds, a mixture containing the five compounds of interest and fluorobenzene were injected into the GC. This was for the purpose of identifying any problems with peaks co-eluting; all peaks were completely resolved, except for vinyl chloride.

Note: The data gathered for vinyl chloride should be treated as tentative identification only. Vinyl chloride (VC) is not very compatible to isothermal (single temperature) analysis with compounds that are higher boiling like tetrachloroethylene (PCE).

The VC volatility rate is near methanol's (the standard) volatility rate, thus making them difficult to differentiate.

CALIBRATION STANDARDS

A Chem Service 100 µg/ml Mix 5 (CS159319) made up in methanol lot number 165-64B was used as the parent standard to make up the 10 µg/l daily standard mixture (Mix 5) in organic free water. This daily standard was used to calibrate the HNU 311 GC prior to any sample analysis. The daily calibration standard contained the following compounds at the concentrations listed below when used at a 1/1 ratio of headspace to liquid volume:

Vinyl chloride	10 µg/l
Trans-1,2-Dichloroethylene (DCE)	10 µg/l
Cis-1,2-Dichloroethylene (DCE)	10 µg/l
Trichloroethylene (TCE)	10 µg/l
Tetrachloroethylene (PCE)	10 µg/l

A twenty (20) ml aliquot of organic free water was slowly added to a properly labeled 40 ml VOA vial by means of a calibrated pipet gun, followed by 2µl of the 100µg/ml parent standard and 1µl of the 200µg/ml fluorobenzene surrogate. The 40 ml VOA vial was than capped and shaken for one minute. After shaking the vial for one minute, the vial was placed cap side down into a water bath which had been set to 35°C. The standard remained in the 35°C water bath for thirty (30) minutes to allow the headspace to reach equilibrium. A 1 ml headspace sample was taken from the standard vial by means of a 1 ml gas tight syringe and injected into the GC. After the analysis was complete, the retention times of the chromatograph was compared with that of the RT window study to identify peaks of interest. With the area counts and concentrations of all peaks known, it was possible to assign response factors to the calibration standard.

SURROGATE FUNCTION

The surrogate's primary function is to confirm retention time, sample aliquoting, and injection consistency. Fluorobenzene was used as a surrogate, which was added to all standards, blanks, and samples at a concentration of 10 µg/l, unless otherwise noted. The percent recovery (%R) for all surrogates was calculated and reported. The fluorobenzene surrogate was not used for the purpose of correcting reported values.

MATRIX SPIKE

A matrix spike (MS) is used to identify matrix interferences which can effect the recovery of a given compound. The MS contained the following compounds at the concentrations listed below when used at a 1/1 ratio of headspace to liquid volume:

Vinyl chloride	10 µg/l
Trans-1,2-Dichloroethylene (DCE)	10 µg/l
Cis-1,2-Dichloroethylene (DCE)	10 µg/l
Trichloroethylene (TCE)	10 µg/l
Tetrachloroethylene (PCE)	10 µg/l

An MS was preformed on designated samples, and their recoveries were calculated and reported.

SAMPLE PREPARATION

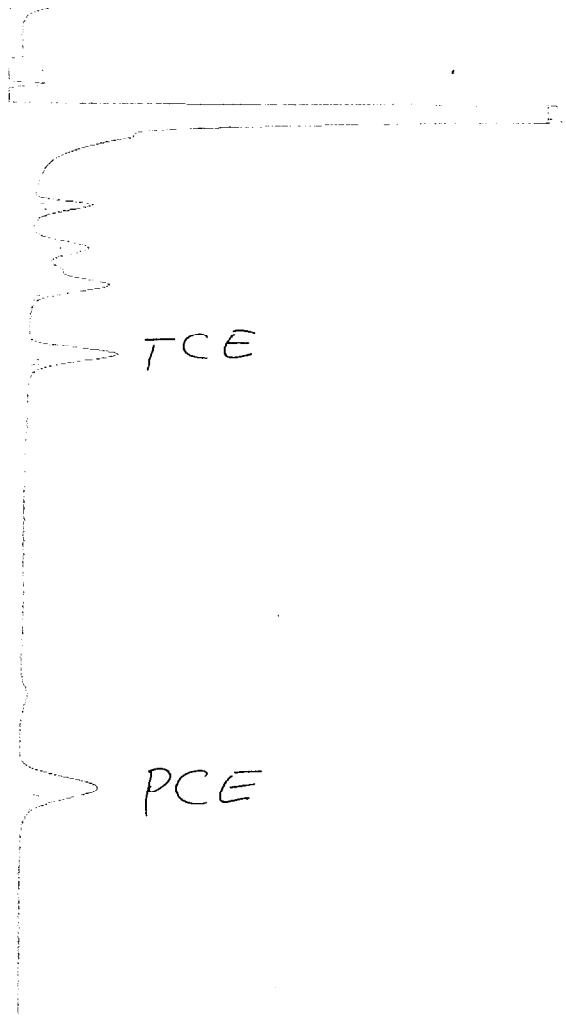
A VOA sample in a labeled 40 ml vial with no headspace packed in ice to chill to 4°C was received by the field lab. The sample was split into two equal parts to give a 1/1 ratio of headspace and liquid sample. A twenty (20) ml aliquot of sample was slowly added to a properly labeled 40 ml VOA vial by means of a calibrated pipet gun, followed by 1µl of the 200µg/ml fluorobenzene surrogate. The 40 ml VOA vial was then capped and shaken for one minute. After shaken, the vial was placed cap side down into a water bath which had been set to 35°C. The sample remained in the 35°C water bath for thirty (30) minutes to allow the headspace to reach equilibrium. A 1 ml headspace sample was taken from the sample vial by means of a 1 ml gas tight syringe and injected into the GC. By comparing the area of an unknown peak (compound) having a given retention time with the response factors of known standards having the same retention time, it was possible to calculate the concentration of the unknown peak (compound).

SAMPLE DILUTIONS

Samples that had compounds which exceeded the calibration limits were diluted. A 10X dilutions was made by injecting into the GC a 100 µl headspace taken from a sample vial that was properly prepped at equilibrium. A 100X dilutions was made by injecting into the GC a 10 µl headspace taken from a sample vial that was properly prepped at equilibrium. Some samples had data reported from two analysis. This was due to a dilution requirement for part of the compounds found. Compound concentrations are always reported on the undiluted sample when dilutions are not required, unless the diluted value appears to be more accurate based on chromatograph and integrator interpretation.

SAMPLE ANALYTICAL RESULTS

The GC provided analytical data in the form of a chromatograph which included the Rt and area for all peaks. This data was compared to the calibration standard to identify the peaks for the compounds of interest. The area and concentration of the calibration standard was used to establish a mathematical ratio (response factor) which was used to calculate the concentration of each compound of interest in each sample. Retention time drift and instrument stability was monitored by means of a surrogate (fluorobenzene) added to each sample.



ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
Cust. 1206

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		NO	Surr
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~ 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/18/96

CAL. STD.: N/A
uncalibrated

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry Johnson

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Helium (3)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL ~~INJ~~: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/18/96

CAL. STD.: UnCalibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

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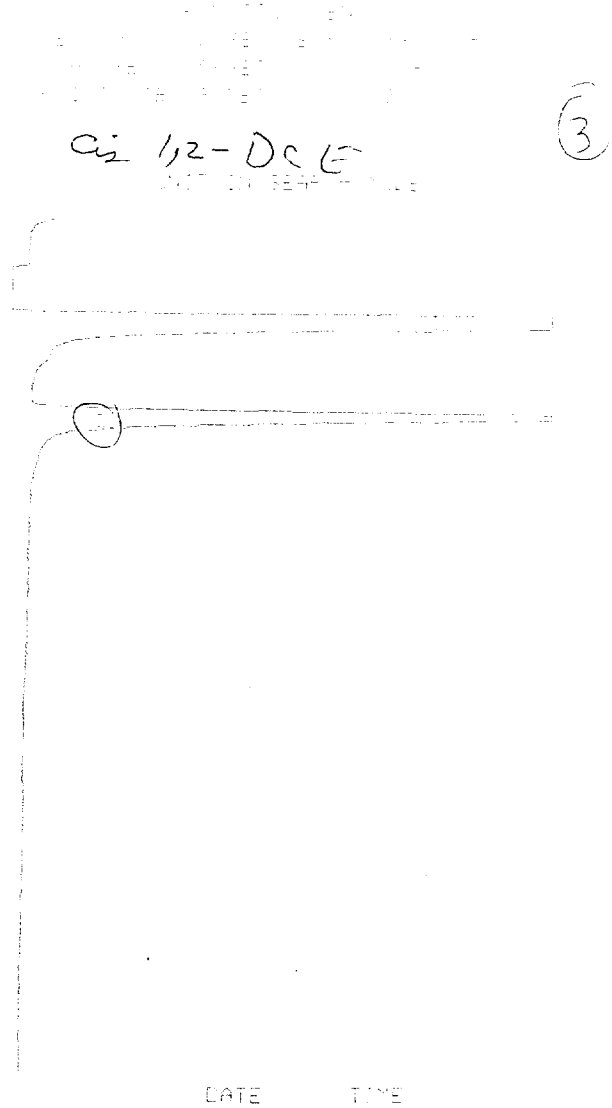
ANALYZED BY: Jimmy Johnson



ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Cis 1,2-DCE RT

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %I
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		RRT	2
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1M

SAMPLE MATRIX: SOIL WATER

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/18/96

CAL. STD.: UnCalibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. 1 Ml headspace sample was withdrawn from the vi and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

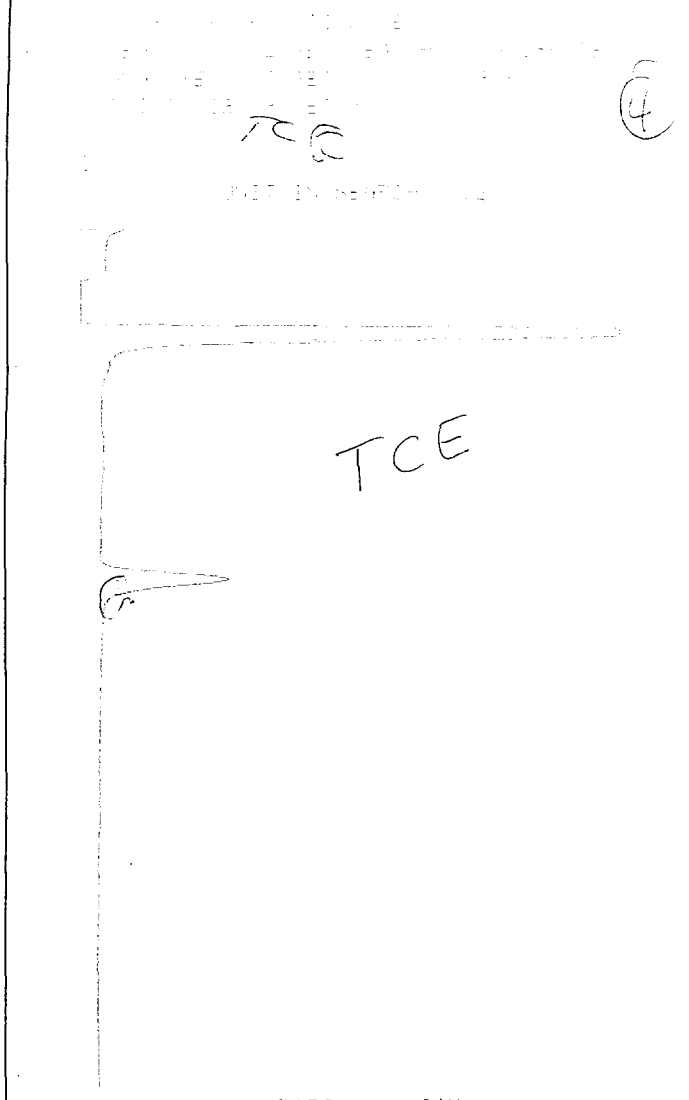
- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY:



ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. TCE RRT

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		4.17	R
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1M
SAMPLE MATRIX: SOIL WATER

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/18/96

CAL. STD.: non-Calibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. 1 Ml headspace sample was withdrawn from the vi and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		RT	3.4
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/18/96

CAL. STD.: un-Calibrated RT Study

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

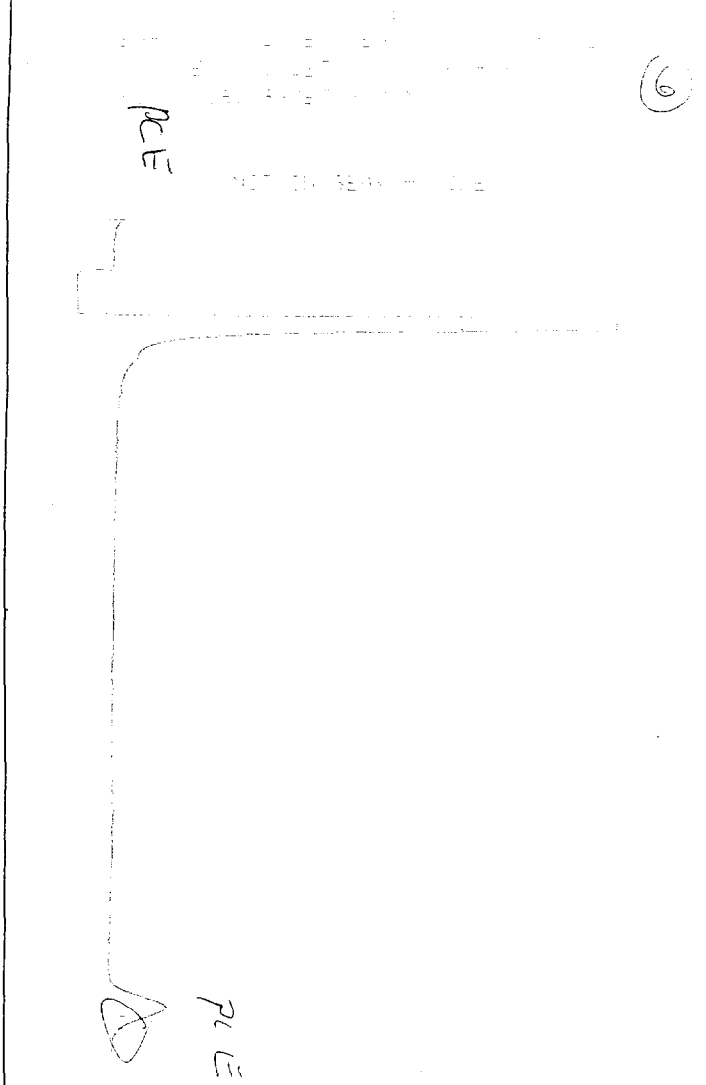
- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson



ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
PCE

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		RT	9.4

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/18/96

CAL. STD.: uncalibrated RT Study

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

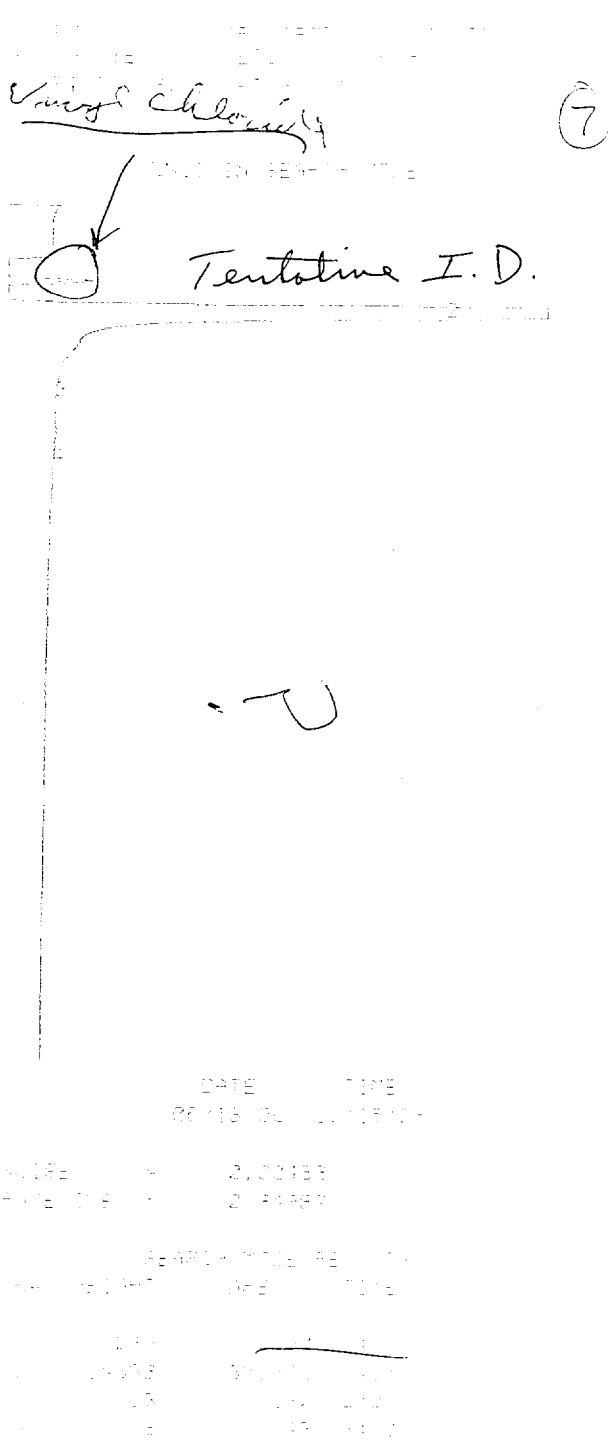
- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson



ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Vinyl Chloride

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		RT	0.0
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/18/96

CAL. STD.: Un Calibrated RT Study.

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson

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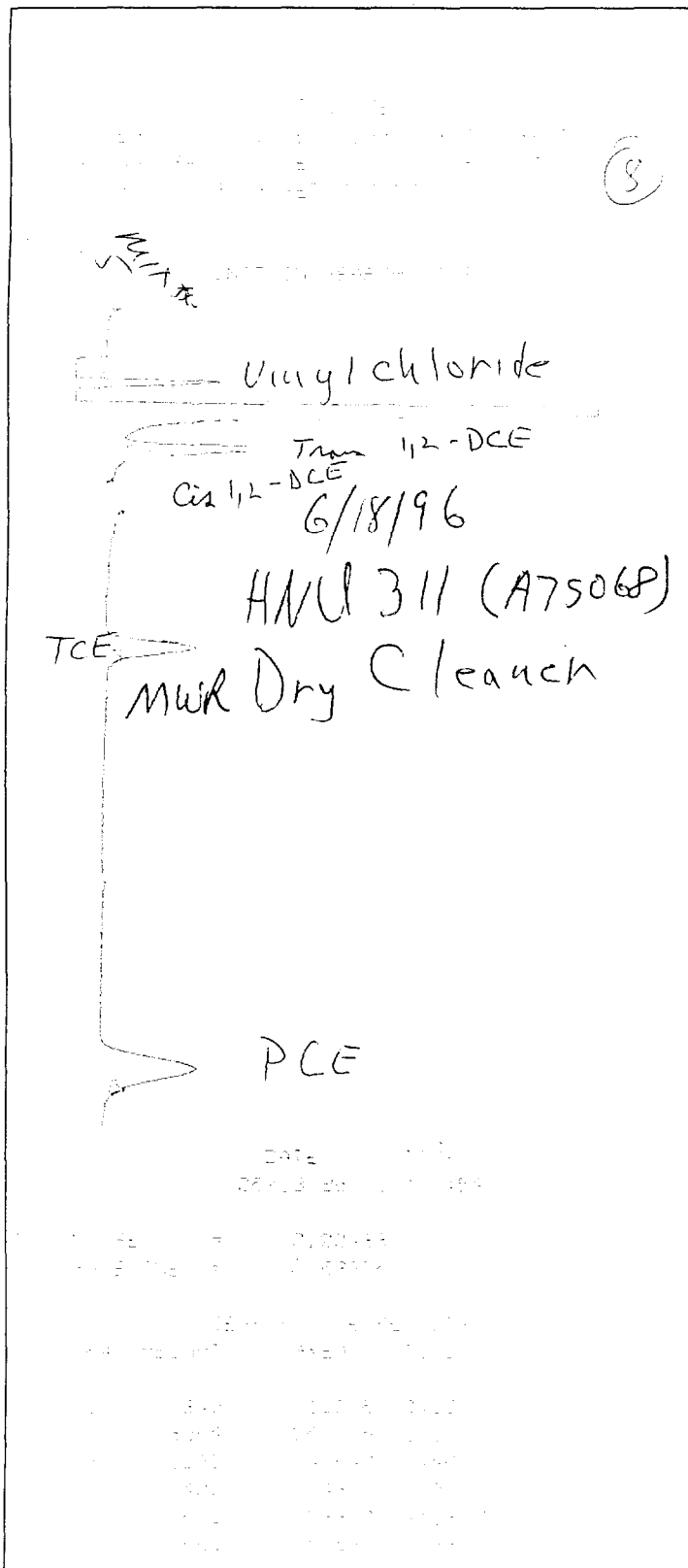

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 10 µg/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %I
Vinyl Chloride		10T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	Fluo Ge N/A
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/18/96

CAL. STD.: Calibration STD #8 6/18/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. 1 Ml headspace sample was withdrawn from the vi and injected into the GC.

§ Surrogate concentration at ~~10~~ 0 7/27/96 80 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

6/10A20-13.5

1.4C

Soil

PCE

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 6/10A20-13.5

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		<5	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml

SAMPLE MATRIX: (SOIL) WATER

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/18/96

DATE ANALYZED: 6/18/96

CAL. STD.: #8 6/18/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jimmy Johnson

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
6/0 A20 -13.5'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		<5	

SAMPLE TEMP: 35 °C VOL. INJ: 1µ
SAMPLE MATRIX: (SOIL) WATER

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/18/96

DATE ANALYZED: 6/18/96

CAL. STD.: #8 6/18/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. 1 Ml headspace sample was withdrawn from the vi and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jimmy Johnson

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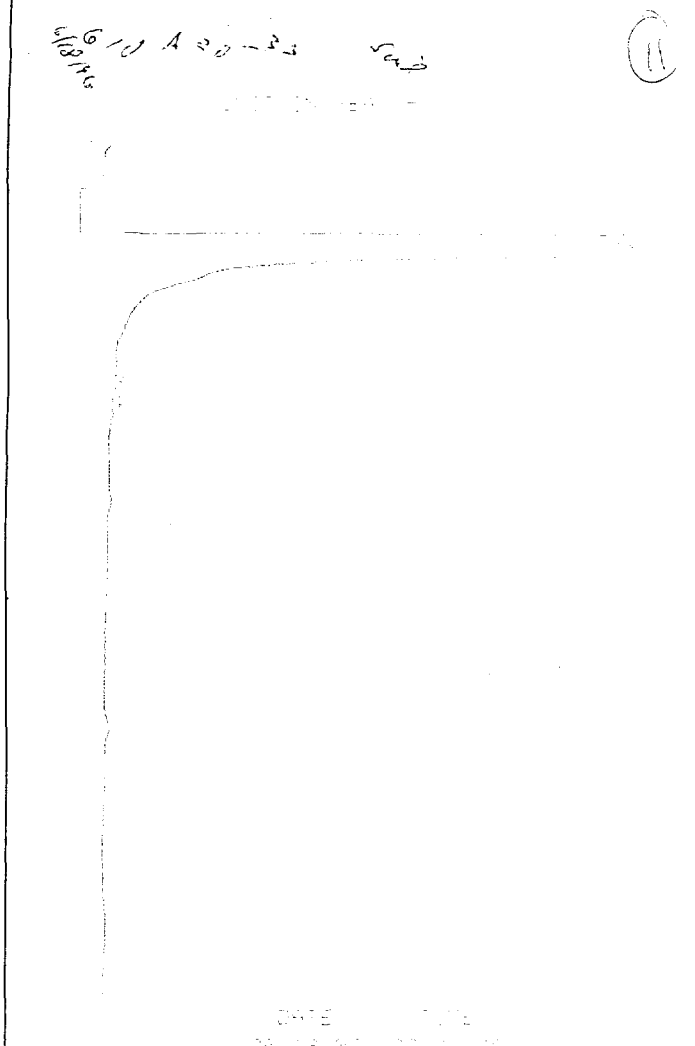

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
6/0A20-33'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1µl
SAMPLE MATRIX: (SOIL) WATER

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/18/96

DATE ANALYZED: 6/18/96

CAL. STD.: #8 6/18/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jim Johnson

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Fluoro Benzene

(12)

Fluorobenzene

DATE TIME

6/18/96

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (1)
Fluorobenzene

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		RT	3.4
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/18/96

CAL. STD.: Un-Calibrated RT STUDY

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson

Cust# 1206 Inc 2 of 5

(1)

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

(1)

*** SAMPLE ID.
Cust 1206

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	Not Added
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/19/96

CAL. STD.: not calibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (2) Vinyl Chloride 10ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		0.57	RT
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL ~~WATER~~

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/19/96

CAL. STD.: Un calibrated RT STUDY

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

TCE 10 µg/l MW Bldg

TCE

TCE

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. TCE @ 10 µg/l (3)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		4.14	RT
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1uC
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/19/96

CAL. STD.: Un Calibrated RT Study

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

BDB

ANALYZED BY: [signature]

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Fluorobenzene @ 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		3:39	RT
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. INJ: 1 ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/19/96

CAL. STD.: on Calibration RT Study

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

DD

ANALYZED BY: [signature]

(5)

cis 1,2-DCE 10ug/L
1ML @ 60°C

Q

Cis 1,2-DCE

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Cis 1,2-DCE @ 10 ug/L (5)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		2:25	RT
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: n/a

DATE ANALYZED: 6/19/96

CAL. STD.: Uncalibrated RT Study

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. O 7/27/96 DD

§ Surrogate concentration at ~~10~~ µg/l.

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

8DD

ANALYZED BY: Jerry D. Johnson

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Trans 1,2-DCE @10 ug/l (6

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		1:44	RT
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/19/96

CAL. STD.: Un Calibrated RT Study

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 7/27/96 DDB

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

PCE 10-ug/l 1ml @ 30?

(7)

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. PCE @10 ug/l (7)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		9.30	RT

SAMPLE TEMP: 35 °C VOL. ~~INJ~~: 1mL

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/19/96

CAL. STD.: uncalibrated RI Study

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. @ 7/27/96 BH

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

DW

ANALYZED BY: Jerry D. Johnson

PCE

610K13-15 (9)
610K13-15-02
1ml
30 min at 35°C water bath
vinyl chloride <
Fluorobenzene 9.75 ug/l
98%R

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 610K13-15' (9)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		9.75	98
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/19/96

CAL. STD.: #4 6/19/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

DDD

ANALYZED BY: [signature]

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX#5 @10 mg/l (8)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		/	NO surr.
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/19/96

CAL. STD.: _____

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l. 7/22/96 DJJ

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

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DJJ

ANALYZED BY: Jerry D. Johnson

1ML-8 @ 60°C
MWR Dry Cleaner
6/19/96 Mix #5 1ML @ 60°C
HNU 311
(A75068) 10 mg/l @
Vinyl Chloride
~~Fluorobenzene~~
Trans 1,2-DCE
Cis 1,2-DCE (Calibration 6/19/96)
TCE
PCE
0
STD 8 ppm

(10)

(615 E15-6') - 4 C

(Sample was analyzed with out dilution time on heat)

Vinyl Chloride > 5.4 ug/l

> 230 ug/l Trans 1,2-DCE

Cis 1,2-DCE

> 9200 ug/l

TCE > 13.3 ug/l

PCE need conf

Vinyl Chloride

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (10)

615 E15-6'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		>230	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		>9300	
Fluorobenzene surrogate §		7/29/96 ~~133~~	DO not report
TCE (Trichloroethylene)		13.3	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/19/96

DATE ANALYZED: 6/19/96

CAL. STD.: #8 6/19/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

DO8

ANALYZED BY: [signature]

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Clean Out (11)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~: 1ml C

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/19/96

CAL. STD.: #8 6/19/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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ANALYZED BY: [signature]

(B)

100X
10 ml

Vinyl Chloride 106 µg/l

Trans 1,2-DCE 164 µg/l

Cis 1,2-DCE
8,617 µg/l

(100 X)

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

(12)

*** SAMPLE ID.
615 E15-6'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		164	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)	86	8,617	
Fluorobenzene surrogate §		—	diluted out
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 10ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 100X

DATE SAMPLED: 6/19/96

DATE ANALYZED: 6/19/96

CAL. STD.: #8 6/19/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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JDJ

ANALYZED BY: Jerry D. Johnson

(12)

1mL 615 E15-22 @ 21' @ 60°C 10min SU @ 35°C

Vinyl Chloride 2.06 ug/l

Trans 1,2-DCE 1.07 ug/l

Fluorobenzene 6.47 ug/l
(surrogate) 65 %R

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

(13)

*** SAMPLE ID.
615 E15-22'&21'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		1.07	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		6.47	65
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/19/96

DATE ANALYZED: 6/19/96

CAL. STD.: #8 6/19/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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808

ANALYZED BY: Jerry D. Johnson

(14)

1ML 615 E15-30' (G 60°C
30 min in water bath @ 35°C

9.8 ug/l Fluorobenzene (surrogate)
98 %R

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 615 E15-30' (14)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		9.8	98
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/19/96

DATE ANALYZED: 6/19/96

CAL. STD.: #4 6/19/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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DDB

ANALYZED BY: [signature]

100X 615-E15-13 (15)
20ml in waterbath at 35°C

All
(Non-detect at
100X

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (15)
615 E15-13

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 100

DATE SAMPLED: 6/19/96

DATE ANALYZED: 6/19/96

CAL. STD.: #8 6/19/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. ○ 7/27/96 DD

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

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DD

ANALYZED BY: Jing D. Johnson

(16)

615 E15-37' @ 60°C / 1 ml in vials only 20 ml in 37°C

Vinyl chloride 0.07 µg/l

Trans 1,2-DCE 0.26 µg/l

7.29 µg/l 73%R

Fluorobenzene (surrogate)

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (16)
615 E15-37'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		<.5	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		7.29	73
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/19/96

DATE ANALYZED: 6/19/96

CAL. STD.: #8 6/19/96 / #4 6/19/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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DUP

ANALYZED BY: Jerry D. Johnson

615 E15 -13 @ 60°C 8psi
~ 6 min. 14 @ 35 °C

(17)

cis 1,2-DCE
38.5 µg/l

Fluorobenzene 10.6 µg/l
(surrogate) 106%

TCE 21.7 µg/l

(see 6/20/96
17:51:25
reanalysis)

PCE 12.0 µg/l

3.39
TCE

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 615 E15 -13' (17)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		38.5	
Fluorobenzene surrogate §		10.6	106
TCE (Trichloroethylene)		21.7	
PCE (Tetrachloroethylene)		12.0	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/19/96

DATE ANALYZED: 6/19/96

CAL. STD.: #8 6/19/96 #14 6/19/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

DOD

ANALYZED BY: Jerry D. Johnson

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BLPR. M
7-PRINT LIB. 8-SETUP DUMP 9-

1 MC mix 5 to Fluorobenzene
@ 60 °C IN SEARCH MODE
10 ppb for 5 minutes
10 ppb for 5 minutes

6/20/96
HNU 311 (A75068)
MWR Dry Cleaners

DATE TIME
06/20/96 07:36:33

NOISE = 0.00488
BASELINE = 0.89621

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	2185	34833	0:54
2	88	1476	1:17
3	548	13032	1:47
4	157	4671	2:28
5	247	8472	4:13
6	201	12223	5:42

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX#5 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/20/96

CAL. STD.: MC calibration

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY:

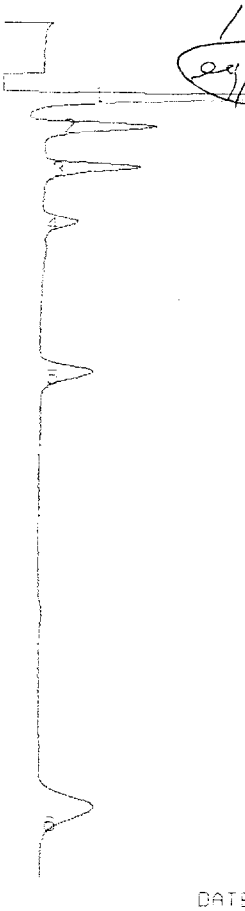
C:\WP51\NAVY\PARRIS.GRP

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BLDG ID
7-PRINT LIB. 8-SETUP PUMP 9-?

2nd std from bottle 10 ug/l

UNIT IN SEARCH MODE

15 min mix 5 eq/heat



DATE TIME
06/22/96 07:48:45

NOISE = 0.00488
BASELINE = 0.81807

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	2400	52352	0:54
2	818	21734	1:16
3	686	19324	1:46
4	227	6821	2:27
5	343	13636	4:18
6	359	25058	5:39

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %F
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL ~~INJ.~~: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/20/96

CAL. STD.: uncalibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

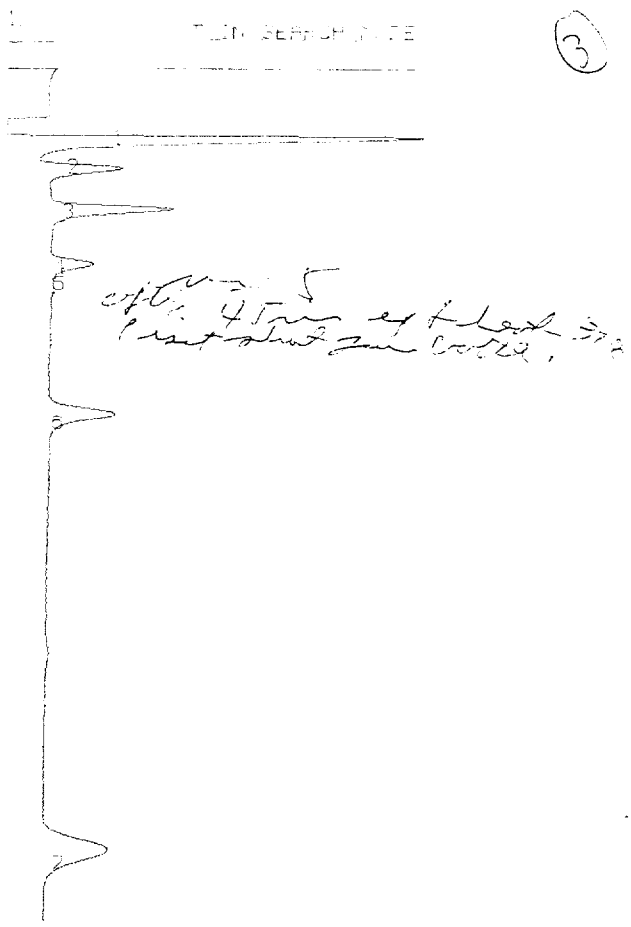
< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson

C:\WP51\NAVY\PARRIS.GRP



(3)

CAL SEARCH MODE

CATE TIME
05/20/96 08:05:55

NOISE = 0.00244
BASELINE = 0.84248

SEARCH MODE RESULTS

PK=	HEIGHT	AREA	TIME
1	2830	58727	0:54
2	529	12696	1:16
3	819	24398	1:48
4	313	9271	2:26
5	3	62	2:45
6	468	19156	4:17
7	412	28053	8:38

------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP CLMP 9-

UNIT IN SEARCH MODE

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX 5 @10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~ 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/20/95

CAL. STD.: un calibrated

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson

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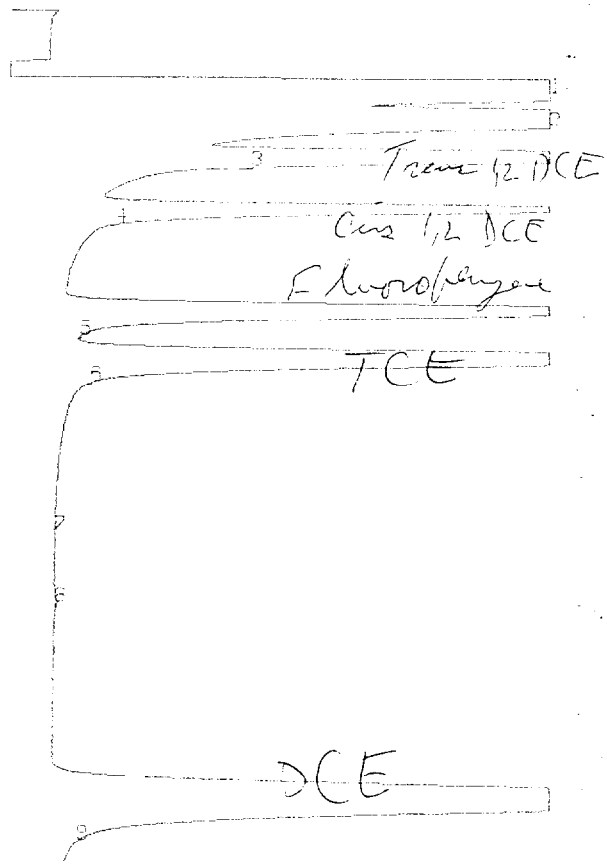
(100 ppb)

1ML [illegible] 5 ml Chloroform

@ 60°C

1/2 hr. [illegible] 35°C

UNIT IN SEARCH MODE



DATE TIME
06/20/96 09:51:03

NOISE = 0.00428
BASELINE = 0.78693

SEARCH MODE RESULTS

Pk#	HEIGHT	AREA	TIME
1	51874	1431232	0:51
2	31854	1031040	1:16
3	12436	413321	1:47
4	4683	122131	2:20
5	5712	268854	3:44
6	8586	338340	4:12
7	11	173	6:04
8	13	317	7:16
9	9893	336730	9:42

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 100 µg/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		100	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		100	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		100	
Fluorobenzene surrogate §		100	
TCE (Trichloroethylene)		100	
PCE (Tetrachloroethylene)		100	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~: 1 ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/20/96

CAL. STD.: uncalibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jerry Johnson

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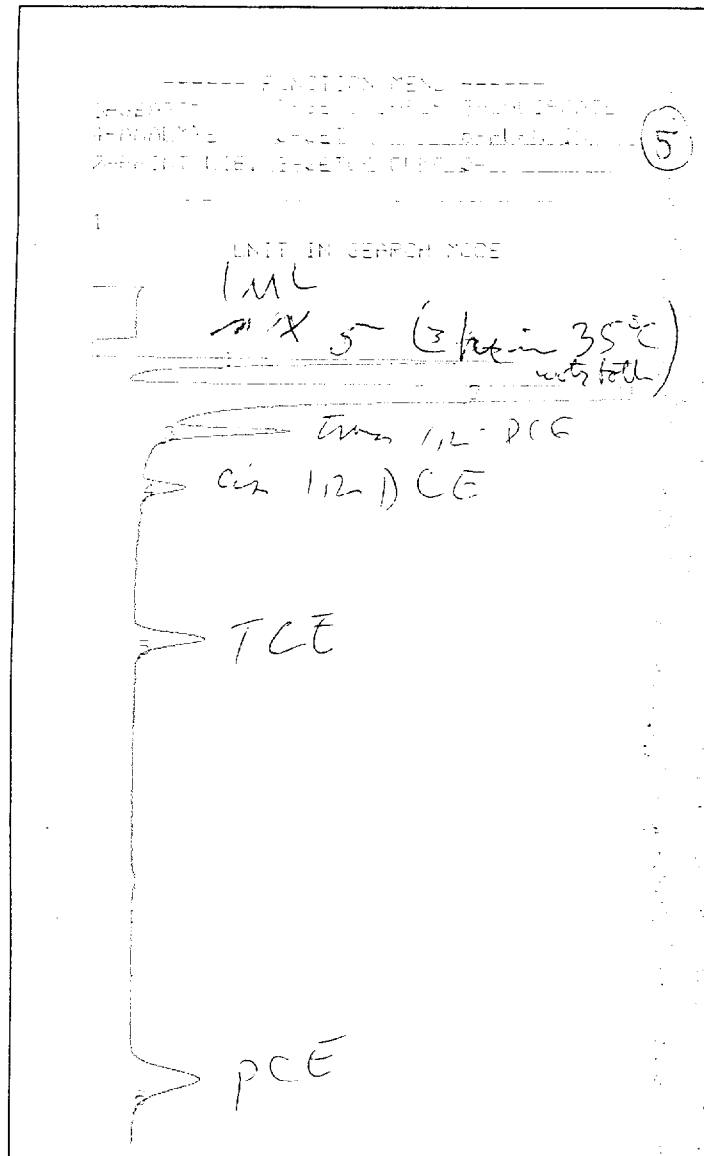

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
MIX #5

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §			nc Sur
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ.: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/20/96

CAL. STD.: Uncalibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at ~~10~~ 0 7/27/96 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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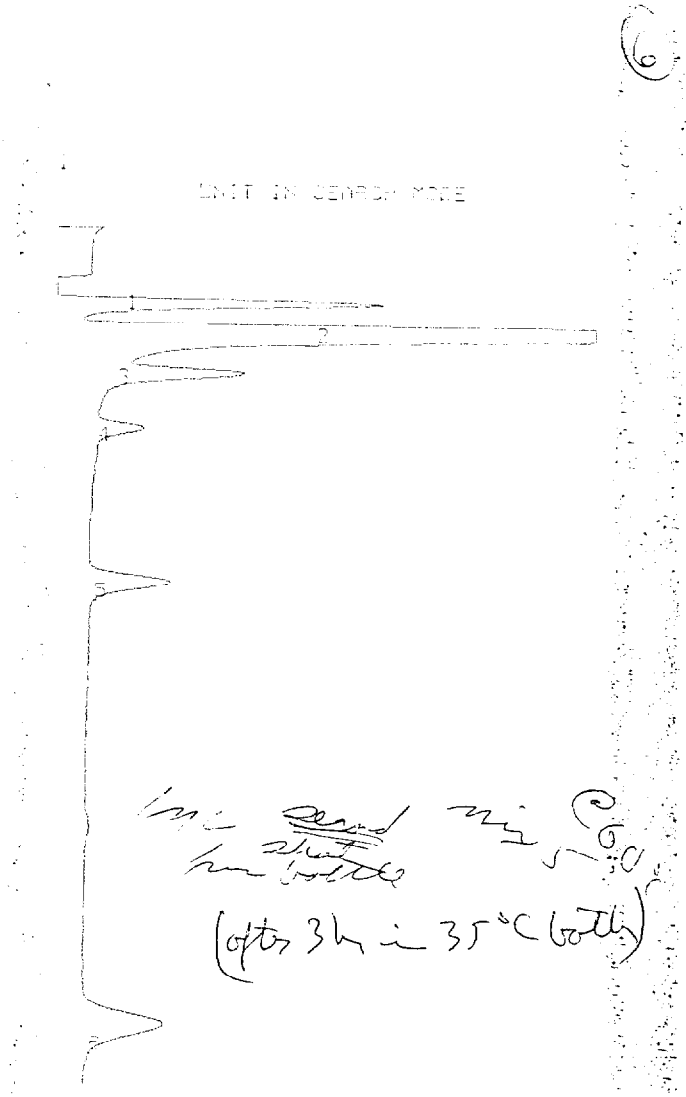
ANALYZED BY: Jimmy Johnson



inj. aerated min @ 35°C
shut in bottle
(after 3hr in 35°C bath)

DATE TIME
06/20/96 10:43:23

NOISE = 0.00488
BASELINE = 0.71531

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	2128	52606	3:37
2	10887	382458	1:13
3	1139	44321	1:48
4	373	14702	2:30
5	573	26201	4:22
6	334	10176	8:47

------- PLOTTER MENU -------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BLANK IN
7-PRINT LIB. 8-SETUP CLMP 9-

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MW #5 @10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §			NC Sur
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ.: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/19

DATE ANALYZED: 6/20/96

CAL. STD.: un-Calibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC. O 7/27/96 DH

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jerry Johnson

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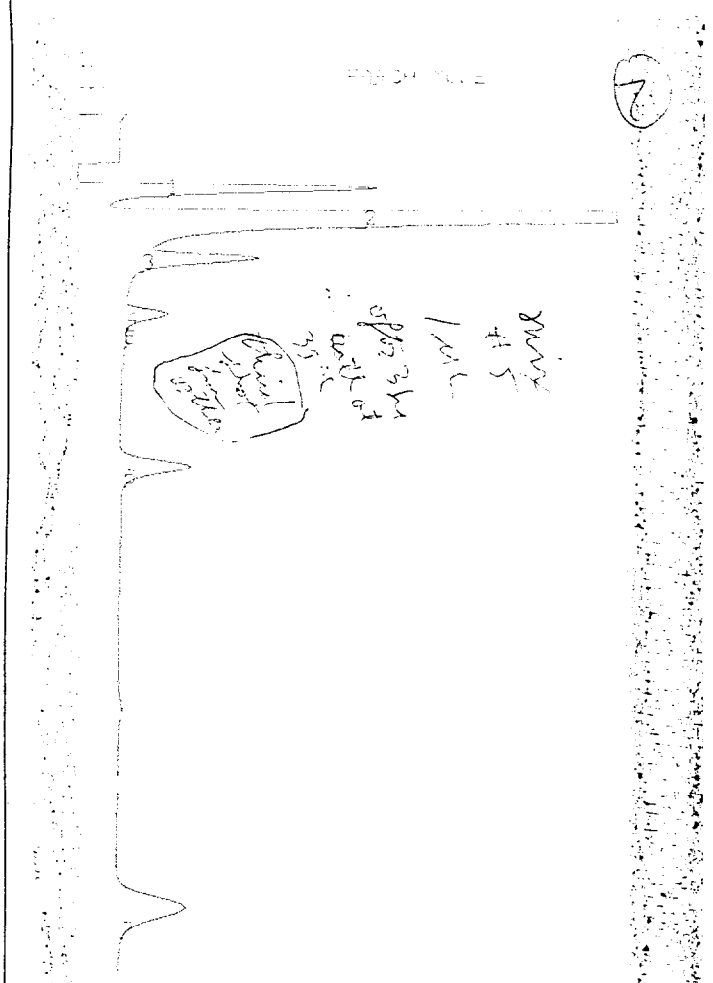

DATE TIME
06/20/96 11:03:24

NOISE = 0.00488
BASELINE = 0.00830

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	1832	15706	0:53
2	8311	316070	1:10
3	1037	32443	1:47
4	361	13609	2:26
5	92	3553	2:48
6	522	21120	4:13
7	483	36862	8:43

FUNCTION MENU
1-REPROM 2-SEARCH/REPROM 3-CALIBRATE
4-ANALYZE 5-SETUP 6-SET
7-PRINT LIB. 8-SETUP TIME 9-

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @10 µg/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §			n/c Surr
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL ~~INJ.~~: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/14

DATE ANALYZED: 6/20/96

CAL. STD.: un calibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson

6/20/96 HNU311 (PID EB)
MWR Dry Cleaner
1mL Mix 5 + Fluoro (8)
@ 60°C in 35mL both 1/2 hr.

LAST IN SEARCH MODE
(all at 10 ng/l)
Vinyl chloride
Trans. 1,2-DCE
Cis 1,2-DCE
Fluorobenzene (surrogate)
TCE
PCE

DATE TIME
06/20/96 11:36:17

NOISE = 0.00188
BASELINE = 0.73003

SEARCH MODE RESULTS
PK# HEIGHT AREA TIME
all at 10 ng/l

PK#	HEIGHT	AREA	TIME	
1	3316	82648	0:58	Vinyl chloride
2	8107	251313	1:16	
3	909	30617	1:48	Trans 1,2-DCE
4	286	11120	2:03	Cis 1,2-DCE
5	380	15844	3:45	Fluorobenzene (surr)
6	465	20370	4:21	TCE
7	448	20166	5:47	PCE

------ FUNCTION MENU ------
1-SEARCH 3-SEL.SEARCH 5-CALIBRATE
4-ANALYSE 6-SETUP 8-BLANK IN
7-PRINT LIB. 9-SETUP (LMF 8-

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
MIX#5 @10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/14

DATE ANALYZED: 6/20/96

CAL. STD.: Cal STD

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: [signature]

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100 ul shot (9)

Purge 3 min @ 60°C / Bake @ 35°C 30 min.

UNIT IN SEARCH MODE

(10X)

Vinyl Chloride 2.97 ug/l

Trans 1,2-DCE 61.9 ug/l

Cis 1,2-DCE 2,527 ug/l (2.5 ppm)

TCE 20828 ug/l (20.8 ppm)

PCE 12215 ug/l (12.2 ppm)

DATE TIME
06/20/96 11:43:07

NOISE = 0.00488
BASELINE = 1.99127

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	283	3438	0:1.3
2	1823	[illegible]	1:1.8
3	88	1133	1:4.1
4	318	18548	1:4.7
5	10332	261481	2:10.8
6	40	1033	2:4.5
7	107470	4025807	4:1.6
8	34830	[illegible]	8:1.9

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
322 D09 - 7.5'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		61.9	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)	2.5	2,527.	
Fluorobenzene surrogate §			dilution
TCE (Trichloroethylene)	20.8	20828	
PCE (Tetrachloroethylene)	12.2	12215	

SAMPLE TEMP: 35 °C VOL. INJ: 100 µl
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 10X

DATE SAMPLED: 6/20/96

DATE ANALYZED: 6/20/96

CAL. STD.: #8 6/20/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

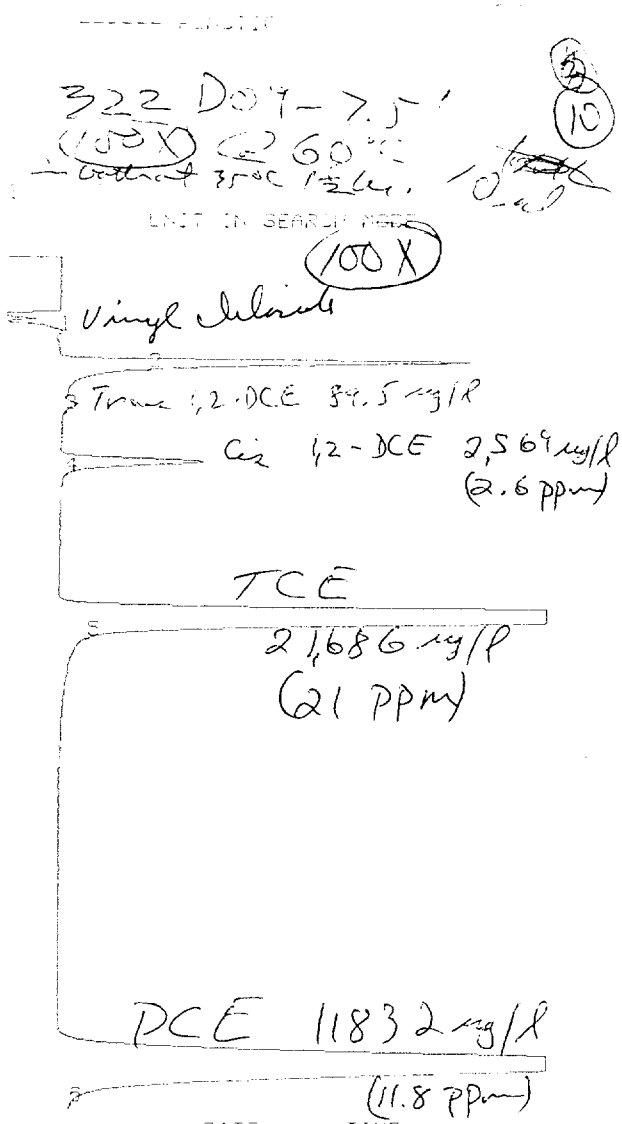
- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson



ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
322 D09 -7.5'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		89.5	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)	2.6	2,569	
Fluorobenzene surrogate §		/	Lab a
TCE (Trichloroethylene)	21.0	21,686	
PCE (Tetrachloroethylene)	11.8	11832	

SAMPLE TEMP: 35 °C VOL. INJ: 10µ
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 100 X

DATE SAMPLED: 6/20/96

DATE ANALYZED: 6/20/96

CAL. STD.: #8 6/20/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy Johnson

322 D09-13 1/4/6
60 35°C 30 min

UNIT IN SEARCH MODE

Vinyl Chloride

Fluorobenzene 5.9 ug/l 59%R

TCE 1.6 ug/l

DATE TIME
06/20/96 12:18:48

NOISE = 0.00488
BASELINE = 0.72038

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME	
1	5842	124022	1:16	
2	225	5376	3:46	Fluorobenzene
3	72	3301	4:27	TCE

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-TERM IN
7-PRINT LIB. 8-SETUP DUMP 9-

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
322 D09-13'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		5.9	59
TCE (Trichloroethylene)		1.6	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/20/96

DATE ANALYZED: 6/20/96

CAL. STD.: # 8 6/20/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy Johnson

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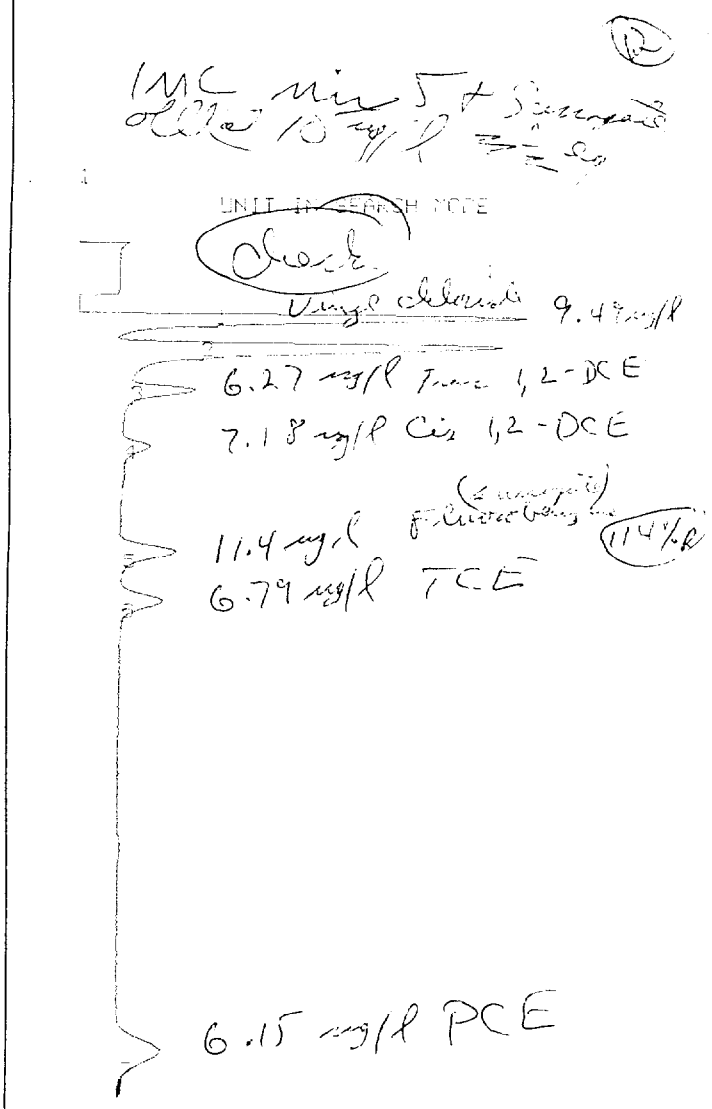

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX#5 @ 10 mg/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		9.49	9.
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		6.27	6
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		7.18	7.
Fluorobenzene surrogate §		11.4	11
TCE (Trichloroethylene)		6.79	6
PCE (Tetrachloroethylene)		6.15	62

SAMPLE TEMP: 35 °C VOL. INJ: 1m
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1 X

DATE SAMPLED: N/A

DATE ANALYZED: 6/20/96

CAL. STD.: #8 6/20/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson

(B)

INJ 322D09-22
@ 60°C
½ hr equil

1

UNIT IN SEARCH MODE

vinyl chloride

Fluorobenzene 11.1 ug/l
111% R

TCE
1.39 ug/l

PCE <

DATE TIME
06/20/96 11:07:48

NOISE = 0.00168
BASELINE = 0.02172

SEARCH MODE RESULTS

Pk#	HEIGHT	AREA	TIME
1	4.02	13670	1:18
2	378	17641	3:58
3	61	2630	4:28

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
322 D09-22'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		11.1	111
TCE (Trichloroethylene)		1.4	
PCE (Tetrachloroethylene)		<5	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/20/96

DATE ANALYZED: 6/20/96

CAL. STD.: #8 6/20/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

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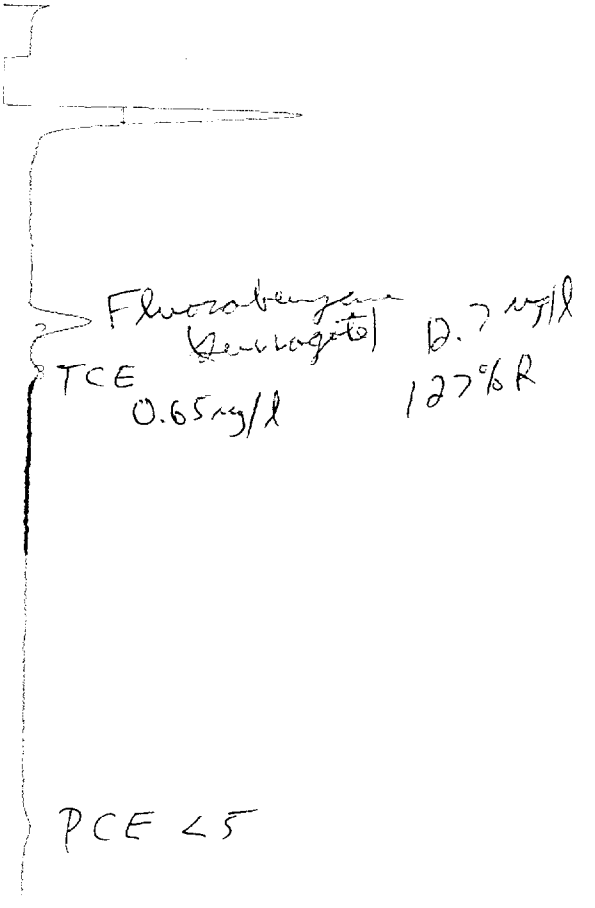
(14)

1mL 322 D09-28' @ 60°C eq. time @ 3,-9° 30 in

UNIT IN SEARCH MODE



DATE TIME
06/20/96 15:12:28

NOISE = 0.00428
BASELINE = 0.00603

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	3323	[illegible]	1:01
2	418	[illegible]	3:31
3	36	1330	4:33

(RTarea long)

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
322 D09-28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §	~~12.7~~ 7/27/96 DMS	12.7	127
TCE (Trichloroethylene)		0.6	
PCE (Tetrachloroethylene)		<5	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/20/96

DATE ANALYZED: 6/20/96

CAL. STD.: #8 6/20/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy Johnson

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1 mL @ 60°C
322-D09-36'
equal 1 mL @ 35°C

(15)

UNIT IN SEARCH MODE

Vinyl chloride

Fluorobenzene 13.6 ug/l
136 %R

PCE < 5

DATE TIME
06/20/96 15:56:01

NOISE = 0.00488
BASELINE = 0.53829

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	2221	8482	1:20
2	481	21029	3:54

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
322 D09-36'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		13.6	13
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		<5	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/20/96

DATE ANALYZED: 6/20/96

CAL. STD.: # 8 6/20/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy Johnson

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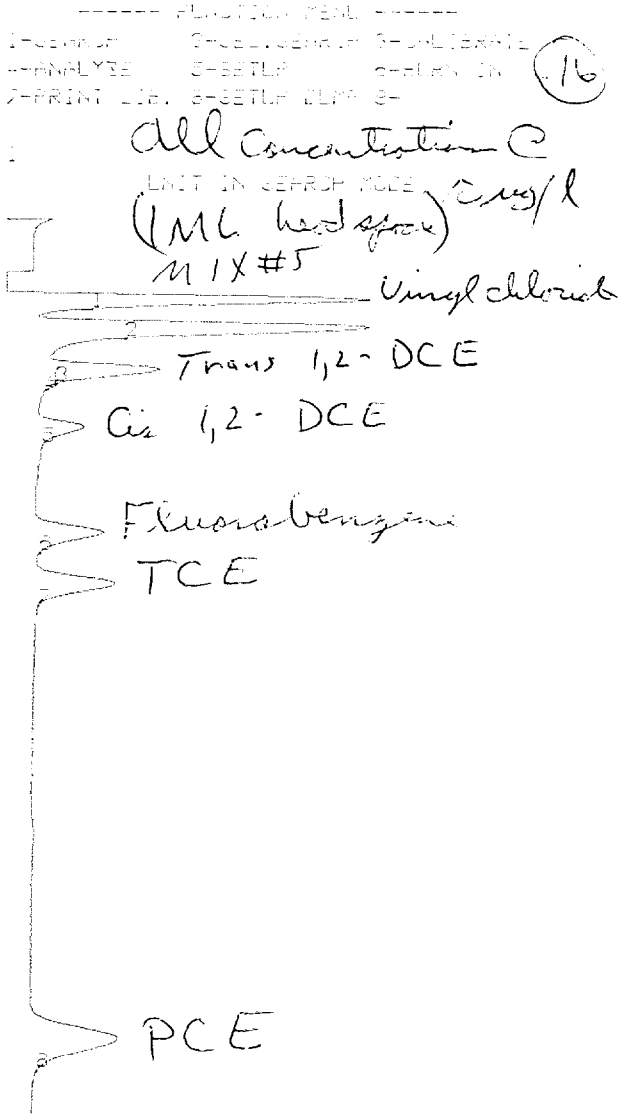

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 2/A

DATE ANALYZED: 6/20/96

CAL. STD.: Cal STD

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy Johnson

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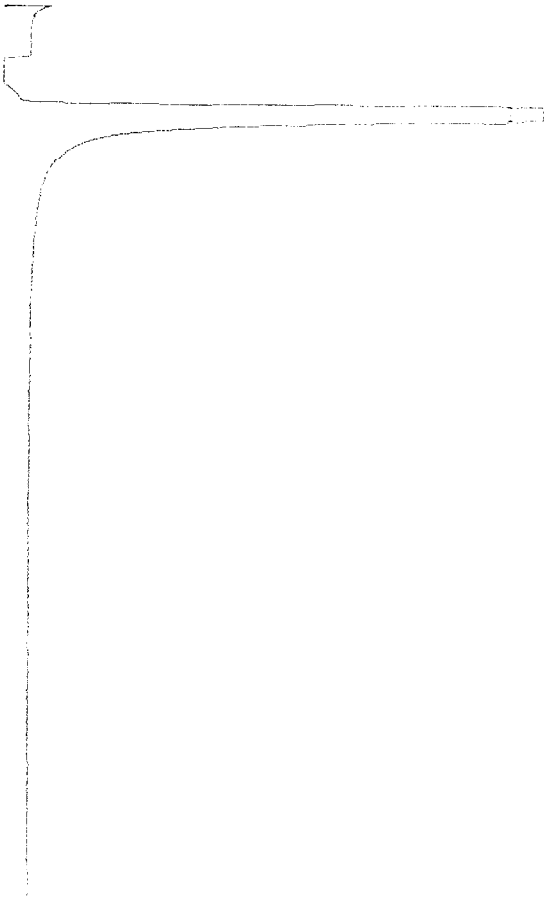
(17)

1

UNIT IN SEARCH MODE



DATE TIME
06/20/96 17:28:43

NOISE = 0.00488
BASELINE = 0.02071

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	11043	383630	1:18

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ.: 1 M
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/20/96

CAL. STD.: #16 6/20/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vi and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jim Johnson

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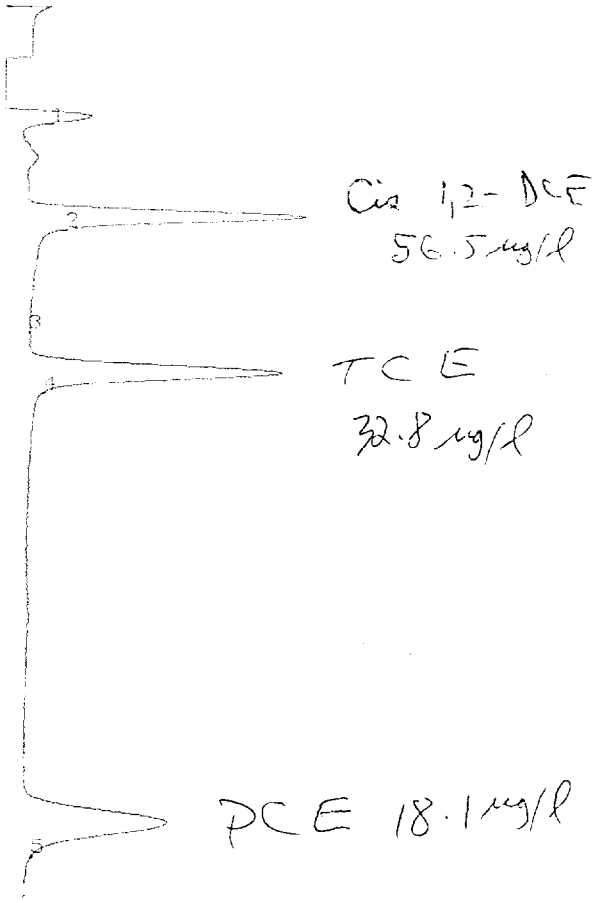
------ PLOT LIB MENU ------
1-SEARCH 2-SEL.SEARCH 3-SPLIT PRINTER
4-ANALYSE 5-SETUP 6-PLOT IN
7-PRINT LIB. 8-SETUP PLOT 9-
(18)
615 E15 -13' (MW Groundwater GC)
(for both 2 vials)
UNIT IN SEARCH MODE



DATE TIME
06/20/96 17:51:05

NOISE = 0.00188
BASELINE = 0.61538

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	336	10313	1:20
2	2031	81328	3:33
3	41	?	3:56
4	1660	33901	4:26
5	1090	20152	10:00

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 615 E15-13' (

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		56.5	
Fluorobenzene surrogate §			NO SUR
TCE (Trichloroethylene)		32.8	
PCE (Tetrachloroethylene)		18.1	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/19/96

DATE ANALYZED: 6/20/96

CAL. STD.: #16 6/20/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC. O 7/27/96 JO

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

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ANALYZED BY: Jimmy Johnson

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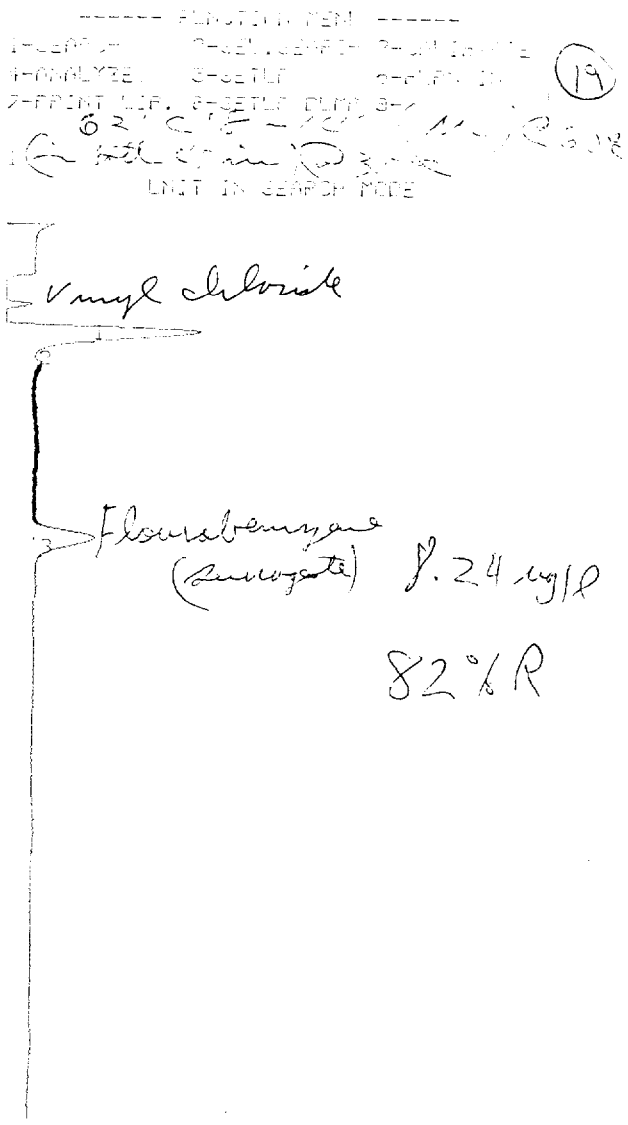

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
621 C18-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		8.24	82
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/20/96

DATE ANALYZED: 6/20/96

CAL. STD.: #16 6/20/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jimmy Johnson

621C18-7' (10x)

(100X)

UNIT IN SEARCH MODE

Vinyl chloride

(100X)

Non-detect at this dilution

See dil. analysis of 621C18-7'

DATE TIME
06/20/96 18:17:28

NOISE = 0.00488
BASELINE = 0.07921

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	58	402	0:58
2	3133	21223	1:16
3	5	0	2:28

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 621 C18 -7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 10 µl
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 100X

DATE SAMPLED: 6/20/96

DATE ANALYZED: 6/20/96

CAL. STD.: #16 6/20/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jim Johnson

------ FUNCTION MENU ------
AGENT 1 = TRICHLOROETHYLENE
AGENT 2 = CIS-1,2-DICHLOROETHYLENE
AGENT 3 = TRANS-1,2-DICHLOROETHYLENE

UNIT IN SEARCH MODE

621 C18-7' 1mL
@ 60°C
(bath temp @ 35°C)
Cis 1,2 DCE 2.01 mg/l
Fluorobenzene 8.68 mg/l 87%R
TCE 3.23 mg/l
PCE 1.07 mg/l

DATE TIME
06/20/96 12:33:50

NOISE = 0.00126
BASELINE = 0.03103

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	[illegible]	[illegible]	1:13
2	200	[illegible]	1:43
3	85	[illegible]	2:59
4	450	[illegible]	3:50
5	213	[illegible]	4:07
6	[illegible]	[illegible]	[illegible]

------ FUNCTION MENU ------

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 621 C18-7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		2.01	
Fluorobenzene surrogate §		8.68	87
TCE (Trichloroethylene)		3.23	
PCE (Tetrachloroethylene)		1.07	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/20/96

DATE ANALYZED: 6/20/96

CAL. STD.: #16 6/20/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jimmy Johnson

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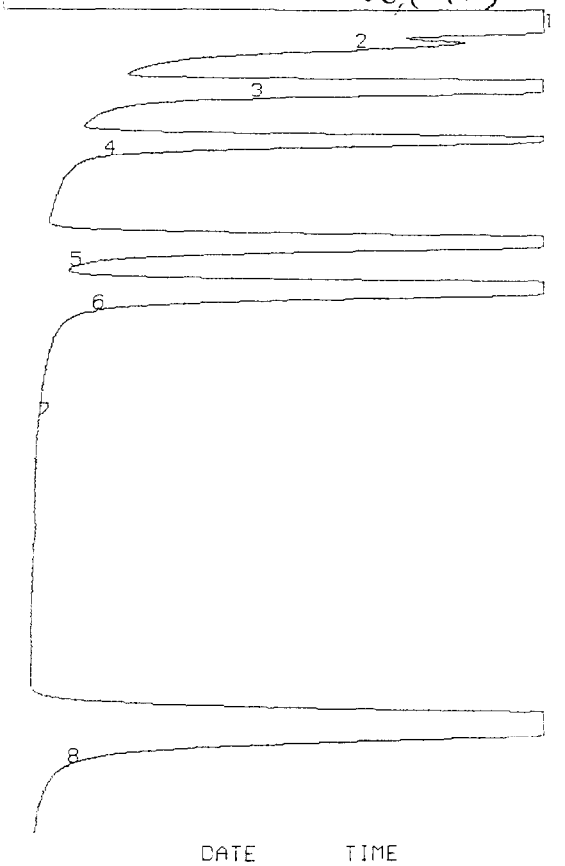
------ FUNCTION MENU ------

1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

1

UNIT IN SEARCH MODE

1ML 100 ug/l @60°C



DATE	TIME
06/21/96	07:27:37

NOISE = 0.00488
BASELINE = 0.65934

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	37790	1373031	0:55
2	3229	110510	1:15
3	11400	435745	1:46
4	4422	193250	2:27
5	5742	234669	3:43
6	7084	371079	4:18
7	18	2323	5:40
8	7362	610478	9:38

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 100 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		100	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		100	
Fluorobenzene surrogate §		100	
TCE (Trichloroethylene)		100	
PCE (Tetrachloroethylene)		100	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: N/A

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at ~~10~~ 100 µg/l, 6/25/96

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

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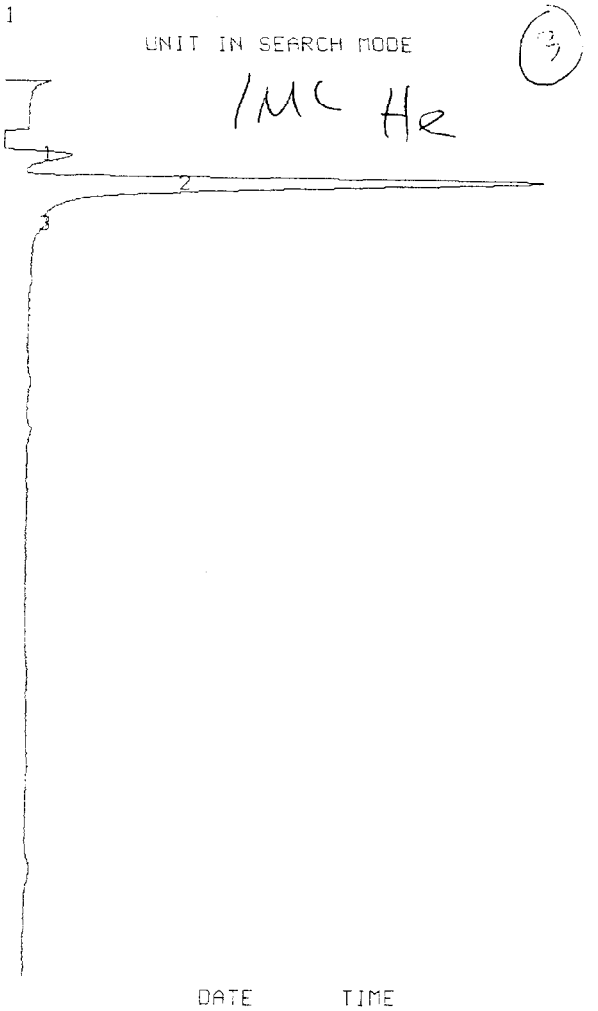
------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

1

UNIT IN SEARCH MODE



DATE TIME
06/21/96 07:42:01

NOISE = 0.00488
BASELINE = 0.59829

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	261	6168	0:56
2	3933	130526	1:16
3	73	2328	1:47

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	NO Surr ad
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: N/A

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

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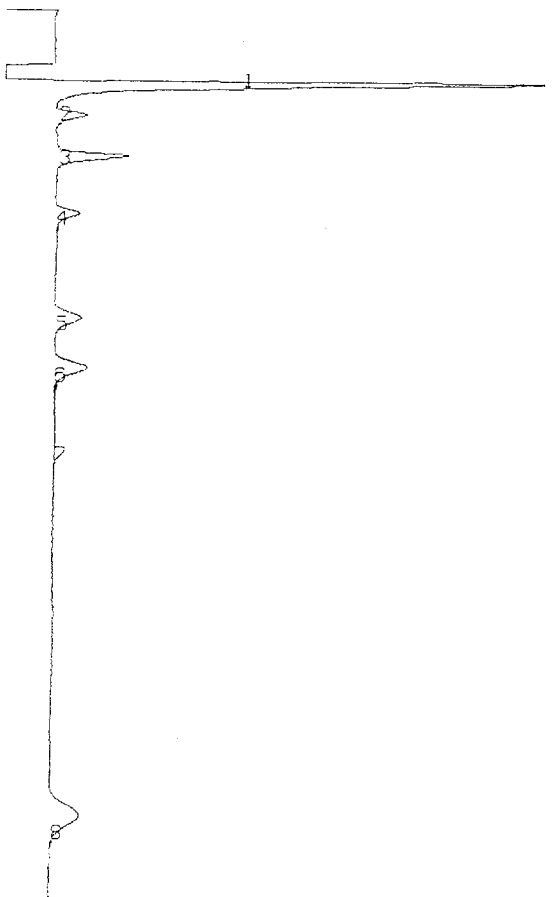
------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(4)

1MC mix 5 + Surrogate
@ 60° (in both 30 min @ 35°C)
all concentrations 10 ug/l

UNIT IN SEARCH MODE



DATE TIME
06/21/96 08:16:29

NOISE = 0.00488
BASELINE = 0.91575

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	4651	58800	0:55
2	247	5537	1:19
3	560	12675	1:50
4	182	5660	2:32
5	283	8121	3:48
6	251	10482	4:25
7	9	83	5:33
8	202	14242	9:56

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (4)
MIX#5

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: N/A

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy Johnson

------ FLN

#5 10 mM 1 ML

1 mix #5 + fluorobenzene (260)

UNIT IN SEARCH MODE

(in bath 30 min @ 35°C

DATE TIME
06/21/96 08:29:11

NOISE = 0.00488
BASELINE = 0.31087

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	4141	71837	0:56
2	365	8727	1:20
3	609	14540	1:51
4	207	7315	2:34
5	233	10143	3:52
6	293	12849	4:29
7	6	2639	5:45
8	6	1761	7:45
9	7	683	7:59
10	261	13889	10:04

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
MIX #5

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: N/A

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

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ANALYZED BY: Jim Johnson

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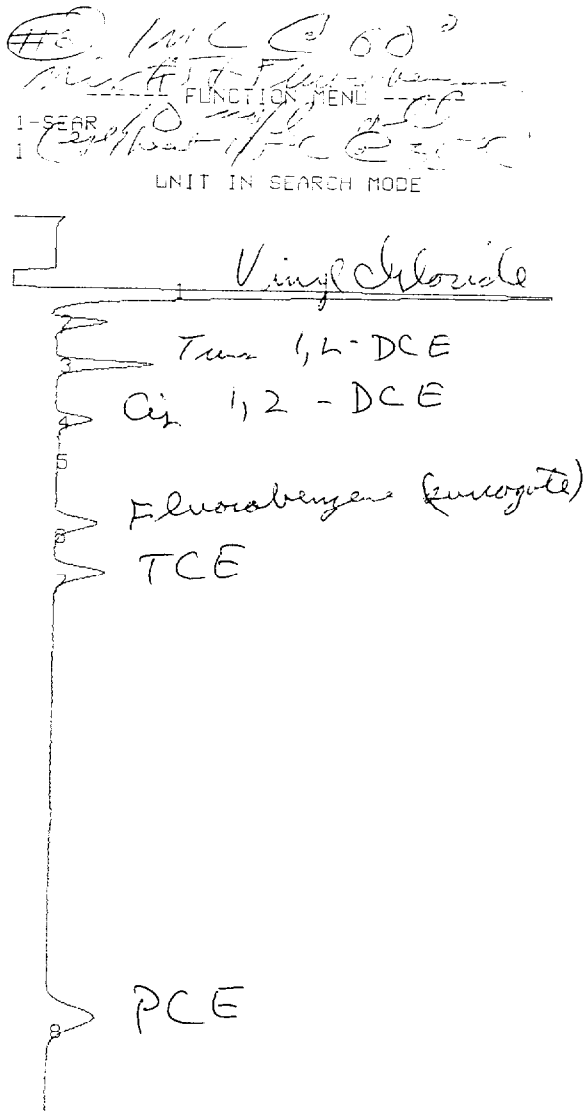

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX#5

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1Ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: N/A

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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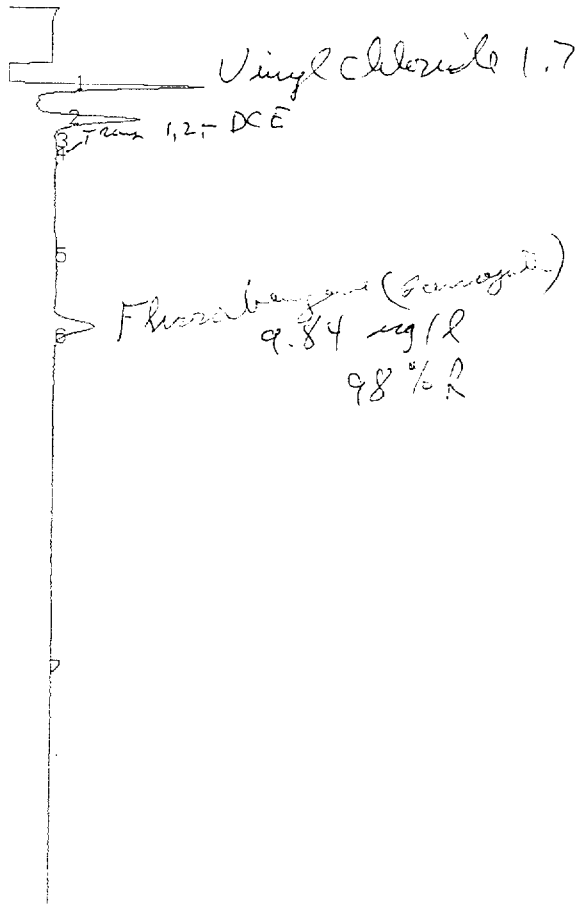
ANALYZED BY: John Johnson

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(7) MC @ 60°
621 C18-21'
(methanol 23°C)

UNIT IN SEARCH MODE



DATE TIME
06/21/96 08:55:04

NOISE = 0.00488
BASELINE = 0.83028

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	1142	15907	0:58
2	646	14785	1:22
3	17	516	1:42
4	27	860	1:48
5	29	2126	2:58
6	318	13593	3:56
7	7	3228	7:45

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 621C18-21' C

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		<	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		<	
Fluorobenzene surrogate §		9.84	98
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 Ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/20/96

DATE ANALYZED: 6/21/96

CAL. STD.: #6 6/21/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Tony John

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------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(10X) MK 2 6.9 2.

1

UNIT IN SEARCH MODE

300 C22-7'

Vinyl chloride 3.37 mg/l

3 Cis 1,2-DCE 10.7 mg/l

4 Fluorobenzene (surrogate) 21.6 mg/l
216 %R

(10X)

5

Concentration too high
(10X) dilution
see next run 300 C22-7'

DATE TIME
06/21/96 09:08:07

NOISE = 0.00488
BASELINE = 1.02320

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	325	3223	0:54
2	2744	57476	1:17
3	20	804	2:30
4	63	2992	3:47
5	7	593	5:24

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 300 C22-7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)	VOID		
Fluorobenzene surrogate §			
TCE (Trichloroethylene)	10X dilution		
PCE (Tetrachloroethylene)	Too Low.		

SAMPLE TEMP: 35 °C VOL. INJ: 100µ
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 10X

DATE SAMPLED: 6/21/96

DATE ANALYZED: 6/21/96

CAL. STD.: #6 6/21/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

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Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy Johnson

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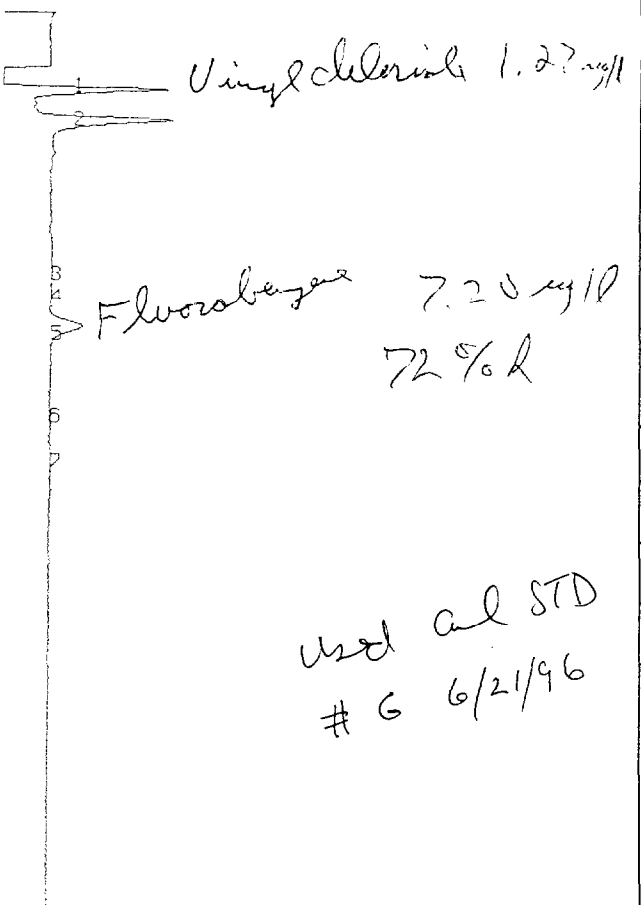
------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANAL

(9) MC @ 60°C
300 C22-7'
(in with 2 ... @ 3.5 V)

UNIT IN SEARCH MODE



DATE TIME
06/21/96 09:22:37

NOISE = 0.00488
BASELINE = 0.86447

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	920	12311	0:57
2	931	22391	1:20
3	17	1908	3:10
4	9	443	3:27
5	249	9952	3:53
6	5	50	5:04
7	4	441	5:33

FUNCT

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
300 C22-7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		–	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		–	
Fluorobenzene surrogate §		720	72.
TCE (Trichloroethylene)		–	
PCE (Tetrachloroethylene)		–	

SAMPLE TEMP: 35 °C VOL. INJ: 1M
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/20/96

DATE ANALYZED: 6/21/96

CAL. STD.: #6 6/21/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy Johnson

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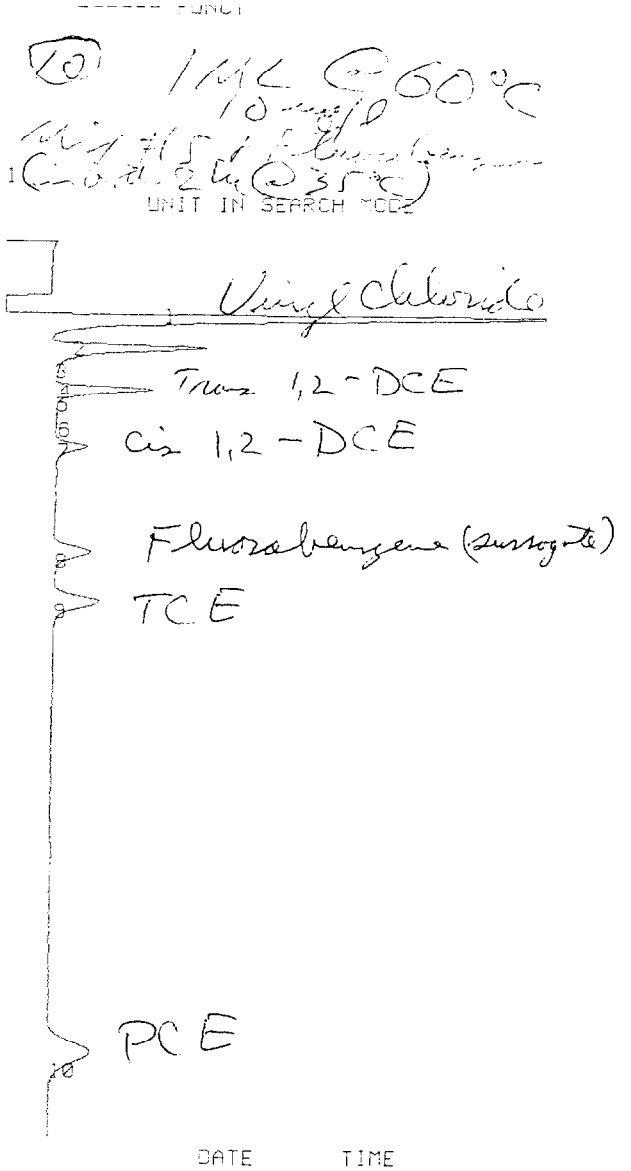

DATE TIME
06/21/96 09:33:02

NOISE = 0.00488
BASELINE = 0.87668

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME	
1	5038	87849	0:56	
2	1168	28716	1:19	
3	33	1357	1:38	
4	743	17758	1:51	
5	23	304	2:26	
6	20	732	2:22	
7	257	8229	2:33	
8	284	12255	3:51	Fluorobenzene
9	349	15336	4:28	
10	301	21471	9:57	

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
MIX #5

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1 Ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: N/A

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

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ANALYZED BY: Jimmy Johnson

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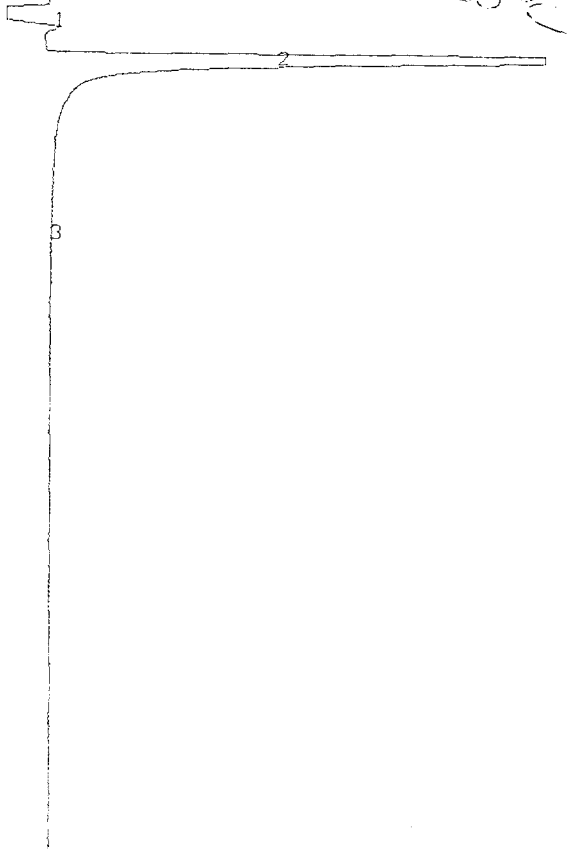
```
------ FUNCTION MENU ------
1-SEARCH      2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE     5-SETUP      6-BURN IN
7-PRINT LIB.  8-SETUP DUMP 9-

1
```

(11) UNIT IN SEARCH MODE

INJ #1 @ 0600 hr



```
                DATE        TIME
              06/21/96   09:46:29

NOISE      =      0.00488
BASELINE   =      0.83516

            SEARCH MODE RESULTS
PK#   HEIGHT      AREA      TIME

 1        45       347     0:56
 2     11868    275876     1:19
 3         2      2462     3:33
```

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (1
Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: #6 6/21/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

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Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy Johnson

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1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

IPC @ 93 (mw #5 Trans Fluorobenzene from 6/20/96 in dell Liq.)

1

(12) UNIT IN SEARCH MODE

10 ug/l

A > Vinyl Chloride

B > Trans 1,2 - DCE

C > Cis 1,2 - DCE

D > Fluorobenzene (surrogate)

E > TCE

F > PCE

DATE TIME
06/21/96 10:00:03

NOISE = 0.00488
BASELINE = 0.85226

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	4467	88549	0:55
2	563	13950	1:17
3	781	19570	1:48
4	264	7671	2:29
5	311	12111	3:46
6	385	16263	4:22
7	391	32022	9:48

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MW#5 (12)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: N/A

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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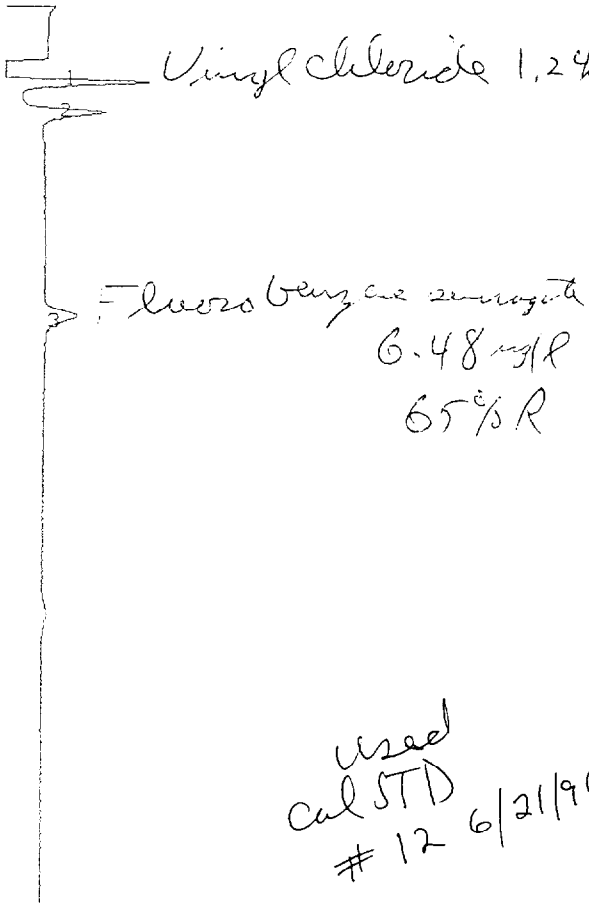
ANALYZED BY: Jimmy Johnson

(13) 1ML @ 60 °C
300 C22-22' (2nd run 30 min @ 35 °C)

UNIT IN SEARCH MODE



used Cal STD #12 6/21/96

DATE TIME
06/21/96 12:51:04

NOISE = 0.00488
BASELINE = 0.82295

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	783	10942	0:56
2	436	8866	1:19
3	217	7843	3:49

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (13)
300 C22-22'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		6.48	65
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/21/96

DATE ANALYZED: 6/21/96

CAL. STD.: #12 6/21/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

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Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy Johnson

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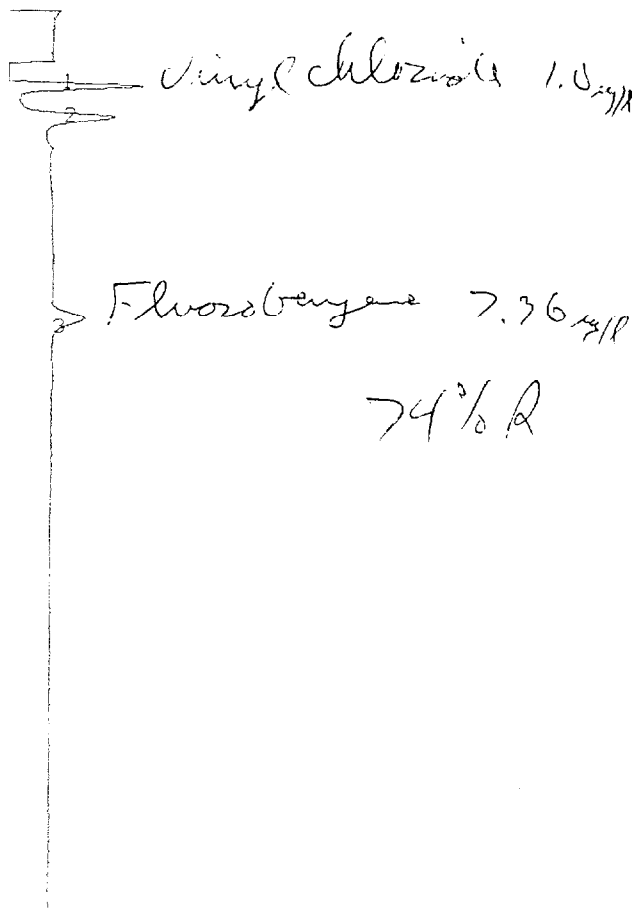
------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(14) TMC @ 60°C

300C22-14

1

UNIT IN SEARCH MODE



DATE TIME
06/21/96 11:04:03

NOISE = 0.00488
BASELINE = 0.84982

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	674	8828	0:56
2	453	9745	1:19
3	230	8918	3:47

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 300C22-14' (14)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		–	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		–	
Fluorobenzene surrogate §		7.36	74
TCE (Trichloroethylene)		–	
PCE (Tetrachloroethylene)		–	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/21/96

DATE ANALYZED: 6/21/96

CAL. STD.: #12 6/21/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

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Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy Johnson

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(15)

------ FUNCTION MENU ------

1-SEARCH 2-SEL.SEARCH 3-CALIBRATE

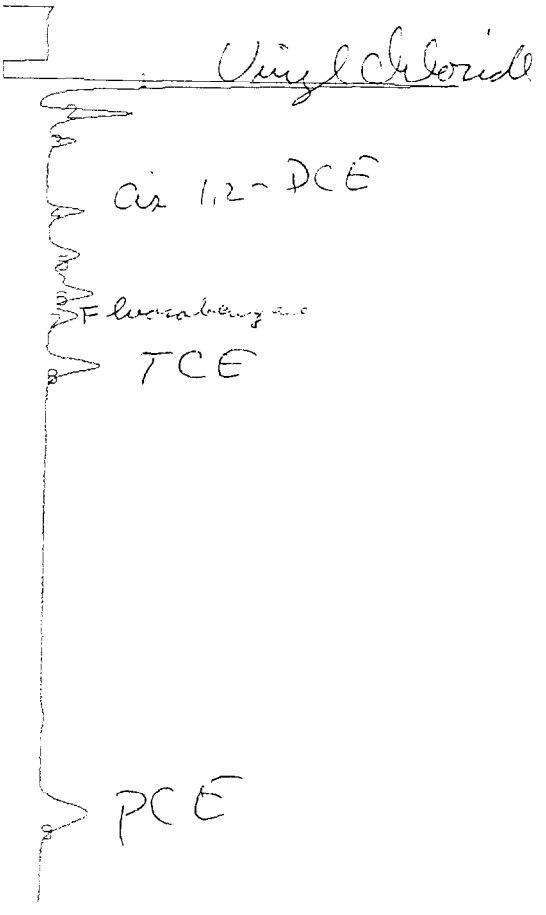
4-ANALYZE 5-SETUP 6-BURN IN

7-PRINT LIB. 8-SETUP DUMP 9-

(MC @ 60 °C Cust Std (4.6)

1 Cust STD 1206 10-sep-96

UNIT IN SEARCH MODE



DATE TIME

06/21/96 11:31:51

NOISE = 2.20488

BASELINE = 0.85226

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	3202	55837	0:56
2	637	15011	1:19
3	204	4710	1:41
4	277	8026	2:32
5	237	10908	3:04
6	345	18689	3:33
7	232	3589	3:50
8	403	17419	4:26
9	340	24357	9:56

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (15)

Cust STD 1206

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	Not ST
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		9.58	96
Fluorobenzene surrogate §		7.92	79.
TCE (Trichloroethylene)		10.7	107.
PCE (Tetrachloroethylene)		8.11	81.

SAMPLE TEMP: 35 °C VOL. INJ: 1ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: #12 6/21/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

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ANALYZED BY: Jim Johnson

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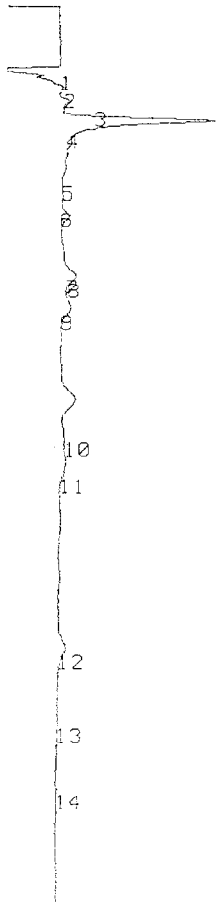
(16) (10X)

10ml @ 60°C
AS-18 in 30ml VOA

1

UNIT IN SEARCH MODE



DATE	TIME
06/21/96	12:07:46

NOISE = 0.00488
BASELINE = 0.94994

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	29	494	1:01
2	74	2025	1:12
3	1186	27815	1:25
4	83	3015	1:44
5	40	6665	2:04
6	81	3506	2:36
7	135	11201	3:21
8	78	536	3:36
9	89	6447	3:47
10	126	19218	4:54
11	55	4817	5:47
12	78	5993	7:56
13	30	2329	8:53
14	27	2762	9:37

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
AS-18

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §			
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. INJ: 10µ
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 100X

DATE SAMPLED: 6/21/96

DATE ANALYZED: 6/21/96

CAL. STD.: #12 6/21/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY:

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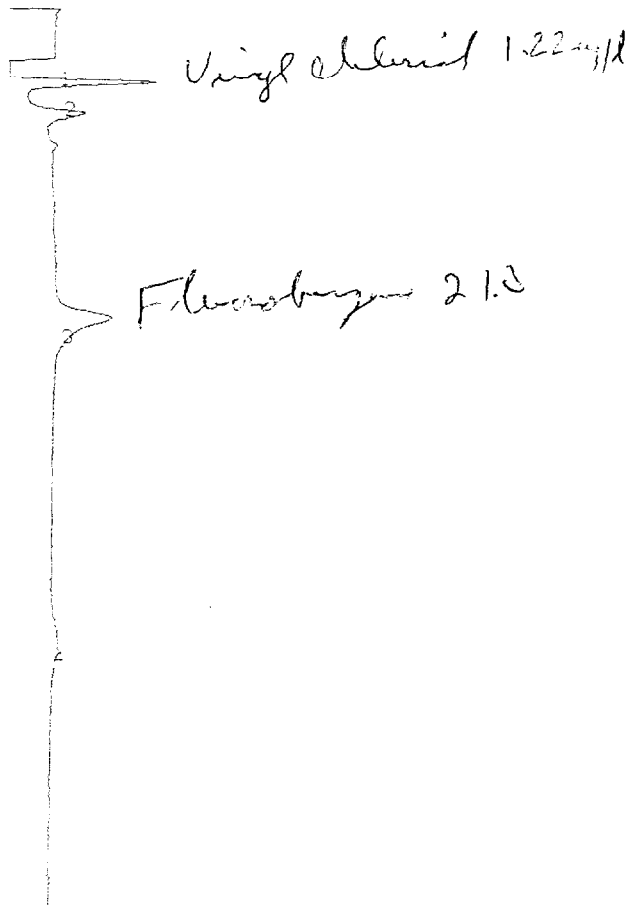
------ FUNCTIO

1 MC @60°C

SOC24-14'

1

UNIT IN SEARCH MODE



DATE TIME
06/21/96 12:22:56

NOISE = 0.00488
BASELINE = 2.87668

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	738	10799	0:56
2	218	4241	1:18
3	432	25842	3:49
4	29	2949	7:52

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
500C24-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		21.0	2/(
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1Ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/21/96

DATE ANALYZED: 6/21/96

CAL. STD.: #12 6/21/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vie and injected into the GC.

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ANALYZED BY: Jimmy Johnson

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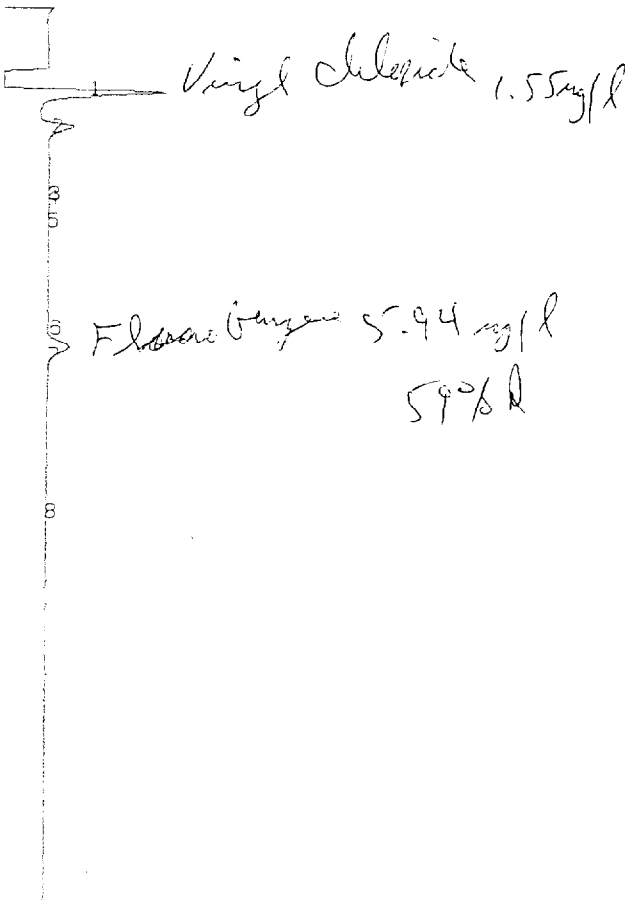
------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(12) 1ML 60°C
500 C24-22'
(in bottle 2ml @ 3:00)

UNIT IN SEARCH MODE



DATE TIME
06/21/96 13:40:43

NOISE = 0.00488
BASELINE = 0.82784

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	899	13733	1:22
2	188	4269	1:28
3	6	1051	2:12
4	7	93	2:24
5	5	257	2:38
6	8	1248	3:58
7	166	7191	4:10
8	5	238	6:16

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (18)
500 C24-22'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		5.94	59
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/21/96

DATE ANALYZED: 6/21/96

CAL. STD.: #12 6/21/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jim Johnson

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------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(19) 1 ML @ 60 °C
(50 C24-7' in both 1½ hr @ 37°C)

UNIT IN SEARCH MODE

Vinyl Chloride 1.03 µg/l
Trans 1,2-DCE 2.17 µg/l
Fluorobenzene 6.84 µg/l
68% R

Cal STD #12 6/21/96

DATE TIME
06/21/96 14:11:17

NOISE = 0.00488
BASELINE = 1.01832

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	778	9110	0:55
2	297	5738	1:18
3	226	4242	1:42
4	17	922	3:25
5	175	~~8286~~	3:49
6	56	12548	5:26

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (19) 500 C24-7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		2.17	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		6.84	68
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/21/96

DATE ANALYZED: 6/21/96

CAL. STD.: #12 6/21/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

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ANALYZED BY: Jimmy Johnson

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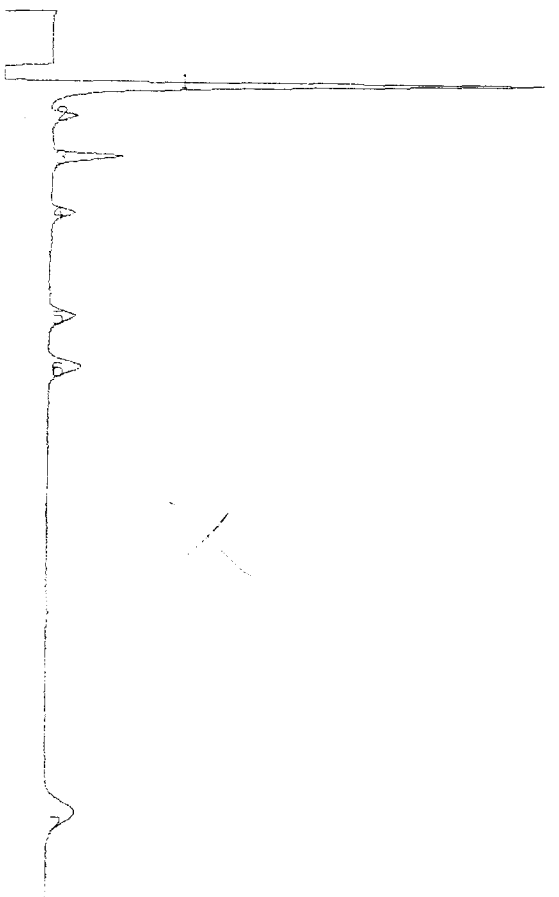
------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(20) MC @ 5.0 ul
Mix #1 + Fluorobenzene
(in bath / Temp 35°C)
UNIT IN SEARCH MODE



DATE TIME
06/21/96 14:25:30

NOISE = 0.20488
BASELINE = 0.91819

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	3904	63548	0:55
2	175	3767	1:18
3	520	11202	1:49
4	153	3939	2:30
5	166	5639	3:47
6	228	7519	4:23
7	177	11195	9:51

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 (20)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §		N/A	
TCE (Trichloroethylene)		Calibration	
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: N/A

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy Johnson

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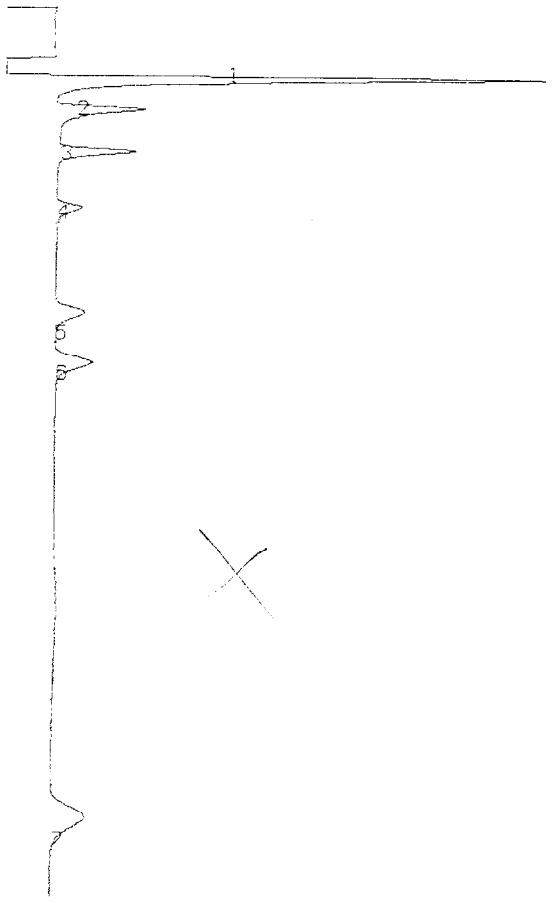
------ FUNCTION MENU ------

1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BLRN IN
7-PRINT 8-SETUP 9-TEMP 80 °C

UNIT IN SEARCH MODE



DATE TIME
06/21/96 14:40:15

NOISE = 0.02488
BASELINE = 2.91087

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	3893	61386	0:56
2	690	16352	1:20
3	615	14034	1:51
4	206	6545	2:33
5	228	10356	3:51
6	281	12831	4:28
7	250	18511	10:02

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (21)

MIX #5

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)	NOT		
Fluorobenzene surrogate §	Calibrate		
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: N/A

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson

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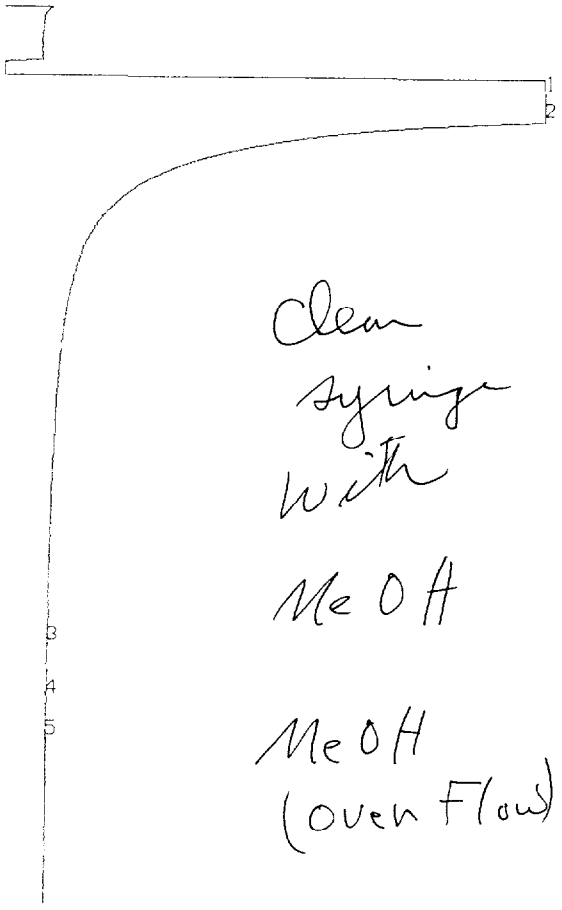
------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(22)

1 M C H2O

1

UNIT IN SEARCH MODE



Clean syringe with MeOH

MeOH (oven Flow)

DATE TIME
06/21/96 14:55:11

NOISE = 0.00488
BASELINE = 2.77167

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	251404	5781214	0:58
2	6044	137236	1:13
3	36	20356	6:55
4	24	3698	8:07
5	19	2352	8:40

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (22)
Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §			
TCE (Trichloroethylene)	Clean Out		
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: N/A (MeOH over Flow)

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: [signature]

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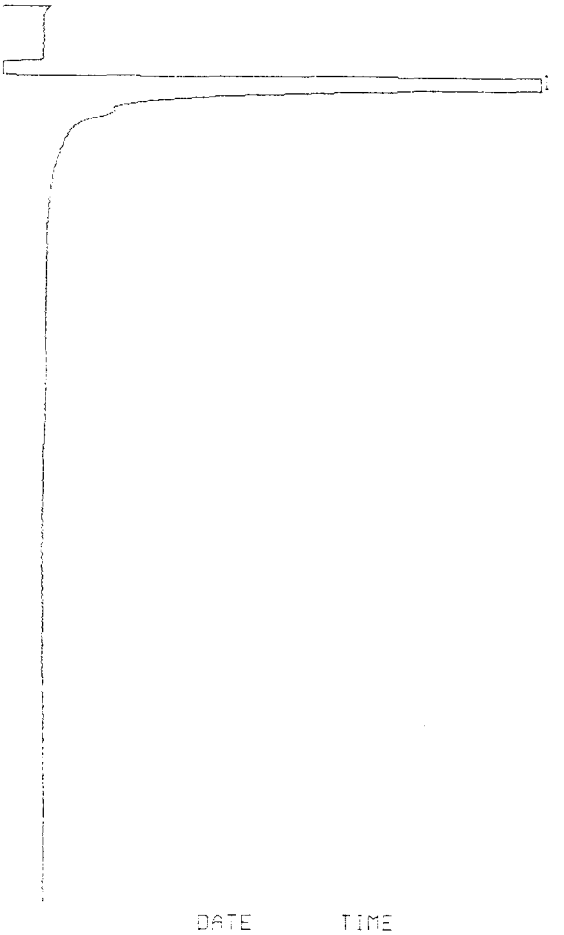
------ FUNCTION MENU ------

1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT 8-SET-UP/DUMP 9-

1

UNIT IN SEARCH MODE



DATE TIME
06/21/96 15:08:04

NOISE = 0.20488
BASELINE = 0.80342

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	18823	453754	0:56

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Helium (23)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: N/A

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

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Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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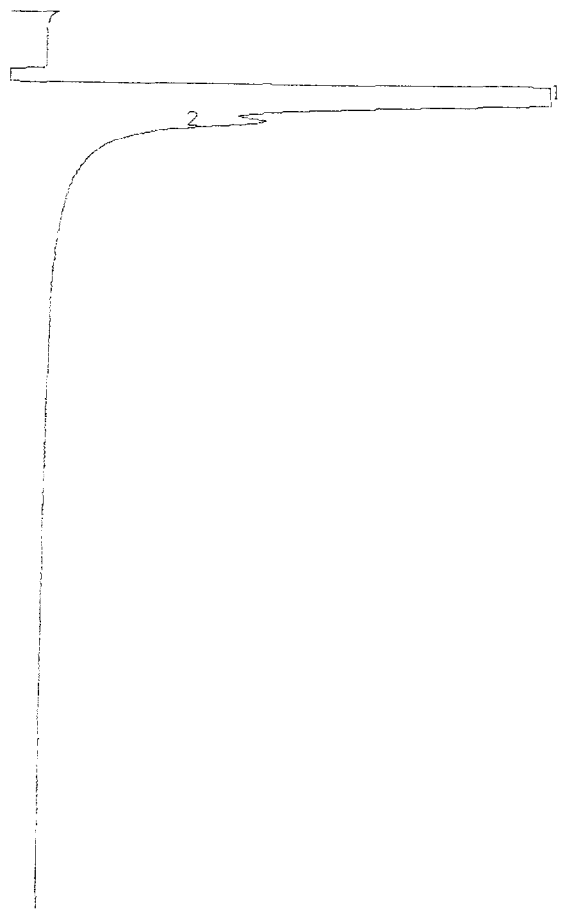
ANALYZED BY: Jimmy Johnson

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(24) 1052 1/2 @ 60°C

1 -

UNIT IN SEARCH MODE



DATE TIME
06/21/96 15:28:44

NOISE = 0.00488
BASELINE = 2.75458

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	50511	1231164	0:56
2	1625	50375	1:20

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (24)

Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §	Clean		
TCE (Trichloroethylene)	Off		
PCE (Tetrachloroethylene)	methane F/a		

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: N/A

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy Johnson

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------ FUNCTION MENU ------

1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BLRN IN
7-PRINT 8-B. 9-SETUP DUMP

25 ml C 60 °C
(mix 5 Fluorobenzene 10 ug/l
Calib 5 ml (25 ml)

UNIT IN SEARCH MODE

(methanol)
A — Vinyl Chloride
B — Trans 1,2- DCE
C — Cis 1,2- DCE
D — Fluorobenzene
E — TCE
F — PCE

DATE TIME
06/21/96 15:42:19

NOISE = 0.00488
BASELINE = 0.76435

SEARCH MODE RESULTS

PK#		HEIGHT	AREA	TIME
1	A	10671	270160	0:57
2		1304	45993	1:21
3	B	861	26223	1:51
4	C	321	13878	2:34
5	D	337	14947	3:52
6	E	397	17198	4:29
7	F	339	23092	12:01

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX#5 10 ug/l (2)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: Cal STD

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

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ANALYZED BY: Jimmy Johnson

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE 5-SE

R6 1,4 DCB 80°C
700 D21 -7'
(1-bell 2 Tail - @ 35 °C)
UNIT IN SEARCH MODE

7.37 mg/l
Vinyl Chloride
Trans 1,2-DCE 29.7 ug/l
Cis 1,2-DCE
528 ug/l
Fluorobenzene 12.0 mg/l
120 ug/l
TCE
208 ug/l

All greater than Calib.

PCE 56.0 ug/l

DATE TIME
08/21/96 15:55:00

NOISE = 0.20468
BASELINE = 0.77300

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	7157	199251	0:56
2	1253	46196	1:20
3	2359	77962	1:51
4	22883	733154	2:33
5	133	1410	3:17
6	347	17871	3:52
7	7537	357879	4:28
8	1578	129351	9:59

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 700D21 -7' (26)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		29.7	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		528	
Fluorobenzene surrogate §		12.0	120
TCE (Trichloroethylene)		208	
PCE (Tetrachloroethylene)		56	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/21/96

DATE ANALYZED: 6/21/96

CAL. STD.: # 25 6/21/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy Johnson

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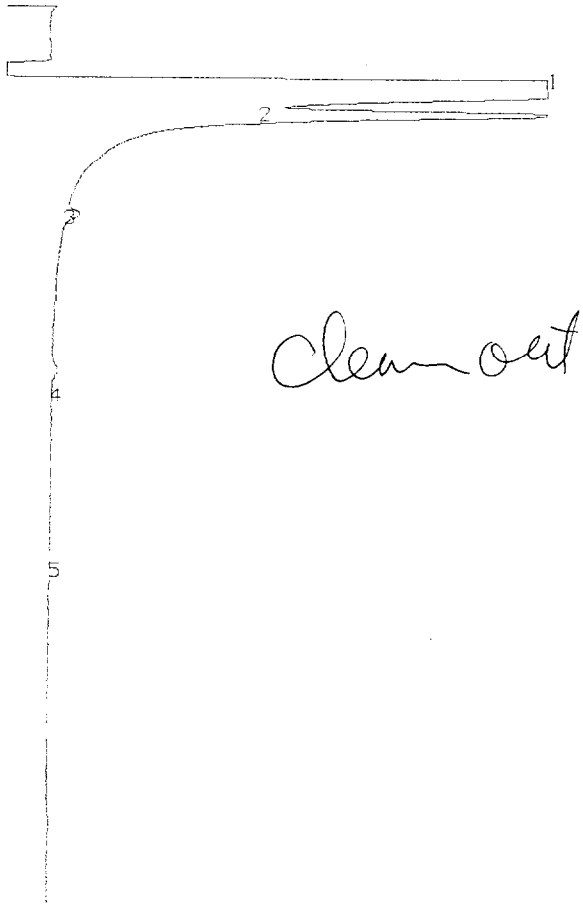
------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(21) 1mL @ 60°C
1/a

1

UNIT IN SEARCH MODE



DATE TIME
06/21/96 16:27:59

NOISE = 0.02488
BASELINE = 0.82784

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	86561	1547345	0:55
2	4305	128063	1:19
3	210	9332	2:34
4	46	3935	4:29
5	8	2	7:20

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (21)
Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §			
TCE (Trichloroethylene)	clean		
PCE (Tetrachloroethylene)	out		

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL WATER

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: # 25 6/21/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jerry Johnson

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------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

5-5

700 D21-14'
(1 ml @ 60°C
in water bath 10-30 min)

1 UNIT IN SEARCH MODE

Vinyl chloride
2.86 µg/l
This has changed with the use of MeOH as in most likely not Vinyl chloride.
Fluorobenzene
surrogate 4.0 40%

all non-detect

DATE TIME
06/21/96 16:21:49

NOISE = 0.02488
BASELINE = 0.03597

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	2854	77294	0:58
2	126	2294	1:21
3	141	6246	3:53
4	3	161	5:33

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (2)
700 D21-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		4.0	40
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/21/96

DATE ANALYZED: 6/21/96

CAL. STD.: # 25 6/21/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jim Johnson

------ FUNCTION MENU ------

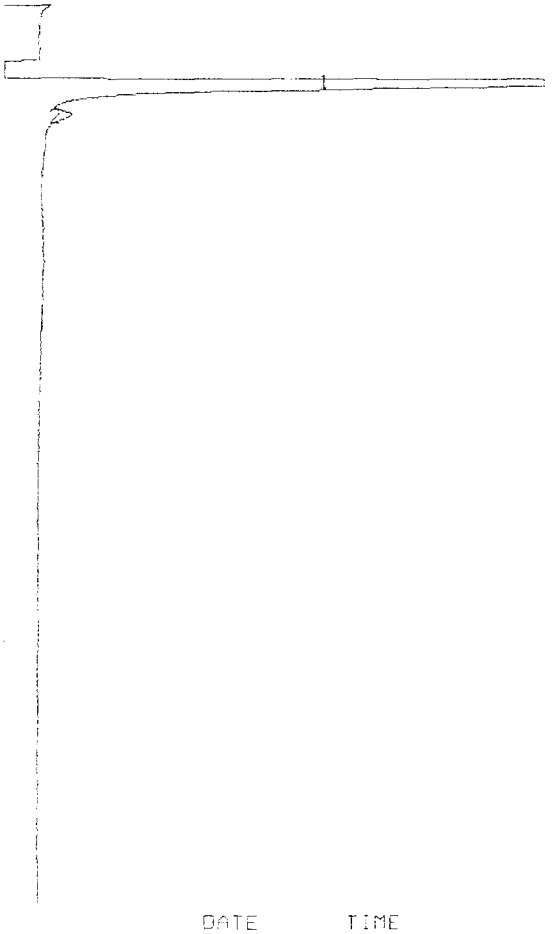
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(2a) Vinyl Chloride

≈ 3.5 ug/l

1

UNIT IN SEARCH MODE



DATE TIME
06/21/96 16:50:21

NOISE = 2.00488
BASELINE = 2.71062

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	8531	213921	0:58
2	215	7328	1:22

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Vinyl Chloride (2)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T35.0	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1M
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: RT Check
Tentative I.D. (only)

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: [signature]

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------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE

(30) 1ML @ 50°C
700 D21 -20'
(30 min @ 35°C)

UNIT IN SEARCH MODE

Vinyl Chloride
2.94 ug/l
?

Fluorobenzene 7.69 ug/l
77%R

all non-detects

DATE TIME
06/21/96 17:02:38

NOISE = 2.20244
BASELINE = 2.78144

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	3662	78428	2:58
2	132	2825	1:21
3	263	11496	3:55

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (30) 700 D21 -20'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		7.69	77
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/21/96

DATE ANALYZED: 6/21/96

CAL. STD.: #25 6/21/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

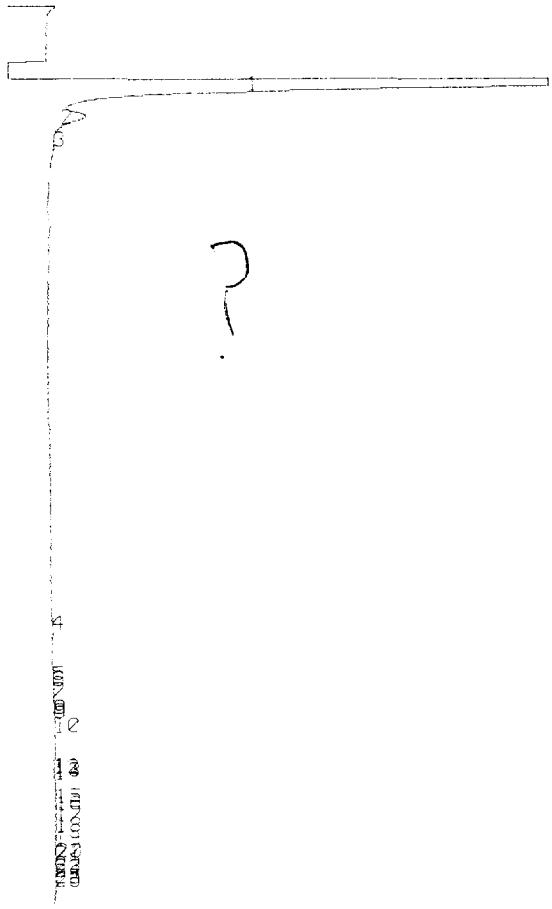
T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson

C:\WP51\NAVY\PARRIS.GRP

Vinyl Chloride 31 mg/l
MWR 60°C 20 min 2 ml

UNIT IN SEARCH MODE



DATE 06/21/96 TIME 17:16:23

NOISE = 0.00244
BASELINE = 0.76679

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	8456	212489	0:58
2	271	8973	1:22
3	27	322	1:43
4	1	5	7:39
5	0	3	8:16
6	3	13	8:19
7	3	85	8:26
8	6	184	8:38
9	6	182	8:42
10	8	61	8:53
11	7	386	9:18
12	5	32	9:24
13	2	14	9:26
14	8	44	9:28
15	11	279	9:37
16	16	216	9:50
17	15	169	9:59
18	15	353	10:05
19	11	365	10:13
20	12	255	10:23
21	13	98	10:27
22	14	324	10:33
23	8	79	10:37
24	7	122	10:40
25	8	66	10:45
26	3	78	10:47

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Vinyl Chloride (31)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: #25 6/21/96
Tentative I.D. (only)

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson

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------- FUNCTION MENU -------
1-SEARCH 2-SELECT

(32) MW @ 60°C
22

1 (-252 D21) 7/29/96 MW Filtered
UNIT IN SEARCH MODE

all non-detect.

DATE TIME
06/21/96 17:32:35

NOISE = 0.22488
BASELINE = 0.31563

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	115	886	0:58

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 22 (32)
700 D21 -1g' 7/29/96 MW

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		N/A	N/A
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/21/96

DATE ANALYZED: 6/21/96

CAL. STD.: #25 6/21/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jim Johnson

------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(33) 1ML @ 60°C

UNIT IN SEARCH MODE

700 D21 -28'

Fluorobenzene 11.6 µg/l

116 %R

All non-detect

DATE TIME
08/21/96 17:43:02

NOISE = 0.00488
BASELINE = 0.76923

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	2335	59403	0:59
2	262	8848	1:22
3	387	17385	3:55

------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (33)
700 D21 -28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		11.6	116
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/21/96

DATE ANALYZED: 6/21/96

CAL. STD.: #25 6/21/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

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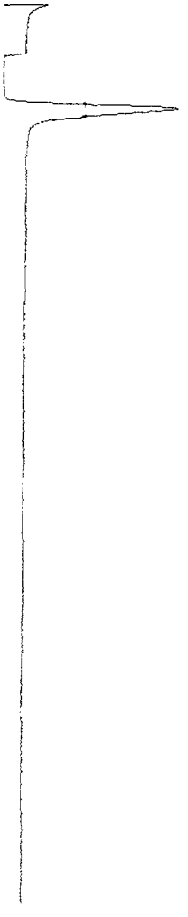
6/21/96
HNU 311 (A75068)
MWR Dry Cleaners

UNIT IN SEARCH MODE



1 ML
HE

DATE TIME
06/21/96 07:14:54

NOISE = 0.00488
BASELINE = 0.57143

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	1080	3:264	1:16

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/21/96

CAL. STD.: N/A

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry D. Johnson

6/24/96
HNU 311 (A75068)
MWR Dry Cleaner

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §			
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. INJ: _____
SAMPLE MATRIX: SOIL WATER

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: _____

DATE SAMPLED: _____

DATE ANALYZED: _____

CAL. STD.: _____

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

· Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

1mL Helium (1)

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Helium + MeOH (1)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: NA

DATE ANALYZED: 6/24/96

CAL. STD.: Uncalibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry D. Johnson 208

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: Un calibrated

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature] 208

(3) 1/1C of 100 ug/l mix #5 (3)

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 100 ug/l (3)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		100	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		100	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		100	
Fluorobenzene surrogate §		100	
TCE (Trichloroethylene)		100	
PCE (Tetrachloroethylene)		100	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: uncalibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at ~~10~~ 100 µg/l, 7/27/96 JDJ

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: John D. Johnson JDJ

(4) 1ML (Old #7) Mix 5 + Fluorobenzene (4)

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX#5 @10 ug/l (4)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. ~~INJ~~: 1ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: Un Calibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry D. Johnson

(5) 1mL He

(5)

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (5)

Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		-	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		-	
Fluorobenzene surrogate §		-	
TCE (Trichloroethylene)		-	
PCE (Tetrachloroethylene)		-	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: Un calibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

(6) (5) IMC Mix #5 + Fluorobenzene @ 10 ug/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX#5 @ 10 ug/l (6)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1 MC
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: Un Calibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature] DDJ

(7)

(7) 1ML ... 60°C 10 µg/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (7)

MIX #5 @ 10 µg/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: Un Calibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

(8)

(8) 1 mL He ISO OH

1 mL inj

injected 1 mL of He three (3) times in mL

1 mL inj

1 mL inj

MeOH ISO OH

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. He + ISO OH (8)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §			
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~: 1 mL

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: uncalibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry D. Johnson JDJ

(9) MC H2 (9)

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Helium (9)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		–	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		–	
Fluorobenzene surrogate §		–	
TCE (Trichloroethylene)		–	
PCE (Tetrachloroethylene)		–	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: Uncalibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

MC & H
ISO CH

ANALYZED BY: JDD Jerry D. Johnson

(12)

(10) Mix #5 @ 50 °C (all 10 µg/l)

A Vinyl chloride

B Trans 1,2-DCE

C Cis 1,2-DCE

D Fluorobenzene

E TCE

F PCE

A

B

C

D

E

F

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 10 µg/l (10)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~: 1ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: Cal. STD.

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry D. Johnson JDJ

(11) 1mL
800 E00 - 14' (60%)
(1hr - 1 unk @ 30 hr)

(11)

Vinyl chloride 2.87 µg/l
+ MeOH
Trans 1,2-DCE 3.15 µg/l

Fluorobenzene 10.6 µg/l
101% R

PCE <

3.15 µg/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (11)
800 E00 - 14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		3.15	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		10.6	101
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		<	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

CC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #10 6/24/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry D. Johnson

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 800 E00 -7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		U	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		U	
Fluorobenzene surrogate §			
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. ~~INJ:~~ 1ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #10 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: [signature]

(13)

(13) MC EOA Chg ... (...) @ 60°

Trans 1,2-DCE 0.24 mg/l

Cis 1,2-DCE 0.30 mg/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 800E00-7' (13)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		<0.5	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		<0.5	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #10 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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ANALYZED BY: JDJ

(14)

(12)

(no surrogate) 800 E00-14'

Trans 1,2-DCE @ 60 °C

2.35 ug/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 800 E00-14' (14)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		2.35	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	NO Surrogate
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~ 1ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #10 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. O 7/27/96 DD

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

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DD

ANALYZED BY: Jerry D. Johnson

(15)

(15) (15 Blank w/ surrogate added)

Vinyl Chloride 0.24 µg/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Blank (15)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		–	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		–	
Fluorobenzene surrogate §		–	
TCE (Trichloroethylene)		–	
PCE (Tetrachloroethylene)		–	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~ 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: #10 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: John D. Johnson JD

(16)

(16)

Bad BR

un flagged late
RT window
are off.

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Blank (16)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §			
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

Bad

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: #10 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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JDJ

ANALYZED BY: John D. Johnson

(17)

(12) Blank + Surrogate 1 in 60 °C

Vinyl chloride 2.44 ug/l

Fluorobenzene 12.3 ug/l

123 %R

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Blank (17)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		-	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		-	
Fluorobenzene surrogate §		12.3	123
TCE (Trichloroethylene)		-	
PCE (Tetrachloroethylene)		-	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: #10 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

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ANALYZED BY: [signature]

(18)

(5) 1 mL @ 60°C
800 600-7'
no surrogate.

Trans 1,2-DCE 1.7 µg/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

(18)

*** SAMPLE ID. 800 600 -7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		1.7	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #10 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. ○ 7/27/96 JJJ

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry D. Johnson JDJ

(19)

(19) 1,1C @60 ?
800 G00 -14'

Vinyl chloride < 0.1 µg/l
Trans 1,2-DCE 0.5 µg/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

(19)

*** SAMPLE ID. 800 G00-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		0.5	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #10 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. O 7/27/96 JJB

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature] 8D

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 700 H05-7' (20)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		9.2	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		1.47	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #21 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 0 7/27/96 DD

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson DD

(20)

(20) 1 ML 60 C
700 H05 -->
(no surrogate)

Cis 1,2-DCE 9.2 ug/l

TCE 1.47 ug/l

(2nd Confirmation run #21)

X

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @10 µg/l (21)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: Cont. STD.

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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ANALYZED BY: Jerry D. Johnson

(21) 1mL @ 60°C Mix #5 @ 10 µg/l

Vinyl Chloride + Meth

Trans. 1,2-DCE

Cis. 1,2-DCE

Fluorobenzene

TCE

PCE

A B C D E F

22

IMC @60°

mix #5 + Surrogate 10 ug/l

9.15 ug/l
Vinyl Chloride

Trans 1,2-DCE 8.72 ug/l

Cis 1,2-DCE 6.81 ug/l

Fluorobenzene 7.4 ug/l

TCE 7.48 ug/l

(check Sample)

PCE 8.72 ug/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MW#5 @10 ug/l (22)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		9.15	92
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		8.72	87
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		6.81	68
Fluorobenzene surrogate §		7.4	74
TCE (Trichloroethylene)		7.48	75
PCE (Tetrachloroethylene)		8.72	87

SAMPLE TEMP: 35 °C VOL. INJ.: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: #21 6/24/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry D. Johnson

(23) 1ml @ 60°C 700 H05-14' 23

UNIT IN SEARCH MODE

DATE TIME
06/24/96 11:33:14

NOISE = 0.03483
BASELINE = 0.75214

SEARCH MODE RESULTS
PKR HEIGHT AREA TIME
1 37. 2184 1.103

all non-detect

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (23)
700 H05-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ.: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #21 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l, 7/27/96 OK

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry D. Johnson BD

(24) (24)

1ML @ 60 °C
2000-08-14

UNIT IN SEARCH MODE

vinyl chloride 0.4 µg/l

Fluorobenzene 6.19 µg/l
62 %R

DATE TIME
06/24/96 13:43:00

NOISE = 0.00488
BASELINE = 0.00800

SEARCH PEAK RESULTS
PK# HEIGHT AREA TIME
1 .035 .0224 1.15
2 .007 .00268 1.25
3 .047 .0228 3:00

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (24)
800 G00 -14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		6.19	62
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: # 21 6/24/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jerry D. Johnson

(25)

25

1ML @ 60°

800 G00 -7' + Surrogate

Bad Inj.

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 800 G00 -7' (25)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §			
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

Bad Inj.

SAMPLE TEMP: 35 °C VOL. INJ: 1ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: # 21 6/24/96

NOTES:

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ANALYZED BY: [signature]

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 800 G-00-7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		1.53	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		1.57	
Fluorobenzene surrogate §		3.5	35
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: 21 6/24/96

NOTES:

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ANALYZED BY: [signature]

(27) 1mL 60°C
Cis 1,2-DCE 100µg/L
(27)

Cis 1,2-DCE

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (27)
Cis 1,2-DCE 100 µg/L

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)	RT	25	25%
Fluorobenzene surrogate §	check	—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: # 21 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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ANALYZED BY: [signature] DDJ

28 1ML @ 60 °C (28)
Trans 1,2-DCE @ 10 ug/L

Trans 1,2-DCE

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (28)
Trans 1,2-DCE @ 10 ug/L

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)	RT	3.57	36
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: #21 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 6/24/96 DJ

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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DJ

ANALYZED BY: Jerry D. Johnson

(29) 1 uL (60) or
700 H05-14' Fluorobenzene 6.12 ug/l (29)

0.6 ug/l
Vinyl chloride & unk T

Trans 1,2-DCE 1.31 ug/l
Cis 1,2-DCE 1.14 ug/l

Fluorobenzene 6.12 ug/l
61 %R

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 700 H05-14' (29)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		1.31	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		1.14	
Fluorobenzene surrogate §		6.12	61
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 uL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #21 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry D. Johnson

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 500 G20 -14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		4.84	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		>161	
Fluorobenzene surrogate §		ND	Surr.
TCE (Trichloroethylene)		>89.6	
PCE (Tetrachloroethylene)		719.6	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #21 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. O 7/27/96

§ Surrogate concentration at 10 µg/l, JDS

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

JDS

ANALYZED BY: [signature]

(30) 1mL @ 60°C 500 G20 -14' (32)

Vinyl chloride 0.4 ug/l

Trans 1,2-DCE 4.84 ug/l

Cis 1,2-DCE >161 ug/l

TCE >89.6 ug/l

PCE >719.6 ug/l

(30)

(31) 1mL @ 60°C
500 G20 -7' no surrogate (31)

Vinyl chloride 3.89 ug/l
Trans 1,2-DCE 2.56 ug/l
Cis 1,2-DCE 45.2 ug/l
Fluorobenzene should not be here
0.20 ug/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (31)
500 G20 -7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		2.56	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		45.2	
Fluorobenzene surrogate §		2.5	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #21 6/24/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l, 7/27/96

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

(32) (32)

700 HO5 -- 7' + Surrogate @ 60 °C 1mL

Vinyl Chloride 4.62 µg/l

Cis 1,2-DCE 5.95 µg/l

Fluorobenzene 3.3 µg/l

33% R

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (32)

700 HO5-7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		5.95	
Fluorobenzene surrogate §		3.3	33
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 mL

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #21 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

(33) 1ML @ 60°C (33)
500 G20-14' Sample Temp

Vinyl Chloride

Trans-1,2-DCE 3.33

Cis 1,2-DCE 112.

Fluorobenzene 0.56

TCE 58.3

PCE 13.6

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (33)
500 G20-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		3.33	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		112.	
Fluorobenzene surrogate §		0.56	<1
TCE (Trichloroethylene)		58.3	
PCE (Tetrachloroethylene)		13.6	

SAMPLE TEMP: 35 °C VOL. INJ.: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #21 6/24/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry D. Johnson

(34) 1ML @ 60°C (34)
500 G20-7' 5.48 ug/l

Vinyl Chloride 5.19 ug/l

Trans 1,2-DCE 2.50 ug/l

Cis 1,2-DCE 33.1 ug/l

Fluorobenzene 5.48 ug/l 55%R

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (34)
500 G20-7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		2.50	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		33.1	
Fluorobenzene surrogate §		5.48	55
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #21 6/24/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: [signature]

(35)

(35) MIC @ 60 °C
mix #5 5 Fluorobenzene

Bcd

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @10 ug/l (35)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §			
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

Bcd

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~: 1 ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: # 21 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

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Matrix spike concentration at 10 µg/l.

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JDF

ANALYZED BY: Jimmy D. Johnson

(36) MIX @ 60 °C (36)
Mix #5 + Fluorobenzene 10 µg/l

Vinyl Chloride

Trans 1,2- DCE

cis 1,2- DCE

Fluorobenzene

TCE

PCE

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 10 µg/l (36)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T5.21	52
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		4.49	45
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		5.27	53
Fluorobenzene surrogate §		7.08	71
TCE (Trichloroethylene)		5.80	58
PCE (Tetrachloroethylene)		3.70	37

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: #21 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

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ANALYZED BY: [signature]

(37) INC @60°C (37)
mix #5 @ 10 ug/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (37) MIX #5 @ 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §			
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. INJ. 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/24/96

CAL. STD.: none

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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AD

ANALYZED BY: Jing D. Johnson

(38) 1MC P60 °C
710 E24-14' R.S
<0.01

Vinyl Chloride 5.36 µg/l

(38)

See analysis # 20 6/27/96

PCE → 14.4 µg/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (38)
710 E24-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		14.4	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #36 6/24/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. ○ 7/27/96 DD

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

DD

ANALYZED BY: [signature]

(39)

(39) IMC @ 60°C
710 E24 -> 1 no surrogate

Trans 1,2 DCE
>204 ug/l

Cis 1,2-DCE
>1,781 ug/l

TCE
>3,443 ug/l

PCE
>45,761 ug/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (39)
710 E24-7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		>204	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		>1,781	
Fluorobenzene surrogate §		/	NO Surr.
TCE (Trichloroethylene)		>3,443	
PCE (Tetrachloroethylene)		>45,761	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #3 6 6/24/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

(40) 10 ml (40)

100X

XDCE 24 - 21,462 ug/l

~~4,462 ug/l~~

? Vinyl Chloride

Trans 1,2 - DCE 290 ug/l

Cis 1,2 - DCE 2,454 ug/l

TCE

4,711 ug/l

PCE

> 115,330 ug/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (40)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		290	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		2,454	
Fluorobenzene surrogate §		/	No Surr.
TCE (Trichloroethylene)		4,711	
PCE (Tetrachloroethylene)		> 115,330	

SAMPLE TEMP: 35 °C VOL. INJ: 10 ul

SAMPLE MATRIX: SOIL WATER

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 100 X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #36 6/24/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

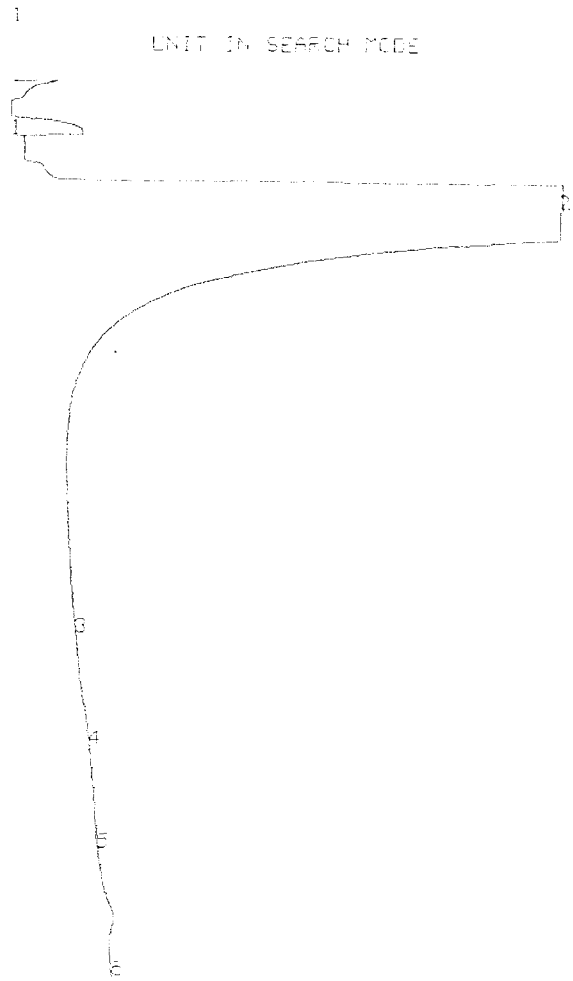
< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

I Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry D. Johnson

(1) 1MC He @60°C (1)



DATE TIME
08/25/96 08:30:18

NOISE = 0.00468
BASELINE = 2.44444

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	268	13738	2:40
2	236838	8408866	1:31
3	262	107844	2:34
4	381	166465	8:06
5	433	125064	9:04
6	840	1838?6	10:07

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (1)
Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1MC
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/25/96

CAL. STD.: N/A

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

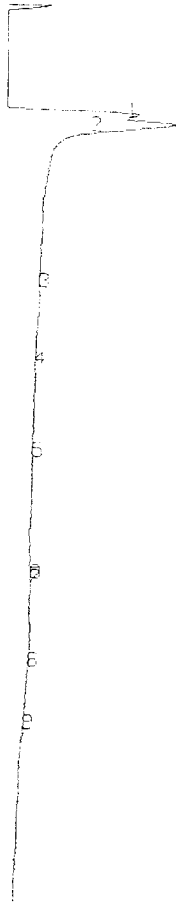
C:\WP51\NAVY\PARRIS.GRP

(2)

(2) 1 mL He @ 60 °C

1

LIMIT IN SEARCH MODE



DATE TIME
08/23/96 08:43:37

NOISE = 0.00488
BASELINE = 0.14836

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	334	20383	1:01
2	1222	40781	1:08
3	204	48452	2:56
4	183	4868	4:27
5	182	18870	5:16
6	134	46185	8:38
7	134	852	9:04
8	129	32382	9:33
9	85	11130	9:58

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (2)
Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/25/96

CAL. STD.: N/A

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

Jimmy Johnson

C:\WPS11\NAVY\PARRIS.GRP

[illegible]

(3) 1 uL He

1

UNIT IN SEARCH MODE

DATE TIME
06/25/96 08:55:39

NOISE = 0.00488
BASELINE = 0.34432

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	11331	303582	1:20

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (3)
Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/25/96

CAL. STD.: N/A

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

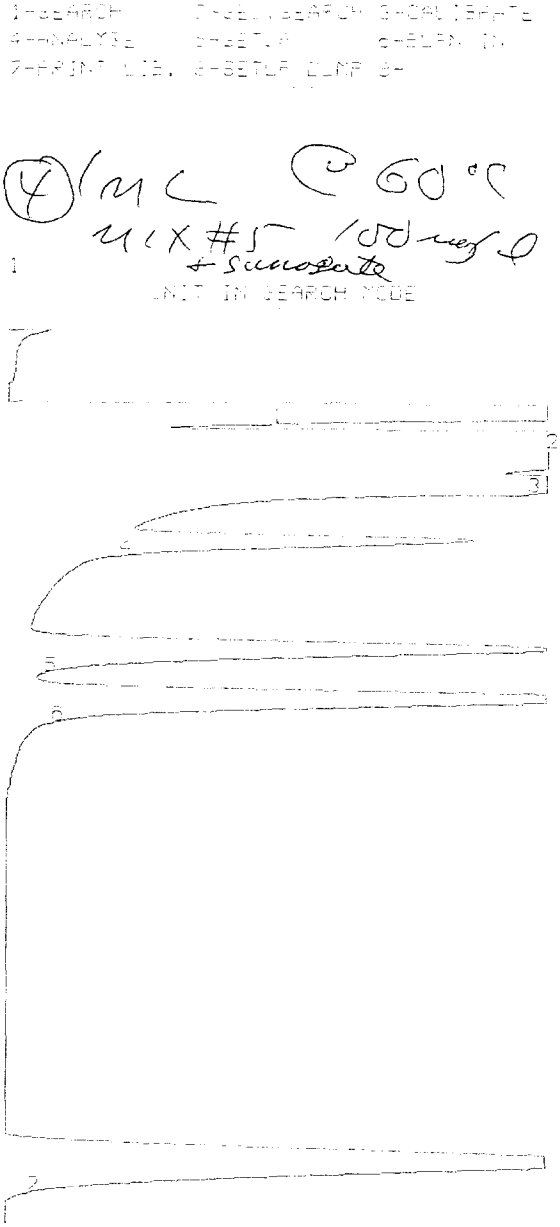
< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

C:\WP51\NAVY\PARRIS.GRP Jimmy Johnson



ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX#5 @ 100 mg/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		100T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		100	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		100	
Fluorobenzene surrogate §		100	
TCE (Trichloroethylene)		100	
PCE (Tetrachloroethylene)		100	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL WATER

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/25/96

CAL. STD.: N/A

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at ~~10~~ 100 µg/l.

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

Jim Johnson

C:\WP51\NAVY\PARRIS.ORP

(5)

(5) 1 MC @ 60 °C
mix #5 & Fluorobenzene @ 10 ug/l

UNIT IN SEARCH MODE

1 Vinyl Chloride + MeOH
3 Trans 1,2-DCE
4 Cis 1,2-DCE
5 Fluorobenzene
6 TCE
7 PCE

DATE 05/25/96 TIME 08:03:03

NOISE = 0.00468
BASELINE = 0.50734

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	1037	21143	1:01
2	100252	3208367	1:22
3	2332	62014	1:57
4	564	23008	2:36
5	264	11847	3:27
6	496	13387	4:33
7	307	18185	10:17

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		Check	
Fluorobenzene surrogate §		OK	
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. INJ: 1 MC
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/25/96

CAL. STD.: Uncaled

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

Jimmy Johnson

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1-SEARCH
4-ANALYSE
7-PRINT LIB. 8-SETUP COMP 9-

(6)

(6)

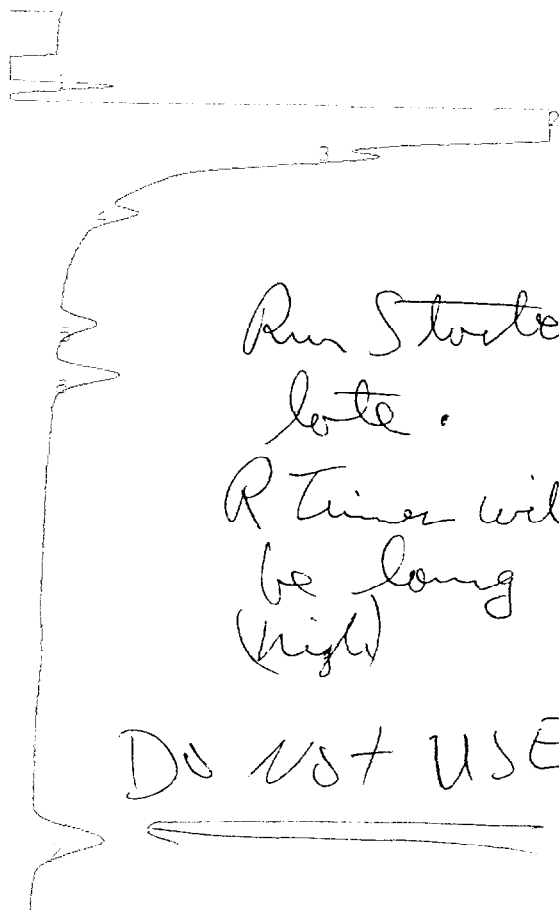
IMC @ 600

11 Loading start

1-SEARCH 10 mg/l mix #5 + Surr

1

UNIT IN SEARCH MODE



Run Started late.
R Times will be long (high)

Do Not USE!

DATE TIME
08/25/96 09:37:50

NOISE = 0.00486
BASELINE = 0.31819

SEARCH MODE RESULTS

PKB	HEIGHT	AREA	TIME
1	415	5868	0:54
2	33024	3438741	1:10
3			
4	887	34333	2:29
5	333	16263	3:50
6	463	23864	4:07
7	788	29661	10:00

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 10 mg/l (6)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		Do Not	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §		USE	
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~ 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/25/96

CAL. STD.: Bad do not use

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

Jimmy Johnson

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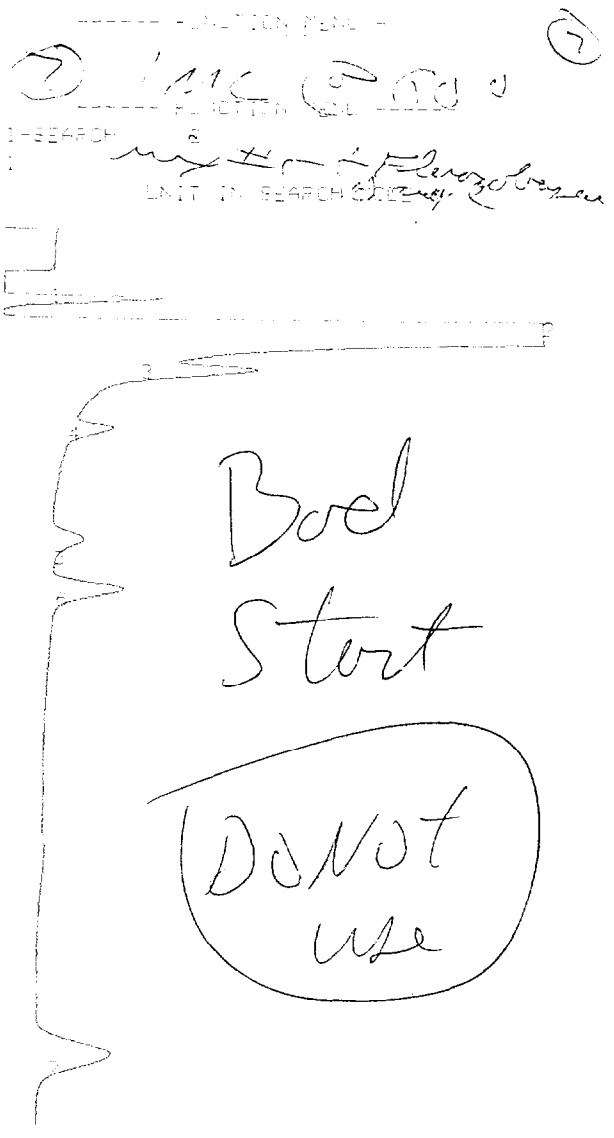

DATE TIME
06/25/96 08:52:43

NOISE = 0.00488
BASELINE = 0.35482

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	611	13862	0:53
2	43010	1408679	1:12
3	1479	85810	1:43
4	406	21782	2:08
5	226	11650	3:10
6	550	28758	4:02
7	412	21126	10:28

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX#5 @ 10 ug/l G

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §			
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

Bad Start

SAMPLE TEMP: 35 °C VOL. INJ: 1ml C
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/25/96

CAL. STD.: Do Not use

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jimmy D. Johnson

Jimmy Johnson

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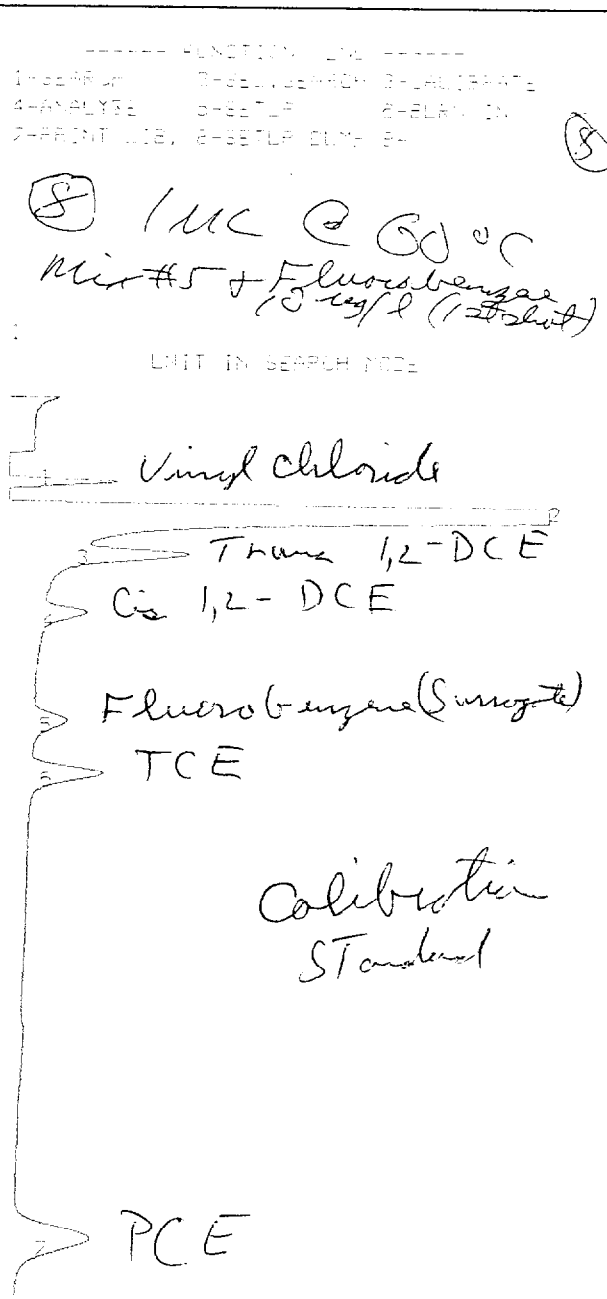

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 10 ug/l (8)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10 T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ.: 1 MC
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/25/96

CAL. STD.: #8 6/25/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jimmy D. Johnson

Jimmy Johnson

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(9)

(9) 1 uL @ 60 °C
D.I. water Blank & Surrogate
10 ug/L

UNIT IN SEARCH MODE

Fluorobenzene 14.98 ug/l
150 %R
Col. STD. 8

non-detect
good

DATE TIME
06/25/96 10:18:34

NOISE = 0.00488
BASELINE = 0.58606

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	28188	330681	1.02
2	284	11413	4.00

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (9)
DI Water Blank

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		14.98	150
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ.: 1 uL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1 X

DATE SAMPLED: N/A

DATE ANALYZED: 6/25/96

CAL. STD.: #8 6/25/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson
Jimmy Johnson

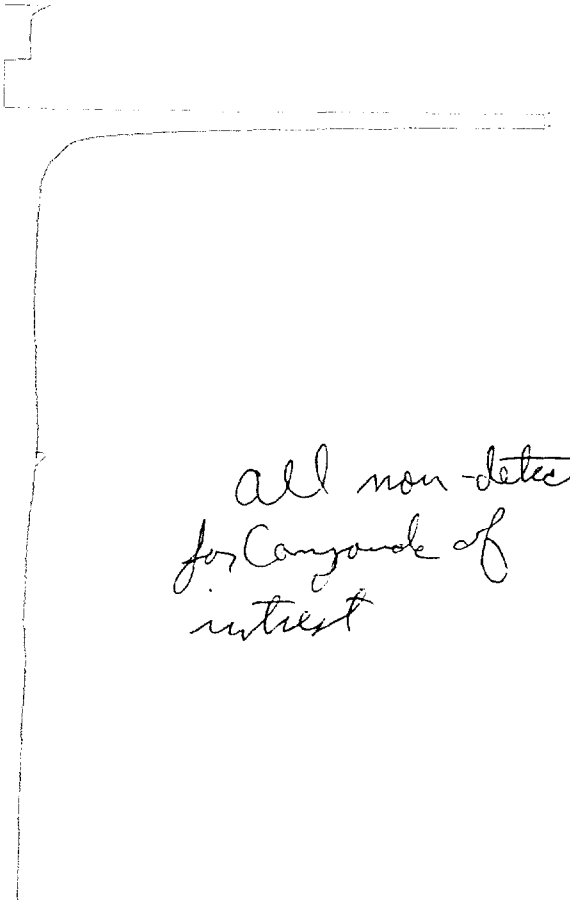
C:\WP51\NAVY\PARRIS.GRP

(12)

(13) 1 mL @ 60 °C
Rinsate Blank #1

1

UNIT IN SEARCH MODE



all non-detect for Compounds of interest

DATE TIME
06/26/96 10:32:55

NOISE = 0.02468
BASELINE = 0.63004

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	19260	3044/31	1:02
2	11	1346	5:36

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Rinsate Blank #1 (1

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/25/96

CAL. STD.: #8 6/25/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l, O 7/25/96 JDJ

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

Jimmy Johnson

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(11)

1 ML @ 60 °C
710E24-21' (as surrogate)

LIMIT IN SEARCH MODE

did not integrate
peak most likely
DCE < 5ppb

DATE TIME
06/25/96 10:43:52 2nd run

NOISE = 0.02488
BASELINE = 0.04225

#12 6/25/96

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	9281	11467e	1:21

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 710E24-21'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		<	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		<	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/25/96

DATE ANALYZED: 6/25/96

CAL. STD.: #8 6/25/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at ~~10~~ 9 µg/l. 7/25/96 DDJ

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

(12)

used Cal #8 6/25/96

(12) 1mL @ 60°

(3 col) 7 10 E24 -21' + surrogate @ 50 µg/l

cis 1,2-DCE 3.87 mg/l

Fluorobenzene (surrogate 37.8 mg/l

37.8% R

PCE 1.2 mg/l

although RT within cri of ± due to bad std, The Peak could be related with Cal #8 as the high surrogate recovery indicated to concentration of cis 1,2-DCE & PCE are no higher but most likely lower than calculated

NOTES =
BASELINE =

PK#	HEIGHT	AREA	TYPE
1			
2			
3			
4			

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (2)
7 10 E24 -21'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		3.87	
Fluorobenzene surrogate §		37.8	378
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		1.2	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/25/96

DATE ANALYZED: 6/25/96

CAL. STD.: #8 6/25/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

Jimmy Johnson

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(13)

(13) 1ML @ 60 °C
710 E24-28' no surrogate

cis 1,2-DCE 4.8 ug/l

TCE 0.16 ug/l

See analysis #15 6/25/96

PCE 54.3 ug/l

DATE TIME
06/25/96 11:12:01

NOISE = 0.00488
BASELINE = 2.00067

SEARCH MODE RESULTS

PKR	HEIGHT	AREA	TIME
1	46/3	134188	1:07
2	210	6772	2:38
3	17	342	4:28
4	1073	131698	10:20

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (13)
710 E24-28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		4.8	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		54.3	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/25/96

DATE ANALYZED: 6/25/96

CAL. STD.: #8 6/25/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at ~~10~~ 0 µg/l, 7/25/96 DDJ

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

Jimmy Johnson

C:\WP51\NAVY\PARRIS.GR

(14)

(14) 1 mL @ 60 °C
mix #5 + Surrogate
allot 10 ug/l

UNIT IN SEARCH MODE

A — Vinyl Chloride
B — Trans 1,2-DCE
C — Cis 1,2-DCE
D — Fluorobenzene (Surrogate)
E — TCE
F — PCE

DATE TIME
06/25/96 11:33:10

NOISE = 0.00488
BASELINE = 0.85934

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME	
A	[illegible]	[illegible]	[illegible]	VC
	[illegible]	[illegible]	[illegible]	ISO-OH
B	[illegible]	[illegible]	[illegible]	T-DCE
C	[illegible]	[illegible]	[illegible]	C-DCE
D	[illegible]	[illegible]	[illegible]	FB
E	[illegible]	[illegible]	[illegible]	TCE
F	[illegible]	[illegible]	[illegible]	PCE

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
Mix #5 @ 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/25/96

CAL. STD.: #14 6/25/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

Jimmy Johnson

C:\WP51\NAVY\PARRIS.GRP

(15)

(15) 1mL @ 60°C

710 E24-28' + Surrogate @ 10 µg/l

UNIT IN SEARCH MODE

Used CalSTD #14 6/25/96

Cis 1,2-DCE 6.58µg/l

Fluorobenzene 13.3 µg/l 130%R

TCE 0.42 µg/l <0.5

Used CalSTD #13 6/25/96

PCE 36.6 µg/l

DATE TIME

06/26/96 11:30:10

NOISE = 2.02466

BASELINE = 2.66811

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	9536	360148	1:02
2	285	3181	2:25
3	736	17811	4:52
4	19	357	6:42
5	1393	111417	10:51

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (15)

710E24-28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		6.58	
Fluorobenzene surrogate §		13.3	130
TCE (Trichloroethylene)		<0.5	
PCE (Tetrachloroethylene)		36.6	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/25/96

DATE ANALYZED: 6/25/96

CAL. STD.: # 14 6/25/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

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Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson

(16)

(16)

1ml @ 60°C
Rinsate Blank #1
+ Fluorobenzene @ 10 ug/l

LIMIT IN SEARCH MODE

Fluorobenzene
(surrogate) 13.2 ug/l

132 %R

DATE TIME
06/25/96 13:48:08

NOISE = 3.30468
BASELINE = 2.42038

SEARCH MODE RESULTS
PKE HEIGHT AREA TIME

1 8767 Inactive 1:02 ISO-OH
2 [illegible] [illegible] 4:01 FB

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
Rinsate Blank #1

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		13.2	132
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/25/96

DATE ANALYZED: 6/25/96

CAL. STD.: #14 6/25/96

NOTES:
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Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson

C:\WP51\NAVY\PARRIS.GRP

(17)

used calibration STD
14 6/25/96

(17) 1MC @ 60 °C
710 E24 -7' + Fluorobenzene
6/24/96

UNIT IN SEARCH MODE

1 ISO-OH
2 Trans 1,2-DCE
Cis 1,2-DCE
Fluorobenzene 27.4 ug/l
27.4%R
TCE
PCE

See run
19
100 X dilution

DATE TIME
06/25/96 10:08:00

SLOPE = 0.00463
BASELINE = 0.02330

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME	
1	4094	11e283	1:22	ISO-OH
2	11994	43e873	1:38	
3	6971	78e33e0	2:04	
4	45e	2e66e	3:22	
5	138936	e396430	4:07	
6	736	3e87e	7:1e	
7	2	7e8	e:e3	
8	4.3.3e	41e1e83e	10:3e	

** PEAK UNDER THRESH **

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 710E24-7' (1

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)	See RUN		
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)	#19 6/25/9		
Fluorobenzene surrogate §		27.4	274
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. ~~INJ~~ 1MC
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: # 14 6/25/96

NOTES:

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§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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> Indicates actual concentration of compound may exceed reported value.

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ANALYZED BY: Jimmy D. Johnson

(18)

#18 Clean out of #17 (no injection)

UNIT IN SEARCH MODE

DATE 08/25/96 TIME 12:21:52

NOISE = 0.00488
BASELINE = 0.3125

NO PEAKS DETECTED

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Clean Out (18)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1 X

DATE SAMPLED: N/A

DATE ANALYZED: 6/25/96

CAL. STD.: #14 6/25/96 N/A

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jimmy D. Johnson JDJ

(19)

(19) 10 µl @ 60 °C

710 E24-7' (100X) x Fluorobenzene

UNIT IN SEARCH MODE

2,106 ug/l
Vinyl Chloride

Trans 1,2-DCE 127 ug/l

Cis 1,2-DCE 1,440 ug/l

(Fluorobenzene diluted out)

TCE
3,296 ug/l

Used Cal Std. #14 6/25/96

47,273 ug/l
PCE

DATE TIME
06/25/96 12:34:00

NOise = 2.004e6
BASELINE = 1.026E5

SEARCH MODE RESULTS

PKS	HEIGHT	AREA	TIME
1	1811	73648	0:58
2	5461	.1e+06	1:07
3	24x	9566	1:15
4	27x	30705	3:26
5	1813	73317	4:32
6	1e+06	.4361e6	12:21

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (19)
710 E24-7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		127	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)	1.4	1,440	
Fluorobenzene surrogate §		diluted out	N/A
TCE (Trichloroethylene)	3.3	3,296	
PCE (Tetrachloroethylene)	47.3	47,273	

SAMPLE TEMP: 35 °C VOL. INJ: 10µl
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 100 X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/24/96

CAL. STD.: #14 6/25/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson 90

(20)

(2C)

(2B)

1 ML @ 60°C
710 E24-141 + Fluorobenzene @ 8.6 ug/l

UNIT IN SEARCH MODE

Jimmy Cohen 6/24/96

Fluorobenzene 8.6 ug/l
86% R

see analysis #38
6/24/96

PCE 2.19 ug/l

analyzed DATE 06/25/96 TIME 13:48:18

NOISE = 0.00468
BASELINE = 0.71881

SEARCH MODE RESULTS

PAK	HEIGHT	AREA	TIME
1	5836	121000	1:13
2	213	4384	4:01
3	117	2420	10:51

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (2C)
710 E24-141

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		8.6	86.(
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		2.19	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/24/96

DATE ANALYZED: 6/25/96

CAL. STD.: #14 6/25/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson (8D)

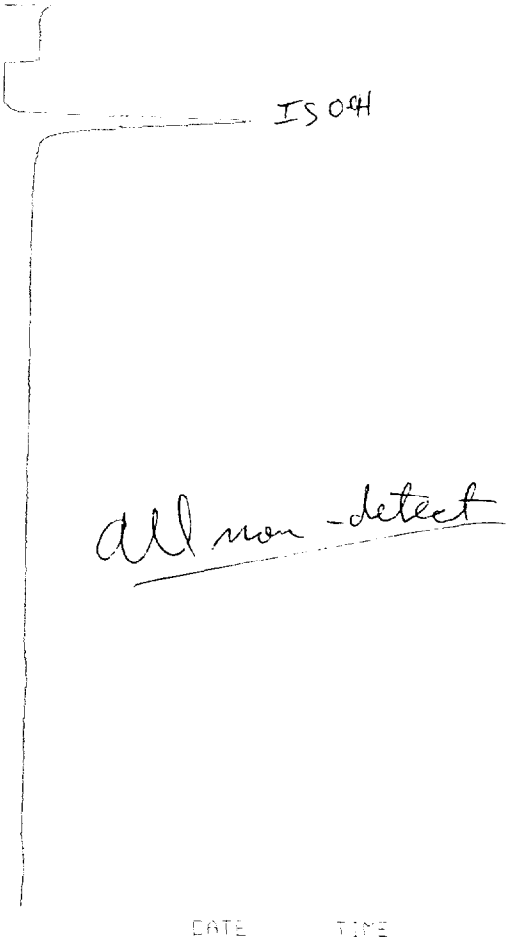
(21)

He 1ml @ 60 °C

(21)

1

UNIT IN SEARCH MODE



all non-detect

DATE TIME
06/25/96 14:02:47

NOISE = 0.00468
BASELINE = 0.03748

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	1578	13147	1124

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (21)

Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ.: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/25/96

CAL. STD.: #14 6/25/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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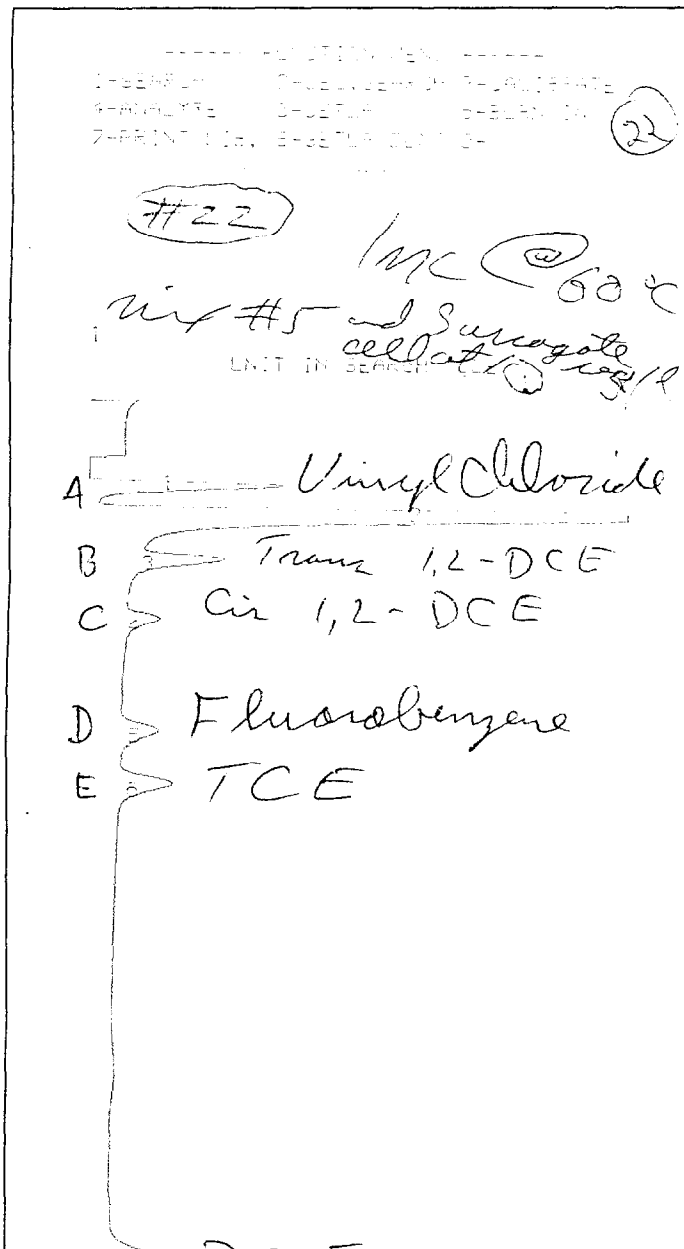
T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson



ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX#5 @ 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/25/96

CAL. STD.: Cal. STD

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson JDJ

(23)

(23) 1ML @ 60 °C
Vinyl Chloride @ 20.5 ug/l

Vinyl Chloride 10.5 ug/l
51.2 %R

10.97 ug/l Fluorobenzene
110 %R

Could be Vinyl Chloride; but not sure.

DATE TIME
06/25/96 14:38:07

NOISE = 0.30468
BASELINE = 0.70330

PKS	HEIGHT	AREA	TIME
1	.0068	06478	1.824
2	.0068	06428	1.824
3	.[illegible]	[illegible]	4.[illegible]

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (23) Vinyl Chloride @ 20.

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10.5	50
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		10.97	110
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/25/96

CAL. STD.: # 22 6/25/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson 8/8

C:\WP51\NAVY\PARRIS.GRP

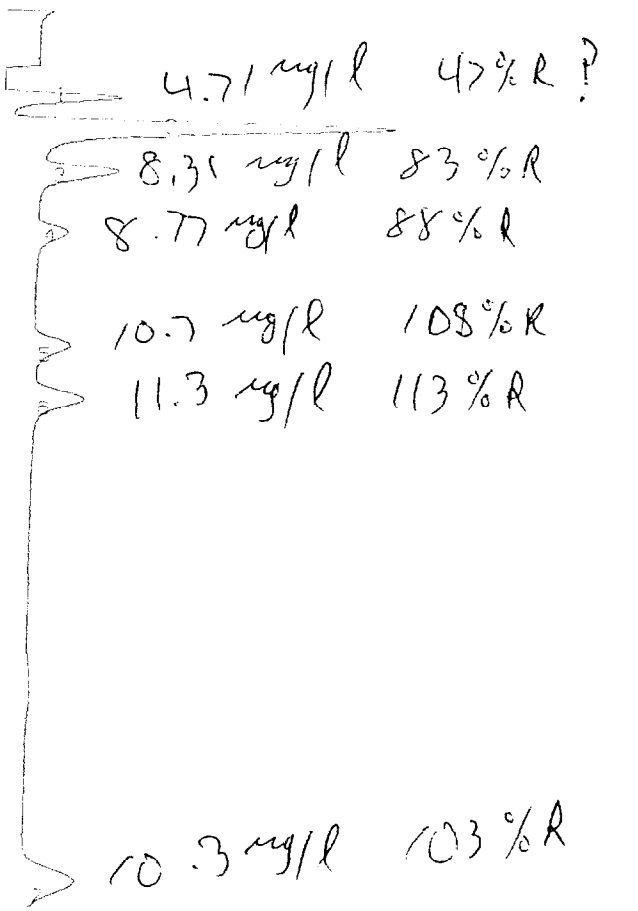
(24)

(24) Check Sample

1 mL @ 60 °C

mix #5 of Fluoro Compounds at 10 mg/l (Prep check)

UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/25/96 15:57:42

NOISE = 0.08486
BASELINE = 0.73260

SELECTIVE SEARCH RESULTS

PKN	COMPOUND NAME	HEIGHT	AREA	TIME
1	Vinyl Chloride ?	363	11327	1:03
3	Trans-1,2-DCE	1.0	23063	1:35
4	Cis-1,2-DCE	199	7832	2:49
5	Fluorobenzene	195	10348	4:07
6	TCE	336	16833	4:14
7	Tetrachloroethene	312	29281	10:41

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (24)

MIX #5 @ 10 mg/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		4.71	47
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		8.31	83
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		8.77	88
Fluorobenzene surrogate §		10.7	108
TCE (Trichloroethylene)		11.3	113
PCE (Tetrachloroethylene)		10.3	103

SAMPLE TEMP: 35 °C VOL. INJ: 1 mL

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/25/96

CAL. STD.: # 22 6/25/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

C:\WPS1\NAVY\PARRIS.GRP

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (25)

Rinsate Blank #2

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		16.2	162
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		<	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~ 1 ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/25/96

DATE ANALYZED: 6/25/96

CAL. STD.: #22 6/25/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

(25) 1 ML @ 60°C Rinsate Blank #2 + Surrogate (10 µg/l)

Fluorobenzene 16.2 µg/l 162 %R

(1) Could be PCE at < 5 µg/l

(26) 1ml @ 60°C

600 G00 - 14' Soil/Ground

Cis 1,2- DCE 9.12 ug/l

Fluorobenzene 11.1 ug/l
111 %R

TCE

5,272 ug/l

Del mt #27
6/25/96

3,705 ug/l

PCE

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 600 G00-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		9.12	
Fluorobenzene surrogate §		11.1	11
TCE (Trichloroethylene)	5.3	5,272	
PCE (Tetrachloroethylene)	3.7	3.705	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/25/96

DATE ANALYZED: 6/25/96

CAL. STD.: # 22 6/25/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

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ANALYZED BY: Jimmy D. Johnson JDJ

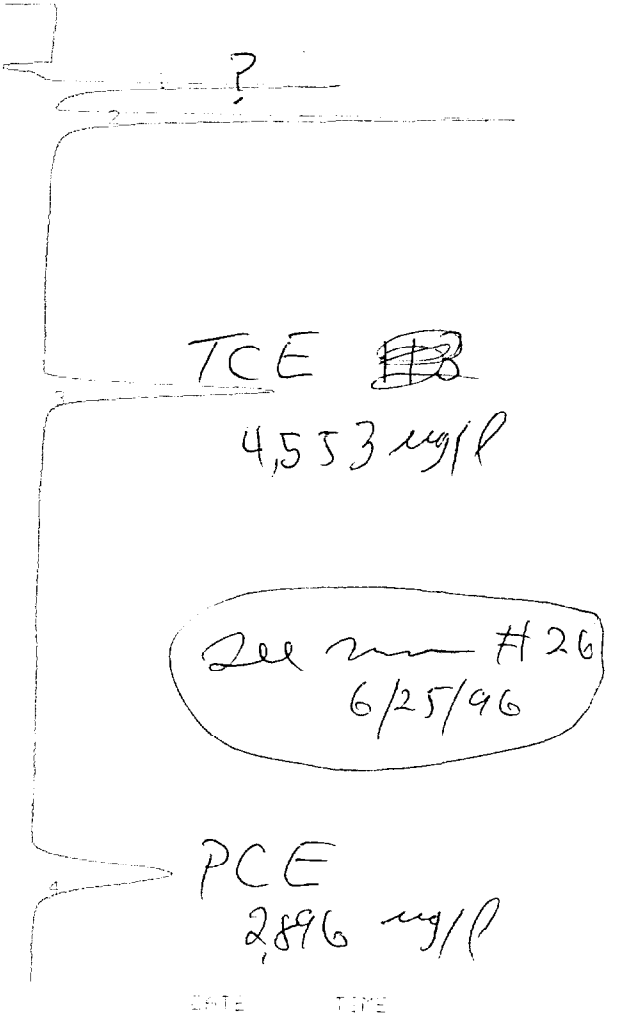
(27)

(27)

(100X) 10ul @ 60 °C

600 ppb + Surrogate @ 5 ug/l

UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/25/96 10:42:17

NOISE = 0.000E+00
BASELINE = 0.000E+00

SELECTIVE SEARCH RESULTS

Pk#	Cmpd	RT	Height	Area	Time
1	Vinyl Chloride?	2168	30422	0.000E+00	9:58
3	TCE	1687	4553	0.000E+00	4:42
4	Tetrachloroethene	2414	65528	0.000E+00	10:40

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)	4.6	4,553	
PCE (Tetrachloroethylene)	2.9	2,896	

SAMPLE TEMP: 35 °C VOL. INJ: 10ul

SAMPLE MATRIX: SOIL WATER

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 100X

DATE SAMPLED: 6/25/96

DATE ANALYZED: 6/25/96

CAL. STD.: #22 6/25/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

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ANALYZED BY: [signature]

(28)

(28) 1MC @ 60 °C
600 G00-21 @ 10 ug/l
+ surrogate

Fluorobenzene
13.3 ug/l
133 %R

PCE 0.84 ug/l

DATE TIME
06/25/96 12:03:13

NOISE = 0.0046a
BASELINE = 2.6637a

SELECTIVE SEARCH RESULTS

PK#	COMPOUNDNAME	HEIGHT	AREA	TIME
2	4	25A	1243a	4.00
3	Tetrachloroethylene	2A	12.5	10.16

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (28)
600 G-00-21'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		13.3	133
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		0.84	

SAMPLE TEMP: 35 °C VOL. INJ: 1 MC
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/25/96

DATE ANALYZED: 6/25/96

CAL. STD.: # 22 6/25/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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DDB

ANALYZED BY: John D. Johnson

(29)

(29) 1mL @ 60 °C
600 G00-28'
+ Surrogate @ 10 ug/l

Fluorobenzene
53.4 ug/l
534 %R

could be PCE?

DATE TIME
06/25/96 17:34:02

NOISE = 0.000482
BASELINE = 0.000372

SELECTIVE SEARCH RESULTS
PEAK CONCENTRATION HEIGHT AREA TYPE
1 1 401 21427 BV

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (29)
600 G00-28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		53.4	534
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		<	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/25/96

DATE ANALYZED: 6/25/96

CAL. STD.: #22 6/25/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

DDB

ANALYZED BY: Jimmy D. Johnson

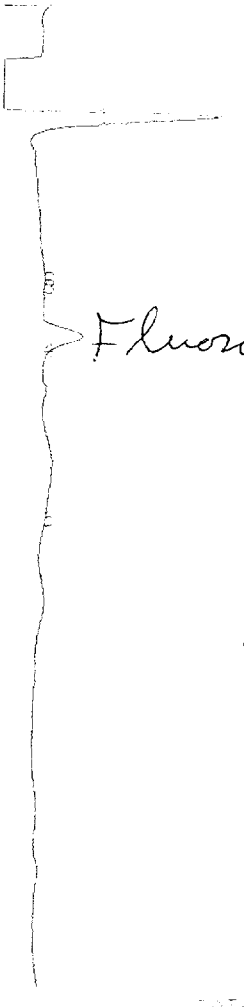
(30)

(30) 1 mL @ 60 °C

600 G00 - 34' 5 surrogate

2

LIMIT IN SELECTIVE SEARCH CYCLE



Fluoro Benzene 16.3 ug/l

163% R

all non-detects

DATE TIME

NOISE =

SPECTRUM =

SELECTIVE SEARCH RESULTS

PEAK COMPOUND WEIGHT AREA TIME

1 1 DB 10758 8.00

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (30)

600 G00 - 34'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		16.3	163
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ.: 1 mL

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/25/96

DATE ANALYZED: 6/25/96

CAL. STD.: # 22 6/25/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

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808

ANALYZED BY: [signature]

(31)

(31) 1ML @60 °C
600 600 -28'
(no surrogate added)

all non-detects

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (31)
600 600 -28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	NO surr. add
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/25/96

DATE ANALYZED: 6/25/96

CAL. STD.: # 22/6/25/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: JDJ

(32)

(32) 1 µC @ 60 °C

710 E24-38' 10 µg/l + Surrogate

2

UNIT IN SELECTIVE SEARCH CYCLE

← Fluorobenzene 13.7 µg/l

137 %R

< 5 µg/l

PCE

DATE TIME

06/25/96 12:17:45

NOISE = 0.000e0

PASSIVE = 0.000e0

SELECTIVE SEARCH RESULTS

PKN	NAME	MASS	AREA	TIME
2	?	131	13281	4.75
6	Tetrachloroethene	82	6747	8.13
3	Tetrachloroethene	131	1262	10.63

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (32)

710 E24-38'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		13.7	137
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		< 5	

SAMPLE TEMP: 35 °C VOL. INJ: 1 µC

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/25/96

DATE ANALYZED: 6/25/96

CAL. STD.: # 22 6/25/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry D. Johnson

(1)

(1) 1 ml Hr @ 60 °C

2

UNIT IN SELECTIVE SEARCH CYCLE

DATE TIME
06/26/96 07:15:24

NOISE = 0.20488
BASELINE = 0.80830

NO PEAKS DETECTED

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/26/96

CAL. STD.: un calibrated

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

C:\WP51\NAVY\PARRIS.GRP

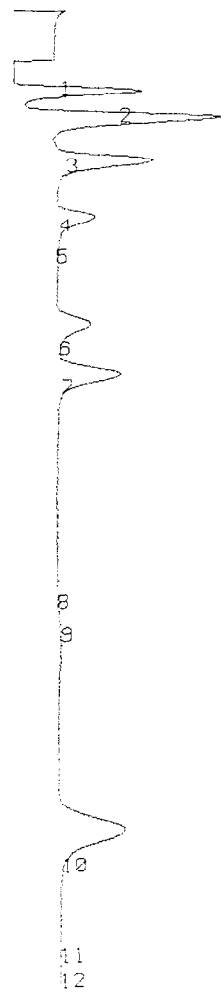
------ FUNCTION MENU ------

1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(2)

(2) 1MC @ 60 °C
old mix #5 + Fluorobenzene old Dat 7/2-3/96

UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/26/96 07:29:15

NOISE = 0.00488
BASELINE = 0.80585

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	VinylChloride	640	12707	0:58
10	Tetrachloroethylene	533	53026	10:04

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @10 µg/l (2)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. ~~INJ:~~ 1 MC
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/26/96

CAL. STD.: un calibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson 8098

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------ FUNCTION MENU ------

1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(3)

(3) 1 ml @ 60 °C
added 5 µl surrogate at 15 sec

2

UNIT IN SELECTIVE SEARCH CYCLE

DATE TIME
06/26/96 07:43:48

NOISE = 0.00488
BASELINE = 0.77656

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	VinylChloride	601	11426	8:58
7	TetClethylene	320	19200	10:36

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
MIX #5

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/26/96

CAL. STD.: un calibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson

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------ FUNCTION MENU ------

1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(4)

(4) 1MC @ 60°C
add mix 5 + Fluorobenzene @ 10 ug/l

1

UNIT IN SEARCH MODE

DATE TIME
06/26/96 08:06:01

NOISE = 0.20488
BASELINE = 0.71306

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	476	8690	1:01
2	410	10259	1:21
3	601	21518	1:53
4	197	6843	2:36
5	161	6452	3:56
6	361	16532	4:33
7	375	27049	12:09

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/14

DATE ANALYZED: 6/26/96

CAL. STD.: un calibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

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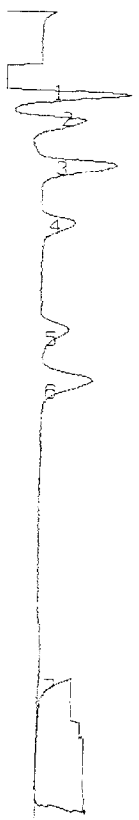
------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(5)

(5) 1ml @ 60 °C
Mix #5 + Fluorobenzene
at 10 µg/l

1

UNIT IN SEARCH MODE



DATE TIME
06/26/96 08:22:08

NOISE = 0.00488
BASELINE = 0.73748

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME	
1	634	12504	1:01	0.24
2	291	7413	1:20	
3	530	20609	1:53	0.05
4	215	8655	2:36	0.07
5	163	7878	3:56	0.07
6	353	17871	4:32	0.10
7	333	25565	10:10	0.50

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
MIX #5 @10 µg/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	Bve

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: n/a

DATE ANALYZED: 6/26/96

CAL. STD.: un calibrated

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

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ANALYZED BY: Jimmy D. Johnson

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------ FUNCTION MENU ------

1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(6)

(6) 1mL @ 60 °C
mix #5 at 10 ug/L Fluorobenzene

2

UNIT IN SELECTIVE SEARCH CYCLE

1 Vinyl Chloride
2 Trans 1,2-DCE
3 Cis 1,2-DCE
4 Fluorobenzene (Surrogate)
5 TCE
6
7 PCE

DATE TIME
06/26/96 08:57:12

NOISE = 0.00488
BASELINE = 0.78877

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
A	1 VinylChloride	652	13758	1:20
B	3 t-1,2DiCle	688	25877	1:52
C	4 c-1,2DiCle	245	10282	2:36
D	5 4	225	(10548)	3:55
E	6 TCE	436	22107	4:32
F	7 TetClethylene	425	33137	10:11

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
MIX # 5 @10 ug/L

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ.: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/26/96

CAL. STD.: mg calibrated Cal STD

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson JDJ

------ FUNCTION MENU ------

1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(7) 1mL @ 60°C
Dilute Blank + Surrogate
UNIT IN SELECTIVE SEARCH

(7)

1

2

Fluorobenzene 8.80 µg/l
88%R

used Cal. STD
#8 6/26/96
7/27/96 JHB

Blanks all non-detect

DATE TIME
06/26/96 09:12:07

NOISE = 0.00488
BASELINE = 0.76923

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	4	223	9288	3:55

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. D.I. Water

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		8.80	88
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~ 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/26/96

CAL. STD.: #8 6/26/96
6 7/27/96 JHB

NOTES:

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§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson JHB

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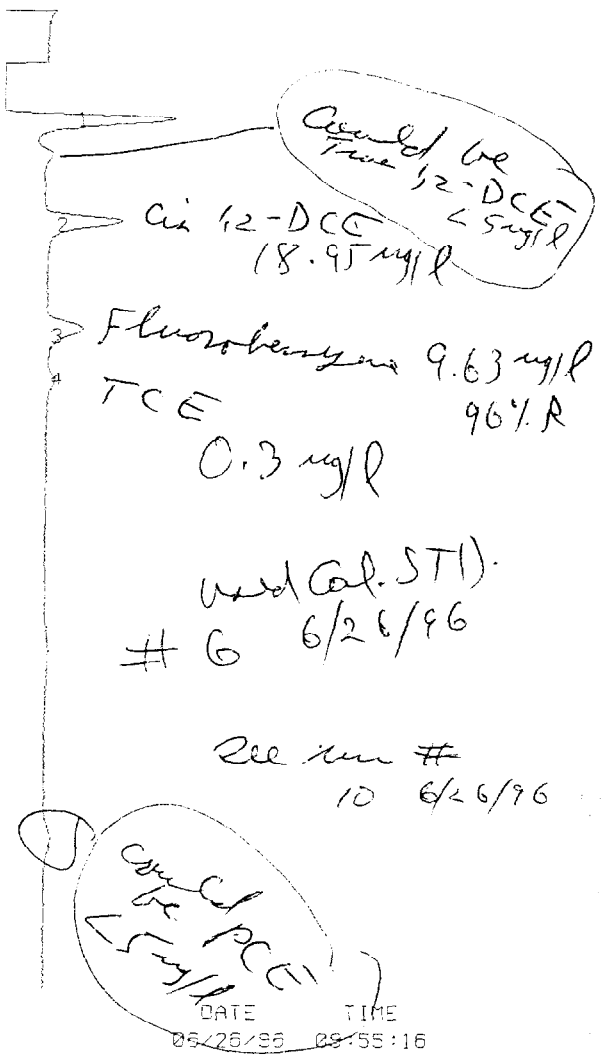
------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(8)

(8) 1ml @60°C
404 H21 ->< + Surrogate 10 ug/l

2

UNIT IN SELECTIVE SEARCH CYCLE



NOISE = 0.00488
BASELINE = 0.85470

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	c-1,2DICLE	533	19498	2:35
3	4	230	10162	3:55
4	TCE	10	655	4:35

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 404 H21 -7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		< 5	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		18.95	
Fluorobenzene surrogate §		9.63	96
TCE (Trichloroethylene)		< .5	
PCE (Tetrachloroethylene)		< 5	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jimmy D. Johnson JDJ

------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(9)

(9) 1ml @ 60°C
404 H21 -14' + Surrogate @ 10 ug/l

2

UNIT IN SELECTIVE SEARCH CYCLE

6/26/96 #11

~~Cis 1,2-DCE~~

Cis 1,2-DCE 42.6 ug/l

Fluorobenzene 12.98 ug/l 130%R

TCE 1.17 ug/l

see also #11 6/26/96

Used Cal. STD. #6 6/26/96

see #11 6/26/96

DATE TIME
06/26/96 10:09:24

NOISE = 2.00488
BASELINE = 0.79853

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	c-1,2DiCle	1049	43815	2:34
3	4	278	13695	3:55
4	TCE	58	2589	4:32

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
404 H21 -14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		42.6	
Fluorobenzene surrogate §		12.98	130
TCE (Trichloroethylene)		1.17	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

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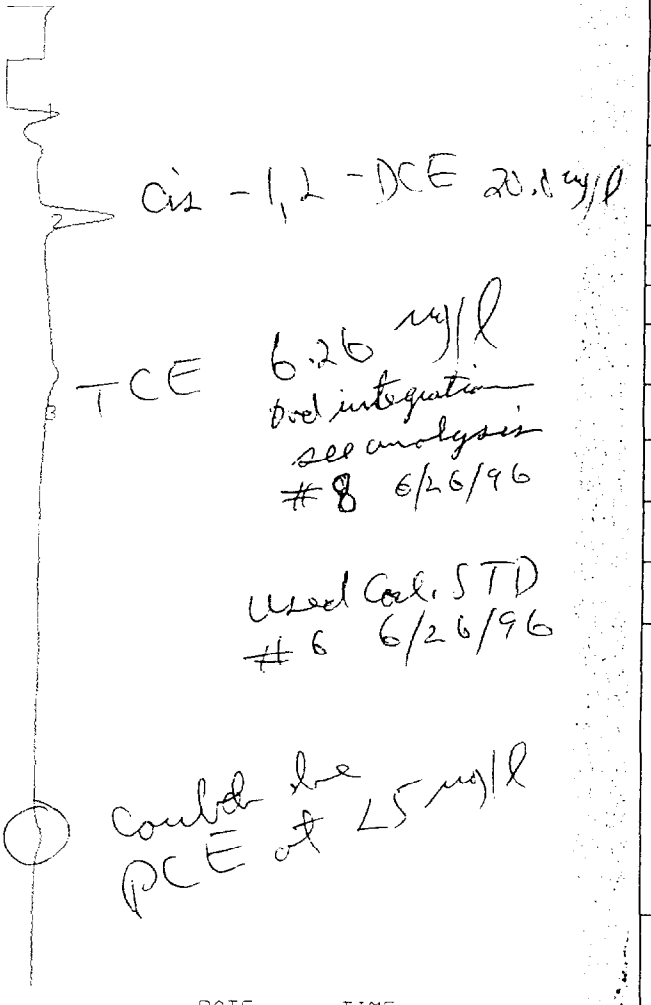
------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(10)

(10) 1ml @ 60°C
404 H21-7' no surrogate

2
UNIT IN SELECTIVE SEARCH CYCLE



Cis-1,2-DCE 20.0 ug/l

TCE 6.26 ug/l
Dual integration
see analysis
#8 6/26/96

Used Cal. STD
#6 6/26/96

Could be
PCE at <5 ug/l

DATE TIME
06/26/96 10:23:10

NOISE = 0.00488
BASELINE = 0.76190

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	c-1,2DiCIE	522	20581	2:35
3	TCE	91	13843	4:32

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
404 H21-7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		20.0	
Fluorobenzene surrogate §			nc Surr
TCE (Trichloroethylene)		6.26	
PCE (Tetrachloroethylene)		<5	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/29/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 0 7/27/96 JDH

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

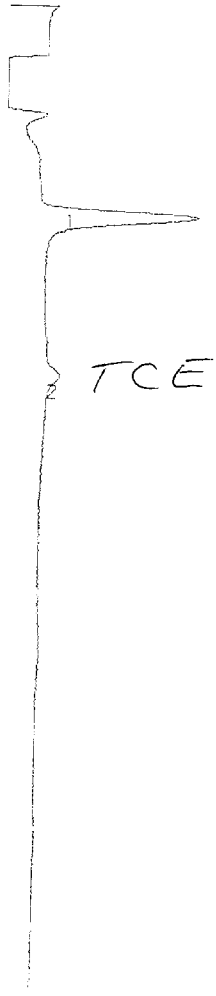
ANALYZED BY: Jimmy D. Johnson JDH

------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(11) 1ml @60°C
404 H21-14'
no surrogate

2

UNIT IN SELECTIVE SEARCH CYCLE



see # 9
6/26/96

DATE TIME
26/26/96 10:36:51

NOISE = 0.00488
BASELINE = 0.80342

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	c-1,2DICE	1132	45572	2:34
2	TCE	91	5697	4:34

FUNCTION MENU

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
404 H21-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		44.3	
Fluorobenzene surrogate §			NO Sur
TCE (Trichloroethylene)		2.58	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: _____

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. O 7/27/96 JDJ

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

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ANALYZED BY: Jimmy D. Johnson JDJ

------ FUNCTION MENU ------

1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

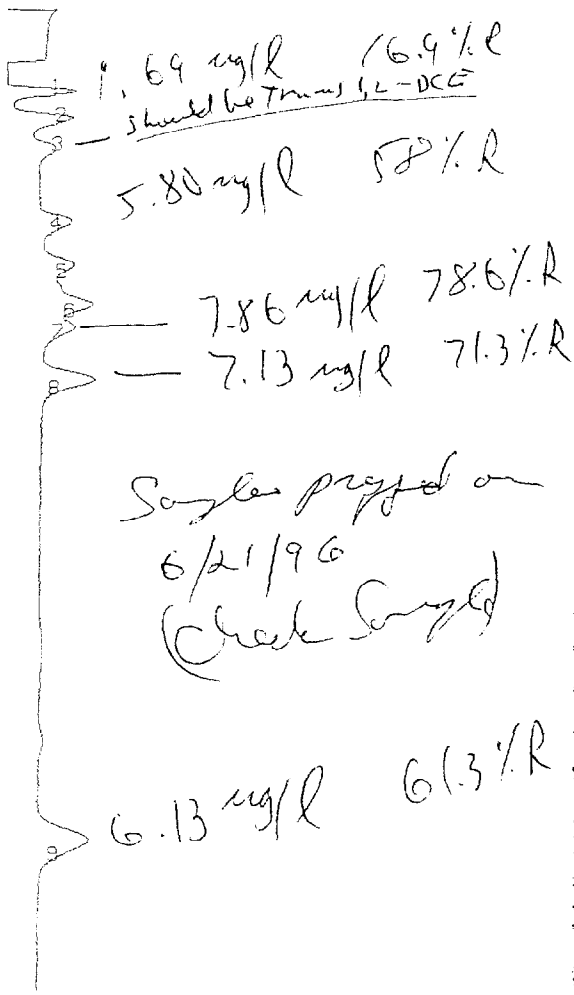
(12)

(12) 1ml @ 60 °C

Cust #1206 Fluorobenzene @ 10 ug/l

(del) (13) 2

UNIT IN SELECTIVE SEARCH CYCLE



Samples prepped on 6/21/96 (Check Sample)

DATE TIME
06/26/96 10:55:18

NOISE = 0.02468
BASELINE = 0.80342

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	VinylChloride	184	2332	1:00
4	c-1,2DiCle	169	5963	2:35
7	4	193	8290	3:54
8	TCE	332	15758	4:32
9	TetCleEthylene	295	20330	10:11

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Cust 1206 @ 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		1.69	16.
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		5.80	58
Fluorobenzene surrogate §		7.86	79
TCE (Trichloroethylene)		7.13	71
PCE (Tetrachloroethylene)		6.13	61

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: n/a

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

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Matrix spike concentration at 10 µg/l.

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JDB

ANALYZED BY: Jimmy D. Johnson

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------ FUNCTION MENU ------

1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(13)

(13) IMC @60°C
Mix #5 + Fluorobenzene
add @ 10 ng/l

3

UNIT IN CALIBRATION

PEAK UNDER RANGE

UNSUCCESSFUL CALIBRATION

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX # 5 @10 ng/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:

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ANALYZED BY: Jimmy D. Johnson DDJ

------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(14)

(14) 1ml @ 60°C
40ml G09-71
(no surrogate added)

2
UNIT IN SELECTIVE SEARCH CYCLE

OK 6/26/96 DDJ

BAD

(did not integrate peaks, Poor resolution Colebolt for, therefore DDJ

see run #16 6/26/96

see above run #16 6/26/96

DATE TIME
06/26/96 12:01:40

NOISE = 0.00488
BASELINE = 0.77411

NO PEAKS DETECTED

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 400 G09 -71 (1

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §			no Surr
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: # 6 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. O 7/27/96 DDJ

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ANALYZED BY: Jimmy D. Johnson

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------ FUNCTION MENU ------

1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(15)

(15) 1 mL @ 60 °C
400 G09-7' MS
10 ug/l mix 5 + Fluorobenzene
2 UNIT IN SELECTIVE SEARCH CYCLE

4.5 ug/l 45% R
6.54 ug/l 65% R
4.77 ug/l 48% R
8.61 ug/l 86% R
5.76 ug/l 58% R

Re-run #16 6/26/96
used Cal. Std. 6 6/26/96

5.71 ug/l 57% R

re-run #16
6/26/96 MS
Chrysene

DATE TIME
06/26/96 12:15:34

NOISE = 0.00488
BASELINE = 0.80586

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	VinylChloride	386	6244	0:59
3	t-1,2DiCle	476	16933	1:51
4	c-1,2DiCle	150	4812	2:33
5	4	217	9077	3:55
6	TCE	287	12731	4:32
7	TetCleEthylene	268	13822	10:12

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
400 G09-7' (MS)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		4.5	45
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		6.54	65
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		4.77	48
Fluorobenzene surrogate §		8.61	86
TCE (Trichloroethylene)		5.76	58
PCE (Tetrachloroethylene)		5.71	57

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:

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ANALYZED BY: Jimmy D. Johnson JDJ

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------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP JUMP 9-

(16)

(16) 1ml @ 60 °C
400 G09-7'

2

UNIT IN SELECTIVE SEARCH CYCLE

non-detect for Compounds of interest

see also run #14 6/26/96

T #15 6/26/96

DATE TIME
06/26/96 12:32:52

NOISE = 0.03488
BASELINE = 0.81074

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (1)
400 G09-7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/29/96

NOTES:
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ANALYZED BY: Jimmy D. Johnson

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------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(17)

(17) Inj @ 60 °C
400 G09-14' + Samples 2nd inj

2 UNIT IN SELECTIVE SEARCH CYCLE

T
126 ug/l Trans 1,2-DCE
2,514 ug/l Cis 1,2-DCE 3
Fluorobenzene 27.9 ug/l 28% R
TCE 5
used Cal. STD #6 6/26/96
8
See run #19
PCE 8

DATE TIME
06/26/96 12:45:43

NOISE = 0.00488
BASELINE = 0.80586

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	t-1,2DiClE	8472	326473	1:52
3	c-1,2DiClE	61050	2555890	2:34
4	4	462	28417	3:54
5	TCE	6000	315992	10:26

1-SEARCH ------ FUNCTION MENU ------ 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
400 G09-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		126	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		2,514	
Fluorobenzene surrogate §		27.9	28%
TCE (Trichloroethylene)		See #19	
PCE (Tetrachloroethylene)		See #19	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

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ANALYZED BY: Jimmy D. Johnson 908

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(18) (18) INJ Clean out #17

UNIT IN SELECTIVE SEARCH CYCLE

DATE TIME
06/26/96 13:00:11

NOISE - 0.00<?

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Clean Out

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL ~~INJ.~~ 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson 808

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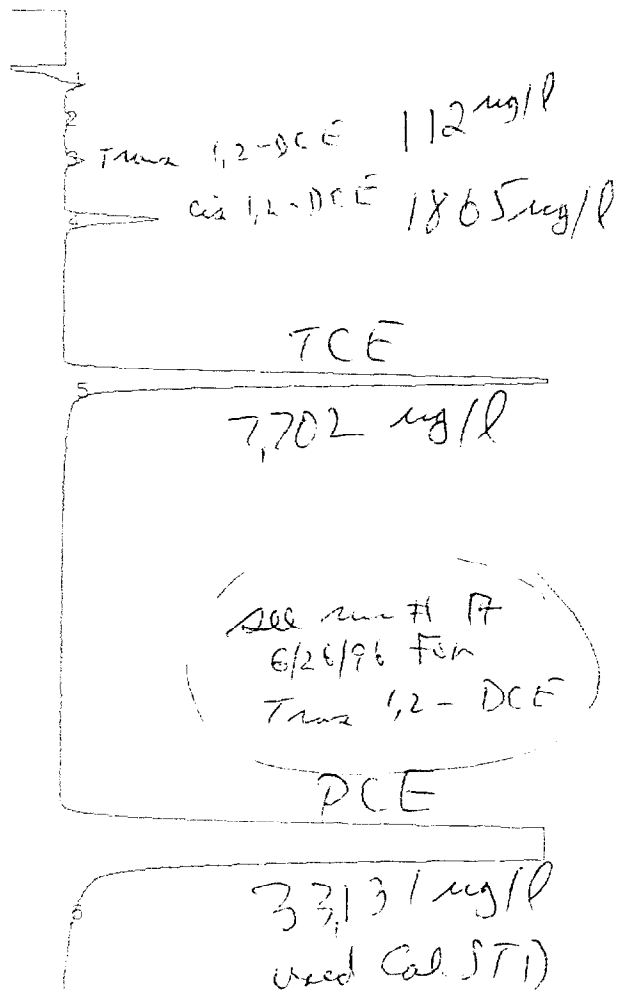
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(19) (19) 100X @ 50°C
400 G09 -14' + Surrogate

2

UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME #6
06/28/96 14:06:18 6/26/96

NOISE = 2.00488
BASELINE = 1.00366

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
3	t-1,2Dichloroethylene	143	2805	1:51
4	c-1,2Dichloroethylene	708	19188	2:34
5	TCE	4108	178273	4:31
6	Tetrachloroethylene	14065	1097858	10:11

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
400 G09 -14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		112	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		1865	
Fluorobenzene surrogate §		7/23/96 ~~7702~~ 2%	dilu qui
TCE (Trichloroethylene)		7702	
PCE (Tetrachloroethylene)		33131	

SAMPLE TEMP: 35 °C VOL ~~INJ:~~ 10ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 100 X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:

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ANALYZED BY: Jimmy D. Johnson DDD

------ FUNCTION MENU ------

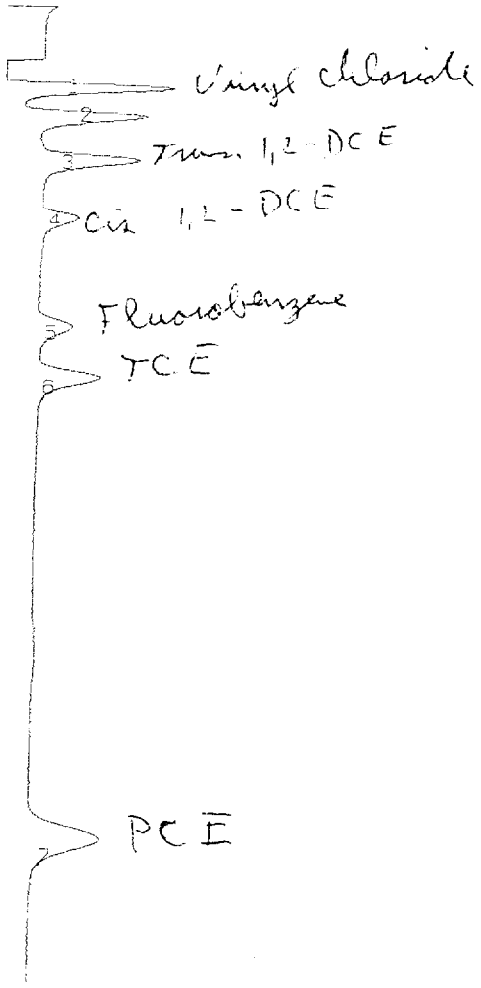
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(2C)

(20) 1 mL @ 60 °C
mix #5 & Fluorobenzene @ 10 ug/l

1

UNIT IN SEARCH MODE



DATE TIME
06/26/96 14:27:51

NOISE = 0.00486
BASELINE = 0.78144

SEARCH MODE RESULTS

PK#	HEIGHT	AREA	TIME
1	957	21882	1:01
2	749	20584	1:21
3	696	24082	1:54
4	239	8785	2:38
5	205	8418	3:58
6	424	19638	4:35
7	457	33848	10:16

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 10 ug/l (2

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	16
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	80 7/29/96
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	85 7/29/96
Fluorobenzene surrogate §		10	80
TCE (Trichloroethylene)		10	89
PCE (Tetrachloroethylene)		10	102

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

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ANALYZED BY: Jimmy D. Johnson

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------ FUNCTION MENU ------

1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(21)

(21) 1ml @ 60 °C
600 H00 - 14 + Fluorobenzene 10 ug/l

2

UNIT IN SELECTIVE SEARCH CYCLE

MS

1 Vinyl chloride 4.07 ug/l 41%R

2 ~~Trans 1,2-DCE 8.99 ug/l 6/26/96 ##~~

3 ~~Trans~~ 1,2-DCE ~~38.9 ug/l~~ 8.99 90%R
6/26/96 ##

4 Cis 1,2-DCE 38.9 ug/l 6/26/96 ##
-30.2 = 87%R 87%R

6-31 Fluorobenzene 63%R

8 TCE
882 ug/l

used Cal Std.
#6 6/26/96

2 or more runs
22,23

8 PCE
1,412 ug/l

DATE TIME
06/26/96 14:51:55

NOISE = 0.00488
BASELINE = 0.82784

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	VinylChloride	356	5605	0:58
3	t-1,2-DCE	654	23264	1:52
4	c-1,2-DCE	939	40066	2:36
5	4	147	6662	3:56
8	TCE	37081	1950656	4:32
8	TetClethylene	55121	4830387	10:12

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID: 600 H00 - 14 (MS)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		4.07	41
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		8.99	90
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		38.9	87
Fluorobenzene surrogate §		6.31	63
TCE (Trichloroethylene)		882	
PCE (Tetrachloroethylene)		1,412	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

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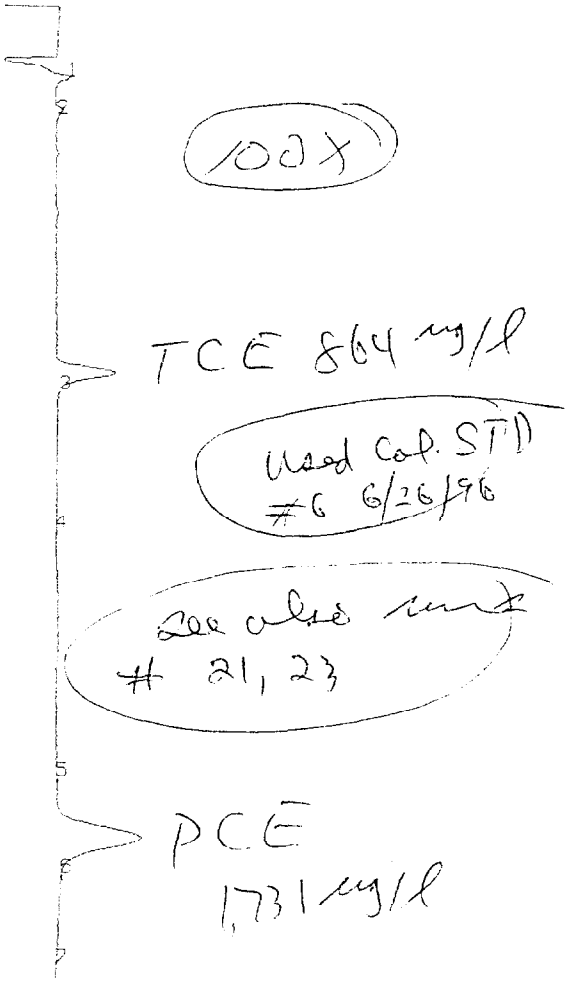
------- FUNCTION MENU -------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BLRN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(22) 10 µl @60°C
600 H00 -14' surrogate + MS add'd 10 µg/l

UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/28/96 15:25:05

NOISE = 0.20488
BASELINE = 0.99878

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
3	TCE	446	18105	4:54
6	TetClethylene	888	57376	10:16

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
600 H00 -14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §			diluted out
TCE (Trichloroethylene)		864	
PCE (Tetrachloroethylene)		1,731	

SAMPLE TEMP: 35 °C VOL ~~INJ~~: 10µl
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE
DILUTION FACTOR: 100X
DATE SAMPLED: 6/26/96
DATE ANALYZED: 6/26/96
CAL. STD.: #6 6/26/96

NOTES:
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Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson

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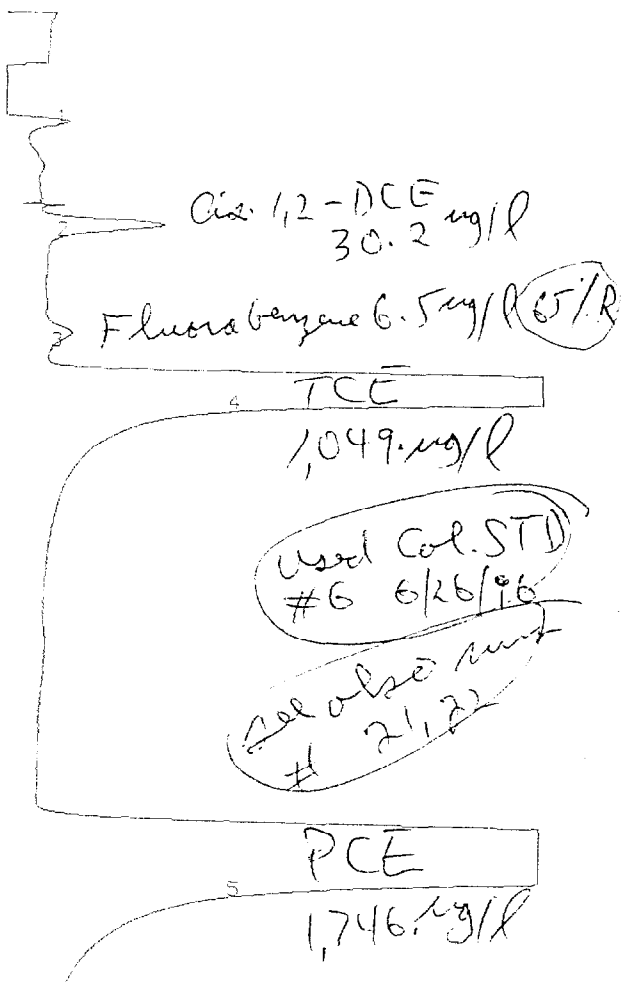
------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(23)

(23) 1 ml @ 60°C
600 H00 -14' + Surrogate

2
UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/26/96 15:18:56

NOISE = 0.20468
BASELINE = 0.84382

SELECTIVE SEARCH RESULTS

PK#	COMPD/NAME	HEIGHT	AREA	TIME
2	c-1,2-DCE	858	31038	2:32
3	4	164	6881	3:57
4	TCE	46582	2318497	4:34
5	Tetrachloroethylene	68472	5787039	10:17

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
600 H00 - 14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		30.2	
Fluorobenzene surrogate §		6.5	65
TCE (Trichloroethylene)		1,049	
PCE (Tetrachloroethylene)		1,746	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL WATER

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

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Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson

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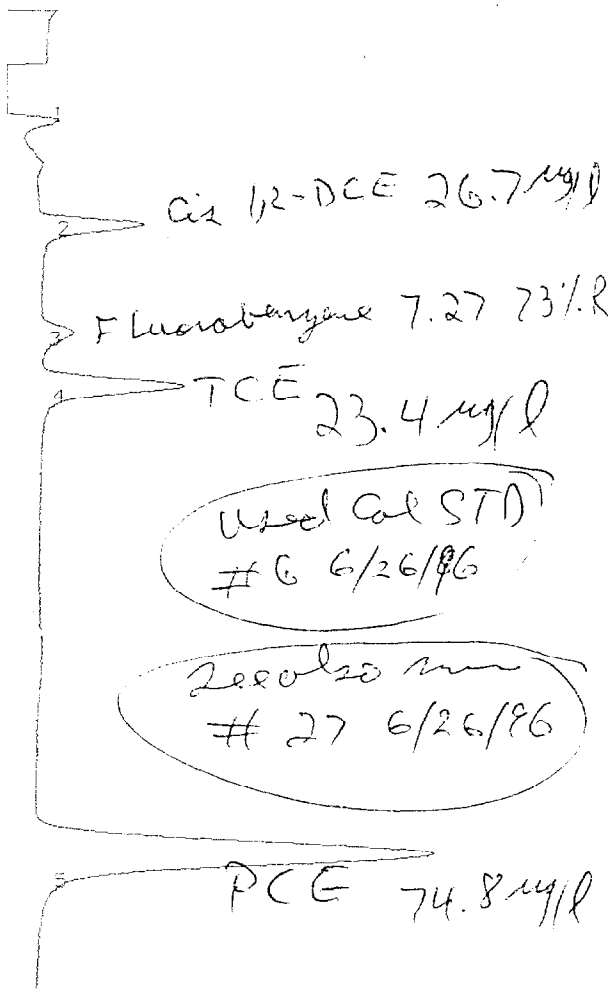
------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(24)

(24) 1ml @ 60°C
600 H00 -7 1,4 Fluorobenzene @ 10 ug/l

2

UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/26/96 15:36:38

NOISE = 0.00488
BASELINE = 0.80096

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	c-1,2DiCle	708	27463	2:02
3	4	182	7674	3:58
4	TCE	1019	51654	4:36
5	TetClethylene	2953	247760	10:18

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 600 H00 - 7

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		26.7	
Fluorobenzene surrogate §		7.27	73
TCE (Trichloroethylene)		23.4	
PCE (Tetrachloroethylene)		74.8	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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SDD

ANALYZED BY: Jimmy D. Johnson

------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

25

25 1ml @ 60°C
500 G20-28' + Fluorobenzene @ 10 mg/l

2
UNIT IN SELECTIVE SEARCH CYCLE

Fluorobenzene 7.31 ug/l 73%R
TCE 2.55 ug/l
PCE 14.0 ug/l

DATE TIME
06/26/96 15:51:03

NOISE = 0.02488
BASELINE = 0.82784

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	4	173	7713	3:58
2	TCE	124	5640	4:36
3	TetraChloroethylene	598	46477	10:20

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
500 G-20-28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		7.31	73
TCE (Trichloroethylene)		2.55	
PCE (Tetrachloroethylene)		14.0	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

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Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson

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------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(26)

(26) 500 G-20-28' (no Surrogate added)

2

UNIT IN SELECTIVE SEARCH CYCLE

See #25
6/26/96

Power Out

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

(2)

*** SAMPLE ID.
500 G-20 -28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §			
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

ND
ND
Fair

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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JDJ

ANALYZED BY: Jimmy D. Johnson

1-SEARCH 2-SET SEARCH 3-CALIBRATE
4-ANALYZE 5-PRINT 6-PLOT
5-PRINT LIB 8-SETUP CLMP 9=

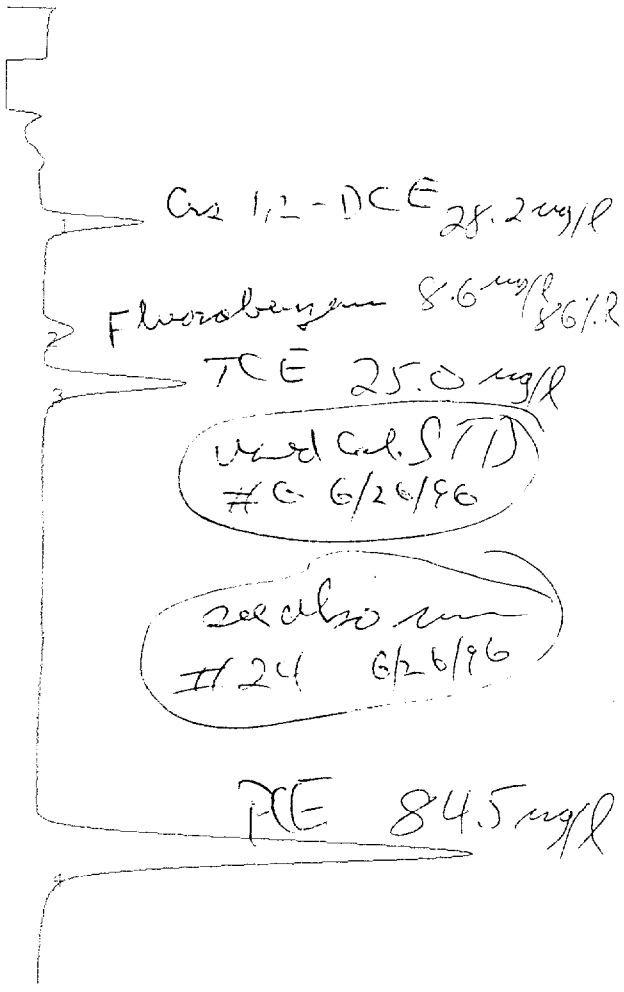
(27)

27 1 ml @ 60°C

600 H00-7 (Maximum contaminants detected) Fluorobenzene 8.6 ug/l

2

UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/26/96 16:32:01

NOISE = 0.00488
BASELINE = 0.80342

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	c-1,2DiClE	724	28978	2:37
2	4	191	9060	3:58
3	TCE	1063	55370	4:36
4	TetC.ethylene	3277	280131	10:22

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (2)
600 H00-7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		28.2	
Fluorobenzene surrogate §		8.6	86
TCE (Trichloroethylene)		25.0	
PCE (Tetrachloroethylene)		84.5	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jimmy D. Johnson JDJ

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------- FUNCTION MENU -------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BLNK IN
7-PRINT LIB. 8-SETUP DUMP 9-

25

1ml @ 60°C
500 G20-34 + Fluorobenzene @ 10 ng/l

2

UNIT IN SELECTIVE SEARCH CYCLE

Fluorobenzene 9.29 ug/l
93% R

all non-detects

used Cal STD. #6 6/26/96

Confirm PCE

DATE TIME
06/26/96 17:16:28

NOISE = 0.00488
BASELINE = 0.84493

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	4	225	9804	3:57

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
500 G20-34

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		9.29	93
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 mL
SAMPLE MATRIX: SOIL WATER

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:
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ANALYZED BY: Jimmy D. Johnson

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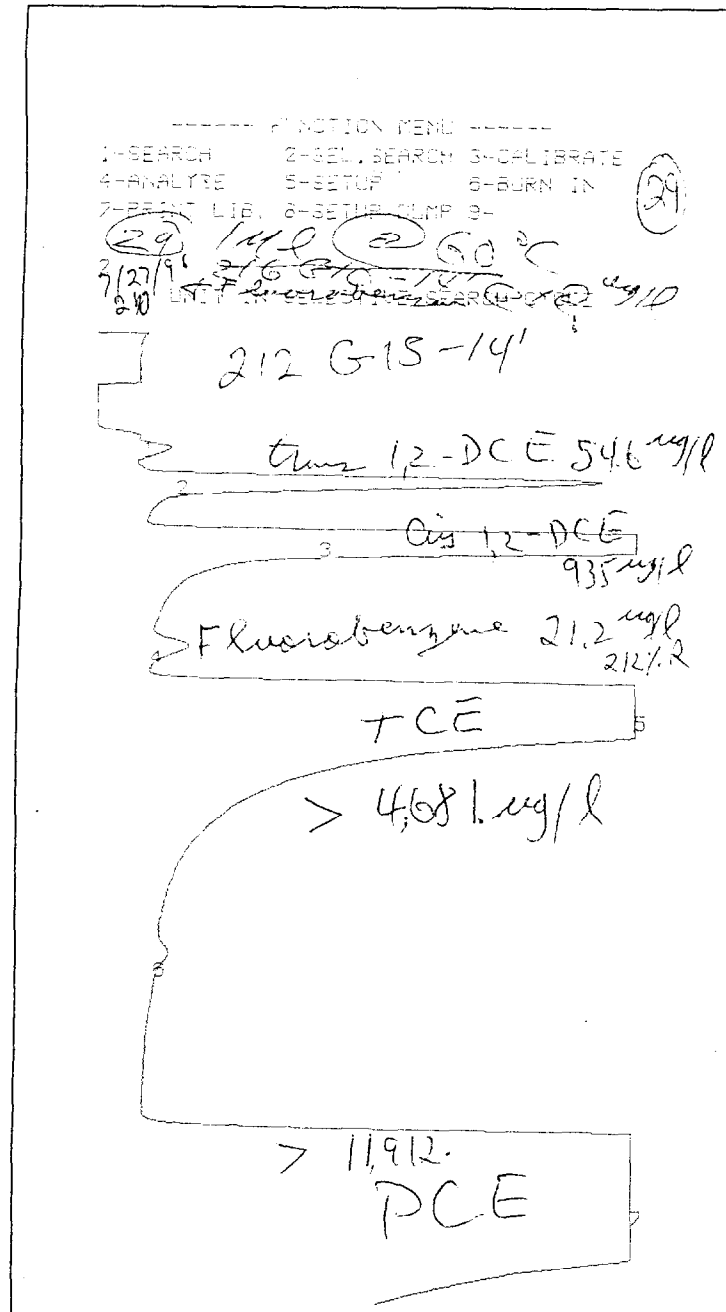

DATE TIME
06/28/96 17:30:11

NOISE = 0.00488
BASELINE = 0.82285

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	t-1,2DiClE	3517	141328	1:52
3	c-1,2DiClE	21861	962285	2:38
4	4	357	22358	3:57
5	TCE	136823	10348886	4:34
7	TetClethylene	407043	38474528	10:17

** Peak OVER RANGE **

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 212 G-15-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		54.6	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		935	
Fluorobenzene surrogate §		21.2	212
TCE (Trichloroethylene)		>4,681	
PCE (Tetrachloroethylene)		>11,912	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

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ANALYZED BY: Jimmy D. Johnson

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------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETLP 6-BLNK IN
7-PRINT LIB. 8-SETLP JUMP 9-

(30)

(30) Clean out (no injection)

2

UNIT IN SELECTIVE SEARCH CYCLE

DATE TIME
06/26/96 17:44:14

NOISE = 0.20488
BASELINE = 0.95329

NO PEAKS DETECTED

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Clean Out (30)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §			
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. INJ: 0
SAMPLE MATRIX: SOIL WATER

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 0

DATE SAMPLED: N/A

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/29/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson 008

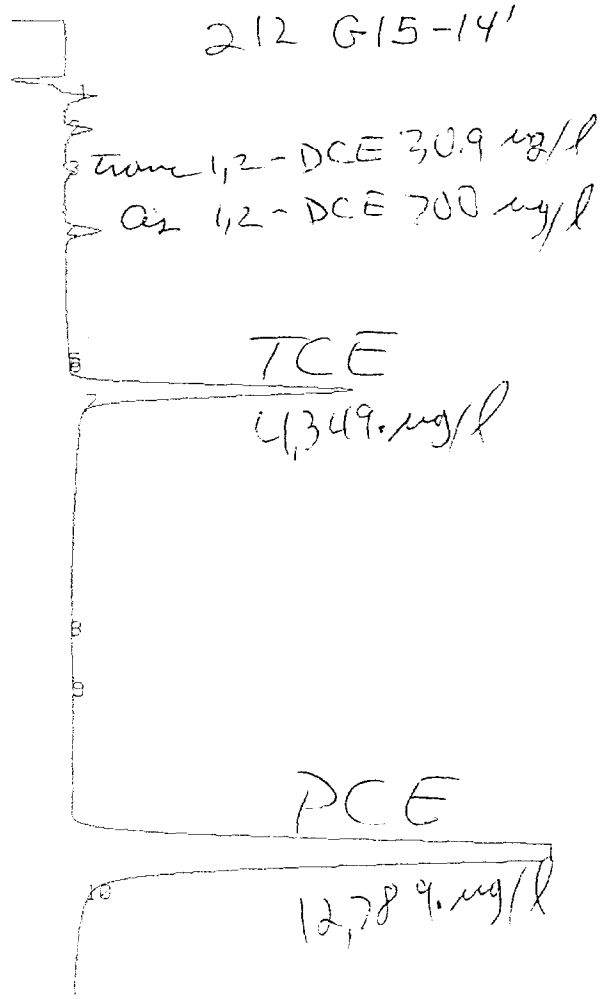
------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(31)

31 10 µl @ 60 °C
100X 246 G (10-14') 7/27/96 DDJ
2 (surrogate is diluted out)

UNIT IN SELECTIVE SEARCH CYCLE

212 G15-14'



DATE TIME
06/26/96 17:57:40

NOISE = 0.00488
BASELINE = 0.98901

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
3	t-1,2DiCle	55	803	1:52
4	c-1,2DiCle	258	7205	2:35
7	TCE	2180	88153	4:32
10	TetraCleethylene	5229	423782	10:13

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
212 - G15 - 14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		30.9	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		700	
Fluorobenzene surrogate §			dilute out
TCE (Trichloroethylene)		4,349	
PCE (Tetrachloroethylene)		12,789	

SAMPLE TEMP: 35 °C VOL. INJ.: 10 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 100X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/26/96

CAL. STD.: #6 6/26/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

DDJ

ANALYZED BY: Jimmy D. Johnson

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------ FUNCTION MENU ------

1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(1)

1ml He @ 60 °C

2

UNIT IN SELECTIVE SEARCH CYCLE

1

DATE TIME
06/27/96 07:24:07

NOISE = 0.00488
BASELINE = 0.81074

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/27/96

CAL. STD.: un Calibrated

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jim Johnson

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------ FUNCTION MENU ------

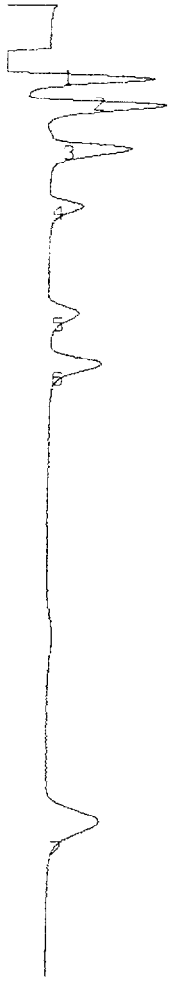
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

2nd run @ 10 °C

2nd run 5 ppb Fluorobenzene

2

UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/27/96 07:42:16

NOISE = 0.00488
BASELINE = 0.85470

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	VinylChloride	221	17124	3:58
3	t-1,2DiClE	588	21727	1:50
4	c-1,2DiClE	219	8352	2:34
5	4	194	9636	3:54
6	TCE	363	19247	4:30
7	TetClethylene	380	31759	10:07

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
MIX #5 @ 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL ~~INJ~~: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/27/96

CAL. STD.: _____

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson

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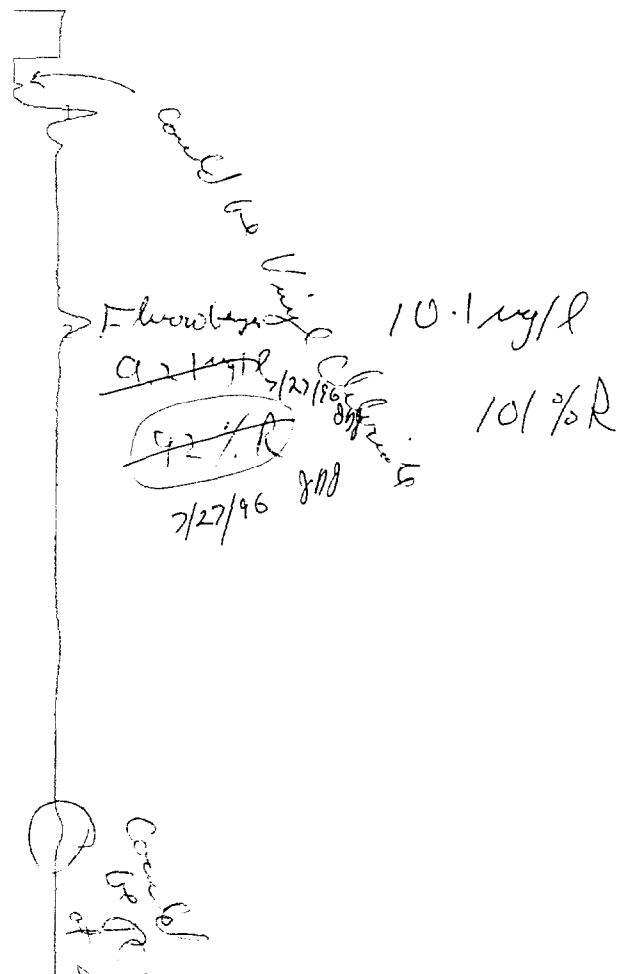
------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(3) 1 mL @ 60 °C
for 6/26/96 @ 20 - 34' 45 sec
2
UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/27/96 07:58:57

NOISE = 0.20488
BASELINE = 0.90110

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	4	221	3710	3:53

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
500 G 20-34'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		<	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		10.1	10
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		<	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/27/96

CAL. STD.: #2 6/27/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson

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------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

@ 1 ml @ 500

2 SEL SEARCH G20 -34'

UNIT IN SELECTIVE SEARCH CYCLE

Segment width chosen for 5 to 6.

used Cal. STD #6 from 6/26/96

Fluorobenzene 7.20 ug/l

72% R

PCE 0.11 ug/l

did not report Values from this analysis - see #28 from 6/26/96 for results

DATE TIME
06/27/96 08:16:18

NOISE = 0.00488
BASELINE = 0.81319

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	4	183	7535	3:54
2	TetCloethylene	10	368	10:10

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
500 G20 -34'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		7.20	72.
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		<.5	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~ 1 Ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/27/96

CAL. STD.: #6 6/26/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jerry Johnson

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------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

5 1ml @ 60°C
min #5 Fluorobenzene
added to 10 ug/l

2

UNIT IN SELECTIVE SEARCH CYCLE

A > Vinyl Chloride
B > Trans 1,2-DCE
C > Cis 1,2-DCE
D > Fluorobenzene (Surrogate)
E > TCE
F > PCE

DATE TIME
06/27/96 08:28:55

NOISE = 0.20488
BASELINE = 0.81319

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	VinylChloride	514	8385	0:58
3	t-1,2DiCle	614	19854	1:51
4	c-1,2DiCle	220	7653	2:35
5	4	178	8812	3:53
6	TCE	401	16870	4:31
7	TetCleethylene	325	23842	10:08

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX#5 @10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %F
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1M
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/27/96

CAL. STD.: Cal STD

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

⑥ DI. water Blank + Sam
INJ @ 60 °C

2
UNIT IN SELECTIVE SEARCH CYCLE

Fluorobenzene
23.3 µg/l
233 %R

used Cal. STD.
5 6/27/96

DATE TIME
06/27/96 08:44:02

NOISE = 0.00488
BASELINE = 0.80342

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	4	301	15883	3:55

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. DI Water Blank

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		23.3	23
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL ~~INJ~~: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/27/96

CAL. STD.: #5 6/27/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

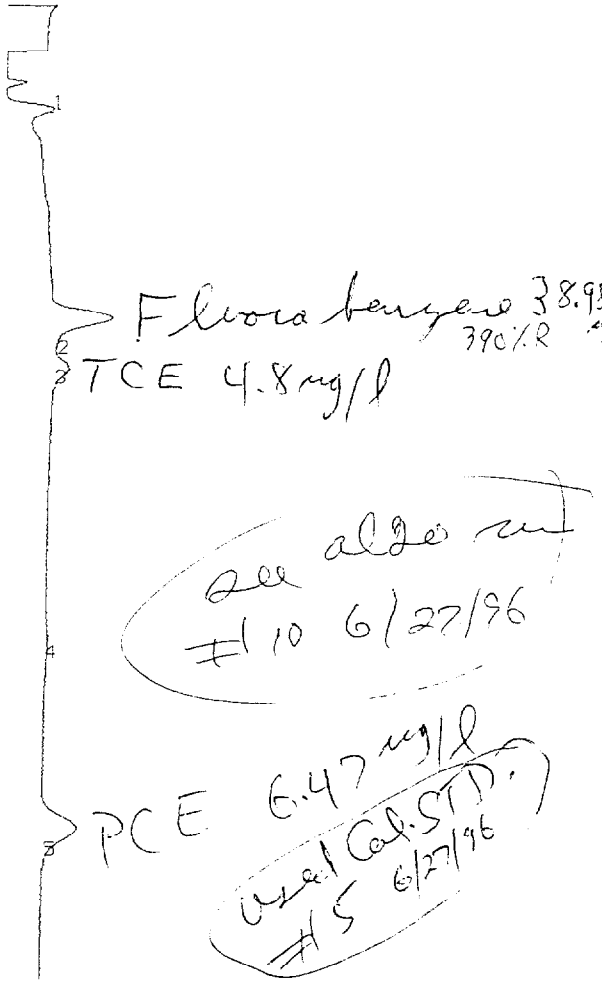
ANALYZED BY: Jimmy Johnson

------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(7) 1ml @ 60°C
212 G-15-28' Fluorobenzene (surrogate)

2

UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/27/96 08:58:02

NOISE = 0.00488
BASELINE = 0.81563

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	4	473	26573	3:54
3	TCE	154	8140	4:32
5	TetClethylene	236	15422	10:29

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
212 G-15-28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		38.98	39
TCE (Trichloroethylene)		4.8	
PCE (Tetrachloroethylene)		6.47	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/27/96

CAL. STD.: #10 6/27/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(9) 1 ml @ 60 °C
500 G20 - 37'
2 + Fluorobenzene @ 10 ug/l

UNIT IN SELECTIVE SEARCH CYCLE

Fluorobenzene 18.0 ug/l
180%R
TCE 1.0 ug/l

Used Cal STD. #5 6/27/96

PCE 1.94 ug/l

Acceptance #11 6/27/96

DATE TIME
06/27/96 09:12:00

NOISE = 0.00488
BASELINE = 0.81074

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	4	257	12246	3:53
2	TCE	28	1655	4:37
3	TetraChloroethylene	76	4633	10:13

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
500 G20-37'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		18.0	180
TCE (Trichloroethylene)		1.0	
PCE (Tetrachloroethylene)		1.94	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/27/96

CAL. STD.: #5 6/27/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson

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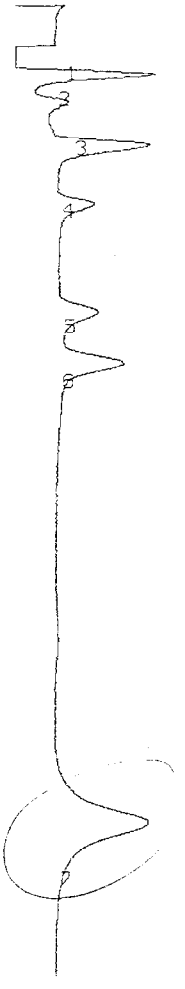
------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(9) 1ug @ 60°C
mix #5 + Fluorobenzene @ 60ug/l

2

UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/27/96 09:25:49

NOISE = 0.00488
BASELINE = 0.81074

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	VinylChloride	220	13472	0:59
3	t-1,2-DCE	575	20938	1:52
4	c-1,2-DCE	263	9651	2:35
5	4	282	13825	3:55
6	TCE	480	23879	4:32
7	TetChlethylene	570	64912	10:10

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
MIX #5 @ 10ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		16.1	16
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10.5	10
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		12.6	12
Fluorobenzene surrogate §		20.3	203
TCE (Trichloroethylene)		14.1	14
PCE (Tetrachloroethylene)		27.2	27

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/27/96

CAL. STD.: # 5 6/27/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

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ANALYZED BY:

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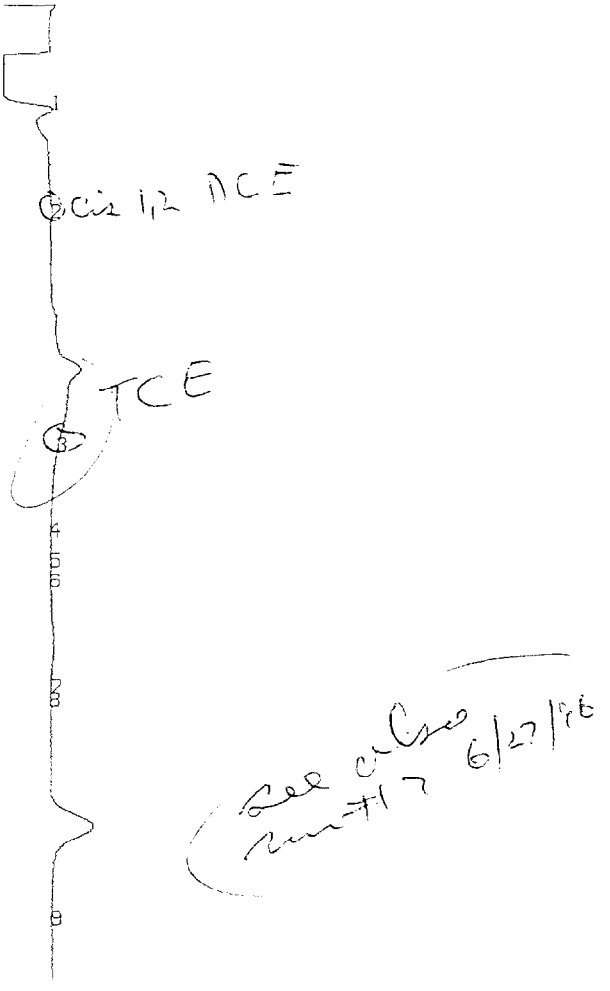
------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(C) 1MC @ 60°C
212 G15-28'
& Fluorobenzene @ 10 µg/l

2

UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/27/96 09:42:48

NOISE = 0.20488
BASELINE = 2.87179

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	c-1,2D,CLE	4	335	2:40
3	TCE	224	34545	4:33
8	TetClethylene	317	27688	10:10

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
212 G15-28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)	See		
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)	Run		
Fluorobenzene surrogate §	#7		
TCE (Trichloroethylene)	6/27/96		
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. ~~INJ~~: 1M
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/27/96

CAL. STD.: #5 6/27/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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> Indicates actual concentration of compound may exceed reported value.

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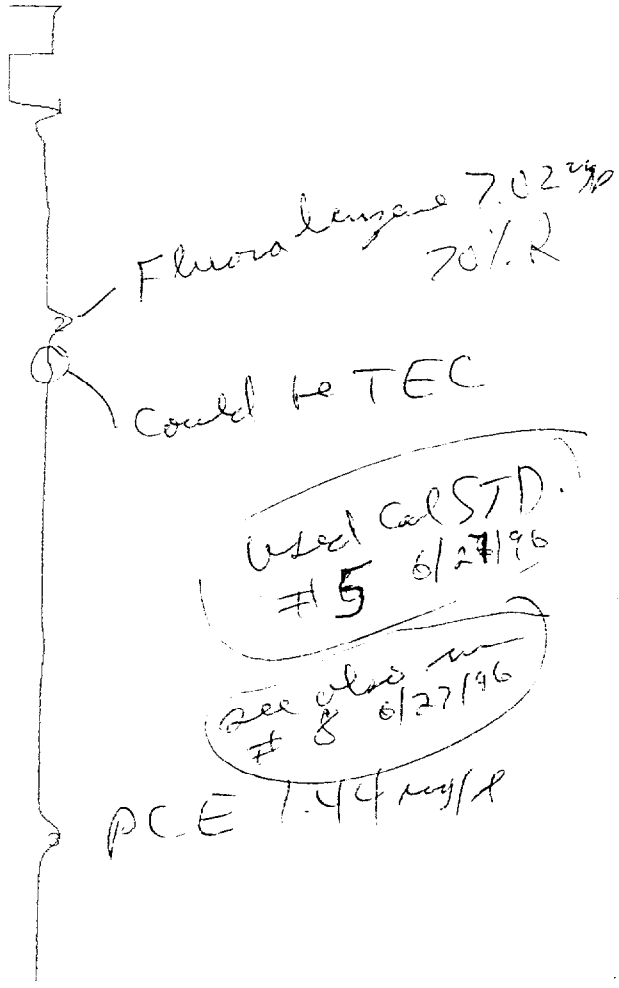
ANALYZED BY: Jimmy Johnson

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(11) 1 ml @ 60 °C
500 G20-37'
+ Fluorobenzene @ 10 µg/l

2
UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/27/96 10:01:01

NOISE = 0.00488
BASELINE = 0.85226

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	4	146	4785	3:55
3	TetClethylene	77	3435	10:15

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
500 G20-37'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		7.02	70
TCE (Trichloroethylene)		<	
PCE (Tetrachloroethylene)		1.44	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/26/96

DATE ANALYZED: 6/27/96

CAL. STD.: #5 6/27/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY:

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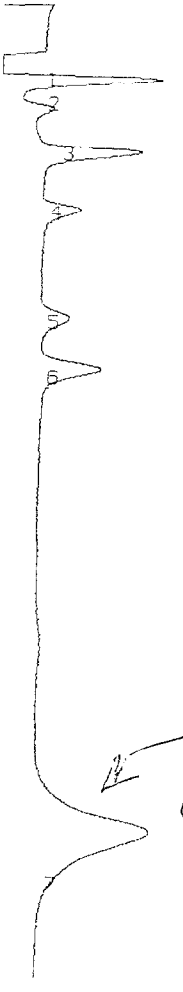
------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(12) 1mL @ 60 °C
mix that Fluorobenzene
2

UNIT IN SELECTIVE SEARCH CYCLE



Could be a high
Could be Coming out
Co-eluting with C.PCE

DATE TIME
06/27/96 10:14:49

NOISE = 0.00488
BASELINE = 0.84493

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	VinylChloride	872	18423	3:58
3	t-1,2DiClE	699	18838	1:52
4	c-1,2DiClE	241	6883	2:36
5	4	155	5255	3:55
6	TCE	403	15202	4:33
7	TetClethylene	782	31071	10:14

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MW#5 @ 10 µg/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		19.6	19(
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		9.49	9
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		9.00	9(
Fluorobenzene surrogate §		7.7	>7
TCE (Trichloroethylene)		9.01	9(
PCE (Tetrachloroethylene)		340	34(

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/27/96

CAL. STD.: # 5 6/27/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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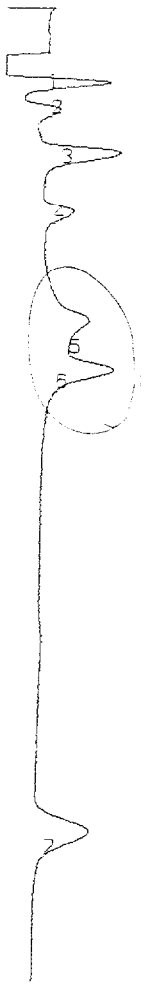
ANALYZED BY: Jimmy Johnson

----- SETUP

------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-RESTOR 6-SUM
7-PRINT LIB. 8-SETUP 9-END

UNIT IN SELECTIVE SEARCH CYCLE



high Gain coming across the Fluorobenzene & TCE

DATE TIME
06/27/96 10:32:40

NOISE = 0.00488
BASELINE = 0.81563

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	V.ChlorIde	452	9053	1:20
3	t-1,2DiClE	525	20445	1:53
4	c-1,2DiClE	173	5831	2:35
5	4	301	32255	3:57
6	TCE	484	23968	4:33
7	TetClethylene	320	22905	10:13

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX 5 @ 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10.8	10
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10.3	10
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		8.91	8
Fluorobenzene surrogate §		47.0	47
TCE (Trichloroethylene)		17.8	17
PCE (Tetrachloroethylene)		9.61	96

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/27/96

CAL. STD.: # 5 6/27/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY:

```
------ FUNCTION MENU ------
1-SEARCH      2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE     5-SETUP      6-BURN IN
7-PRINT LIB.  8-SETUP DUMP 9-

5

-----  SETUP  MENU

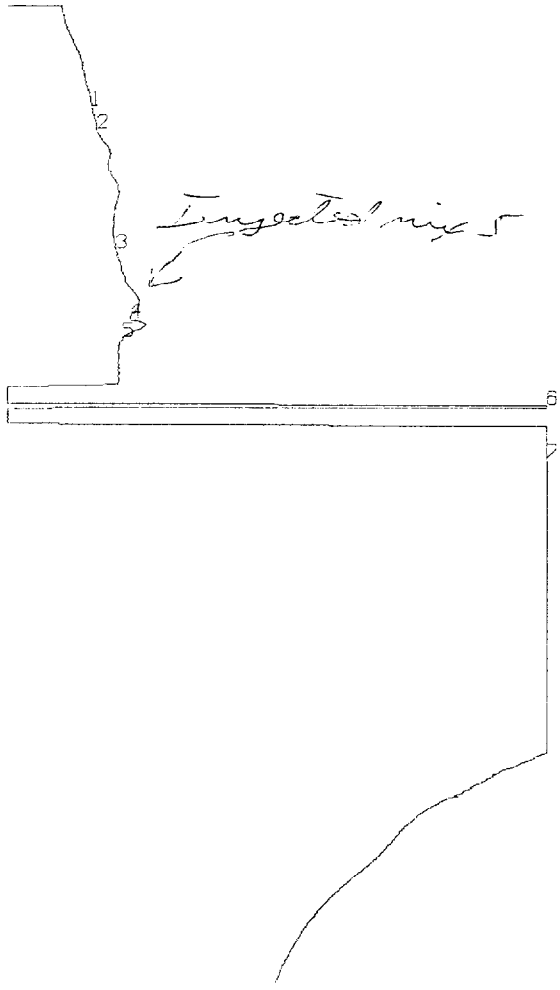
1

-----  SETUP  MENU  ---

(14) Clean out and Oven Bake 100°C (2 hrs)
FUNCTION

21

UNIT IN SEARCH MODE
```




```
DATE        TIME
05/27/96  12:47:49

NOISE      =     0.00483
BASELINE   =     1.02320

SEARCH MODE RESULTS
PK#  HEIGHT      AREA      TIME

 1       213      33431   1:16
 2       240      15215   1:24
 3       403     127241   2:25
 4       574     100543   3:42
 5       605      32017   3:53
 6     18183      83577   4:56
 7    193041   15441862   5:22
```

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Clean Out

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §			
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/27/96

CAL. STD.: none

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jim Johnson

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```
------ FUNCTION MENU ------
1-SEARCH      2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE     5-SETUP      6-BLRN IN
7-PRINT LIB.  8-SETUP DUMP 9-

5

-----  SETUP  MEN
1

-----  SETUP  M


------ FUNCTION MENU ------
1-SEARCH      2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE     5-SETUP      6-BLRN IN
7-PRINT LIB.  8-SETUP DUMP 9-
1

UNIT IN SEARCH MODE

                DATE        TIME
              06/27/96   11:24:52

NOISE      =      0.00486
BASELINE   =      2.97132

          SEARCH MODE RESULTS
PK#   HEIGHT      AREA      TIME

 1         2         636   8:10
```

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
NO Injection

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1 X

DATE SAMPLED: N/A

DATE ANALYZED: 6/27/96

CAL. STD.: # 5 6/27/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY:

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------ FUNCTION MENU ------

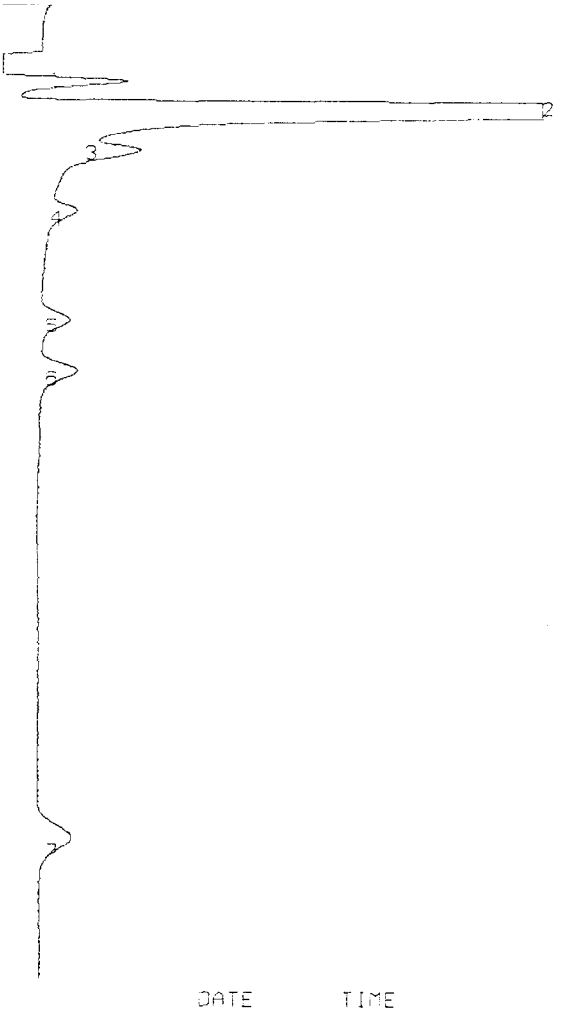
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

16

1ml @ 60°C
mix 5 + Fluoro Benzene
in Vial @ 35°C for Tue 30 min
all @ 10 ug/l

2

UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/27/96 11:40:06

NOISE = 0.00488
BASELINE = 0.80586

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	Vinyl Chloride	617	13063	1:00
3	t-1,2-DCE	718	33355	1:52
4	c-1,2-DCE	228	11383	2:37
5	4	172	7830	3:58
6	TCE	232	11210	4:36
7	Tetrachloroethylene	188	12820	10:13

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		15.6	15
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		16.8	16
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		14.9	14
Fluorobenzene surrogate §		11.6	11
TCE (Trichloroethylene)		6.6	66
PCE (Tetrachloroethylene)		5.4	5

SAMPLE TEMP: 35 °C VOL ~~IN~~ 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/27/96

CAL. STD.: # 5 6/27/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy Johnson

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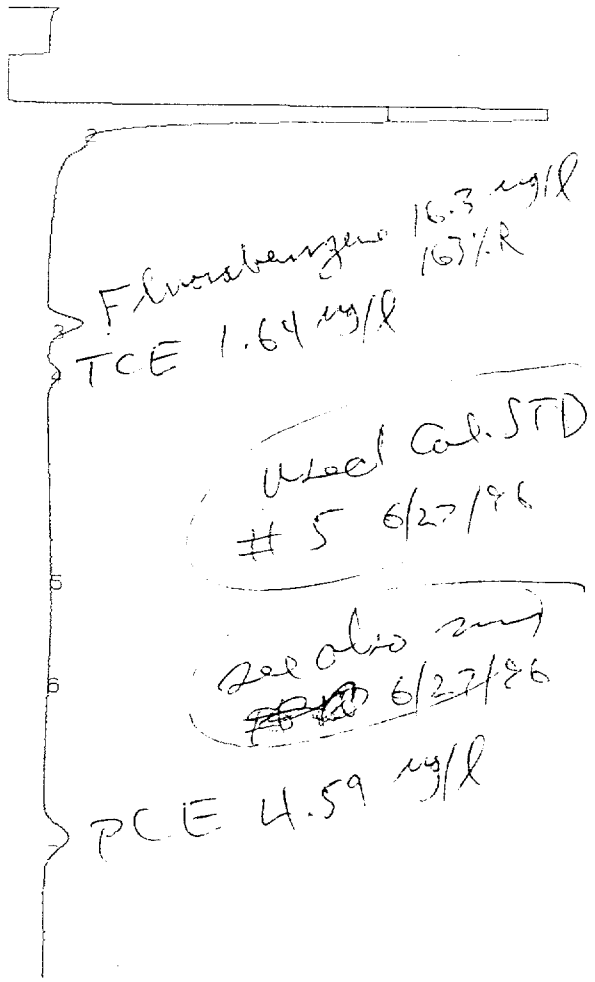
------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(17) 1mL @ 60°C
+ Fluorobenzene 600 HOD-28' 10 ug/L
2

UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/27/96 11:54:28

NOISE = 0.00488
BASELINE = 0.81307

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
3	4	234	1123	3:57
4	TCE	55	2775	4:37
7	TetraChloroethylene	152	10823	10:17

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
600 HOD-28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		16.3	16
TCE (Trichloroethylene)		1.64	
PCE (Tetrachloroethylene)		4.59	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/27/96

DATE ANALYZED: 6/27/96

CAL. STD.: #5 6/27/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: John Johnson

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------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(8) Lead @ 60 °C
600 H00-23 + Fluorobenzene 18.5 ug/l
2
UNIT IN SELECTIVE SEARCH CYCLE

185 %R
Fluorobenzene 18.5 ug/l
TCE < 1.0 ug/l
used Cal. STD #5 6/27/96
C could be PCE at < 5 ug/l

DATE TIME
06/27/96 12:10:11

NOISE = 0.00488
BASELINE = 0.81807

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
3	4	251	12585	3:57
4	TCE	3	81	4:35

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 600 H00-23'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		18.5	18
TCE (Trichloroethylene)		<0.5	
PCE (Tetrachloroethylene)		<5	

SAMPLE TEMP: 35 °C VOL. INJ: ____
SAMPLE MATRIX: SOIL WATER

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: ____

DATE SAMPLED: 6/27/96

DATE ANALYZED: 6/27/96

CAL. STD.: #5 6/27/96

NOTES:
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ANALYZED BY: Jimmy Johnson

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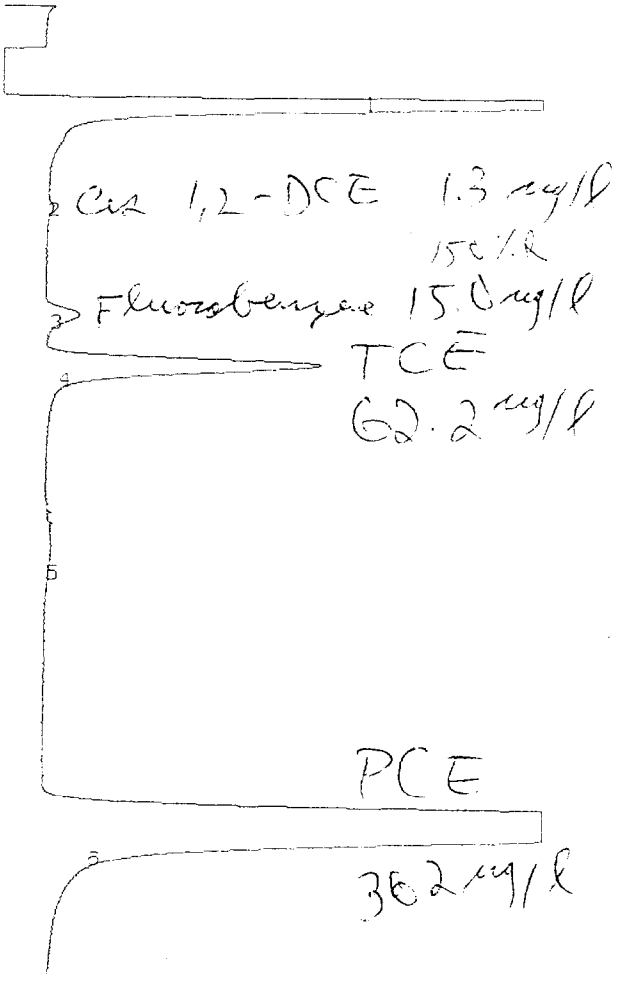
------ FUNCTION MENU ------

1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP OLMP 9-

(19) 1ML @60°C
102 GDO-14' (R) 10 ug/l
+Fluorobenzene

2

UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/27/96 12:27:33

NOISE = 2.00488
BASELINE = 0.84005

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	c-1,2DICLE	14	1000	2:38
3	4	223	10207	3:55
4	TCE	2071	134332	4:32
5	TetClethylene	10260	861388	10:12

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 102 GDO-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		1.3	
Fluorobenzene surrogate §		15.0	150
TCE (Trichloroethylene)		62.2	
PCE (Tetrachloroethylene)		362	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/27/96

DATE ANALYZED: 6/27/96

CAL. STD.: # 5 6/27/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy Johnson

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------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

2

UNIT IN SELECTIVE SEARCH CYCLE

152/.2

Fluorobenzene 15.2 ug/l

3 TCE 0.8 ug/l

could be PCG
at < 5 ug/l

DATE TIME
06/27/96 12:41:38

NOISE = 0.00488
BASELINE = 0.82235

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	4	184	10328	3:38
3	TCE	13	1336	4:37

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
600 H00 36'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		15.2	15
TCE (Trichloroethylene)		0.8	
PCE (Tetrachloroethylene)		<5	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/27/96

DATE ANALYZED: 6/27/96

CAL. STD.: #5 6/27/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

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Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jim Johnson

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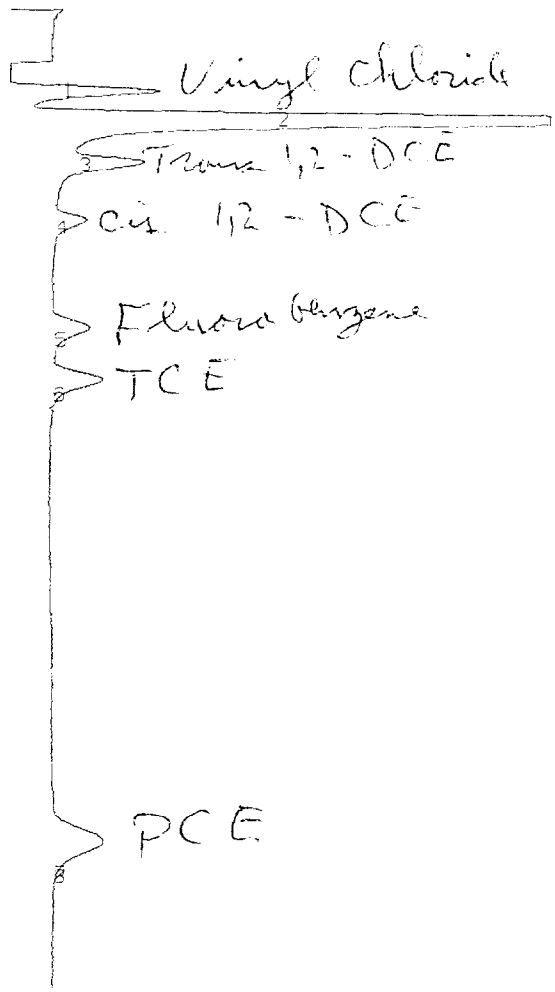
------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

R1 1ml 60°C
1% Sample

2

UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/27/96 12:55:44

NOISE = 0.00483
BASELINE = 0.83516

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME	
1	VinylChloride	824	19038	0:58	-
3	t-1,2D.C.E	624	23531	1:52	-
4	c-1,2D.C.E	232	10484	2:36	-
5	4	257	13278	3:32	B
6	TCE	363	19131	4:34	?
7	TetCleEthylene	382	34345	10:14	
8	TetCleEthylene	18	183	10:43	<

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 10 µg/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		22.7	22
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		14.4	14
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		13.7	13
Fluorobenzene surrogate §		19.5	19
TCE (Trichloroethylene)		11.3	11
PCE (Tetrachloroethylene)		14.5	14

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1 X

DATE SAMPLED: N/A

DATE ANALYZED: 6/27/96

CAL. STD.: #5 6/27/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jerry Johnson

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------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

22 1mg @ 60 °C
-110 G10 -14' @ 10 ug/l
+ Fluorobenzene
2

UNIT IN SELECTIVE SEARCH CYCLE

0.89 ug/l
3 - Trans 1,2 - DCE 2.3 6 ug/l 6/27/96 #5
Cis 1,2 - DCE
199 ug/l 32% R
Fluorobenzene 3.20 ug/l
TCE 1.91 ug/l

Used Cal. Std. #5 6/27/96

Second run #23 6/27/96

Could be PCE at < 5 ug/l

DATE TIME
06/27/96 14:13:23

NOISE = 0.00488
BASELINE = 0.82051

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	t-1,2-DCE	71	1763	1:51
5	c-1,2-DCE	3804	132523	2:38
6	4	36	2182	3:58
7	TCE	74	3227	4:34

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
-110 G10 -14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		0.9	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		199	
Fluorobenzene surrogate §		7/27/96 GBB + 3.20	32
TCE (Trichloroethylene)		1.91	
PCE (Tetrachloroethylene)		<5	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/27/96

DATE ANALYZED: 6/27/96

CAL. STD.: #5 6/27/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jerry Johnson

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------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

23 1 ml @ 60 °C
-110 G10 -14' + Fluorobenzene @ 10 µg/l
UNIT IN SELECTIVE SEARCH CYCLE

Could be Vinyl Chloride

2-Trans 1,2-DCE T. 1.12 µg/l

Cis 1,2-DCE 193 µg/l

4 Fluorobenzene 30.0 µg/l 30C%R

8 TCE 2.47 µg/l

Used Cal. Std. #5 6/27/96

See also #22 6/27/96

Could be PCE at <5 µg/l

DATE TIME
06/27/96 14:27:22

NOISE = 0.00488
BASELINE = 0.86203

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
3	t-1,2-DCE	57	2212	1:55
4	c-1,2-DCE	3753	146146	2:36
5	4	422	20481	3:56
6	TCE	81	4168	4:33

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
-110 G10 -14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		1.12	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		193	
Fluorobenzene surrogate §		30.0	30C
TCE (Trichloroethylene)		2.47	
PCE (Tetrachloroethylene)		<5	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/27/96

DATE ANALYZED: 6/27/96

CAL. STD.: #5 6/27/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: [signature]

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------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

24
1 ml @ 60°C
Mix #5 @ 10 µg/l

2
UNIT IN SELECTIVE SEARCH CYCLE

1 Vinyl Chloride
2 Trans 1,2-DCE
3 Cis 1,2-DCE
4 Fluorobenzene (Surrogate)
5 TCE
6 PCE

DATE TIME
06/27/96 14:57:00

NOISE = 0.00488
BASELINE = 0.81807

SELECTIVE SEARCH RESULTS

PK#	COMPOUND NAME	HEIGHT	AREA	TIME
1	VinylChloride	812	18837	0:58
3	t-1,2DiClE	738	27858	1:53
4	c-1,2DiClE	256	10737	2:37
5	[illegible]	223	10503	3:57
6	TCE	414	19838	4:34
7	TetraClethylene	377	28253	10:12

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 10 µg/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~: 1 ml
SAMPLE MATRIX: SOIL ~~WATER~~

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/27/96

CAL. STD.: Cal. STD.

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: [signature]

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------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

25 1nd @ 60 °C
118 (H05-14' @ 23 ug/l
+ Fluorobenzene
2

UNIT IN SELECTIVE SEARCH CYCLE

Vinyl chloride 2.76 ug/l
2
Trans 1,2-DCE 19.1 ug/l
3
38 ~~ug/l~~ Cis. 1,2-DCE
4
35.3 ~~ug/l~~ Fluorobenzene 176%R
5
TCE
6
6/27/96 2nd 5,245 ug/l
5,245
used cal STD #24 6/27/96
7
8
PCE
9
1,997 ug/l

DATE TIME
06/27/96 15:44:19

NOISE = 0.00488
BASELINE = 0.83272

see also run #26 6/27/96

SELECTIVE SEARCH RESULTS

PK#	COMPD/NAME	HEIGHT	AREA	TIME
1	VinylChloride	328	5226	1:23
3	t-1,2DiClE	1322	53348	1:53
4	c-1,2DiClE	9883	417296	2:36
5	4	715	37021	3:57
6	TCE	192659	10404340	4:34
8	TetraChloroethylene	35819	1842757	12:16

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
118 H05-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		19.1	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		387	
Fluorobenzene surrogate §		35.3	176
TCE (Trichloroethylene)	5.2	5,245	
PCE (Tetrachloroethylene)	2.0	1,997	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~ 1M
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/27/96

DATE ANALYZED: 6/27/96

CAL. STD.: #24 6/27/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 20 7/27/96 gdd

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jimmy Johnson

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------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

26 10 µl @ 60°C
100X
2 118 H05 -14' 2X Fluorobenzene
UNIT IN SELECTIVE SEARCH MODE
100X
3 Trans 1,2-DCE 9.44 ug/l
Cis 1,2-DCE 307 ug/l
* Fluorobenzene diluted out
TCE
4279 ug/l
used Cal. STD.
#24 6/27/96
see also run
#25 6/27/96
PCE 1198. ug/l

DATE TIME
06/27/96 15:59:12

NOISE = 0.02488
BASE_INE = 0.98901

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
3	t-1,2D ClE	26	284	1:51
4	c-1,2D ClE	114	3317	2:35
5	TCE	2038	84831	4:33
6	TetC.ethylene	488	33834	10:17

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 118 H05-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		9.44	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)	0.3	307	
Fluorobenzene surrogate §		diluted out	
TCE (Trichloroethylene)	4.3	4,279	
PCE (Tetrachloroethylene)	2.0	1,198	

SAMPLE TEMP: 35 °C VOL. INJ: 10µ
SAMPLE MATRIX: SOIL WATER

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 100 X

DATE SAMPLED: 6/27/96

DATE ANALYZED: 6/27/96

CAL. STD.: #24 6/27/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Tina Johnson

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------ FUNCTION MENU ------

1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(27)

1ml @ 60 °C

102 F00 -14' @ 20 ug/l

2

UNIT IN SELECTIVE SEARCH CYCLE

Could be Vinyl Chloride

Cis 1,2-DCE 0.5 ug/l

18.6 ug/l

Fluorobenzene 93% R

Could be TCE at < 5 ug/l

5 PCE < 1 ug/l

DATE TIME
06/27/96 17:04:29

NOISE = 0.00488
BASELINE = 0.82235

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	c-1,2D ClE	70	394	2:39
3	4	381	19528	4:00
5	TetCleethylene	8	222	10:24

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 102 F00 -14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		0.6	
Fluorobenzene surrogate §		18.6	93
TCE (Trichloroethylene)		< 5	
PCE (Tetrachloroethylene)		< 0.5	

SAMPLE TEMP: 35 °C VOL. INJ: ____
SAMPLE MATRIX: SOIL WATER

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: _____

DATE SAMPLED: _____

DATE ANALYZED: _____

CAL. STD.: _____

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: _____

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %F
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: Un calibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC. 7/27/96 JL

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jim Johnson

000041

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 10 µg/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		20	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/28/96

CAL. STD.: on Calibration

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC. 20 7/29/96

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jim Johnson

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(3)

Bad strip

Run started late!

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.

MIX #5

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §			
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~ 1ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/28/96

CAL. STD.: um Calibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jim Johnson

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(4) 1ml @ 60°C
mix 5 + Fluorobenzene
10 ug/l + 20 ug/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX#5 @ 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		20	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/28/96

CAL. STD.: un Calibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC. 20 7/29/96

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

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(5) 1 ml @ 60 °C
mix #5 @ 10 ug/l
Fluorobenzene @ 20 ug/l

Vinyl Chloride
Trans 1,2- DCE
Cis 1,2- DCE

Fluorobenzene
TCE

PCE

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		20	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/28/96

CAL. STD.: Cal STD

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC. 7/29/96 BJD

§ Surrogate concentration at ~~10~~ 20 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY:

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6 1ml @ 60°C
+ D.I. water B lank 20 ml's

Fluorobenzene 6/28/96 JJJ
24.9 ug/l +2.4 ug/l
124% R 62% R

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
D.I. Water B lank

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		24.9	12
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/28/96

CAL. STD.: # 5 6/28/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at ~~10~~ 20 µg/l, 7/29/96 DH

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jim Johnson

T 1ml @ 60°C
400G09-36'
Fluorobenzene @20 ug/l

147%R
29.4 ug/l
Fluorobenzene 147 ug/l
TCE 5.16 ug/l

6/28/96 JA

used CalSTD #5 6/28/96

2nd calib #10 6/28/96

PCE 141 ug/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 400G09-36'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		29.4	14
TCE (Trichloroethylene)		5.2	
PCE (Tetrachloroethylene)		141	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/27/96

DATE ANALYZED: 6/28/96

CAL. STD.: #5 6/28/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC. 20 7/29/96 80

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: John Johnson

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 400 G09-28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		2.18	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		2.14	
Fluorobenzene surrogate §		36.7	184
TCE (Trichloroethylene)		< 5	
PCE (Tetrachloroethylene)		1.98	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/27/96

DATE ANALYZED: 6/28/96

CAL. STD.: # 5 6/28/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at ~~10~~ 20 µg/l, 7/29/96

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY:

8 1/2 Mil 60 ft
400 G09 - 28'
+ Fluorobenzene @ 20 µg/l

Trans 1,2-DCE 2.18 µg/l

cis 1,2-DCE 2.14 µg/l

Fluorobenzene 36.7 µg/l 6/28/96 JW
184% R ~~154 µg/l~~ 91.8% R

Could be TCE?
at < 5 µg/l

Used cal STD
#5 6/28/96

PCE 1.98 µg/l

C:\WP51\NAVY\PARRIS.GRP

(9) Inj @ 60°C
400 G09-23'
+ Fluorobenzene @ 29.4 ug/l

Trans 1,2-DCE 1.96 ug/l
142% R 6/28/96 DM
29.4 ug/l 73.4 ug/l DM
Fluorobenzene
TCE 0.3 ug/l
Used Cal. STD.
#5 6/28/96

(1) Confirmed no PCE at < 5 ug/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
400G09-23'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		1.96	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		29.4	147
TCE (Trichloroethylene)		< 5	
PCE (Tetrachloroethylene)		< 5	

SAMPLE TEMP: 35 °C VOL ~~INJ~~: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/27/96

DATE ANALYZED: 6/28/96

CAL. STD.: #5 6/28/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC. 20 7/29/96 JM
§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jim Johnson

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(10) 1ml @ 60°C
400 G09-36' VOC surrogate added

2nd run
#7 6/28/96
integration lost

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 400 G09-36'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		B	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		od	
Fluorobenzene surrogate §			
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/27/96

DATE ANALYZED: 6/28/96

CAL. STD.: # 5 6/28/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at 10 µg/l, 0 7/29/96 JJ

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson

C:\WPSI\NAVY\PARRIS.GRP

11 1 mg @ 50 °C
MIX 10 ug/l
+ Fluorobenzene @ 20 ug/l

27.5 ug/l Vinyl Chloride
10.5 ug/l Trans 1,2 - DCE
8.41 ug/l Cis 1,2 - DCE

180 ug/l Fluorobenzene (Surrogate)
TCE 8.8 ug/l

used cal STD
5 6/28/96

PCE 6.41 ug/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		27.5	2
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10.5	10
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		8.41	8
Fluorobenzene surrogate §		18.0	9(
TCE (Trichloroethylene)		8.8	88
PCE (Tetrachloroethylene)		6.41	64

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: n/a

DATE ANALYZED: 6/28/96

CAL. STD.: #5 6/28/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC. 20 7/29/96 DD

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry Johnson

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
-218 G00-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		3.23	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		29.7	148
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		<5	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/28/96

CAL. STD.: #5 6/28/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC. 20 7/29/96 JJ

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson

1ml @ 60°C
(12) = 218 G00 -14' Fluorobenzene @ 29.7 ug/l

Trans 1,2-DCE 3.23 ug/l

Fluorobenzene 29.7 ug/l 148 %R

cal STD. #5 6/28/96

PCE < 5 ug/l due to poor integration

C:\WP51\NAVY\PARRIS.GRP

(13) 1 ml @ 60°C
010 J05-14' + Fluorobenzene Surr

Trans 1,2-DCE 4.73 ug/l

101% R
Fluorobenzene 20.1 ug/l
TCE 8.13 ug/l

used cal STD #5 6/28/96
PCE < 5 ug/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
010J05-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		4.73	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		20.1	10
TCE (Trichloroethylene)		8.13	
PCE (Tetrachloroethylene)		<5	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/28/96

CAL. STD.: #5 6/28/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC. 20 7/29/96 BW

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.

MIX #5 @ 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		20	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ.: 1mL

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/28/96

CAL. STD.: Cal. STD.

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC. -20 7/29/96 JM

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry Johnson

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(15) 1ml @ 60 °C
102 F00-23' @ 20 ml/l
Fluorobenzene

Vinyl Chloride 0.3 mg/l

111 %R

Fluorobenzene 22.3 mg/l

Used Cal Std. #14 6/28/96.

non detect

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
102 F00-23'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		22.3	111
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/28/96

CAL. STD.: #14 6/28/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC. QC 7/29/96 JM

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jim D. Johnson

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
102 F00-28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		8.48	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		207	103
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		0.9	

SAMPLE TEMP: 35 °C VOL. ~~INJ~~: 1M
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/28/96

CAL. STD.: # 14 6/28/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC. 20 7/29/96 BH

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

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ANALYZED BY: Jimmy Johnson

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(17) 1ml @ 60°C
-011 H14 -5'
+ Fluoro Benzene @ 25 ug/l

Trans 1,2 DCE = 5.39 mg/l
Cis 1,2-DCE = 1.91 mg/l
125%R
Fluorobenzene 25.0 mg/l
- Conclude TCE < 5 ug/l

Used Cal. STD
#14 6/28/96

PCE 0.7 mg/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
-011 H14 -7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		5.39	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		1.91	
Fluorobenzene surrogate §		25.0	125
TCE (Trichloroethylene)		< 5	
PCE (Tetrachloroethylene)		0.7	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL ~~WATER~~

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/28/96

CAL. STD.: #14 6/28/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 20 7/29/96 JMJ

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson

C:\WP51\NAVY\PARRIS.GRP

(18 lab @ 60°C
-011 H14-14'
+ Fluorobenzene @ 20 µg/l

- Could be Vinyl Chloride

Trans 1,2-DCE 8.6 µg/l
- Could be Cis 1,2-DCE
80% R

Fluorobenzene 15.9

TCE 1.66 mg/l

Used CalSTD # 14 6/28/96

PCE 5.28 µg/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
-011 -H14-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		8.65	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		<	
Fluorobenzene surrogate §		15.9	80
TCE (Trichloroethylene)		1.66	
PCE (Tetrachloroethylene)		5.28	

SAMPLE TEMP: 35 °C VOL. INJ: 1M
SAMPLE MATRIX: SOIL ~~WATER~~

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/28/96

CAL. STD.: #14 6/28/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC. 20 7/29/96 JHJ

§ Surrogate concentration at ~~10~~ 20 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy Johnson

(19) 1mL @ 60°C
-011 H14-36' Fluorobenzene @ 20 ppb

Trans 1,2 - DCE 0.5 µg/l
>3% R
Fluorobenzene 14.6 µg/l
- could be TCE at < 5 µg/l

used Cal. STD. #14 6/28/96

see above quantitation #20

PCE 2.32 µg/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. -011 H14-36'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		0.5	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		14.6	73
TCE (Trichloroethylene)		<5	
PCE (Tetrachloroethylene)		2.32	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/28/96

CAL. STD.: #14 6/28/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC. 20 7/29/96 BDD

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry Johnson

MS

20 1/4 @ 60°C

-011 H14 -36'

MSD 1 mg/l

Surrogate 20 µg/l

6.19 µg/l - 0.5 mg/l 56.9 %R

7.51 mg/l 75 %R

9.97 mg/l 99 %R

21.3 mg/l 106 %R

12.5 µg/l 125 %R

used Cal STD # 14 6/28/96

see also analyzed in # 19

16.6 mg/l - 2.32 mg/l 143 %R

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
-011 H14 -36'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		6.19	57
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		7.51	75
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		9.97	99
Fluorobenzene surrogate §		21.3	21
TCE (Trichloroethylene)		12.5	12
PCE (Tetrachloroethylene)		16.6	143

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/28/96

CAL. STD.: #14 6/28/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at ~~10~~ 20 µg/l, 7/29/96 BD.

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jenny Johnson

C:\WP51\NAVY\PARRIS.GRP

2ml @ 60°C
-011 H14 -28'
+ Fluorobenzene @ 20 µg/l

6/28/96 JHJ
~~Fluoro~~ Trans 1,2-DCE
12.1 µg/l

Fluorobenzene
22.1 µg/l
110 % R

used Cal. STD
#14 6/28/96

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. -011 H14 -28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		12.1	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		22.1	110
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL ~~WATER~~

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/28/96

CAL. STD.: #14 6/28/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at ~~10~~ 20 7/29/96 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jim Johnson

C:\WP51\NAVY\PARRIS.GRP

(22) 1ml @ GC's
-218 J05-36' @ 20 ug/l
+ Fluorobenzene

Trans - 1,2-DCE 9.84 ug/l

Fluorobenzene 18.8 ug/l
94% R

Wcal.STD
#14 6/28/96

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
-218 J05-36'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		9.84	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		188	94
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		-	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/28/96

CAL. STD.: #14 6/28/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at ~~10~~ 20 µg/l, 7/28/96 JJJ

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jim Johnson

(23) 1ml @ 60°C
+218 J05-28'
+ Fluorobenzene @ 20 µg/l

Trans 1,2-DCE 5.91 µg/l

107%R

Fluorobenzene 21.4 µg/l

TCE 1.96 µg/l

Used Std #14 6/28/96

PCE 9.37 µg/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (2)

-218 J05-28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		5.91	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		21.4	107
TCE (Trichloroethylene)		1.96	
PCE (Tetrachloroethylene)		9.37	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/28/96

CAL. STD.: #14 6/28/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC. 20 7/29/96 BJB

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY:

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
- 218 J05 -14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		25.0	125
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/28/96

CAL. STD.: #14 6/28/95

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the via and injected into the GC.

§ Surrogate concentration at ~~10~~ 20 µg/l, 7/29/96 JH

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jay Johnson

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25 1/4 @ 60°C
-218 JC5 -14' (215)
m 5 = 10 mg/l + Fluorobenzene 20 mg/l

Vinyl chloride 3.6 µg/l 36% R
trans 1,2 - DCE 7.2 µg/l 72% R
cis 1,2 DCE 9.4 µg/l 94% R
Fluorobenzene 22.4 µg/l 112% R
TCE 15.4 µg/l
154% R

used Cal. STD. #14 6/28/96

see chrom #24 6/28/96

PCE 17.4 µg/l
174% R

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
-218 JC5 -14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		3.6	36
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		7.2	72
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		9.4	94
Fluorobenzene surrogate §		22.4	112
TCE (Trichloroethylene)		15.4	154
PCE (Tetrachloroethylene)		17.4	174

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL WATER

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/28/96

CAL. STD.: #14 6/28/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 20 7/29/96 JHJ

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy Johnson

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(26) Inf @ 50°C
#2 PAD-28' Trans 1,2-DCE @ 8.16 ug/l

Trans 1,2-DCE
8.16 ug/l

Fluorobenzene 22.5 ug/l
113% R

Used Cal. STD
#14 6/28/96

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

(2)

*** SAMPLE ID.
-218 GOO-28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		8.16	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		22.5	113
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/28/96

CAL. STD.: #14 6/28/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at ~~10~~ 20 µg/l, 7/29/96 DNB

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

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ANALYZED BY:

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		8.11	81
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10.1	101
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		9.88	99
Fluorobenzene surrogate §		19.8	99
TCE (Trichloroethylene)		10.2	102
PCE (Tetrachloroethylene)		171	171

SAMPLE TEMP: 35 °C VOL. INJ: 1ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/28/96

CAL. STD.: #14 6/28/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 20 7/29/96 DJ

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY:

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000041

(1) 1 µg @ 60°

H2

UNIT IN SELECTIVE SEARCH CYCLE

UNIT TIME
Co/28.96 0:18:18

NOISE = 0.20433
PARKLINE = 0.18513

NO PEAKS DETECTED

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (1)
Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/14

DATE ANALYZED: 6/29/96

CAL. STD.: uncalibrated

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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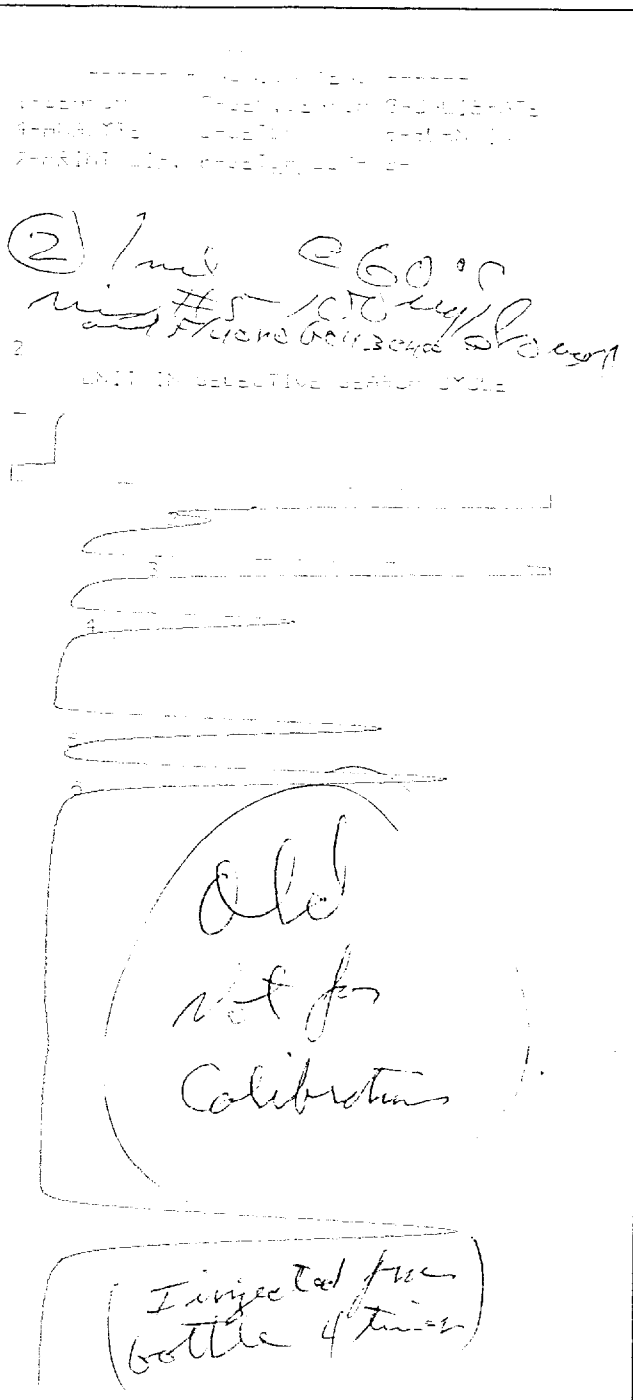
T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson 6/30



ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 100 µg/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		100	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		100	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		100	
Fluorobenzene surrogate §		100	
TCE (Trichloroethylene)		100	
PCE (Tetrachloroethylene)		100	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: n/a

DATE ANALYZED: 6/29/96

CAL. STD.: un calibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

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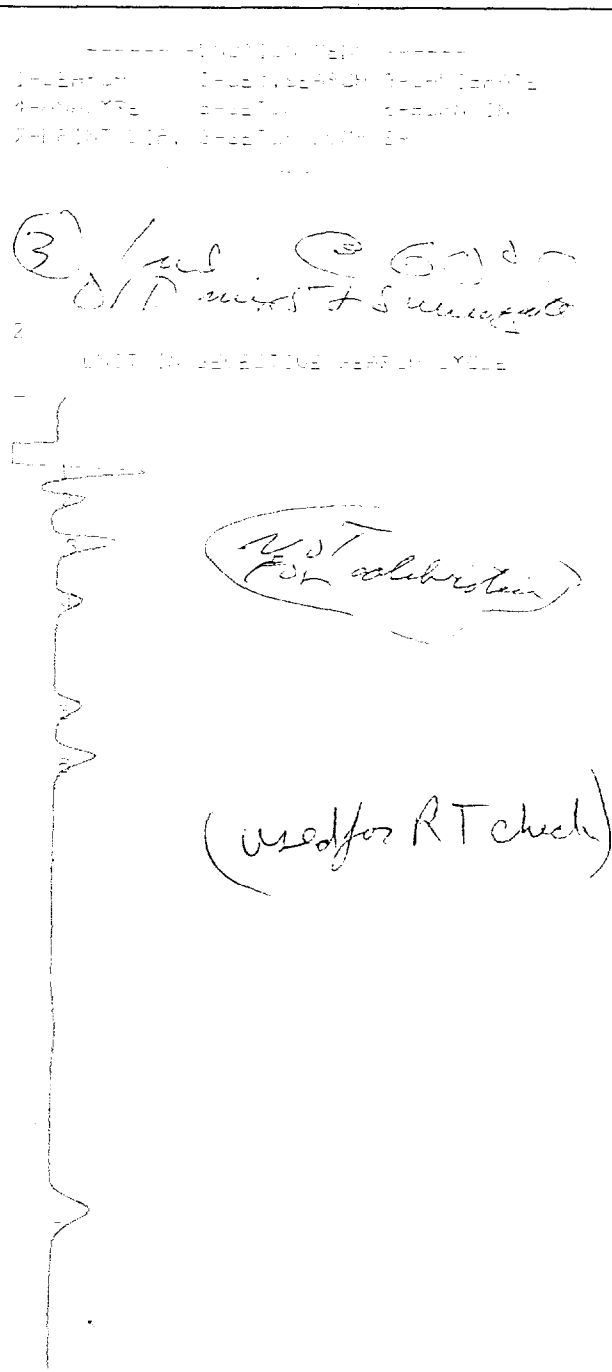

DATE TIME
06/29/96 07:33:09

NOISE = 0.00486
BASELINE = 0.87031

SELECTIVE SEARCH RESULTS

PK#	COMPOUND NAME	HEIGHT	AREA	TIME
1	Vinyl chloride	0%	.1842	0.122
3	t-1,2-DCE	100	.2668	1.141
4	c-1,2-DCE	178	.6362	2.333
5	"	1%	.1302	3.167
6	TCE	28%	.4736	4.171
7	Tetrachloroethylene	2%	.1114	10.000

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
MIX #5 @10 ug/l (3)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: n/a

DATE ANALYZED: 6/29/96

CAL. STD.: lm Calibrated

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

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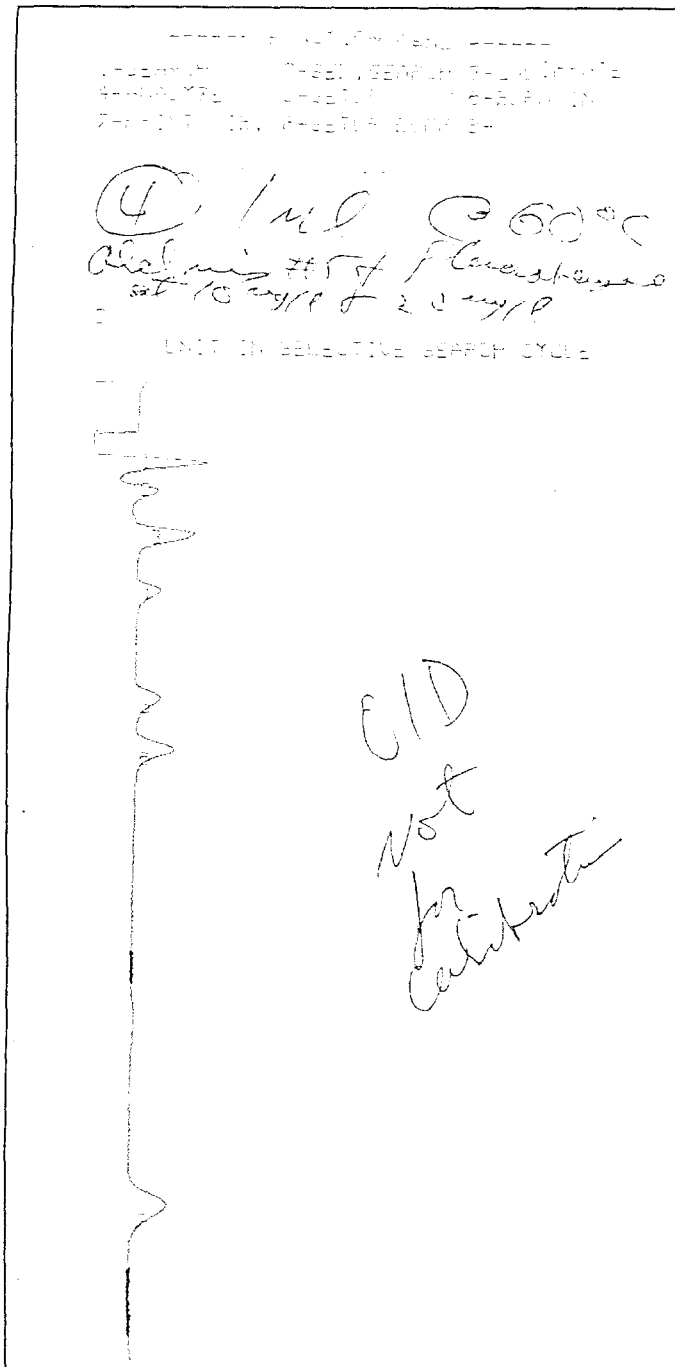

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/29/96

CAL. STD.: Un Calibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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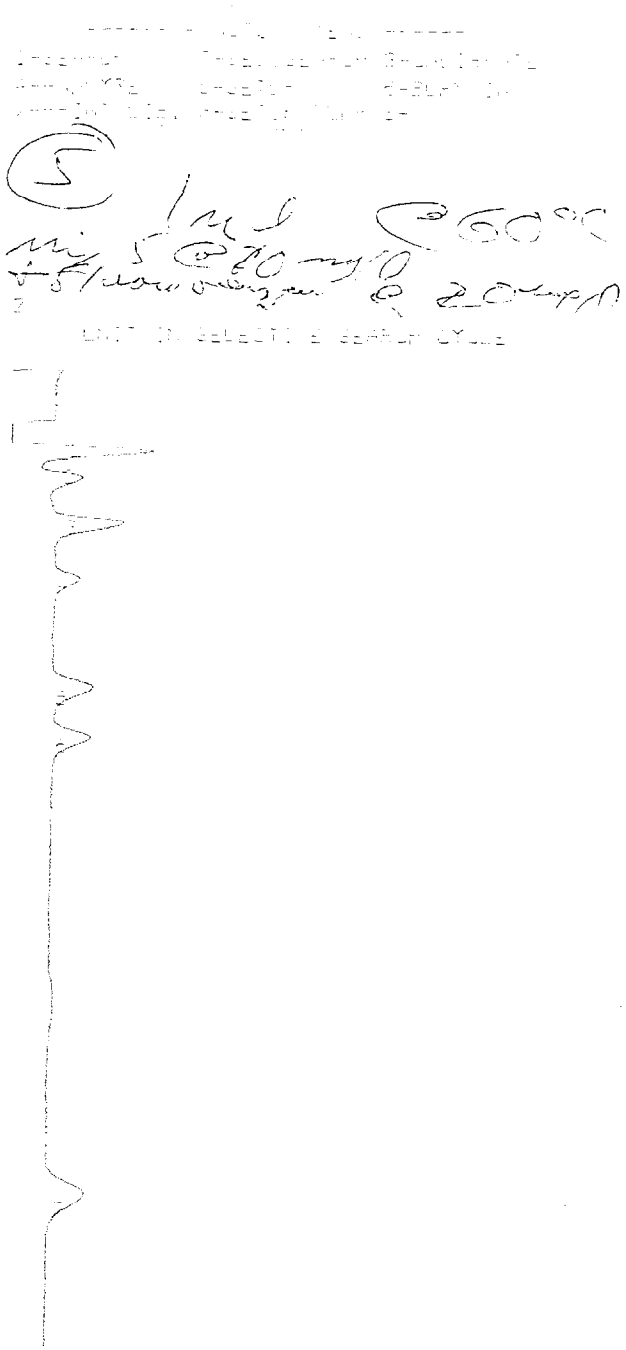
T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson



ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Mix #5 @ 10 ug/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. ~~INJ.~~: 1ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/29/96

CAL. STD.: 7/27/96 Cal STD

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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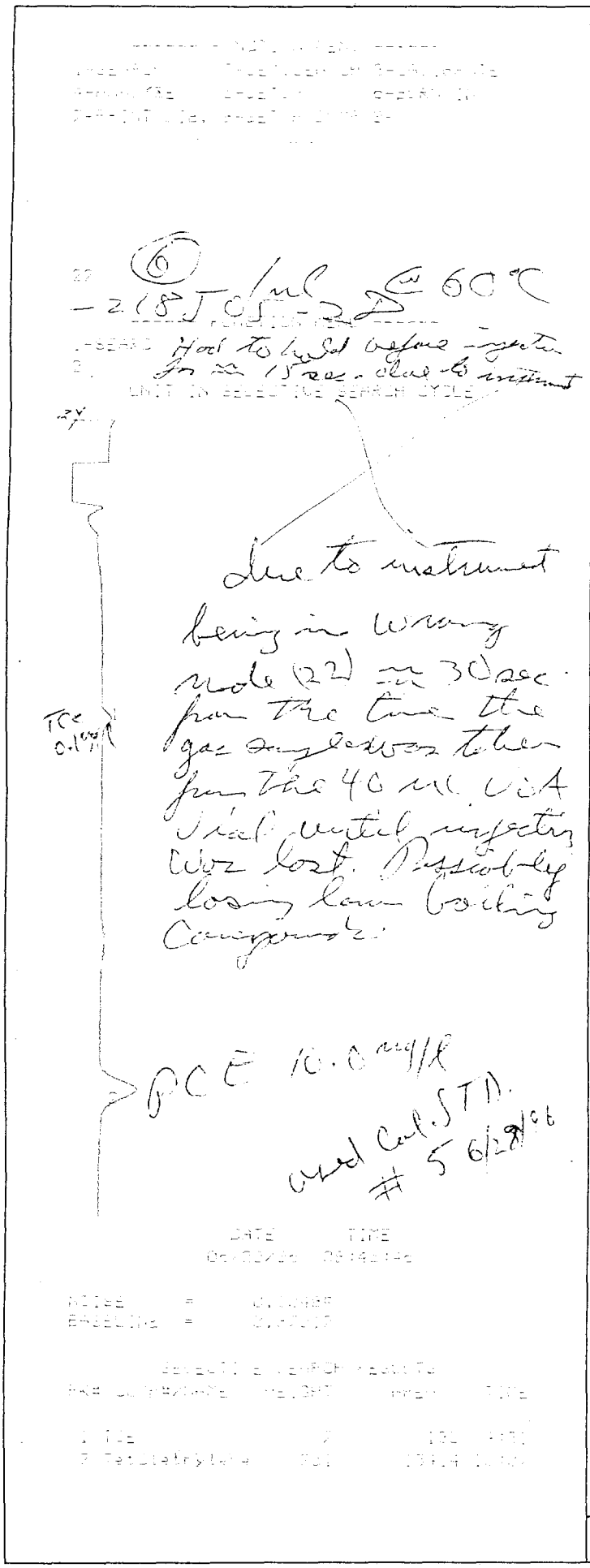
T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson 208



ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
-218 JO.5-28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		40.5	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/29/96

CAL. STD.: #5 6/28/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jimmy D. Johnson

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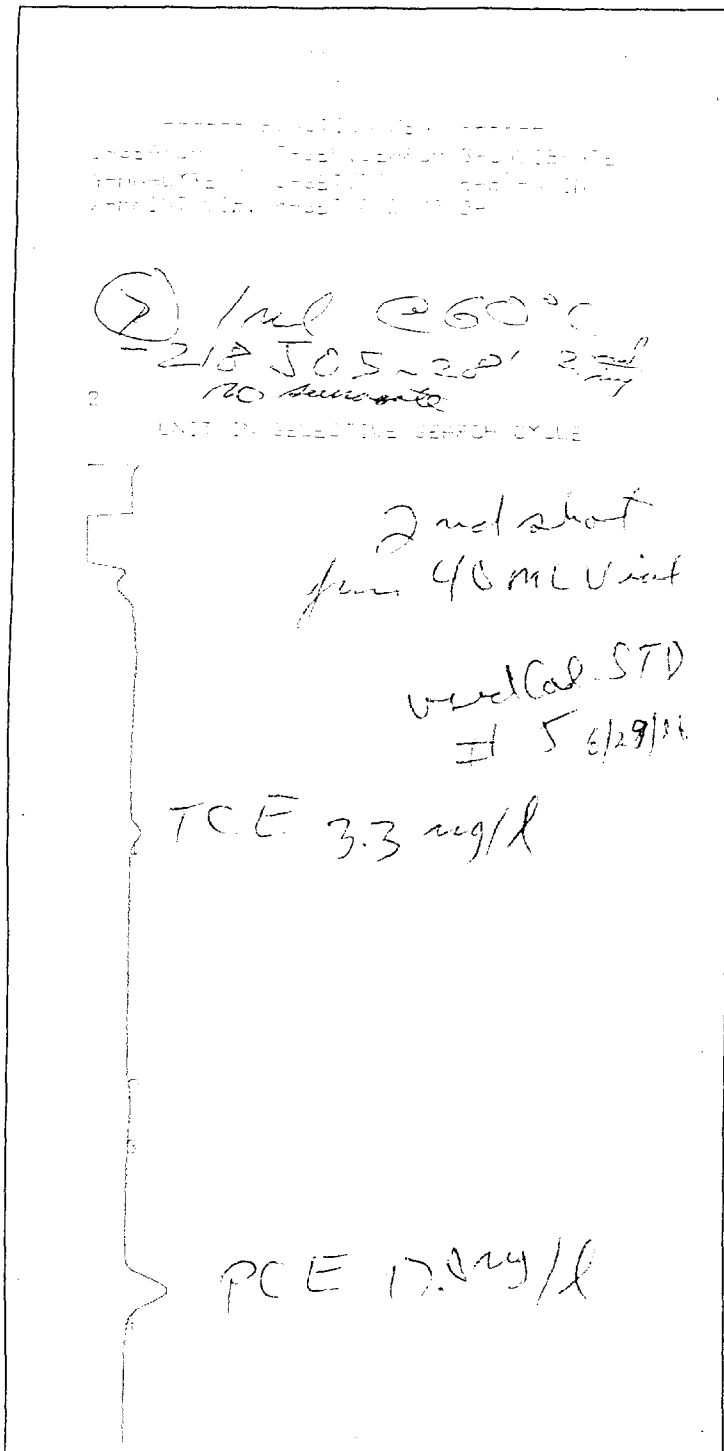

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §			103 Sur
TCE (Trichloroethylene)		3.3	
PCE (Tetrachloroethylene)		17.0	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/29/96

CAL. STD.: # 5 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 0 7/27/96 JHJ

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

\- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (8) Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/29/96

CAL. STD.: #5 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/29/96

CAL. STD.: #5 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson 908

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(illegible)

(10) 1 ml @ 60°C
Mix #1 @ 10 ug/l
+ Fluorobenzene @ 20 ug/l

(illegible)

Vinyl chloride
Trans 1,2-DCE
Cis 1,2-DCE
Fluorobenzene
TCE
PCE

(illegible)

(illegible)

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (illegible)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §			
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. INJ: _____
SAMPLE MATRIX: SOIL WATER

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: _____

DATE SAMPLED: _____

DATE ANALYZED: _____

CAL. STD.: _____

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jimmy D. Johnson

DATE TIME
(illegible)

Noise = (illegible)
Baseline = (illegible)

Selective Search Results

PK#	Compound Name	Height	Area	Type
(illegible)				

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. DI Wtr Blank

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		-	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		-	
Fluorobenzene surrogate §		353	176
TCE (Trichloroethylene)		-	
PCE (Tetrachloroethylene)		-	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: n/a

DATE ANALYZED: 6/29/96

CAL. STD.: # 10 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson JDJ

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 @ 10 mg/l

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		20	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/29/96

CAL. STD.: Cal STD

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 20 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jimmy D. Johnson

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(13 1/15 @ 59°C
D.I. Water Blank
Fluoro Benzene 20 ppb

Vinyl chloride 0.4 ug/l

85%

Fluorobenzene 17.00 ug/l
TCE < 0.1 ug/l

Used Cal STD.
#12 6/29/96

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. D.I. Water Blank

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		17.00	85
TCE (Trichloroethylene)		<.5	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 20 7/27/96 JJJ

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson 809

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(14) 1 ml @ 60°C
118 H05-7'
← Fluoro (surr.) spike @ 20 µg/l
Unit in selective search cycle

Trans 1,2-DCE 5.88 µg/l
Cis 1,2-DCE 54.0 µg/l
Fluorobenzene 13.1 µg/l 66% R
TCE
> 321 µg/l
Used cal STD #12 6/29/96
Re-ran 100X dilution run # 6/29/96
PCE
> 614 µg/l

Date Time
Calibration initiated

NOISE = 0.00483
SENSITIVITY = 0.01753

Selective search results

PK#	COMPOUND NAME	RETENTION TIME	AREA	PPB
2	trans-1,2-dcle	3.4	4163	5.8
3	cis-1,2-dcle	4.01	39162	54
4	?	4.2	17418	24.1
5	tce	4.83	231832	321
7	? pce/chlorobenzene	6.6833	190000	263.1

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 118 H05-7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		5.88	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		>54	
Fluorobenzene surrogate §		13.1	66
TCE (Trichloroethylene)		>321	
PCE (Tetrachloroethylene)		>614	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at ~~10~~ 20 µg/l, 7/27/96

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson 908

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1 X

DATE SAMPLED: N/A

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson

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(16) 1ml @ 60°C

118 H05 -28'

(see also run # 18 6/29/96)

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 118 H05 -28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jimmy D. Johnson

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
118 H05-36'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		4.6	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		<.5	
Fluorobenzene surrogate §		15.2	76
TCE (Trichloroethylene)		1.06	
PCE (Tetrachloroethylene)		1.06	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL WATER

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: # 12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 20 7/27/96 EJM

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson 7/27/96

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
118 H05 - 28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		35	175
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #16 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 20 7/27/96 JK

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only With no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson JDJ

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Rinse Blank #3

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		19.6	98
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL ~~INJ.~~ 1 ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

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ANALYZED BY: Jimmy D. Johnson

20 10X 100µl

118 HO5-7' Fluorobenzene @ 82.5 ug/l

P 115ug/l (not on straight away) Vinyl Chloride

Trans 1,2-DCE 40.3 ug/l

Cis 1,2-DCE 109 ug/l

Fluorobenzene 82.5 ug/l

TCE 454 ug/l

PCE 794 ug/l

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 118 HO5-7' (2)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		40.3	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		109	
Fluorobenzene surrogate §			dil. out
TCE (Trichloroethylene)		454	
PCE (Tetrachloroethylene)		794	

SAMPLE TEMP: 35 °C VOL. INJ: 100µl

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 10X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

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ANALYZED BY: Jimmy D. Johnson 6/29

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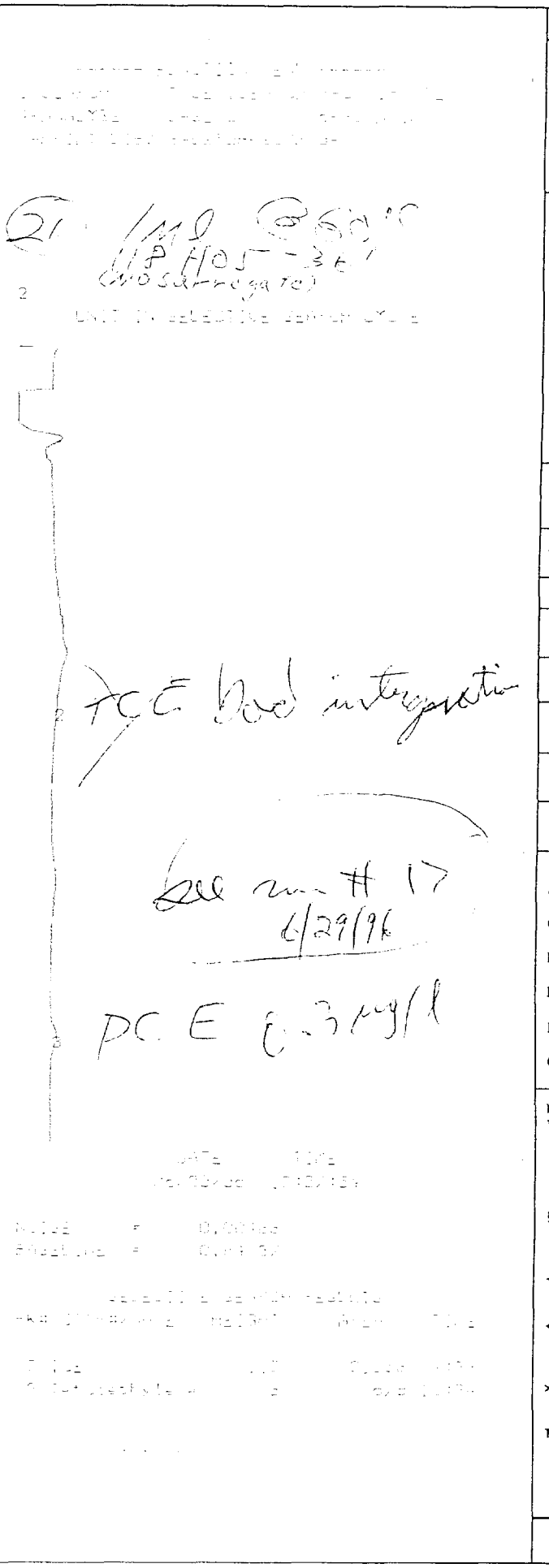

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 118 H05 -36' (2)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §			NO SUM
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		6.5	

SAMPLE TEMP: 35 °C VOL. INJ: 1 mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 07/27/96 JDJ

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson JDJ

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Rinsate Blank #3

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §			NO Surr
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. D 7/27/96 JDJ

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson JDJ

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 (2)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		112	112
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		11.9	119
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		124	124
Fluorobenzene surrogate §		18.5	93
TCE (Trichloroethylene)		9.22	92
PCE (Tetrachloroethylene)		8.4	84

SAMPLE TEMP: 35 °C VOL. INJ.: 1 µL

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 30 7/27/96 JDJ

§ Surrogate concentration at 10 µg/l,

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ANALYZED BY: Jimmy D. Johnson 7/29/96

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. -115 SJ23-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		13.1	65
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. ~~INJ~~: 1 ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l.

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
-115 J23-28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		14.4	72
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1 to 1

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

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Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson

25 µl @ 60°C
-115 J23-28' @ 20 µg/l

Fluorobenzene 14.4 µg/l
72% R

Used Cal. STD. #12 6/29/96

2nd dup run #26 6/29/96

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. -115 J23 - 28' (2

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		0.6	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		9.57	48
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 23 7/27/96 JH

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jimmy D. Johnson

2G 1ml @ 60°C
-115 T23-28 Fluorobenzene @ 9.57 ppb

Trans 1,2-DCE 0.6 µg/l

Fluorobenzene 9.57 µg/l
48%R

Used Cal STD #12 6/29/96

Reanalyzed #25 6/21/96

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID: 108 SB-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		<5	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		22.6	113
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 20 7/27/96 JDJ

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson JDJ

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2P 1µl @ 60°C
R.T. of mix 5 & Fluorobenzene 20 ng/µl

Retention Time Windows

Not For Calibration Use

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MIX #5 (2)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		1:04	R
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		1:57	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		2:41	
Fluorobenzene surrogate §		4:03	
TCE (Trichloroethylene)		4:42	
PCE (Tetrachloroethylene)		10:30	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 20 7/27/96 JDJ

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
108 J18 - 14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	110 Surr
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL ~~WATER~~

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 0 7/27/96 JHJ

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson DW

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
-218 G00 -36'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		3.88	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		157	79
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 2 07/27/96 JHB

§ Surrogate concentration at 10 µg/l.

Matrix spike concentration at 10 µg/l.

\- Indicates no peak found at assigned retention time for the compound.

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ANALYZED BY: Jimmy D. Johnson 7/29/96

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID.
-218 GOO -36' (MS)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		0.05	0
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		8.83	5C
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		6.45	6S
Fluorobenzene surrogate §			SC
TCE (Trichloroethylene)		7.02	70
PCE (Tetrachloroethylene)		8.18	82

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/28/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 7/27/96 SDD

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

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ANALYZED BY: Jimmy D. Johnson

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID: 108 SB-7' (3)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		15.7	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		303	
Fluorobenzene surrogate §		22.7	116
TCE (Trichloroethylene)		61.7	
PCE (Tetrachloroethylene)		42.1	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 20 µg/l, 20 7/27/96 JDJ

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson JDJ

(32) 1mL @60°C
108 SB-7'
+ Fluorobenzene @ 20 µg/l

Trans. 1,2 DCE 15.7 µg/l
Cis 1,2 DCE
303 µg/l
116%R
Fluorobenzene 22.7 µg/l
TCE
61.7 µg/l

Used Cal. STD.
#12 6/29/96

PCE 42.1 µg/l

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(32) 1ml @ 60°C
108 J18-28' @ 20%
+Fluorobenzene @ 20%

Trans 1,2-DCE 12.7 µg/l

Fluorobenzene 18.7 µg/l
93.5% R

used Cal. STD
#12 6/29/96

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (3)
108 J18 -28'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		12.7	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		18.7	93.
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 20 7/27/96 DJJ

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson DJJ

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 108 J18 -36' (3)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		9.55	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		18.4	92.
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 20 7/27/96 JDJ

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson 8/01

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		—	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. ~~INJ~~: 1.11C

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 7/27/96 JDJ

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson JDJ

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. DI Blank (30)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		15.6	78
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. JD 7/27/96

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson JDJ

30 1ml @ 60°C
6/29/96 JDJ

3 24 Blank
Cal
DI Blank

Fluorobenzene
15.6 mg/l
78.0 %R
on cal
sample with three
1ml samples taken
from 40ml VOA
vial

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 102 F00-7' (3)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		0	0
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson JDJ

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 102F00-7' (3)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		20.8	104
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 7/27/96

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson 7/27/96

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(39) 1 ml @ 60 °C
= 310 JOS-14' @ 20 ug/l

← could be Vinyl Chloride at <1 ug/l

← could be Trans 1,2-DCE at <5 ug/l

Fluorobenzene 10.9 ug/l
54.6 %R

used Cal. STD #12 6/29/96

← could be PCE at <1 ug/l

All non-detect

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (3)
-310 JOS-14'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		<5	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		10.9	55
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		<1	

SAMPLE TEMP: 35 °C VOL. ~~INJ~~: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. JDJ 7/27/96

§ Surrogate concentration at ~~10~~ µg/l,
Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson JDJ

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. -310 J05-28' (4)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		<5	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		11.9	59
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		<2	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. RO 7/27/96 BHB

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

\- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson 7/27/96 BHB

(40) 1ml @ 60°C
-310 J05-28'
Fluorobenzene @ 2 ug/l

- could be Vinyl Chloride at <1 ug/l
- could be trans-1,2-DCE at <5 ug/l

(used Cal STD #12 6/29/96)

Fluorobenzene 11.9 ug/l
59.3 %R

all non-detect

- could be PCE <2 ug/l

Bore hole near pond to North (possible Comm. Chem. Storage)

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. -310 JOS-36'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		2.13	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		10.2	51
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL ~~WATER~~

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: # 12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 20 µg/l, 7/27/96 DJ

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson 8DJ

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. MW#5 (4)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		ND	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §		Data	
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. INJ: 1ML

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. JD 7/27/96

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson JDJ

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ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. -115 J23-7'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		2.08	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		10.9	55
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		<1	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE

DILUTION FACTOR: 1X

DATE SAMPLED: 6/29/96

DATE ANALYZED: 6/29/96

CAL. STD.: #12 6/29/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Indicates no peak found at assigned retention time for the compound.

< (Sign only with no numerical value) indicates small peak found at assigned compound retention time but was not integrated by instrument.

> Indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

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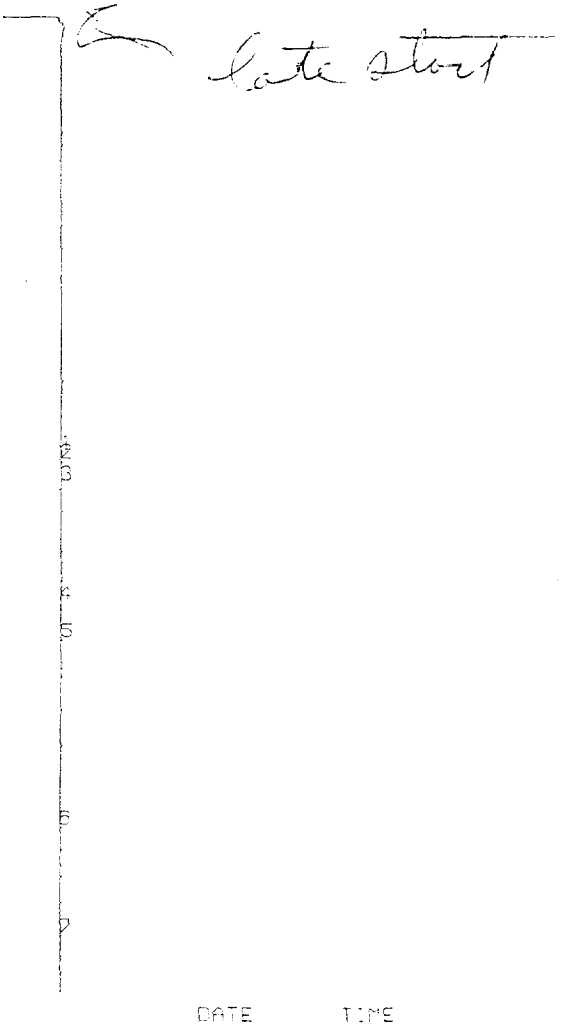
000041

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(1)

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

12
UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/30/96 08:21:54

NOISE = 0.00486
BASELINE = 1.07448

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
7	TetClethylene	3	1758	10:46

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. Helium (1)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride	—	—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)	—	—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)	—	—	
Fluorobenzene surrogate §	—	—	
TCE (Trichloroethylene)	—	—	
PCE (Tetrachloroethylene)	—	—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/30/96

CAL. STD.: uncalibrated N/A

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: John D. Johnson

------ FUNCTION MENU ------

1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(2) Helium 60°C

2

UNIT IN SELECTIVE SEARCH CYCLE

DATE TIME
06/30/96 08:18:02

NOISE = 0.02488
BASELINE = 0.87424

NO PEAKS DETECTED

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (2) Helium

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride	—	—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)	—	—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)	—	—	
Fluorobenzene surrogate §	—	—	
TCE (Trichloroethylene)	—	—	
PCE (Tetrachloroethylene)	—	—	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/30/96

CAL. STD.: Uncalibrated / A

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

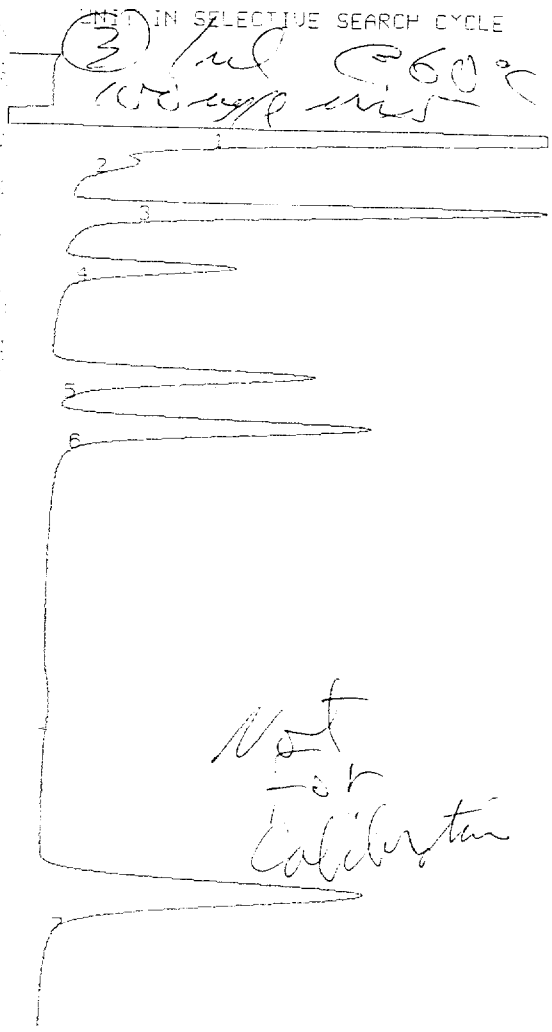
ANALYZED BY: [signature]

------ FUNCTION MENU ------

1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP.DUMP 9-

2

UNIT IN SELECTIVE SEARCH CYCLE



Not
for
Calibration

DATE TIME
06/30/96 28:31:55

NOISE = 0.00468
BASELINE = 0.86835

SELECTIVE SEARCH RESULTS

PK#	COMPD/NAME	HEIGHT	AREA	TIME
1	Vinyl Chloride	2745	253224	1:20
3	t-1,2D.C.E	3282	136422	1:54
4	c-1,2D.C.E	1330	55346	2:36
5	4	2025	82353	3:59
6	TCE	2435	116273	4:37
7	Tetrachloroethylene	3428	177190	10:21

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 100 µg/l MIX (3)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		100	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		100	
Fluorobenzene surrogate §		100	
TCE (Trichloroethylene)		100	
PCE (Tetrachloroethylene)		100	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/30/96

CAL. STD.: Not Cal. uncalibrated

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

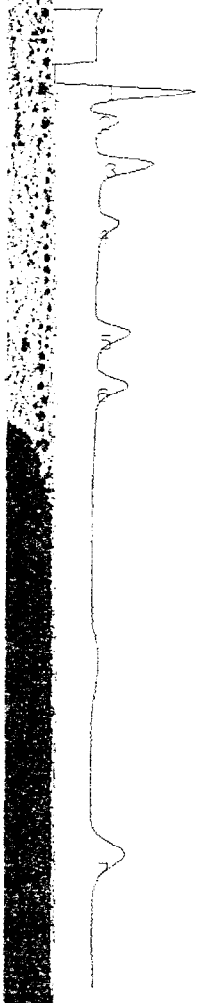
T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

4 Old Mix + Surrogate

UNIT IN SELECTIVE SEARCH CYCLE



Not for Calibration

DATE TIME
06/30/96 08:48:22

NOISE = 0.00488
BASELINE = 0.80342

SELECTIVE SEARCH RESULTS

PK#	COMPD/NAME	HEIGHT	AREA	TIME
1	Vinyl Chloride	208	16288	1:01
3	t-1,2D C'E	418	15130	1:55
4	c-1,2D C'E	144	6396	2:40
5	[illegible]	242	12181	4:00
6	TCE	222	9770	4:33
7	TetCleth'lene	135	12033	10:25

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (4)
Old Mix 1X 5+ Surrogate

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/30/96

CAL. STD.: Not Cal. uncalibrated

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l,

Matrix spike concentration at 10 µg/l.

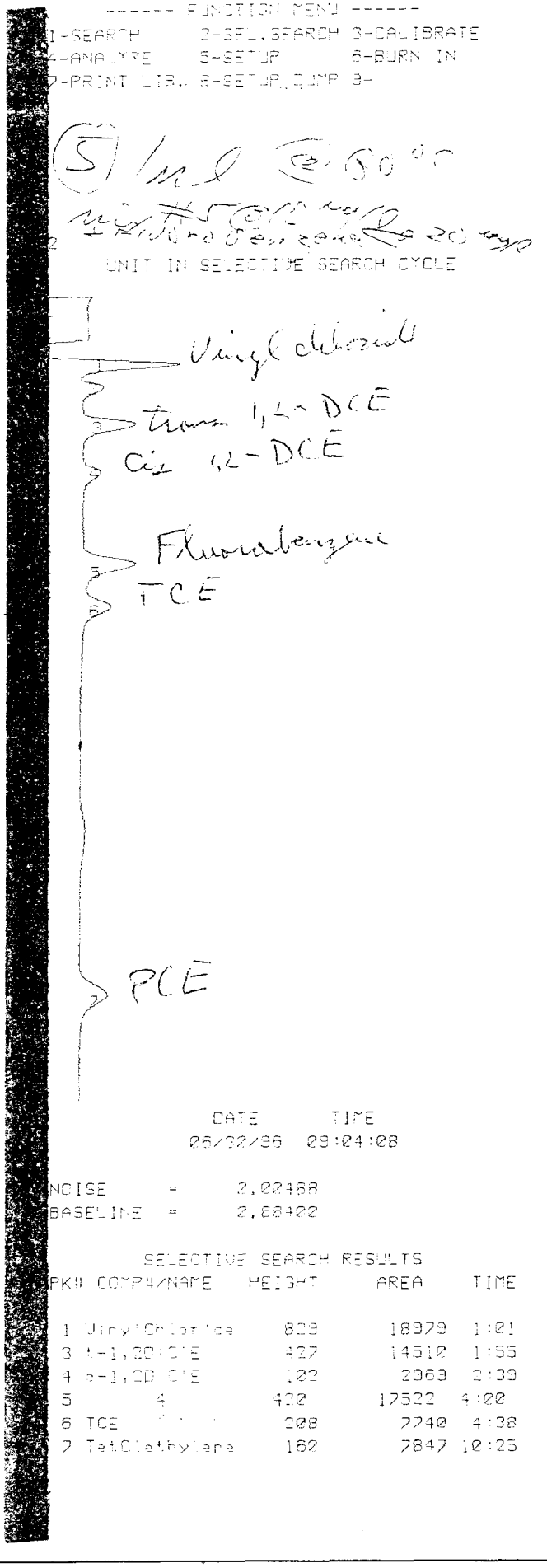
- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]



ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (5)

MIX 5

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		10T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		10	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL

SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/30/96

CAL. STD.: Cal #5

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at ~~10~~ 20 µg/l, 7/29/96 spb

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

6 ml @ 35°C
D.I. Water
Fluorobenzene 16.0 ug/l

2 UNIT IN SELECTIVE SEARCH CYCLE

cannot be
Vinyl Chloride 0.2 ug/l

3 Fluorobenzene 16.0 ug/l

80% R

Used Cal. STD
#5 6/30/96

DATE TIME
06/30/96 09:18:52

NOISE = 0.00488
BASELINE = 2.67812

SELECTIVE SEARCH RESULTS

PK#	COMPd/NAME	HEIGHT	AREA	TIME
1	Vinyl Chloride	51	423	1:02
4	4	302	14244	4:01

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (6) D.I. Water

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T0.2	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		16.0	80.0
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1 X

DATE SAMPLED: N/A

DATE ANALYZED: 6/30/96

CAL. STD.: Used Cal #5 6/30/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l, 20 7/29/96 DJ

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

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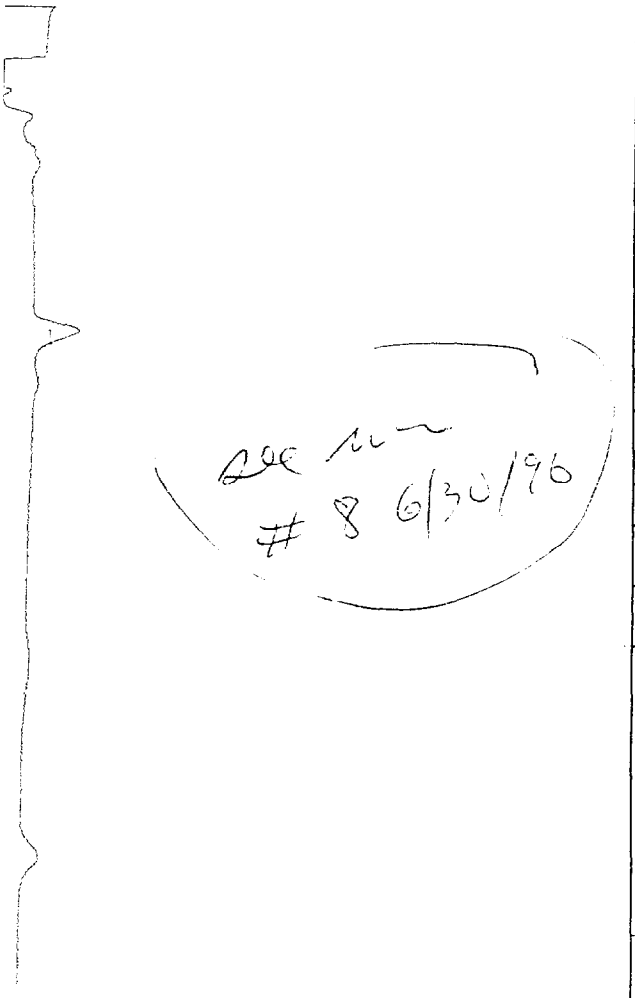
T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: John D. Johnson

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

2 Fluorobenzene (8) 20 ppm

UNIT IN SELECTIVE SEARCH CYCLE



See run #8 6/30/96

DATE TIME
06/30/96 20:56:58

NOISE = 0.20488
BASELINE = 0.85714

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	4	250	6866	4:01

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (7)
200 L13-9' Surrogate

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride			
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)			
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)			
Fluorobenzene surrogate §			
TCE (Trichloroethylene)			
PCE (Tetrachloroethylene)			

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR:

DATE SAMPLED: See run

DATE ANALYZED: #8 6/30/96

CAL. STD.: #5 6/30/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 20 µg/l, 20 7/29/96 DB

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

50

------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(8)

1ml @ 60°C
+ ~300 C13-9' (@ 20 mg/l)

2 UNIT IN SELECTIVE SEARCH CYCLE

Fluorobenzene 12.6 mg/l
63.3 %R

Internal STD
#5 6/30/96

PCE 2.6 mg/l

DATE TIME
06/30/96 10:13:25

NOISE = 0.02488
BASELINE = 0.87178

SELECTIVE SEARCH RESULTS

PK#	COMPD/NAME	HEIGHT	AREA	TIME
1	4	226	11086	4:02
2	Tetrachloroethylene	48	2077	12:06

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (8)
200 C13-9' + Surrogate

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		12.6	63.3
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		7/29/96 DNT 2.6	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/30/96

DATE ANALYZED: 6/30/96

CAL. STD.: #5 6/30/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 20 7/25/96 DNT

§ Surrogate concentration at ~~10~~ 20 µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry D. Johnson

------- FUNCTION MENU -------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(9)
INJ @ 60°C
200 C13-9'

2
UNIT IN SELECTIVE SEARCH CYCLE

Trans 1,2-DCE 0.2 ug/l

Fluorobenzene 12.9 ug/l
64.4 %R

Used Cal STD
#10 6/30/96

Bad integration
PCE 4 ug/l

DATE TIME
06/30/96 10:40:57

NOISE = 0.00488
BASELINE = 0.87812

SELECTIVE SEARCH RESULTS

PK#	COMPD NAME	HEIGHT	AREA	TIME
1	1,2-DCE	13	303	1:58
2		251	11293	4:01
4	TetraChloroethylene	102	8679	12:28

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (9)
200 C13-9'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		0.2	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		12.9	64.4
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		<	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/30/96

DATE ANALYZED: 6/30/96

CAL. STD.: # 10 6/30/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 20 µg/l, 20 7/29/96 JJJ

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

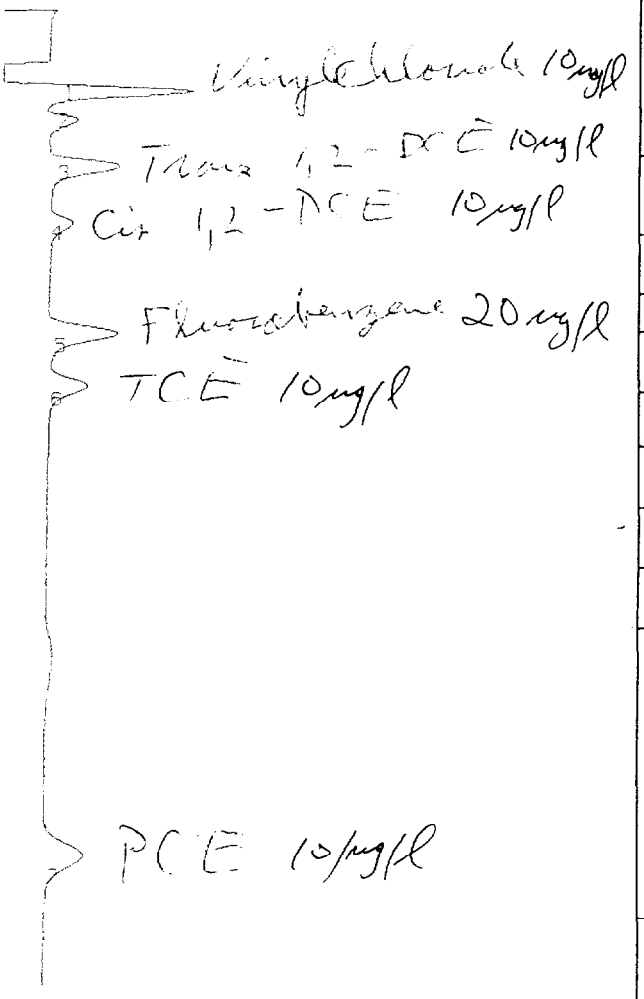
T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: John D. Johnson

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT CAL. 8-SETUP-CLMP 9-

(10) 1 ml (@ 60°C
Methyl-t-Bu 10 ug/l
& Fluorobenzene @ 20 ug/l
2

UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/30/96 12:54:48

NOISE = 0.00486
BASELINE = 0.88645

SELECTIVE SEARCH RESULTS

PK#	COMPD/NAME	HEIGHT	AREA	TIME
1	Vinyl Chloride	1072	26263	1:01
3	t-1,2-DCE	506	18737	1:56
4	c-1,2-DCE	156	6137	2:40
5	4	521	21363	4:20
6	TCE	380	12617	4:33
7	TetChloroethylene	266	17432	10:26

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (10)
MW5 #5

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T/0	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		10	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		10	
Fluorobenzene surrogate §		20	
TCE (Trichloroethylene)		10	
PCE (Tetrachloroethylene)		10	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/30/96

CAL. STD.: NA

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at ~~10~~ 20 7/29/96 DBJ µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

11 1mL @60°C
2,5-Fluorobenzene @20 ug/l
2
UNIT IN SELECTIVE SEARCH CYCLE

Vinyl Chloride <
Trans 1,2-DCE 4.97 ug/l
Cis 1,2-DCE <
3 Fluorobenzene 10.97 ug/l
54.8% R
Used Cal STD
#10 6/30/96

DATE TIME
06/30/96 11:11:02

NOISE = 0.00488
BASELINE = 0.88156

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	1-1,2DICLE	245	9328	1:59
4	4	283	12043	4:01

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (11)
200C13-16FT.

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		<T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		4.97	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		<	
Fluorobenzene surrogate §		10.97	54.8
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/30/96

DATE ANALYZED: 6/30/96

CAL. STD.: #10 6/30/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 20 7/25/96 JJ

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jim D. Johnson

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(12) Inl @60°C

2
UNIT IN SELECTIVE SEARCH CYCLE

200L13-30' @20 ug/l
Fluorobenzene
Vinylchloride (0.7ug/l
Trans 1,2-DCE 13.6 ug/l
Cis 1,2-DCE <
Fluorobenzene 20.4 ug/l
102% R

used Cal. STD.
#10 6/30/96

< PCE

DATE TIME
06/30/96 11:25:00

NOISE = 0.00486
BASELINE = 0.00883

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	Vinyl Chloride	155	1877	1:21
3	T-1,2-DCE	518	25477	1:57
5	F	475	22386	3:59

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 200L13-30' (12)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		0.7T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		13.6	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		<	
Fluorobenzene surrogate §		20.4	102
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		<	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/30/96

DATE ANALYZED: 6/30/96

CAL. STD.: #10 6/30/96

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 µg/l, 20 7/29/96 BJF

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry D. Johnson

------- FUNCTION MENU -------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(13) 1 ml @ GC °C
aliquots DK + 4.0 µg/l of Fluorobenzene

2
UNIT IN SELECTIVE SEARCH CYCLE

Vinyl chloride 0.2 µg/l
Trans. 1,2-DCE
Cis. 1,2-DCE
Fluorobenzene 8.91 µg/l 44.5%R
TCE
Medical STD #10 6/30/96
all non-detects
PCE

DATE TIME
06/30/96 11:43:55

NOISE = 2.00488
BASELINE = 0.87868

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	VinylChloride	67	537	1:02
3	4	285	3783	4:01

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (13) Purgeable Blank #4

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		0.2T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		8.91	44.5
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/30/96

DATE ANALYZED: 6/30/96

CAL. STD.: #10 6/30/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 20 7/25/96 dpf

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jerry D. Johnson

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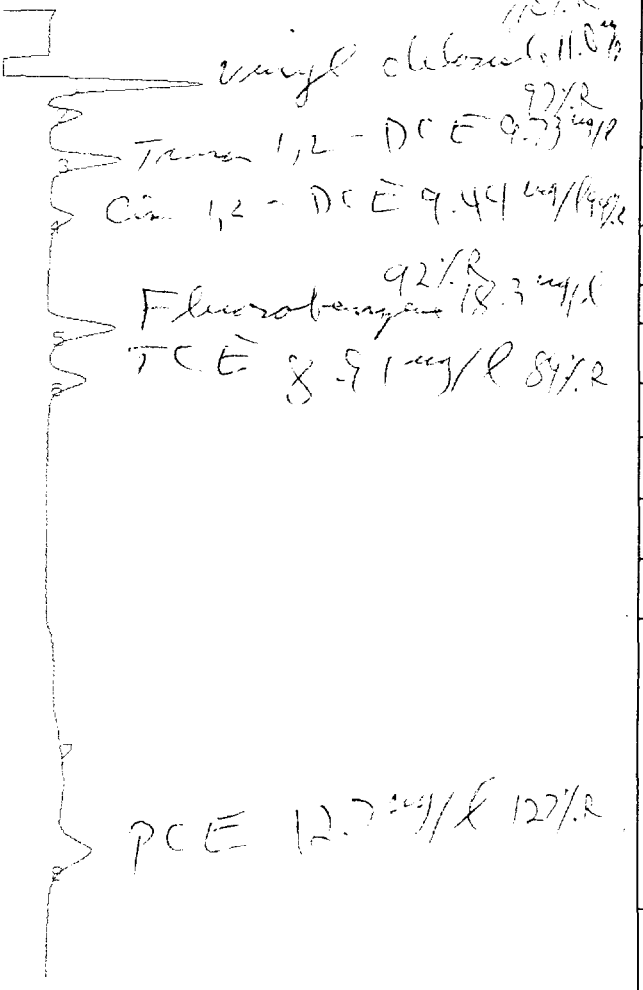
------ FUNCTION MENU ------
1-SEARCH      2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE     5-SETUP       6-BURN IN
7-PRINT LIB.  8-SETUP DUMP  9-
```

(14) 1ml @ 6.0°C
Mix #5 @ 10 mg/l
Fluorobenzene @ 20 mg/l

2

UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
26/30/96 12:07:26

NOISE = 2.00488
BASELINE = 2.88402

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
1	Vinyl Chloride	1148	28334	1:21
3	t-1,2-DCE	523	18256	1:56
4	c-1,2-DCE	154	5732	2:42
5	F	481	20122	4:01
6	TCE	262	11237	4:40
8	TetraChloroethylene	302	22281	10:08

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (14) MIX #5

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		11.0T	110
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		9.73	97
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		9.44	94
Fluorobenzene surrogate §		18.3	92
TCE (Trichloroethylene)		8.91	89
PCE (Tetrachloroethylene)		12.7	127

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/30/96

CAL. STD.: #10 6/30/96 Check Std

NOTES:
* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 20 µg/l. 10 µg/l. 7/25/96 dlf

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

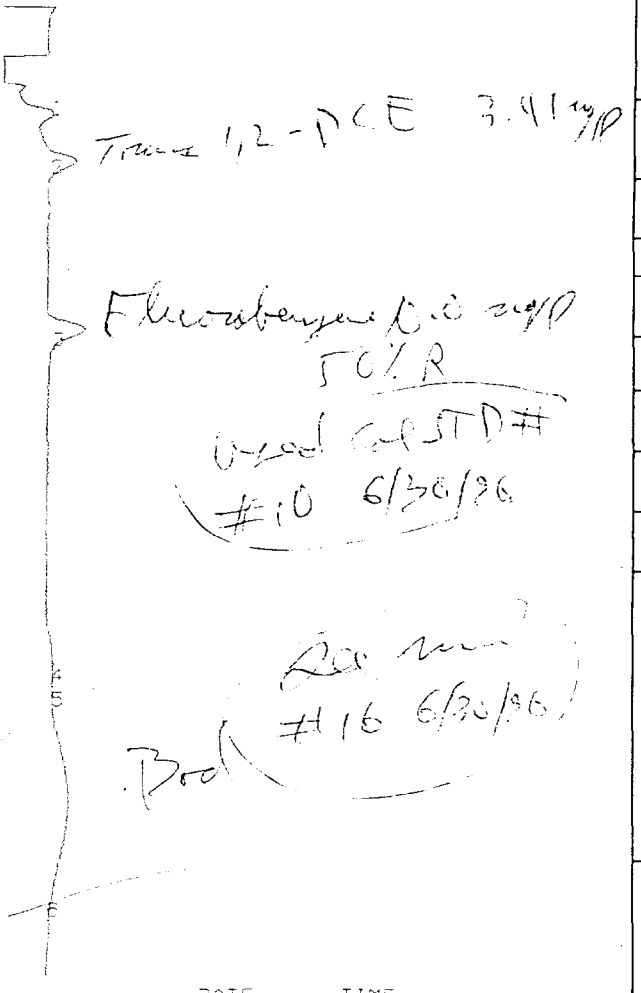
T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jing D. Johnson

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BLRN IN
7-PRINT LIB. 8-SETUP DUMP 9-

15 Inj @ 60°C
FID 10 JOT - 28' @ 20 ml/m

2 UNIT IN SELECTIVE SEARCH CYCLE



DATE TIME
06/30/96 12:30:51

NOISE = 2.22488
BASELINE = 2.66891

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	RT
2	t-1,2DICLE	.84	6425	3:20
3	4	281	11007	4:23
6	TetCleEthylene	132	40267	10:20

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 0/10J05-28' (15)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		—	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		3.41	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		10.0	50
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		<	

SAMPLE TEMP: 35 °C VOL. INJ: 1ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/30/96

DATE ANALYZED: 6/30/96

CAL. STD.: #10 6/30/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at ~~10~~ 20 µg/l, 7/25/96 ok

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jimmy D. Johnson

------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

6 1 ml Gas
010 J05-28' & Fluorobenzene (9.96 ug/l)

2

UNIT IN SELECTIVE SEARCH CYCLE

Vinyl chloride <
Trans 1,2-DCE 3.50 ug/l
cis 1,2-DCE <
Fluorobenzene 9.96 ug/l 49.8 %R
TCE <
Cal STD. #10 6/30/96
#15 6/30/96
PCE <

DATE TIME
06/30/96 12:45:32

NOISE = 0.00488
BASELINE = 2.87912

SELECTIVE SEARCH RESULTS

PK#	COMPD NAME	HEIGHT	AREA	TIME
2	t-1,2-DICE	193	6550	1:59
3		272	12834	4:02

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. 010 J05-28' (6)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		<	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		3.50	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		<	
Fluorobenzene surrogate §		9.96	49.8
TCE (Trichloroethylene)		<	
PCE (Tetrachloroethylene)		<	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/30/96

DATE ANALYZED: 6/30/96

CAL. STD.: #10 6/30/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at ~~10~~ 20 µg/l, 7/25/96 DJF

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Tina D. Johnson

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(15)
010J05-28' MS
Fluorobenzene @ 20 ug/l

UNSIGNIFICANT SELECTIVE SEARCH CYCLE

28%R
Vinyl chloride 2.82 ug/l
26%R
Trans 1,2-DCE 6.11 ug/l
Cis 1,2-DCE 5.46 ug/l 55%R
38%R
Fluorobenzene 7.65 ug/l
TCE 7.15 ug/l 72%R
65%R
PCE 6.52 ug/l

DATE TIME
06/30/96 13:05:19

NOISE = 0.02488
BASELINE = 0.84248

SELECTIVE SEARCH RESULTS

PK#	COMPOUND NAME	WEIGHT	AREA	TIME
1	Vinyl Chloride	403	7425	1:23
3	t-1,2D C E	958	11461	1:57
4	c-1,2D C E	111	3350	2:41
5	[illegible]	218	8406	4:04
6	TCE	227	9217	4:42
7	Tetrachloroethylene	221	11408	10:32

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (17) 010J05-28' MS

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		2.82T	28
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		6.11	26
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		5.46	55
Fluorobenzene surrogate §		7.65	38
TCE (Trichloroethylene)		7.15	72
PCE (Tetrachloroethylene)		6.52	65

SAMPLE TEMP: 35 °C VOL. INJ: 1 mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/30/96

DATE ANALYZED: 6/30/96

CAL. STD.: #10 6/30/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at ~~10~~ 20 µg/l, 7/25/96 dlf

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

(18)

1ml @ 60 °C
-110 G-10-28'
+ Fluorobenzene @ 20 ug/l

2

UNIT IN SELECTIVE SEARCH CYCLE

Vinyl chloride < 1

Trans 1,2-DCE 2.1 ug/l

Cis 1,2 DCE <

Fluorobenzene 10.3 ug/l

TCE < 51%R

used Cal STD
10 6/30/96

PCE <

DATE TIME
06/30/96 12:24:23

NOISE = 0.00488
BASELINE = 0.00883

SELECTIVE SEARCH RESULTS

PK#	COMPD#/NAME	HEIGHT	AREA	TIME
2	1-1,2-DCE	113	3381	2:00
3	1	271	11323	4:24

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. -110 G-10-28' (18)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		<1T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		2.1	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		10.3	51
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1 ml
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/30/96

DATE ANALYZED: 6/30/96

CAL. STD.: #10 6/30/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC. 20 7/25/96 DJF

§ Surrogate concentration at ~~10~~ µg/l,

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jing D. Fu

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

20 1/4 L @ 50 °C
Fluorobenzene 5 ng/50 typo
2

UNIT IN SELECTIVE SEARCH CYCLE

Test after 4 shots

Trans 1,2-DCE 9.4 ng/l

Cis 1,2-DCE 8.02 ng/l

Fluorobenzene 6/30/96 JJ

TCE 10.2 ng/l

PCE 8.87 ng/l

DATE TIME
06/30/96 14:41:10

NOISE = 0.20488
BASELINE = 0.82424

SELECTIVE SEARCH RESULTS

PK#	COMPOUNDNAME	HEIGHT	AREA	TIME
2	t-1,2D DCE	462	17713	1:52
4	c-1,2D DCE	143	5415	2:43
6	TCE	268	12846	4:45
8	Tetrachloroethylene	232	15514	10:38

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (20)
Mix 5 @ 10 ng/l (Test)

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		9.4	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		8.02	
Fluorobenzene surrogate §		<	
TCE (Trichloroethylene)		10.2	
PCE (Tetrachloroethylene)		8.87	

SAMPLE TEMP: 35 °C VOL. INJ: 1ML
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: N/A

DATE ANALYZED: 6/30/96

CAL. STD.: #10 6/30/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at ~~10~~ 20 µg/l, 7/25/96 JJ

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: Jing D. Johnson

------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

21 1mL @ 60°C
200 M15-9'
= Fluorobenzene @ 20 µg/l

2

UNIT IN SELECTIVE SEARCH CYCLE

- Vinyl chloride
- Trans 1,2 DCE
- Cis 1,2 DCE
- Fluorobenzene
- TCE
- PCE

DATE TIME
06/30/96 15:02:44

NOISE = 0.00488
BASELINE = 0.86447

SELECTIVE SEARCH RESULTS
PK# COMP#/NAME HEIGHT AREA TIME

------ FUNCTION MENU ------
1-SEARCH 2-SEL. SEARCH 3-CALIBRATE
4-ANALYZE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP DUMP 9-

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (21)
200 M15-9'

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		<T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		—	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		<	
TCE (Trichloroethylene)		—	
PCE (Tetrachloroethylene)		—	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1 X

DATE SAMPLED: 6/30/96

DATE ANALYZED: 6/30/96

CAL. STD.: #10 6/30/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 10 20 µg/l, 7/25/96 JMF

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]

------ FUNCTION MENU ------
1-SEARCH 2-SEL.SEARCH 3-CALIBRATE
4-ANALYSE 5-SETUP 6-BURN IN
7-PRINT LIB. 8-SETUP EPROM 9-

19 1 ml @ 60°C
Fluoro IDW Drum 40 mg/l

2

UNIT IN SELECTIVE SEARCH CYCLE

Vinyl Chloride 5.7 µg/l

Trans 1,2-DCE 2.87 µg/l

Fluorobenzene 22.2 µg/l
55.4 %R

TCE 3.8 µg/l

PCE 12.1 µg/l

DATE TIME
06/30/96 12:32:46

NOISE = 0.20488
BASELINE = 0.31575

SELECTIVE SEARCH RESULTS

PK#	COMP#/NAME	HEIGHT	AREA	TIME
2	Vinyl Chloride	663	14886	1:22
4	t-1,2DCE	321	5375	1:58
7	4	827	24344	4:24
8	TCE	137	4805	4:43
9	Tet.Chloroethylene	343	21202	10:34

ANALYSIS INFORMATION SHEET

Contract No.: N62467-93-D-0936

Job Name: MWR CLEANERS, Bldg. 193

Job #: 22567-145

Delivery order No.: 48

INSTRUMENT: HNU 311 Portable Gas Chromatograph

Analysis head Pressure: 8 PSI

Oven Temperature: 60 °C

INJ./DET. TEMP.: 100 °C

ANALYSIS TIME: 12 MIN.

COLUMN TYPE: MXT-502.2

SOURCE TYPE: 11.7 eV PID

*** SAMPLE ID. (19)
IDW Drum

COMPOUND NAME	PPM Mg/l	PPB µg/l	QC %R
Vinyl Chloride		5.7T	
Trans. 1,2-DCE (trans-1,2-Dichloroethylene)		2.87	
Cis. 1,2-DCE (Cis-1,2-Dichloroethylene)		—	
Fluorobenzene surrogate §		22.2	55.4
TCE (Trichloroethylene)		3.8	
PCE (Tetrachloroethylene)		12.1	

SAMPLE TEMP: 35 °C VOL. INJ: 1mL
SAMPLE MATRIX: SOIL (WATER)

GC SAMPLING METHOD: VOA HEAD SPACE *

DILUTION FACTOR: 1X

DATE SAMPLED: 6/30/96

DATE ANALYZED: 6/30/96

CAL. STD.: #10 6/30/96

NOTES:

* A 40 Ml VOA vial containing 20 Ml of sample, standard, or blank and a 20 Ml headspace was heated to 35°C in a waterbath for 30 minutes. A 1 Ml headspace sample was withdrawn from the vial and injected into the GC.

§ Surrogate concentration at 40 µg/l, 7/25/96 40 µg/l

Matrix spike concentration at 10 µg/l.

- Dash for compound concentration indicates no peak found at assigned retention time.

< Less than sign only for compound concentration indicates small peak found at assigned retention time but not integrated.

> Greater than sign before a numerical value indicates actual concentration of compound may exceed reported value.

T Tentative identification of vinyl chloride, area of peak represents co-elution with methanol and unknown compound(s). Therefore, identification and/or concentration of the vinyl chloride compound is not definable.

ANALYZED BY: [signature]