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SUPPLEMENTAL FEASIBILITY STUDY
FOR SITE #734048
SYRACUSE, NEW YORK

VOLUME 2 of 2

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Date: February, 1990

APPENDIX A

This appendix contains the analytical data for soil samples collected during the Supplemental Remedial Investigation. The boring locations for the samples are shown on Figure 4 and the sampling depths are shown on Table 1 as contained in this report. The information contained in this appendix is for the sample results only. Although all samples were analyzed using Contract Laboratory Protocol, this additional QA/QC information is not yet available from the laboratory.

The following is a list of notes received from the laboratory regarding the analytical procedures and results on some of the samples:

- The laboratory blank analyzed with samples S-4, S-5, and S-6 (boring SB-1) and samples S-1, S-2 and S-3 (boring SB-2) contained a low concentration (13.6 ppb) of acetone.

- The laboratory blank analyzed with samples S-15, S-16, S-17 (boring DGC-16D) contained a low concentration (15 ppb) of acetone.

- The laboratory blank analyzed with samples S-6, S-7 and S-8 (boring TB-6B), S-11, S-12 and S-13 (boring TB-9B) and S-8, S-9 (boring TB-11B) contained low levels (42 ppb) of acetone and low levels of methylene chloride (7 ppb).

In accordance with the analytical program for the remedial investigation, one sample was collected at each of five locations and analyzed for all TCL parameters. Duplicate samples were also collected at each location for quality control. The sampling locations and the corresponding duplicates are as follows:

TB-4A:	X-2
TB-6A:	X-3
TB-9A:	X-5
TB-10A:	X-4
TB-11A:	X-1

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

DATE 1/4/90

LABORATORY NUMBER:
SAMPLE IDENTIFICATION: MED BLANK

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	1000	UG/KG
BROMOMETHANE	ND	UG/KG	1000	UG/KG
DICHLORODIFLUOROMETHANE	ND	UG/KG	500	UG/KG
VINYL CHLORIDE	ND	UG/KG	1000	UG/KG
CHLOROETHANE	ND	UG/KG	1000	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	500	UG/KG
TRICHLOROFLUOROMETHANE	ND	UG/KG	500	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	500	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	500	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	500	UG/KG
CHLOROFORM	ND	UG/KG	500	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	500	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	500	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	500	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	500	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	500	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	500	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	500	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	500	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	500	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	500	UG/KG
BENZENE	ND	UG/KG	500	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	1000	UG/KG
BROMOFORM	ND	UG/KG	500	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	500	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	500	UG/KG
TOLUENE	ND	UG/KG	500	UG/KG
CHLOROBENZENE	ND	UG/KG	500	UG/KG
ETHYLBENZENE	ND	UG/KG	500	UG/KG
XYLENES, TOTAL	ND	UG/KG	500	UG/KG
1,2-DICHLOROBENZENE	ND	UG/KG	500	UG/KG
1,3-DICHLOROBENZENE	ND	UG/KG	500	UG/KG
1,4-DICHLOROBENZENE	ND	UG/KG	500	UG/KG
STYRENE	ND	UG/KG	500	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	500	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	1000	UG/KG
ACETONE	3770	UG/KG	1000	UG/KG
2-HEXANONE	ND	UG/KG	1000	UG/KG
VINYL ACETATE	ND	UG/KG	1000	UG/KG
CARBON DISULFIDE	ND	UG/KG	500	UG/KG
2-BUTANONE	ND	UG/KG	1000	UG/KG
ACROLEIN	ND	UG/KG	10000	UG/KG
ACRYLONITRILE	ND	UG/KG	10000	UG/KG

DATA REVIEW _____ DATE _____

DATE SAMPLED:
DATE ANALYZED:

SAMPLE MATRIX: SOIL

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

DATE
10490

LABORATORY NUMBER: 1210401
SAMPLE IDENTIFICATION: TB-4A

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	17.4581	UG/KG
BROMOMETHANE	ND	UG/KG	17.4581	UG/KG
DICHLORODIFLUOROMETHANE	ND	UG/KG	8.72905	UG/KG
VINYL CHLORIDE	ND	UG/KG	17.4581	UG/KG
CHLOROETHANE	ND	UG/KG	17.4581	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	8.72905	UG/KG
TRICHLOROFLUOROMETHANE	ND	UG/KG	8.72905	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	8.72905	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	8.72905	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	8.72905	UG/KG
CHLOROFORM	ND	UG/KG	8.72905	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	8.72905	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	8.72905	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	8.72905	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	8.72905	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	8.72905	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	8.72905	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	8.72905	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	8.72905	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	8.72905	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	8.72905	UG/KG
BENZENE	ND	UG/KG	8.72905	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	17.4581	UG/KG
BROMOFORM	ND	UG/KG	8.72905	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	8.72905	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	8.72905	UG/KG
TOLUENE	ND	UG/KG	8.72905	UG/KG
CHLOROBENZENE	ND	UG/KG	8.72905	UG/KG
ETHYLBENZENE	ND	UG/KG	8.72905	UG/KG
XYLENES, TOTAL	ND	UG/KG	8.72905	UG/KG
1,2-DICHLOROBENZENE	ND	UG/KG	8.72905	UG/KG
1,3-DICHLOROBENZENE	ND	UG/KG	8.72905	UG/KG
1,4-DICHLOROBENZENE	ND	UG/KG	8.72905	UG/KG
STYRENE	ND	UG/KG	8.72905	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	8.72905	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	17.4581	UG/KG
ACETONE	ND	UG/KG	17.4581	UG/KG
2-HEXANONE	ND	UG/KG	17.4581	UG/KG
VINYL ACETATE	ND	UG/KG	17.4581	UG/KG
CARBON DISULFIDE	ND	UG/KG	8.72905	UG/KG
2-BUTANONE	ND	UG/KG	17.4581	UG/KG
ACROLEIN	ND	UG/KG	174.581	UG/KG
ACRYLONITRILE	ND	UG/KG	174.581	UG/KG

DATA REVIEW _____ DATE _____

DATE SAMPLED:
DATE ANALYZED:

SAMPLE MATRIX: SOIL

VOLATILE Compounds

10590

LABORATORY NUMBER: 1210407
SAMPLE IDENTIFICATION: X-2

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	17.4581	UG/KG
BROMOMETHANE	ND	UG/KG	17.4581	UG/KG
~~DICHLORODIFLUOROMETHANE~~	ND	UG/KG	8.72905	UG/KG
VINYL CHLORIDE	ND	UG/KG	17.4581	UG/KG
CHLOROETHANE	ND	UG/KG	17.4581	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	8.72905	UG/KG
~~TRICHLOROFLUOROMETHANE~~	ND	UG/KG	8.72905	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	8.72905	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	8.72905	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	8.72905	UG/KG
CHLOROFORM	ND	UG/KG	8.72905	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	8.72905	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	8.72905	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	8.72905	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	8.72905	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	8.72905	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	8.72905	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	8.72905	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	8.72905	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	8.72905	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	8.72905	UG/KG
BENZENE	ND	UG/KG	8.72905	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	17.4581	UG/KG
BROMOFORM	ND	UG/KG	8.72905	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	8.72905	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	8.72905	UG/KG
TOLUENE	ND	UG/KG	8.72905	UG/KG
CHLOROBENZENE	ND	UG/KG	8.72905	UG/KG
ETHYLBENZENE	ND	UG/KG	8.72905	UG/KG
XYLENES, TOTAL	ND	UG/KG	8.72905	UG/KG
~~1,2-DICHLOROBENZENE~~	ND	UG/KG	8.72905	UG/KG
~~1,3-DICHLOROBENZENE~~	ND	UG/KG	8.72905	UG/KG
~~1,4-DICHLOROBENZENE~~	ND	UG/KG	8.72905	UG/KG
STYRENE	ND	UG/KG	8.72905	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	8.72905	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	17.4581	UG/KG
ACETONE	ND	UG/KG	17.4581	UG/KG
2-HEXANONE	ND	UG/KG	17.4581	UG/KG
VINYL ACETATE	ND	UG/KG	17.4581	UG/KG
CARBON DISULFIDE	ND	UG/KG	8.72905	UG/KG
2-BUTANONE	ND	UG/KG	17.4581	UG/KG
~~ACROLEIN~~	ND	UG/KG	174.581	UG/KG
~~ACRYLONITRILE~~	ND	UG/KG	174.581	UG/KG

DATA REVIEW _____ DATE _____

DATE SAMPLED:

DATE ANALYZED:

SAMPLE MATRIX: SOIL

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

DATE

LABORATORY NUMBER: 121042
SAMPLE IDENTIFICATION: TB-6A

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	3444.001	UG/KG
BROMOMETHANE	ND	UG/KG	3444.001	UG/KG
DICHLORODIFLUOROMETHANE	ND	UG/KG	1722	UG/KG
VINYL CHLORIDE	ND	UG/KG	3444.001	UG/KG
CHLOROETHANE	ND	UG/KG	3444.001	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	1722	UG/KG
TRICHLOROFLUOROMETHANE	ND	UG/KG	1722	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	1722	UG/KG
1,1-DICHLOROETHANE	8506.681	UG/KG	1722	UG/KG
trans-1,2-DICHLOROETHYLENE	6888.001	UG/KG	1722	UG/KG
CHLOROFORM	ND	UG/KG	1722	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	1722	UG/KG
1,1,1-TRICHLOROETHANE	153946.8	UG/KG	1722	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	1722	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	1722	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	1722	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	1722	UG/KG
TRICHLOROETHYLENE	688800.1	UG/KG	1722	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	1722	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	1722	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	1722	UG/KG
BENZENE	ND	UG/KG	1722	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	3444.001	UG/KG
BROMOFORM	ND	UG/KG	1722	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	1722	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	1722	UG/KG
TOLUENE	378840.1	UG/KG	1722	UG/KG
CHLOROBENZENE	ND	UG/KG	1722	UG/KG
ETHYLBENZENE	6199.201	UG/KG	1722	UG/KG
XYLENES, TOTAL	48216.01	UG/KG	1722	UG/KG
1,2-DICHLOROBENZENE	ND	UG/KG	1722	UG/KG
1,3-DICHLOROBENZENE	ND	UG/KG	1722	UG/KG
1,4-DICHLOROBENZENE	ND	UG/KG	1722	UG/KG
STYRENE	ND	UG/KG	1722	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	1722	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	3444.001	UG/KG
ACETONE	4132.801	UG/KG	3444.001	UG/KG
2-HEXANONE	ND	UG/KG	3444.001	UG/KG
VINYL ACETATE	ND	UG/KG	3444.001	UG/KG
CARBON DISULFIDE	ND	UG/KG	1722	UG/KG
2-BUTANONE	ND	UG/KG	3444.001	UG/KG
ACROLEIN	ND	UG/KG	34440.01	UG/KG
ACRYLONITRILE	ND	UG/KG	34440.01	UG/KG

DATA REVIEW _____ DATE _____

DATE SAMPLED:
DATE ANALYZED:

SAMPLE MATRIX: SOIL

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT DATE

90

DG

LABORATORY NUMBER: 1210408
SAMPLE IDENTIFICATION: X-3

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	15781	UG/KG
BROMOMETHANE	ND	UG/KG	15781	UG/KG
VINYL CHLORIDE	ND	UG/KG	15781	UG/KG
CHLOROETHANE	ND	UG/KG	15781	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	7890	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	7890	UG/KG
1,1-DICHLOROETHANE	21620	UG/KG	7890	UG/KG
trans-1,2-DICHLOROETHYLENE	9942	UG/KG	7890	UG/KG
CHLOROFORM	ND	UG/KG	7890	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	7890	UG/KG
1,1,1-TRICHLOROETHANE	277743	UG/KG	7890	UG/KG
CARBON TETRACHLORIDE	ND ~~25095~~	UG/KG	7890	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	7890	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	7890	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	7890	UG/KG
TRICHLOROETHYLENE	1115705	UG/KG	7890	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	7890	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	7890	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	7890	UG/KG
BENZENE	ND	UG/KG	7890	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	15781	UG/KG
BROMOFORM	ND	UG/KG	7890	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	7890	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	7890	UG/KG
TOLUENE	330236	UG/KG	7890	UG/KG
CHLOROBENZENE	ND	UG/KG	7890	UG/KG
ETHYLBENZENE	8995	UG/KG	7890	UG/KG
XYLENES, TOTAL	77326	UG/KG	7890	UG/KG
STYRENE	ND	UG/KG	7890	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	7890	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	15781	UG/KG
ACETONE	ND	UG/KG	15781	UG/KG
2-HEXANONE	ND	UG/KG	15781	UG/KG
VINYL ACETATE	ND	UG/KG	15781	UG/KG
CARBON DISULFIDE	ND	UG/KG	7890	UG/KG
2-BUTANONE	ND	UG/KG	15781	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
CLIENT

DATE

LABORATORY NUMBER: 1210403
SAMPLE IDENTIFICATION: TB-9A

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	ug/kg	3235.408	ug/kg
BROMOMETHANE	ND	ug/kg	3235.408	ug/kg
DICHLORODIFLUOROMETHANE	ND	ug/kg	1617.704	ug/kg
VINYL CHLORIDE	ND	ug/kg	3235.408	ug/kg
CHLOROETHANE	ND	ug/kg	3235.408	ug/kg
METHYLENE CHLORIDE	ND	ug/kg	1617.704	ug/kg
TRICHLOROFLUOROMETHANE	ND	ug/kg	1617.704	ug/kg
1,1-DICHLOROETHYLENE	ND	ug/kg	1617.704	ug/kg
1,1-DICHLOROETHANE	ND	ug/kg	1617.704	ug/kg
trans-1,2-DICHLOROETHYLENE	11906.3	ug/kg	1617.704	ug/kg
CHLOROFORM	ND	ug/kg	1617.704	ug/kg
1,2-DICHLOROETHANE	ND	ug/kg	1617.704	ug/kg
1,1,1-TRICHLOROETHANE	ND	ug/kg	1617.704	ug/kg
CARBON TETRACHLORIDE	ND	ug/kg	1617.704	ug/kg
BROMODICHLOROMETHANE	ND	ug/kg	1617.704	ug/kg
1,2-DICHLOROPROPANE	ND	ug/kg	1617.704	ug/kg
trans-1,3-DICHLOROPROPENE	ND	ug/kg	1617.704	ug/kg
TRICHLOROETHYLENE	11615.12	ug/kg	1617.704	ug/kg
DIBROMOCHLOROMETHANE	ND	ug/kg	1617.704	ug/kg
1,1,2-TRICHLOROETHANE	ND	ug/kg	1617.704	ug/kg
cis-1,3-DICHLOROPROPYLENE	ND	ug/kg	1617.704	ug/kg
BENZENE	ND	ug/kg	1617.704	ug/kg
2-CHLOROETHYLVINYL ETHER	ND	ug/kg	3235.408	ug/kg
BROMOFORM	ND	ug/kg	1617.704	ug/kg
1,1,2,2-TETRACHLOROETHANE	ND	ug/kg	1617.704	ug/kg
TETRACHLOROETHYLENE	ND	ug/kg	1617.704	ug/kg
TOLUENE	10094.47	ug/kg	1617.704	ug/kg
CHLOROBENZENE	ND	ug/kg	1617.704	ug/kg
ETHYLBENZENE	ND	ug/kg	1617.704	ug/kg
XYLENES, TOTAL	ND	ug/kg	1617.704	ug/kg
1,2-DICHLOROBENZENE	ND	ug/kg	1617.704	ug/kg
1,3-DICHLOROBENZENE	ND	ug/kg	1617.704	ug/kg
1,4-DICHLOROBENZENE	ND	ug/kg	1617.704	ug/kg
STYRENE	ND	ug/kg	1617.704	ug/kg
cis-1,2-DICHLOROETHYLENE	ND	ug/kg	1617.704	ug/kg
4-METHYL-2-PENTANONE	ND	ug/kg	3235.408	ug/kg
ACETONE	10288.6	ug/kg	3235.408	ug/kg
2-HEXANONE	ND	ug/kg	3235.408	ug/kg
VINYL ACETATE	ND	ug/kg	3235.408	ug/kg
CARBON DISULFIDE	ND	ug/kg	1617.704	ug/kg
2-BUTANONE	ND	ug/kg	3235.408	ug/kg
ACROLEIN	ND	ug/kg	32354.08	ug/kg
ACRYLONITRILE	ND	ug/kg	32354.08	ug/kg

DATA REVIEW

DATE

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT 10590
DG

LABORATORY NUMBER: 1210410
SAMPLE IDENTIFICATION: X-S

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	3421	UG/KG
BROMOMETHANE	ND	UG/KG	3421	UG/KG
VINYL CHLORIDE	ND	UG/KG	3421	UG/KG
CHLOROETHANE	ND	UG/KG	3421	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	1711	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	1711	UG/KG
1,1-DICHLOROETHANE	2569	UG/KG	1711	UG/KG
trans-1,2-DICHLOROETHYLENE	28192	UG/KG	1711	UG/KG
CHLOROFORM	ND	UG/KG	1711	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	1711	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	1711	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	1711	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	1711	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	1711	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	1711	UG/KG
TRICHLOROETHYLENE	44820	UG/KG	1711	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	1711	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	1711	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	1711	UG/KG
BENZENE	ND	UG/KG	1711	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	3421	UG/KG
BROMOFORM	ND	UG/KG	1711	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	1711	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	1711	UG/KG
TOLUENE	34214	UG/KG	1711	UG/KG
CHLOROBENZENE	ND	UG/KG	1711	UG/KG
ETHYLBENZENE	ND	UG/KG	1711	UG/KG
XYLENES, TOTAL	ND	UG/KG	1711	UG/KG
STYRENE	ND	UG/KG	1711	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	1711	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	3421	UG/KG
ACETONE	3421	UG/KG	3421	UG/KG
2-HEXANONE	ND	UG/KG	3421	UG/KG
VINYL ACETATE	ND	UG/KG	3421	UG/KG
CARBON DISULFIDE	ND	UG/KG	1711	UG/KG
2-BUTANONE	ND	UG/KG	3421	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

DATE 1/5/90

LABORATORY NUMBER: 1210404
SAMPLE IDENTIFICATION: TB-10A

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	3310	UG/KG
BROMOMETHANE	ND	UG/KG	3310	UG/KG
VINYL CHLORIDE	ND	UG/KG	3310	UG/KG
CHLOROETHANE	ND	UG/KG	3310	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	1655	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	1655	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	1655	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	1655	UG/KG
CHLOROFORM	ND	UG/KG	1655	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	1655	UG/KG
1,1,1-TRICHLOROETHANE	31680.35	UG/KG	1655	UG/KG
CARBON TETRACHLORIDE	~~3989.854~~	UG/KG	1655	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	1655	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	1655	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	1655	UG/KG
TRICHLOROETHYLENE	180415.8	UG/KG	1655	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	1655	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	1655	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	1655	UG/KG
BENZENE	ND	UG/KG	1655	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	3310	UG/KG
BROMOFORM	ND	UG/KG	1655	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	1655	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	1655	UG/KG
TOLUENE	147974	UG/KG	1655	UG/KG
CHLOROBENZENE	ND	UG/KG	1655	UG/KG
ETHYLBENZENE	ND	UG/KG	1655	UG/KG
XYLENES, TOTAL	23834.75	UG/KG	1655	UG/KG
				UG/KG
				UG/KG
				UG/KG
STYRENE	ND	UG/KG	1655	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	1655	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	3310	UG/KG
ACETONE	10195.97	UG/KG	3310	UG/KG
2-HEXANONE	ND	UG/KG	3310	UG/KG
VINYL ACETATE	ND	UG/KG	3310	UG/KG
CARBON DISULFIDE	ND	UG/KG	1655	UG/KG
2-BUTANONE	ND	UG/KG	3310	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT 10590
DG

LABORATORY NUMBER: 1210409
SAMPLE IDENTIFICATION: X-4

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	3399	UG/KG
BROMOMETHANE	ND	UG/KG	3399	UG/KG
VINYL CHLORIDE	ND	UG/KG	3399	UG/KG
CHLOROETHANE	ND	UG/KG	3399	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	1700	UG/KG
1,1-DICHLOROETHYLENE	2549	UG/KG	1700	UG/KG
1,1-DICHLOROETHANE	5235	UG/KG	1700	UG/KG
trans-1,2-DICHLOROETHYLENE	30048	UG/KG	1700	UG/KG
CHLOROFORM	ND	UG/KG	1700	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	1700	UG/KG
1,1,1-TRICHLOROETHANE	631543	UG/KG	1700	UG/KG
CARBON TETRACHLORIDE	xD ~~76189~~	UG/KG	1700	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	1700	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	1700	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	1700	UG/KG
TRICHLOROETHYLENE	1601292	UG/KG	1700	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	1700	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	1700	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	1700	UG/KG
BENZENE	ND	UG/KG	1700	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	3399	UG/KG
BROMOFORM	ND	UG/KG	1700	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	1700	UG/KG
TETRACHLOROETHYLENE	1937	UG/KG	1700	UG/KG
TOLUENE	948334	UG/KG	1700	UG/KG
CHLOROBENZENE	ND	UG/KG	1700	UG/KG
ETHYLBENZENE	8634	UG/KG	1700	UG/KG
XYLENES, TOTAL	59823	UG/KG	1700	UG/KG
STYRENE	ND	UG/KG	1700	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	1700	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	3399	UG/KG
ACETONE	6696	UG/KG	3399	UG/KG
2-HEXANONE	ND	UG/KG	3399	UG/KG
VINYL ACETATE	ND	UG/KG	3399	UG/KG
CARBON DISULFIDE	ND	UG/KG	1700	UG/KG
2-BUTANONE	ND	UG/KG	3399	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

DATE 1/5/90

LABORATORY NUMBER: 1210405
SAMPLE IDENTIFICATION: TB-11A

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	3532	UG/KG
BROMOMETHANE	ND	UG/KG	3532	UG/KG
VINYL CHLORIDE	ND	UG/KG	3532	UG/KG
CHLOROETHANE	ND	UG/KG	3532	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	1766	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	1766	UG/KG
1,1-DICHLOROETHANE	3107.784	UG/KG	1766	UG/KG
trans-1,2-DICHLOROETHYLENE	12819.61	UG/KG	1766	UG/KG
CHLOROFORM	ND	UG/KG	1766	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	1766	UG/KG
1,1,1-TRICHLOROETHANE	40259.92	UG/KG	1766	UG/KG
CARBON TETRACHLORIDE	~~5156.095~~	UG/KG	1766	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	1766	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	1766	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	1766	UG/KG
TRICHLOROETHYLENE	173400.2	UG/KG	1766	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	1766	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	1766	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	1766	UG/KG
BENZENE	ND	UG/KG	1766	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	3532	UG/KG
BROMOFORM	ND	UG/KG	1766	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	1766	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	1766	UG/KG
TOLUENE	84051.42	UG/KG	1766	UG/KG
CHLOROBENZENE	ND	UG/KG	1766	UG/KG
ETHYLBENZENE	ND	UG/KG	1766	UG/KG
XYLENES, TOTAL	8475.773	UG/KG	1766	UG/KG
STYRENE	ND	UG/KG	1766	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	1766	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	3532	UG/KG
ACETONE	ND	UG/KG	3532	UG/KG
2-HEXANONE	ND	UG/KG	3532	UG/KG
VINYL ACETATE	ND	UG/KG	3532	UG/KG
CARBON DISULFIDE	ND	UG/KG	1766	UG/KG
2-BUTANONE	ND	UG/KG	3532	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

DATE 1/5/90

LABORATORY NUMBER: 1210406
SAMPLE IDENTIFICATION: X-1

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	3388	UG/KG
BROMOMETHANE	ND	UG/KG	3388	UG/KG
VINYL CHLORIDE	ND	UG/KG	3388	UG/KG
CHLOROETHANE	ND	UG/KG	3388	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	1694	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	1694	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	1694	UG/KG
trans-1,2-DICHLOROETHYLENE	8130	UG/KG	1694	UG/KG
CHLOROFORM	ND	UG/KG	1694	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	1694	UG/KG
1,1,1-TRICHLOROETHANE	73848	UG/KG	1694	UG/KG
CARBON TETRACHLORIDE	~~9146~~	UG/KG	1694	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	1694	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	1694	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	1694	UG/KG
TRICHLOROETHYLENE	457217	UG/KG	1694	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	1694	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	1694	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	1694	UG/KG
BENZENE	ND	UG/KG	1694	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	3388	UG/KG
BROMOFORM	ND	UG/KG	1694	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	1694	UG/KG
TETRACHLOROETHYLENE	4065	UG/KG	1694	UG/KG
TOLUENE	455285	UG/KG	1694	UG/KG
CHLOROBENZENE	ND	UG/KG	1694	UG/KG
ETHYLBENZENE	4743	UG/KG	1694	UG/KG
XYLENES, TOTAL	33875	UG/KG	1694	UG/KG
STYRENE	ND	UG/KG	1694	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	1694	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	3388	UG/KG
ACETONE	ND	UG/KG	3388	UG/KG
2-HEXANONE	ND	UG/KG	3388	UG/KG
VINYL ACETATE	ND	UG/KG	3388	UG/KG
CARBON DISULFIDE	ND	UG/KG	1694	UG/KG
2-BUTANONE	ND	UG/KG	3388	UG/KG

VOLATILE COMPOUNDS

DATE
10590

LABORATORY NUMBER: 1210407
SAMPLE IDENTIFICATION: X-2

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	17.4581	UG/KG
BROMOMETHANE	ND	UG/KG	17.4581	UG/KG
DICHLORODIFLUOROMETHANE	ND	UG/KG	8.72905	UG/KG
VINYL CHLORIDE	ND	UG/KG	17.4581	UG/KG
CHLOROETHANE	ND	UG/KG	17.4581	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	8.72905	UG/KG
TRICHLOROFLUOROMETHANE	ND	UG/KG	8.72905	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	8.72905	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	8.72905	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	8.72905	UG/KG
CHLOROFORM	ND	UG/KG	8.72905	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	8.72905	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	8.72905	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	8.72905	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	8.72905	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	8.72905	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	8.72905	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	8.72905	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	8.72905	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	8.72905	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	8.72905	UG/KG
BENZENE	ND	UG/KG	8.72905	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	17.4581	UG/KG
BROMOFORM	ND	UG/KG	8.72905	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	8.72905	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	8.72905	UG/KG
TOLUENE	ND	UG/KG	8.72905	UG/KG
CHLOROBENZENE	ND	UG/KG	8.72905	UG/KG
ETHYLBENZENE	ND	UG/KG	8.72905	UG/KG
XYLENES, TOTAL	ND	UG/KG	8.72905	UG/KG
1,2-DICHLOROBENZENE	ND	UG/KG	8.72905	UG/KG
1,3-DICHLOROBENZENE	ND	UG/KG	8.72905	UG/KG
1,4-DICHLOROBENZENE	ND	UG/KG	8.72905	UG/KG
STYRENE	ND	UG/KG	8.72905	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	8.72905	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	17.4581	UG/KG
ACETONE	ND	UG/KG	17.4581	UG/KG
2-HEXANONE	ND	UG/KG	17.4581	UG/KG
VINYL ACETATE	ND	UG/KG	17.4581	UG/KG
CARBON DISULFIDE	ND	UG/KG	8.72905	UG/KG
2-BUTANONE	ND	UG/KG	17.4581	UG/KG
ACROLEIN	ND	UG/KG	174.581	UG/KG
ACRYLONITRILE	ND	UG/KG	174.581	UG/KG

DATA REVIEW _____ DATE _____

DATE SAMPLED:
DATE ANALYZED:

SAMPLE MATRIX: SOIL

UNITED STATES TESTING COMPANY, INC.

CLIENT
DUNN GEOSCIENCE

JOB #
12104

SAMPLING DATE: 12/29/89
DATE RECEIVED: 12/30/89
DATE ANALYZED: 01/03/90

ANALYTE	TB-4A RESULT		TB-6A RESULT		TB-9A RESULT	
Aluminum (Al)	18377	mg/Kg	11790	mg/Kg	11041	mg/Kg
Antimony (Sb)	< 8.4	mg/Kg	< 6.6	mg/Kg	< 6.2	mg/Kg
Arsenic (As)	8.8	mg/Kg	2.3	mg/Kg	12.2	mg/Kg
Barium (Ba)	94.7	mg/Kg	103	mg/Kg	86.7	mg/Kg
Beryllium (Be)	.4	mg/Kg	.32	mg/Kg	.91	mg/Kg
Cadmium (Cd)	< .7	mg/Kg	< .55	mg/Kg	< .52	mg/Kg
Calcium (Ca)	43211	mg/Kg	33168	mg/Kg	17225	mg/Kg
Chromium (Cr)	26.3	mg/Kg	20.7	mg/Kg	18.4	mg/Kg
Cobalt (Co)	12.5	mg/Kg	9.2	mg/Kg	11	mg/Kg
Copper (Cu)	11.9	mg/Kg	12.2	mg/Kg	5.2	mg/Kg
Iron (Fe)	30925	mg/Kg	17664	mg/Kg	28096	mg/Kg
Lead (Pb)	19.7	mg/Kg	11.4	mg/Kg	10.2	mg/Kg
Magnesium (Mg)	6556	mg/Kg	13093	mg/Kg	8846	mg/Kg
Manganese (Mn)	279	mg/Kg	257	mg/Kg	1255	mg/Kg
Mercury (Hg)	< .17	mg/Kg	< .14	mg/Kg	< .13	mg/Kg
Nickel (Ni)	23.8	mg/Kg	23	mg/Kg	20	mg/Kg
Potassium (K)	2560.2	mg/Kg	1418	mg/Kg	1365	mg/Kg
Selenium (Se)	< .35	mg/Kg	.96	mg/Kg	< .26	mg/Kg
Silver (Ag)	< .7	mg/Kg	< .55	mg/Kg	< .52	mg/Kg
Sodium (Na)	730	mg/Kg	1222	mg/Kg	709	mg/Kg
Thallium (Tl)	< .35	mg/Kg	< .28	mg/Kg	< .26	mg/Kg
Vanadium (V)	24.7	mg/Kg	17.9	mg/Kg	17.2	mg/Kg
Zinc (Zn)	71.6	mg/Kg	32.6	mg/Kg	32.7	mg/Kg
Cyanide	< 2.2	mg/Kg	< 1.7	mg/Kg	< 1.6	mg/Kg
Phenols	< .87	mg/Kg	5.2	mg/Kg	< .65	mg/Kg

Patricia Foley — 01/03/90
DATA REVIEW — DATE

- mg/Kg is based on the dry weight of the sample and is equivalent to parts per million (PPM)

- ug/L is equivalent to parts per billion (PPB)

UNITED STATES TESTING COMPANY, INC.

CLIENT
DUNN GEOSCIENCE

JOB #
12104

ANALYTE	TB-10A RESULT	TB-11A RESULT	X-1 RESULT
Aluminum (Al)	15122 mg/Kg	12283 mg/Kg	10350 mg/Kg
Antimony (Sb)	< 6.4 mg/Kg	< 6.8 mg/Kg	< 6.5 mg/Kg
Arsenic (As)	6.7 mg/Kg	4.8 mg/Kg	7 mg/Kg
Barium (Ba)	130 mg/Kg	112 mg/Kg	128.6 mg/Kg
Beryllium (Be)	.93 mg/Kg	.32 mg/Kg	< .27 mg/Kg
Cadmium (Cd)	< .53 mg/Kg	< .57 mg/Kg	< .54 mg/Kg
Calcium (Ca)	12794 mg/Kg	58342 mg/Kg	63320 mg/Kg
Chromium (Cr)	23.3 mg/Kg	17.8 mg/Kg	16.5 mg/Kg
Cobalt (Co)	13.6 mg/Kg	8.2 mg/Kg	8.5 mg/Kg
Copper (Cu)	13.5 mg/Kg	12.5 mg/Kg	11.1 mg/Kg
Iron (Fe)	30138 mg/Kg	20822 mg/Kg	20732 mg/Kg
Lead (Pb)	16 mg/Kg	10.2 mg/Kg	12.3 mg/Kg
Magnesium (Mg)	6183 mg/Kg	5578 mg/Kg	5501 mg/Kg
Manganese (Mn)	465 mg/Kg	283 mg/Kg	1168 mg/Kg
Mercury (Hg)	< .13 mg/Kg	< .14 mg/Kg	< .14 mg/Kg
Nickel (Ni)	29.2 mg/Kg	18.8 mg/Kg	20.1 mg/Kg
Potassium (K)	1676 mg/Kg	1536 mg/Kg	1034 mg/Kg
Selenium (Se)	< .26 mg/Kg	<,28 mg/Kg	< .27 mg/Kg
Silver (Ag)	< .53 mg/Kg	< .57 mg/Kg	< .54 mg/Kg
Sodium (Na)	263 mg/Kg	884 mg/Kg	791 mg/Kg
Thallium (Tl)	< .26 mg/Kg	< .28 mg/Kg	< .27 mg/Kg
Vanadium (V)	21 mg/Kg	17.1 mg/Kg	14.6 mg/Kg
Zinc (Zn)	53 mg/Kg	25.7 mg/Kg	29.6 mg/Kg
Cyanide	< 1.7 mg/Kg	< 1.8 mg/Kg	< 1.7 mg/Kg
Phenols	8.5 mg/Kg	1.6 mg/Kg	1.9 mg/Kg

Patricia Foley 01/03/90
DATA REVIEW DATE

mg/Kg is based on the dry weight of the sample and is equivalent to parts per million (PPM)

ug/L is equivalent to parts per billion (PPB)

UNITED STATES TESTING COMPANY, INC.

CLIENT
DUNN GEOSCIENCE

JOB #
12104

ANALYTE	X-2 RESULT	X-3 RESULT	X-4 RESULT
Aluminum (Al)	7666 mg/Kg	10616 mg/Kg	14630 mg/Kg
Antimony (Sb)	< 10.7 mg/Kg	< 6.1 mg/Kg	13.5 mg/Kg
Arsenic (As)	3.6 mg/Kg	11.7 mg/Kg	8.8 mg/Kg
Barium (Ba)	38.5 mg/Kg	121 mg/Kg	145 mg/Kg
Beryllium (Be)	< .45 mg/Kg	< .25 mg/Kg	.95 mg/Kg
Cadmium (Cd)	< .89 mg/Kg	< .51 mg/Kg	< .54 mg/Kg
Calcium (Ca)	312095 mg/Kg	33026 mg/Kg	17648 mg/Kg
Chromium (Cr)	14.6 mg/Kg	17.2 mg/Kg	22.8 mg/Kg
Cobalt (Co)	6.6 mg/Kg	9 mg/Kg	13.4 mg/Kg
Copper (Cu)	31.8 mg/Kg	13.3 mg/Kg	13 mg/Kg
Iron (Fe)	11357 mg/Kg	21172 mg/Kg	28973 mg/Kg
Lead (Pb)	16.3 mg/Kg	20.2 mg/Kg	15.2 mg/Kg
Magnesium (Mg)	17302 mg/Kg	12105 mg/Kg	8150 mg/Kg
Manganese (Mn)	939.4 mg/Kg	350 mg/Kg	382 mg/Kg
Mercury (Hg)	< .22 mg/Kg	< .13 mg/Kg	< .14 mg/Kg
Nickel (Ni)	11.2 mg/Kg	19.4 mg/Kg	29.7 mg/Kg
Potassium (K)	712 mg/Kg	1461 mg/Kg	1574 mg/Kg
Selenium (Se)	< .45 mg/Kg	.88 mg/Kg	< .27 mg/Kg
Silver (Ag)	.94 mg/Kg	.92 mg/Kg	.9 mg/Kg
Sodium (Na)	1841 mg/Kg	651 mg/Kg	370 mg/Kg
Thallium (Tl)	< .45 mg/Kg	< .25 mg/Kg	< .27 mg/Kg
Vanadium (V)	15.5 mg/Kg	16.7 mg/Kg	21.5 mg/Kg
Zinc (Zn)	23.4 mg/Kg	28.4 mg/Kg	59.2 mg/Kg
Cyanide	< 2.8 mg/Kg	< 1.6 mg/Kg	< 1.7 mg/Kg
Phenols	< 1.1 mg/Kg	< .63 mg/Kg	5 mg/Kg

Katherine Foley
DATA REVIEW

01/03/90
DATE

mg/Kg is based on the dry weight of the sample and is equivalent to parts per million (PPM)

ug/L is equivalent to parts per billion (PPB)

UNITED STATES TESTING COMPANY, INC.

CLIENT
DUNN GEOSCIENCE

JOB #
12104

SAMPLING DATE: 12/29/89
DATE RECEIVED: 12/29/89
DATE ANALYZED: 01/03/90

ANALYTE	X-5 RESULT	
Aluminum (Al)	18051	mg/Kg
Antimony (Sb)	< 6.6	mg/Kg
Arsenic (As)	9.5	mg/Kg
Barium (Ba)	173	mg/Kg
Beryllium (Be)	.9	mg/Kg
Cadmium (Cd)	< .6	mg/Kg
Calcium (Ca)	5831	mg/Kg
Chromium (Cr)	26.6	mg/Kg
Cobalt (Co)	13.2	mg/Kg
Copper (Cu)	18.2	mg/Kg
Iron (Fe)	29424	mg/Kg
Lead (Pb)	20	mg/Kg
Magnesium (Mg)	6332	mg/Kg
Manganese (Mn)	269	mg/Kg
Mercury (Hg)	< .14	mg/Kg
Nickel (Ni)	35.1	mg/Kg
Potassium (K)	2181	mg/Kg
Selenium (Se)	< .27	mg/Kg
Silver (Ag)	.57	mg/Kg
Sodium (Na)	1145	mg/Kg
Thallium (Tl)	< .27	mg/Kg
Vanadium (V)	25.5	mg/Kg
Zinc (Zn)	66.3	mg/Kg
Cyanide	< 1.7	mg/Kg
Phenols	< .68	mg/Kg

Patricia Foley 01/03/9
DATA REVIEW DATE

mg/Kg is based on the dry weight of the sample and is equivalent to part per million (PPM)

ug/L is equivalent to parts per billion (PPB)

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

X-9

Name: U.S.T. CO. Contract: 68-01-7433

Code: USTEST Case No.: 12104 SAS No.: _____ SDG No.: 12104

Matrix: (soil/water) SOIL Lab Sample ID: 12104-10X9

Sample wt/vol: 30.5 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 12/30/89

% Moisture: not dec. 39 dec. ____ Date Extracted: 12/30/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/04/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	55	U
319-85-7	beta-BHC	55	U
319-86-8	delta-BHC	55	U
58-89-9	gamma-BHC (Lindane)	55	U
76-44-8	Heptachlor	55	U
309-00-2	Aldrin	55	U
1024-57-3	Heptachlor epoxide	55	U
959-98-8	Endosulfan I	55	U
60-57-1	Dieldrin	110	U
72-55-9	4,4'-DDE	110	U
72-20-8	Endrin	110	U
33213-65-9	Endosulfan II	110	U
72-54-8	4,4'-DDD	110	U
1031-07-8	Endosulfan sulfate	110	U
50-29-3	4,4'-DDT	110	U
72-43-5	Methoxychlor	550	U
53494-70-5	Endrin ketone	110	U
5103-71-9	alpha-Chlordane	550	U
5103-74-2	gamma-Chlordane	550	U
8001-35-2	Toxaphene	1100	U
12674-11-2	Aroclor-1016	550	U
11104-28-2	Aroclor-1221	550	U
11141-16-5	Aroclor-1232	550	U
53469-21-9	Aroclor-1242	550	U
12672-29	Aroclor-1248	550	U
11097-69-1	Aroclor-1254	1100	U
11096-82-5	Aroclor-1260	1100	U

Client: DUNN GEOSCIENCE
Job Number: 12104
Sample ID: X-1

United States Testing Company, Inc.
Organics Analysis Data Sheet

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 12/29/89
Date Analyzed: 1/3/90
Conc/Dil Factor: 1
Percent Moisture (Decanted): 32

GPC Cleanup: No
Separatory Funnel Extraction: No
Continuous Liquid-Liquid Extraction: No

CAS #		ug/kg		CAS#		ug/kg	
108-95-2	Phenol	490	U	83-32-9	Acenaphthene	490	U
111-44-4	bis(2-Chloroethyl)Ether	490	U	51-28-5	2,4-Dinitrophenol	2500	U
95-57-8	2-Chlorophenol	490	U	100-02-7	4-Nitrophenol	2500	U
541-73-1	1,3-Dichlorobenzene	490	U	132-64-9	Dibenzofuran	490	U
106-46-7	1,4-Dichlorobenzene	490	U	121-14-2	2,4-Dinitrotoluene	490	U
100-51-6	Benzyl Alcohol	490	U	606-20-2	2,6-Dinitrotoluene	490	U
95-50-1	1,2-Dichlorobenzene	490	U	84-66-2	Diethylphthalate	490	U
95-48-7	2-Methylphenol	250	J	7005-72-3	4-Chlorophenyl-phenylether	490	U
39638-32-9	bis(2-chloroisopropyl)Ether	490	U	86-73-7	Fluorene	490	U
106-44-5	4-Methylphenol	390	J	100-01-6	4-Nitroaniline	2500	U
621-64-7	N-Nitroso-Di-n-Propylamine	490	U	534-52-1	4,6-Dinitro-2-Methylphenol	2500	U
67-72-1	Hexachloroethane	490	U	86-30-6	N-Nitrosodiphenylamine(1)	490	U
98-95-3	Nitrobenzene	490	U	101-55-3	4-Bromophenyl-phenlyether	490	U
78-59-1	Isophorone	490	U	118-74-1	Hexachlorobenzene	490	U
88-75-5	2-Nitrophenol	490	U	87-86-5	Pentachlorophenol	2500	U
105-67-9	2,4-Dimethylphenol	490	U	85-01-8	Phenanthrene	490	U
65-85-0	Benzoic Acid	150	J	120-12-7	Anthracene	490	U
111-91-1	bis(2-Chloroethoxy)Methane	490	U	84-74-2	Di-n-Butylphthalate	2900	
120-83-2	2,4-Dichlorophenol	490	U	206-44-0	Fluoranthene	490	U
120-82-1	1,2,4-Trichlorobenzene	490	U	129-00-0	Pyrene	490	U
91-20-3	Naphthalene	250	J	85-68-7	Butylbenzylphthalate	490	U
106-47-8	4-Chloroaniline	490	U	91-94-1	3,3'-Dichlorobenzidine	980	U
87-68-3	Hexachlorobutadiene	490	U	56-55-3	Benzo(a)Anthracene	490	U
59-50-7	4-Chloro-3-Methylphenol	490	U	117-81-7	bis(2-Ethylhexyl)Phthalate	2300	
91-57-6	2-Methylnaphthalene	250	J	218-01-9	Chrysene	490	U
77-47-4	Hexachlorocyclopentadiene	490	U	117-84-0	Di-n-Octyl Phthalate	490	U
88-06-2	2,4,6-Trichlorophenol	490	U	205-99-2	Benzo(b)Fluoranthene	490	U
95-95-4	2,4,5-Trichlorophenol	2500	U	207-08-9	Benzo(k)Fluoranthene	490	U
91-58-7	2-Chloronaphthalene	490	U	50-32-8	Benzo(a)Pyrene	490	U
88-74-4	2-Nitroaniline	2500	U	193-39-5	Indeno(1,2,3-cd)Pyrene	490	U
131-11-3	Dimethyl Phthalate	490	U	53-70-3	Dibenzo(a,h)Anthracene	490	U
208-96-8	Acenaphthylene	490	U	191-24-2	Benzo(g,h,i)Perylene	490	U
				99-09-2	3-Nitroaniline	2500	U

(1) Cannot be separated from diphenylamine

Client: DUNN GEOSCIENCE
Job Number: 12104
Sample ID: X-2

United States Testing Company, Inc.
Organics Analysis Data Sheet

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 12/29/89
Date Analyzed: 1/4/90
Conc/Dil Factor: 1
Percent Moisture (Decanted): 31

GPC Cleanup: No
Separatory Funnel Extraction: No
Continuous Liquid-Liquid Extraction: No

CAS #		ug/kg		CAS#		ug/kg	
108-95-2	Phenol	140	J	83-32-9	Acenaphthene	480	U
111-44-4	bis(2-Chloroethyl)Ether	480	U	51-28-5	2,4-Dinitrophenol	2400	U
95-57-8	2-Chlorophenol	480	U	100-02-7	4-Nitrophenol	2400	U
541-73-1	1,3-Dichlorobenzene	480	U	132-64-9	Dibenzofuran	480	U
106-46-7	1,4-Dichlorobenzene	480	U	121-14-2	2,4-Dinitrotoluene	480	U
100-51-6	Benzyl Alcohol	480	U	606-20-2	2,6-Dinitrotoluene	480	U
95-50-1	1,2-Dichlorobenzene	480	U	84-66-2	Diethylphthalate	480	U
95-48-7	2-Methylphenol	480	U	7005-72-3	4-Chlorophenyl-phenylether	480	U
39638-32-9	bis(2-chloroisopropyl)Ether	480	U	86-73-7	Fluorene	480	U
106-44-5	4-Methylphenol	480	U	100-01-6	4-Nitroaniline	2400	U
621-64-7	N-Nitroso-Di-n-Propylamine	480	U	534-52-1	4,6-Dinitro-2-Methylphenol	2400	U
67-72-1	Hexachloroethane	480	U	86-30-6	N-Nitrosodiphenylamine(1)	480	U
98-95-3	Nitrobenzene	480	U	101-55-3	4-Bromophenyl-phenylether	480	U
78-59-1	Isophorone	480	U	118-74-1	Hexachlorobenzene	480	U
88-75-5	2-Nitrophenol	480	U	87-86-5	Pentachlorophenol	2400	U
105-67-9	2,4-Dimethylphenol	480	U	85-01-8	Phenanthrene	190	J
65-85-0	Benzoic Acid	480	U	120-12-7	Anthracene	240	J
111-91-1	bis(2-Chloroethoxy)Methane	480	U	84-74-2	Di-n-Butylphthalate	530	
120-83-2	2,4-Dichlorophenol	480	U	206-44-0	Fluoranthene	480	U
120-82-1	1,2,4-Trichlorobenzene	480	U	129-00-0	Pyrene	480	U
91-20-3	Naphthalene	480	U	85-68-7	Butylbenzylphthalate	480	U
106-47-8	4-Chloroaniline	480	U	91-94-1	3,3'-Dichlorobenzidine	970	U
87-68-3	Hexachlorobutadiene	480	U	56-55-3	Benzo(a)Anthracene	480	U
59-50-7	4-Chloro-3-Methylphenol	480	U	117-81-7	bis(2-Ethylhexyl)Phthalate	190	J
91-57-6	2-Methylnaphthalene	480	U	218-01-9	Chrysene	480	U
77-47-4	Hexachlorocyclopentadiene	480	U	117-84-0	Di-n-Octyl Phthalate	480	U
88-06-2	2,4,6-Trichlorophenol	480	U	205-99-2	Benzo(b)Fluoranthene	480	U
95-95-4	2,4,5-Trichlorophenol	2400	U	207-08-9	Benzo(k)Fluoranthene	480	U
91-58-7	2-Chloronaphthalene	480	U	50-32-8	Benzo(a)Pyrene	480	U
88-74-4	2-Nitroaniline	2400	U	193-39-5	Indeno(1,2,3-cd)Pyrene	480	U
131-11-3	Dimethyl Phthalate	480	U	53-70-3	Dibenzo(a,h)Anthracene	480	U
208-96-8	Acenaphthylene	480	U	191-24-2	Benzo(g,h,i)Perylene	480	U
				99-09-2	3-Nitroaniline	2400	U

(1) Cannot be separated from diphenylamine

Client: DUNN GEOSCIENCE
Job Number: 12104
Sample ID: X-3

United States Testing Company, Inc.
Organics Analysis Data Sheet

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 12/29/89
Date Analyzed: 1/4/89
Conc/Dil Factor: 1
Percent Moisture (Decanted): 27

GPC Cleanup: No
Separatory Funnel Extraction: No
Continuous Liquid-Liquid Extraction: No

CAS #		ug/kg		CAS#		ug/kg	
108-95-2	Phenol	460	U	83-32-9	Acenaphthene	460	U
111-44-4	bis(2-Chloroethyl)Ether	460	U	51-28-5	2,4-Dinitrophenol	2300	U
95-57-8	2-Chlorophenol	460	U	100-02-7	4-Nitrophenol	2300	U
541-73-1	1,3-Dichlorobenzene	460	U	132-64-9	Dibenzofuran	460	U
106-46-7	1,4-Dichlorobenzene	460	U	121-14-2	2,4-Dinitrotoluene	460	U
100-51-6	Benzyl Alcohol	460	U	606-20-2	2,6-Dinitrotoluene	460	U
95-50-1	1,2-Dichlorobenzene	460	U	84-66-2	Diethylphthalate	46	J
95-48-7	2-Methylphenol	460	U	7005-72-3	4-Chlorophenyl-phenylether	460	U
39638-32-9	bis(2-chloroisopropyl)Ether	460	U	86-73-7	Fluorene	460	U
106-44-5	4-Methylphenol	460	U	100-01-6	4-Nitroaniline	2300	U
621-64-7	N-Nitroso-Di-n-Propylamine	460	U	534-52-1	4,6-Dinitro-2-Methylphenol	2300	U
67-72-1	Hexachloroethane	460	U	86-30-6	N-Nitrosodiphenylamine(1)	460	U
98-95-3	Nitrobenzene	460	U	101-55-3	4-Bromophenyl-phenlyether	460	U
78-59-1	Isophorone	460	U	118-74-1	Hexachlorobenzene	460	U
88-75-5	2-Nitrophenol	460	U	87-86-5	Pentachlorophenol	2300	U
105-67-9	2,4-Dimethylphenol	460	U	85-01-8	Phenanthrene	91	J
65-85-0	Benzoic Acid	460	U	120-12-7	Anthracene	91	J
111-91-1	bis(2-Chloroethoxy)Methane	460	U	84-74-2	Di-n-Butylphthalate	460	
120-83-2	2,4-Dichlorophenol	460	U	206-44-0	Fluoranthene	91	J
120-82-1	1,2,4-Trichlorobenzene	460	U	129-00-0	Pyrene	460	U
91-20-3	Naphthalene	460	U	85-68-7	Butylbenzylphthalate	460	U
106-47-8	4-Chloroaniline	460	U	91-94-1	3,3'-Dichlorobenzidine	910	U
87-68-3	Hexachlorobutadiene	460	U	56-55-3	Benzo(a)Anthracene	460	U
59-50-7	4-Chloro-3-Methylphenol	460	U	117-81-7	bis(2-Ethylhexyl)Phthalate	180	J
91-57-6	2-Methylnaphthalene	460	U	218-01-9	Chrysene	460	U
77-47-4	Hexachlorocyclopentadiene	460	U	117-84-0	Di-n-Octyl Phthalate	460	U
88-06-2	2,4,6-Trichlorophenol	460	U	205-99-2	Benzo(b)Fluoranthene	460	U
95-95-4	2,4,5-Trichlorophenol	2300	U	207-08-9	Benzo(k)Fluoranthene	460	U
91-58-7	2-Chloronaphthalene	460	U	50-32-8	Benzo(a)Pyrene	460	U
88-74-4	2-Nitroaniline	2300	U	193-39-5	Indeno(1,2,3-cd)Pyrene	460	U
131-11-3	Dimethyl Phthalate	460	U	53-70-3	Dibenzo(a,h)Anthracene	460	U
208-96-8	Acenaphthylene	460	U	191-24-2	Benzo(g,h,i)Perylene	460	U
				99-09-2	3-Nitroaniline	2300	U

(1) Cannot be separated from diphenylamine

Client: DUNN GEOSCIENCE
Job Number: 12104
Sample ID: X-4

United States Testing Company, Inc.
Organics Analysis Data Sheet

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 12/29/89
Date Analyzed: 1/4/90
Conc/Dil Factor: 1
Percent Moisture (Decanted): 23

GPC Cleanup: No
Separatory Funnel Extraction: No
Continuous Liquid-Liquid Extraction: No

CAS #		ug/kg		CAS#		ug/kg	
108-95-2	Phenol	430	U	83-32-9	Acenaphthene	430	U
111-44-4	bis(2-Chloroethyl)Ether	430	U	51-28-5	2,4-Dinitrophenol	2200	U
95-57-8	2-Chlorophenol	430	U	100-02-7	4-Nitrophenol	2200	U
541-73-1	1,3-Dichlorobenzene	430	U	132-64-9	Dibenzofuran	430	U
106-46-7	1,4-Dichlorobenzene	430	U	121-14-2	2,4-Dinitrotoluene	430	U
100-51-6	Benzyl Alcohol	430	U	606-20-2	2,6-Dinitrotoluene	430	U
95-50-1	1,2-Dichlorobenzene	87	J	84-66-2	Diethylphthalate	430	U
95-48-7	2-Methylphenol	950		7005-72-3	4-Chlorophenyl-phenylether	430	U
39638-32-9	bis(2-chloroisopropyl)Ether	430	U	86-73-7	Fluorene	430	U
106-44-5	4-Methylphenol	1000		100-01-6	4-Nitroaniline	2200	U
621-64-7	N-Nitroso-Di-n-Propylamine	430	U	534-52-1	4,6-Dinitro-2-Methylphenol	2200	U
67-72-1	Hexachloroethane	430	U	86-30-6	N-Nitrosodiphenylamine(1)	430	U
98-95-3	Nitrobenzene	430	U	101-55-3	4-Bromophenyl-phenylether	430	U
78-59-1	Isophorone	430	U	118-74-1	Hexachlorobenzene	430	U
88-75-5	2-Nitrophenol	430	U	87-86-5	Pentachlorophenol	2200	U
105-67-9	2,4-Dimethylphenol	430	U	85-01-8	Phenanthrene	430	U
65-85-0	Benzoic Acid	430	U	120-12-7	Anthracene	430	U
111-91-1	bis(2-Chloroethoxy)Methane	430	U	84-74-2	Di-n-Butylphthalate	2600	
120-83-2	2,4-Dichlorophenol	430	U	206-44-0	Fluoranthene	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U	129-00-0	Pyrene	430	U
91-20-3	Naphthalene	430		85-68-7	Butylbenzylphthalate	430	U
106-47-8	4-Chloroaniline	430	U	91-94-1	3,3'-Dichlorobenzidine	870	U
87-68-3	Hexachlorobutadiene	430	U	56-55-3	Benzo(a)Anthracene	430	U
59-50-7	4-Chloro-3-Methylphenol	430	U	117-81-7	bis(2-Ethylhexyl)Phthalate	1600	
91-57-6	2-Methylnaphthalene	350	J	218-01-9	Chrysene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U	117-84-0	Di-n-Octyl Phthalate	430	U
88-06-2	2,4,6-Trichlorophenol	430	U	205-99-2	Benzo(b)Fluoranthene	430	U
95-95-4	2,4,5-Trichlorophenol	2200	U	207-08-9	Benzo(k)Fluoranthene	430	U
91-58-7	2-Chloronaphthalene	430	U	50-32-8	Benzo(a)Pyrene	430	U
88-74-4	2-Nitroaniline	2200	U	193-39-5	Indeno(1,2,3-cd)Pyrene	430	U
131-11-3	Dimethyl Phthalate	430	U	53-70-3	Dibenzo(a,h)Anthracene	430	U
208-96-8	Acenaphthylene	430	U	191-24-2	Benzo(g,h,i)Perylene	430	U
				99-09-2	3-Nitroaniline	2200	U

(1) Cannot be separated from diphenylamine

Client: DUNN GEOSCIENCE
Job Number: 12104
Sample ID: X-5

United States Testing Company, Inc.
Organics Analysis Data Sheet

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 12/29/89
Date Analyzed: 1/4/90
Conc/Dil Factor: 1
Percent Moisture (Decanted): 24

GPC Cleanup: No
Separatory Funnel Extraction: No
Continuous Liquid-Liquid Extraction: No

CAS #		ug/kg		CAS#		ug/kg	
108-95-2	Phenol	440	U	83-32-9	Acenaphthene	440	U
111-44-4	bis(2-Chloroethyl)Ether	440	U	51-28-5	2,4-Dinitrophenol	2200	U
95-57-8	2-Chlorophenol	440	U	100-02-7	4-Nitrophenol	2200	U
541-73-1	1,3-Dichlorobenzene	440	U	132-64-9	Dibenzofuran	440	U
106-46-7	1,4-Dichlorobenzene	440	U	121-14-2	2,4-Dinitrotoluene	440	U
100-51-6	Benzyl Alcohol	440	U	606-20-2	2,6-Dinitrotoluene	440	U
95-50-1	1,2-Dichlorobenzene	440	U	84-66-2	Diethylphthalate	440	U
95-48-7	2-Methylphenol	440	U	7005-72-3	4-Chlorophenyl-phenylether	440	U
39638-32-9	bis(2-chloroisopropyl)Ether	440	U	86-73-7	Fluorene	440	U
106-44-5	4-Methylphenol	440	U	100-01-6	4-Nitroaniline	2200	U
621-64-7	N-Nitroso-Di-n-Propylamine	440	U	534-52-1	4,6-Dinitro-2-Methylphenol	2200	U
67-72-1	Hexachloroethane	440	U	86-30-6	N-Nitrosodiphenylamine(1)	440	U
98-95-3	Nitrobenzene	440	U	101-55-3	4-Bromophenyl-phenlyether	440	U
78-59-1	Isophorone	440	U	118-74-1	Hexachlorobenzene	440	U
88-75-5	2-Nitrophenol	440	U	87-86-5	Pentachlorophenol	2200	U
105-67-9	2,4-Dimethylphenol	440	U	85-01-8	Phenanthrene	130	J
65-85-0	Benzoic Acid	44	J	120-12-7	Anthracene	44	J
111-91-1	bis(2-Chloroethoxy)Methane	440	U	84-74-2	Di-n-Butylphthalate	530	
120-83-2	2,4-Dichlorophenol	440	U	206-44-0	Fluoranthene	310	J
120-82-1	1,2,4-Trichlorobenzene	440	U	129-00-0	Pyrene	440	U
91-20-3	Naphthalene	440	U	85-68-7	Butylbenzylphthalate	440	U
106-47-8	4-Chloroaniline	440	U	91-94-1	3,3'-Dichlorobenzidine	880	U
87-68-3	Hexachlorobutadiene	440	U	56-55-3	Benzo(a)Anthracene	220	J
59-50-7	4-Chloro-3-Methylphenol	440	U	117-81-7	bis(2-Ethylhexyl)Phthalate	440	
91-57-6	2-Methylnaphthalene	440	U	218-01-9	Chrysene	220	J
77-47-4	Hexachlorocyclopentadiene	440	U	117-84-0	Di-n-Octyl Phthalate	440	U
88-06-2	2,4,6-Trichlorophenol	440	U	205-99-2	Benzo(b)Fluoranthene	440	U
95-95-4	2,4,5-Trichlorophenol	2200	U	207-08-9	Benzo(k)Fluoranthene	440	U
91-58-7	2-Chloronaphthalene	440	U	50-32-8	Benzo(a)Pyrene	440	U
88-74-4	2-Nitroaniline	2200	U	193-39-5	Indeno(1,2,3-cd)Pyrene	440	U
131-11-3	Dimethyl Phthalate	440	U	53-70-3	Dibenzo(a,h)Anthracene	440	U
208-96-8	Acenaphthylene	440	U	191-24-2	Benzo(g,h,i)Perylene	440	U
				99-09-2	3-Nitroaniline	2200	U

(1) Cannot be separated from diphenylamine

Client: DUNN GEOSCIENCE
Job Number: 12104
Sample ID: TB-4A

United States Testing Company, Inc.
Organics Analysis Data Sheet

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 12/29/89
Date Analyzed: 1/5/90
Dilution/Dil Factor: 1
Percent Moisture (Decanted): 31

GPC Cleanup: No
Separatory Funnel Extraction: No
Continuous Liquid-Liquid Extraction: No

CAS #		ug/kg		CAS#		ug/kg	
108-95-2	Phenol	140	J	83-32-9	Acenaphthene	48	J
111-44-4	bis(2-Chloroethyl)Ether	480	U	51-28-5	2,4-Dinitrophenol	2400	U
95-57-8	2-Chlorophenol	480	U	100-02-7	4-Nitrophenol	2400	U
541-73-1	1,3-Dichlorobenzene	480	U	132-64-9	Dibenzofuran	48	J
106-46-7	1,4-Dichlorobenzene	480	U	121-14-2	2,4-Dinitrotoluene	480	U
100-51-6	Benzyl Alcohol	480	U	606-20-2	2,6-Dinitrotoluene	480	U
95-50-1	1,2-Dichlorobenzene	480	U	84-66-2	Diethylphthalate	480	U
95-48-7	2-Methylphenol	480	U	7005-72-3	4-Chlorophenyl-phenylether	480	U
39638-32-9	bis(2-chloroisopropyl)Ether	480	U	86-73-7	Fluorene	48	J
106-44-5	4-Methylphenol	480	U	100-01-6	4-Nitroaniline	2400	U
621-64-7	N-Nitroso-Di-n-Propylamine	480	U	534-52-1	4,6-Dinitro-2-Methylphenol	2400	U
67-72-1	Hexachloroethane	480	U	86-30-6	N-Nitrosodiphenylamine(1)	480	U
98-95-3	Nitrobenzene	480	U	101-55-3	4-Bromophenyl-phenlyether	480	U
78-59-1	Isophorone	480	U	118-74-1	Hexachlorobenzene	480	U
88-75-5	2-Nitrophenol	480	U	87-86-5	Pentachlorophenol	2400	U
105-67-9	2,4-Dimethylphenol	480	U	85-01-8	Phenanthrene	97	J
65-85-0	Benzoic Acid	48	J	120-12-7	Anthracene	48	J
111-91-1	bis(2-Chloroethoxy)Methane	480	U	84-74-2	Di-n-Butylphthalate	1100	
120-83-2	2,4-Dichlorophenol	480	U	206-44-0	Fluoranthene	97	J
120-82-1	1,2,4-Trichlorobenzene	480	U	129-00-0	Pyrene	480	U
91-20-3	Naphthalene	480	U	85-68-7	Butylbenzylphthalate	480	U
106-47-8	4-Chloroaniline	480	U	91-94-1	3,3'-Dichlorobenzidine	970	U
87-68-3	Hexachlorobutadiene	480	U	56-55-3	Benzo(a)Anthracene	480	U
59-50-7	4-Chloro-3-Methylphenol	480	U	117-81-7	bis(2-Ethylhexyl)Phthalate	290	J
91-57-6	2-Methylnaphthalene	48	J	218-01-9	Chrysene	480	U
77-47-4	Hexachlorocyclopentadiene	480	U	117-84-0	Di-n-Octyl Phthalate	480	U
88-06-2	2,4,6-Trichlorophenol	480	U	205-99-2	Benzo(b)Fluoranthene	480	U
95-95-4	2,4,5-Trichlorophenol	2400	U	207-08-9	Benzo(k)Fluoranthene	480	U
91-58-7	2-Chloronaphthalene	480	U	50-32-8	Benzo(a)Pyrene	480	U
88-74-4	2-Nitroaniline	2400	U	193-39-5	Indeno(1,2,3-cd)Pyrene	480	U
131-11-3	Dimethyl Phthalate	48	J	53-70-3	Dibenzo(a,h)Anthracene	480	U
208-96-8	Acenaphthylene	48	J	191-24-2	Benzo(g,h,i)Perylene	480	U
				99-09-2	3-Nitroaniline	2400	U

(1) Cannot be separated from diphenylamine

Client: DUNN GEOSCIENCE
Job Number: 12104
Sample ID: TB-6A

United States Testing Company, Inc.
Organics Analysis Data Sheet

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 12/29/89
Date Analyzed: 1/5/90
Conc/Dil Factor: 1
Percent Moisture (Decanted): 31

GPC Cleanup: No
Separatory Funnel Extraction: No
Continuous Liquid-Liquid Extraction: No

CAS #		ug/kg		CAS#		ug/kg	
108-95-2	Phenol	480	U	83-32-9	Acenaphthene	480	U
111-44-4	bis(2-Chloroethyl)Ether	480	U	51-28-5	2,4-Dinitrophenol	2400	U
95-57-8	2-Chlorophenol	480	U	100-02-7	4-Nitrophenol	2400	U
541-73-1	1,3-Dichlorobenzene	480	U	132-64-9	Dibenzofuran	480	U
106-46-7	1,4-Dichlorobenzene	480	U	121-14-2	2,4-Dinitrotoluene	480	U
100-51-6	Benzyl Alcohol	480	U	606-20-2	2,6-Dinitrotoluene	480	U
95-50-1	1,2-Dichlorobenzene	480	U	84-66-2	Diethylphthalate	480	U
95-48-7	2-Methylphenol	340	J	7005-72-3	4-Chlorophenyl-phenylether	480	U
39638-32-9	bis(2-chloroisopropyl)Ether	48	J	86-73-7	Fluorene	480	U
106-44-5	4-Methylphenol	290	J	100-01-6	4-Nitroaniline	2400	U
621-64-7	N-Nitroso-Di-n-Propylamine	480	U	534-52-1	4,6-Dinitro-2-Methylphenol	2400	U
67-72-1	Hexachloroethane	480	U	86-30-6	N-Nitrosodiphenylamine(1)	480	U
98-95-3	Nitrobenzene	480	U	101-55-3	4-Bromophenyl-phenlyether	480	U
78-59-1	Isophorone	480	U	118-74-1	Hexachlorobenzene	480	U
88-75-5	2-Nitrophenol	480	U	87-86-5	Pentachlorophenol	2400	U
105-67-9	2,4-Dimethylphenol	480	U	85-01-8	Phenanthrene	480	U
65-85-0	Benzoic Acid	480	U	120-12-7	Anthracene	480	U
111-91-1	bis(2-Chloroethoxy)Methane	480	U	84-74-2	Di-n-Butylphthalate	680	
120-83-2	2,4-Dichlorophenol	480	U	206-44-0	Fluoranthene	480	U
120-82-1	1,2,4-Trichlorobenzene	480	U	129-00-0	Pyrene	480	U
91-20-3	Naphthalene	480	U	85-68-7	Butylbenzylphthalate	480	U
106-47-8	4-Chloroaniline	480	U	91-94-1	3,3'-Dichlorobenzidine	970	U
87-68-3	Hexachlorobutadiene	480	U	56-55-3	Benzo(a)Anthracene	480	U
59-50-7	4-Chloro-3-Methylphenol	480	U	117-81-7	bis(2-Ethylhexyl)Phthalate	970	
91-57-6	2-Methylnaphthalene	48	J	218-01-9	Chrysene	480	U
77-47-4	Hexachlorocyclopentadiene	480	U	117-84-0	Di-n-Octyl Phthalate	480	U
88-06-2	2,4,6-Trichlorophenol	480	U	205-99-2	Benzo(b)Fluoranthene	480	U
95-95-4	2,4,5-Trichlorophenol	2400	U	207-08-9	Benzo(k)Fluoranthene	480	U
91-58-7	2-Chloronaphthalene	480	U	50-32-8	Benzo(a)Pyrene	480	U
88-74-4	2-Nitroaniline	2400	U	193-39-5	Indeno(1,2,3-cd)Pyrene	480	U
131-11-3	Dimethyl Phthalate	480	U	53-70-3	Dibenzo(a,h)Anthracene	480	U
208-96-8	Acenaphthylene	480	U	191-24-2	Benzo(g,h,i)Perylene	480	U
				99-09-2	3-Nitroaniline	2400	U

(1) Cannot be separated from diphenylamine

Client: DUNN GEOSCIENCE
Job Number: 12104
Sample ID: TB-9A

United States Testing Company, Inc.
Organics Analysis Data Sheet

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 12/29/89
Date Analyzed: 1/4/89
Conc/Dil Factor: 1
Percent Moisture (Decanted): 31

GPC Cleanup: No
Separatory Funnel Extraction: No
Continuous Liquid-Liquid Extraction: No

CAS #		ug/kg		CAS#		ug/kg	
108-95-2	Phenol	480	U	83-32-9	Acenaphthene	480	U
111-44-4	bis(2-Chloroethyl)Ether	480	U	51-28-5	2,4-Dinitrophenol	2400	U
95-57-8	2-Chlorophenol	480	U	100-02-7	4-Nitrophenol	2400	U
541-73-1	1,3-Dichlorobenzene	480	U	132-64-9	Dibenzofuran	480	U
106-46-7	1,4-Dichlorobenzene	480	U	121-14-2	2,4-Dinitrotoluene	480	U
100-51-6	Benzyl Alcohol	480	U	606-20-2	2,6-Dinitrotoluene	480	U
95-50-1	1,2-Dichlorobenzene	480	U	84-66-2	Diethylphthalate	480	U
95-48-7	2-Methylphenol	480	U	7005-72-3	4-Chlorophenyl-phenylether	480	U
39638-32-9	bis(2-chloroisopropyl)Ether	48	59	86-73-7	Fluorene	480	U
106-44-5	4-Methylphenol	480	U	100-01-6	4-Nitroaniline	2400	U
621-64-7	N-Nitroso-Di-n-Propylamine	480	U	534-52-1	4,6-Dinitro-2-Methylphenol	2400	U
67-72-1	Hexachloroethane	480	U	86-30-6	N-Nitrosodiphenylamine(1)	480	U
98-95-3	Nitrobenzene	480	U	101-55-3	4-Bromophenyl-phenlyether	480	U
78-59-1	Isophorone	480	U	118-74-1	Hexachlorobenzene	480	U
88-75-5	2-Nitrophenol	480	U	87-86-5	Pentachlorophenol	2400	U
105-67-9	2,4-Dimethylphenol	480	U	85-01-8	Phenanthrene	480	U
65-85-0	Benzoic Acid	480	U	120-12-7	Anthracene	48	
111-91-1	bis(2-Chloroethoxy)Methane	480	U	84-74-2	Di-n-Butylphthalate	680	
120-83-2	2,4-Dichlorophenol	480	U	206-44-0	Fluoranthene	97	
120-82-1	1,2,4-Trichlorobenzene	480	U	129-00-0	Pyrene	140	
91-20-3	Naphthalene	480	U	85-68-7	Butylbenzylphthalate	480	U
106-47-8	4-Chloroaniline	480	U	91-94-1	3,3'-Dichlorobenzidine	970	U
87-68-3	Hexachlorobutadiene	480	U	56-55-3	Benzo(a)Anthracene	480	U
59-50-7	4-Chloro-3-Methylphenol	480	U	117-81-7	bis(2-Ethylhexyl)Phthalate	1800	
91-57-6	2-Methylnaphthalene	480	U	218-01-9	Chrysene	480	U
77-47-4	Hexachlorocyclopentadiene	480	U	117-84-0	Di-n-Octyl Phthalate	480	U
88-06-2	2,4,6-Trichlorophenol	480	U	205-99-2	Benzo(b)Fluoranthene	480	U
95-95-4	2,4,5-Trichlorophenol	2400	U	207-08-9	Benzo(k)Fluoranthene	480	U
91-58-7	2-Chloronaphthalene	480	U	50-32-8	Benzo(a)Pyrene	480	U
88-74-4	2-Nitroaniline	2400	U	193-39-5	Indeno(1,2,3-cd)Pyrene	480	U
131-11-3	Dimethyl Phthalate	480	U	53-70-3	Dibenzo(a,h)Anthracene	480	U
208-96-8	Acenaphthylene	480	U	191-24-2	Benzo(g,h,i)Perylene	480	U
				99-09-2	3-Nitroaniline	2400	U

(1) Cannot be separated from diphenylamine

Client: DUNN GEOSCIENCE
Job Number: 12104
Sample ID: TB-10A

United States Testing Company, Inc.
Organics Analysis Data Sheet

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 12/29/89
Date Analyzed: 1/5/90
Conc/Dil Factor: 1
Percent Moisture (Decanted): 27

GPC Cleanup: No
Separatory Funnel Extraction: No
Continuous Liquid-Liquid Extraction: No

CAS #		ug/kg		CAS#		ug/kg	
108-95-2	Phenol	460	U	83-32-9	Acenaphthene	460	U
111-44-4	bis(2-Chloroethyl)Ether	460	U	51-28-5	2,4-Dinitrophenol	2300	U
95-57-8	2-Chlorophenol	460	U	100-02-7	4-Nitrophenol	2300	U
541-73-1	1,3-Dichlorobenzene	460	U	132-64-9	Dibenzofuran	460	U
106-46-7	1,4-Dichlorobenzene	460	U	121-14-2	2,4-Dinitrotoluene	460	U
100-51-6	Benzyl Alcohol	460	U	606-20-2	2,6-Dinitrotoluene	460	U
95-50-1	1,2-Dichlorobenzene	91	J	84-66-2	Diethylphthalate	91	J
95-48-7	2-Methylphenol	730		7005-72-3	4-Chlorophenyl-phenylether	460	U
39638-32-9	bis(2-chloroisopropyl)Ether	460	U	86-73-7	Fluorene	46	J
106-44-5	4-Methylphenol	780		100-01-6	4-Nitroaniline	2300	U
621-64-7	N-Nitroso-Di-n-Propylamine	460	U	534-52-1	4,6-Dinitro-2-Methylphenol	2300	U
67-72-1	Hexachloroethane	460	U	86-30-6	N-Nitrosodiphenylamine(1)	460	U
98-95-3	Nitrobenzene	460	U	101-55-3	4-Bromophenyl-phenylether	460	U
78-59-1	Isophorone	460	U	118-74-1	Hexachlorobenzene	460	U
88-75-5	2-Nitrophenol	460	U	87-86-5	Pentachlorophenol	2300	U
105-67-9	2,4-Dimethylphenol	460	U	85-01-8	Phenanthrene	460	U
65-85-0	Benzoic Acid	91	J	120-12-7	Anthracene	460	U
111-91-1	bis(2-Chloroethoxy)Methane	460	U	84-74-2	Di-n-Butylphthalate	3200	
120-83-2	2,4-Dichlorophenol	460	U	206-44-0	Fluoranthene	46	J
120-82-1	1,2,4-Trichlorobenzene	460	U	129-00-0	Pyrene	460	U
91-20-3	Naphthalene	460		85-68-7	Butylbenzylphthalate	91	J
106-47-8	4-Chloroaniline	460	U	91-94-1	3,3'-Dichlorobenzidine	910	U
87-68-3	Hexachlorobutadiene	460	U	56-55-3	Benzo(a)Anthracene	460	U
59-50-7	4-Chloro-3-Methylphenol	460	U	117-81-7	bis(2-Ethylhexyl)Phthalate	3200	
91-57-6	2-Methylnaphthalene	460		218-01-9	Chrysene	460	U
77-47-4	Hexachlorocyclopentadiene	460	U	117-84-0	Di-n-Octyl Phthalate	460	U
88-06-2	2,4,6-Trichlorophenol	460	U	205-99-2	Benzo(b)Fluoranthene	460	U
95-95-4	2,4,5-Trichlorophenol	2300	U	207-08-9	Benzo(k)Fluoranthene	460	U
91-58-7	2-Chloronaphthalene	460	U	50-32-8	Benzo(a)Pyrene	460	U
88-74-4	2-Nitroaniline	2300	U	193-39-5	Indeno(1,2,3-cd)Pyrene	460	U
131-11-3	Dimethyl Phthalate	140	J	53-70-3	Dibenzo(a,h)Anthracene	460	U
208-96-8	Acenaphthylene	460	U	191-24-2	Benzo(g,h,i)Perylene	460	U
				99-09-2	3-Nitroaniline	2300	U

(1) Cannot be separated from diphenylamine

Client: DUNN GEOSCIENCE
Job Number: 12104
Sample ID: TB-11A

United States Testing Company, Inc.
Organics Analysis Data Sheet

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 12/29/89
Date Analyzed: 1/5/90
Conc/Dil Factor: 1
Percent Moisture (Decanted): 28

GPC Cleanup: No
Separatory Funnel Extraction: No
Continuous Liquid-Liquid Extraction: No

CAS #		ug/kg		CAS#		ug/kg	
108-95-2	Phenol	460	U	83-32-9	Acenaphthene	460	U
111-44-4	bis(2-Chloroethyl)Ether	460	U	51-28-5	2,4-Dinitrophenol	2300	U
95-57-8	2-Chlorophenol	460	U	100-02-7	4-Nitrophenol	2300	U
541-73-1	1,3-Dichlorobenzene	460	U	132-64-9	Dibenzofuran	460	U
106-46-7	1,4-Dichlorobenzene	460	U	121-14-2	2,4-Dinitrotoluene	460	U
100-51-6	Benzyl Alcohol	460	U	606-20-2	2,6-Dinitrotoluene	460	U
95-50-1	1,2-Dichlorobenzene	460	U	84-66-2	Diethylphthalate	460	U
95-48-7	2-Methylphenol	140	J	7005-72-3	4-Chlorophenyl-phenylether	460	U
39638-32-9	bis(2-chloroisopropyl)Ether	460	U	86-73-7	Fluorene	460	U
106-44-5	4-Methylphenol	230	J	100-01-6	4-Nitroaniline	2300	U
621-64-7	N-Nitroso-Di-n-Propylamine	460	U	534-52-1	4,6-Dinitro-2-Methylphenol	2300	U
67-72-1	Hexachloroethane	460	U	86-30-6	N-Nitrosodiphenylamine(1)	460	U
98-95-3	Nitrobenzene	460	U	101-55-3	4-Bromophenyl-phenlyether	460	U
78-59-1	Isophorone	460	U	118-74-1	Hexachlorobenzene	460	U
88-75-5	2-Nitrophenol	460	U	87-86-5	Pentachlorophenol	2300	U
105-67-9	2,4-Dimethylphenol	460	U	85-01-8	Phenanthrene	93	J
65-85-0	Benzoic Acid	560		120-12-7	Anthracene	93	J
111-91-1	bis(2-Chloroethoxy)Methane	460	U	84-74-2	Di-n-Butylphthalate	3100	
120-83-2	2,4-Dichlorophenol	460	U	206-44-0	Fluoranthene	460	U
120-82-1	1,2,4-Trichlorobenzene	460	U	129-00-0	Pyrene	460	U
91-20-3	Naphthalene	140	J	85-68-7	Butylbenzylphthalate	460	U
106-47-8	4-Chloroaniline	460	U	91-94-1	3,3'-Dichlorobenzidine	930	U
87-68-3	Hexachlorobutadiene	460	U	56-55-3	Benzo(a)Anthracene	460	U
59-50-7	4-Chloro-3-Methylphenol	460	U	117-81-7	bis(2-Ethylhexyl)Phthalate	3100	
91-57-6	2-Methylnaphthalene	140	J	218-01-9	Chrysene	460	U
77-47-4	Hexachlorocyclopentadiene	460	U	117-84-0	Di-n-Octyl Phthalate	460	U
88-06-2	2,4,6-Trichlorophenol	460	U	205-99-2	Benzo(b)Fluoranthene	460	U
95-95-4	2,4,5-Trichlorophenol	2300	U	207-08-9	Benzo(k)Fluoranthene	460	U
91-58-7	2-Chloronaphthalene	460	U	50-32-8	Benzo(a)Pyrene	460	U
88-74-4	2-Nitroaniline	2300	U	193-39-5	Indeno(1,2,3-cd)Pyrene	460	U
131-11-3	Dimethyl Phthalate	460	U	53-70-3	Dibenzo(a,h)Anthracene	460	U
208-96-8	Acenaphthylene	460	U	191-24-2	Benzo(g,h,i)Perylene	460	U
				99-09-2	3-Nitroaniline	2300	U

(1) Cannot be separated from diphenylamine

ID

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

IB-10A

Lab Name: U.S.T. CO. Contract: 68-01-7473

Lab Code: USTEST Case No.: 12104 SAS No.: _____ SDG No.: A104

Matrix: (soil/water) SOIL Lab Sample ID: 12104-4

Sample wt/vol: 30.10 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 12/30/89

% Moisture: not dec. 27 dec. _____ Date Extracted: 12/30/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/04/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	11	U
319-85-7	beta-BHC	11	U
319-86-8	delta-BHC	11	U
58-89-9	gamma-BHC (Lindane)	11	U
76-44-8	Heptachlor	11	U
309-00-2	Aldrin	11	U
1024-57-3	Heptachlor epoxide	11	U
959-98-8	Endosulfan I	11	U
60-57-1	Dieldrin	22	U
72-55-9	4,4'-DDE	22	U
72-20-8	Endrin	22	U
33213-65-9	Endosulfan II	22	U
72-54-8	4,4'-DDD	22	U
1031-07-8	Endosulfan sulfate	22	U
50-29-3	4,4'-DDT	22	U
72-43-5	Methoxychlor	110	U
53494-70-5	Endrin ketone	22	U
5103-71-9	alpha-Chlordane	110	U
5103-74-2	gamma-Chlordane	110	U
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	110	U
11104-28-2	Aroclor-1221	110	U
11141-16-5	Aroclor-1232	110	U
53469-21-9	Aroclor-1242	110	U
12672-29-6	Aroclor-1248	110	U
11097-69-1	Aroclor-1254	220	U
11096-82-5	Aroclor-1260	220	U

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK

Lab Name: U.S.T. CO. Contract: 68-01-7473

Lab Code: USTEST Case No.: 12104 SAS No.: _____ SDG No.: AJ04

Matrix: (soil/water) SOIL Lab Sample ID: 12104-SBLK

Sample wt/vol: 30 (g/ML) G Lab File ID: _____

Level: (low/med) LOW Date Received: 12/30/89

% Moisture: not dec. _____ dec. _____ Date Extracted: 12/30/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/03/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.0	U
319-85-7	beta-BHC	8.0	U
319-86-8	delta-BHC	8.0	U
58-89-9	gamma-BHC (Lindane)	8.0	U
76-44-8	Heptachlor	8.0	U
309-00-2	Aldrin	8.0	U
1024-57-3	Heptachlor epoxide	8.0	U
959-98-8	Endosulfan I	8.0	U
60-57-1	Dieldrin	16	U
72-55-9	4,4'-DDE	16	U
72-20-8	Endrin	16	U
33213-65-9	Endosulfan II	16	U
72-54-8	4,4'-DDD	16	U
1031-07-8	Endosulfan sulfate	16	U
50-29-3	4,4'-DDT	16	U
72-43-5	Methoxychlor	80	U
53494-70-5	Endrin ketone	16	U
5103-71-9	alpha-Chlordane	80	U
5103-74-2	gamma-Chlordane	80	U
8001-35-2	Toxaphene	160	U
12674-11-2	Aroclor-1016	80	U
11104-28-2	Aroclor-1221	80	U
11141-16-5	Aroclor-1232	80	U
53469-21-9	Aroclor-1242	80	U
12672-29-6	Aroclor-1248	80	U
11097-69-1	Aroclor-1254	160	U
11096-82-5	Aroclor-1260	160	U

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: X-4

Lab Name: U.S.T. CO. Contract: 68-01-7477

Lab Code: USTEST Case No.: 12104 SAS No.: _____ SDG No.: AJ04

Matrix: (soil/water) SOIL Lab Sample ID: 12104-9X5

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 12/30/89

Moisture: not dec. 22 dec. ____ Date Extracted: 12/30/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/04/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	51	U
319-85-7	beta-BHC	51	U
319-86-8	delta-BHC	51	U
58-89-9	gamma-BHC (Lindane)	51	U
76-44-8	Heptachlor	51	U
309-00-2	Aldrin	51	U
1024-57-3	Heptachlor epoxide	51	U
959-98-8	Endosulfan I	51	U
60-57-1	Dieldrin	38	J
72-55-9	4,4'-DDE	100	U
72-20-8	Endrin	100	U
33213-65-9	Endosulfan II	100	U
72-54-8	4,4'-DDD	100	U
1031-07-8	Endosulfan sulfate	100	U
50-29-3	4,4'-DDT	100	U
72-43-5	Methoxychlor	510	U
53494-70-5	Endrin ketone	100	U
5103-71-9	alpha-Chlordane	510	U
5103-74-2	gamma-Chlordane	510	U
8001-35-2	Toxaphene	1000	U
12674-11-2	Aroclor-1016	510	U
11104-28-2	Aroclor-1221	510	U
11141-16-5	Aroclor-1232	510	U
53469-21-9	Aroclor-1242	510	U
12672-29-6	Aroclor-1248	510	U
11097-69-1	Aroclor-1254	1000	U
11096-82-5	Aroclor-1260	1000	U

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

X-3

Lab Name: U.S.T. CO. Contract: 68-01-7473

Lab Code: USTEST Case No.: 12104 SAS No.: _____ SDG No.: AJ04

Matrix: (soil/water) SOIL Lab Sample ID: 12104-BX5

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 12/30/89

% Moisture: not dec. 22 dec. ____ Date Extracted: 12/30/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/04/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	54	U
319-85-7	beta-BHC	54	U
319-86-8	delta-BHC	54	U
58-89-9	gamma-BHC (Lindane)	54	U
76-44-8	Heptachlor	54	U
309-00-2	Aldrin	54	U
1024-57-3	Heptachlor epoxide	54	U
959-98-8	Endosulfan I	54	U
60-57-1	Dieldrin	110	U
72-55-9	4,4'-DDE	110	U
72-20-8	Endrin	110	U
33213-65-9	Endosulfan II	110	U
72-54-8	4,4'-DDD	110	U
1031-07-8	Endosulfan sulfate	110	U
50-29-3	4,4'-DDT	110	U
72-43-5	Methoxychlor	540	U
53494-70-5	Endrin ketone	110	U
5103-71-9	alpha-Chlordane	540	U
5103-74-2	gamma-Chlordane	540	U
8001-35-2	Toxaphene	1100	U
12674-11-2	Aroclor-1016	540	U
11104-28-2	Aroclor-1221	540	U
11141-16-5	Aroclor-1232	540	U
53469-21-9	Aroclor-1242	540	U
12672-29-6	Aroclor-1248	540	U
11097-69-1	Aroclor-1254	1100	U
11096-82-5	Aroclor-1260	1100	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

X-2

Lab Name: U.S.T. CO. Contract: 68-01-7477

Lab Code: USTEST Case No.: 12104 SAS No.: SDG No.: 0J04

Matrix: (soil/water) SOIL Lab Sample ID: 12104-7X5

Sample wt/vol: 30.1 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 12/30/89

% Moisture: not dec. 31 dec. Date Extracted: 12/30/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/04/90

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 5.00

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

CAS NO.	COMPOUND	Concentration	Q
319-84-6	alpha-BHC	58	U
319-85-7	beta-BHC	58	U
319-86-8	delta-BHC	58	U
58-89-9	gamma-BHC (Lindane)	58	U
76-44-8	Heptachlor	58	U
309-00-2	Aldrin	58	U
1024-57-3	Heptachlor epoxide	58	U
959-98-8	Endosulfan I	58	U
60-57-1	Dieldrin	120	U
72-55-9	4,4'-DDE	120	U
72-20-8	Endrin	120	U
33213-65-9	Endosulfan II	120	U
72-54-8	4,4'-DDD	120	U
1031-07-8	Endosulfan sulfate	120	U
50-29-3	4,4'-DDT	120	U
72-43-5	Methoxychlor	580	U
53494-70-5	Endrin ketone	120	U
5103-71-9	alpha-Chlordane	580	U
5103-74-2	gamma-Chlordane	580	U
8001-35-2	Toxaphene	1200	U
12674-11-2	Aroclor-1016	580	U
11104-28-2	Aroclor-1221	580	U
11141-16-5	Aroclor-1232	580	U
53469-21-9	Aroclor-1242	580	U
12672-29-6	Aroclor-1248	580	U
11097-69-1	Aroclor-1254	1200	U
11096-82-5	Aroclor-1260	1200	U

LD

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

X-1

Lab Name: U.S.T. CO. Contract: 68-01-7473

Lab Code: USTEST Case No.: 12104 SAS No.: _____ SDG No.: A304

Matrix: (soil/water) SOIL Lab Sample ID: 12104-6X5

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 12/30/89

% Moisture: not dec. 32 dec. ____ Date Extracted: 12/30/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/04/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	59	U
319-85-7	beta-BHC	59	U
319-86-8	delta-BHC	59	U
58-89-9	gamma-BHC (Lindane)	59	U
76-44-8	Heptachlor	59	U
309-00-2	Aldrin	59	U
1024-57-3	Heptachlor epoxide	59	U
959-98-8	Endosulfan I	59	U
60-57-1	Dieldrin	120	U
72-55-9	4,4'-DDE	120	U
72-20-8	Endrin	120	U
33213-65-9	Endosulfan II	120	U
72-54-8	4,4'-DDD	120	U
1031-07-8	Endosulfan sulfate	120	U
50-29-3	4,4'-DDT	120	U
72-43-5	Methoxychlor	590	U
53494-70-5	Endrin ketone	120	U
5103-71-9	alpha-Chlordane	590	U
5103-74-2	gamma-Chlordane	590	U
8001-35-2	Toxaphene	1200	U
12674-11-2	Aroclor-1016	590	U
11104-28-2	Aroclor-1221	590	U
11141-16-5	Aroclor-1232	590	U
53469-21-9	Aroclor-1242	590	U
12672-29-6	Aroclor-1248	590	U
11097-69-1	Aroclor-1254	1200	U
11096-82-5	Aroclor-1260	1200	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-9A

Lab Name: U.S.T. CO. Contract: 68-01-7473

Lab Code: USTEST Case No.: 12104 SAS No.: _____ SDG No.: AJ04

Matrix: (soil/water) SOIL Lab Sample ID: 12104-3X5

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

Level: (low/med) LOW Date Received: 12/30/89

% Moisture: not dec. 25 dec. ____ Date Extracted: 12/30/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/03/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	52	U
319-85-7	beta-BHC	52	U
319-86-8	delta-BHC	52	U
58-89-9	gamma-BHC (Lindane)	52	U
76-44-8	Heptachlor	52	U
309-00-2	Aldrin	52	U
1024-57-3	Heptachlor epoxide	52	U
959-98-8	Endosulfan I	52	U
60-57-1	Dieldrin	9.6	J
72-55-9	4,4'-DDE	100	U
72-20-8	Endrin	100	U
33213-65-9	Endosulfan II	100	U
72-54-8	4,4'-DDD	100	U
1031-07-8	Endosulfan sulfate	100	U
50-29-3	4,4'-DDT	100	U
72-43-5	Methoxychlor	520	U
53494-70-5	Endrin ketone	100	U
5103-71-9	alpha-Chlordane	520	U
5103-74-2	gamma-Chlordane	520	U
8001-35-2	Toxaphene	1000	U
12674-11-2	Aroclor-1016	520	U
11104-28-2	Aroclor-1221	520	U
11141-16-5	Aroclor-1232	520	U
53469-21-9	Aroclor-1242	520	U
12672-29-6	Aroclor-1248	520	U
11097-69-1	Aroclor-1254	1000	U
11096-82-5	Aroclor-1260	1000	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-6A

Lab Name: U.S.T. CO. Contract: 68-01-7473

Lab Code: USTEST Case No.: 12104 SAS No.: ______ SDG No.: AJ04

Matrix: (soil/water) SOIL Lab Sample ID: 12104-2

Sample wt/vol: 30.3 (g/mL) G Lab File ID: ______

Level: (low/med) LOW Date Received: 12/30/89

% Moisture: not dec. 30 dec. ____ Date Extracted: 12/30/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/03/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.000

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

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	11	U
319-85-7	beta-BHC	11	U
319-86-8	delta-BHC	11	U
58-89-9	gamma-BHC (Lindane)	11	U
76-44-8	Heptachlor	11	U
309-00-2	Aldrin	11	U
1024-57-3	Heptachlor epoxide	11	U
959-98-8	Endosulfan I	11	U
60-57-1	Dieldrin	27	
72-55-9	4,4'-DDE	23	U
72-20-8	Endrin	23	U
33213-65-9	Endosulfan II	23	U
72-54-8	4,4'-DDD	23	U
1031-07-8	Endosulfan sulfate	23	U
50-29-3	4,4'-DDT	23	U
72-43-5	Methoxychlor	110	U
53494-70-5	Endrin ketone	23	U
5103-71-9	alpha-Chlordane	110	U
5103-74-2	gamma-Chlordane	110	U
8001-35-2	Toxaphene	230	U
12674-11-2	Aroclor-1016	110	U
11104-28-2	Aroclor-1221	110	U
11141-16-5	Aroclor-1232	110	U
53469-21-9	Aroclor-1242	110	U
12672-29-6	Aroclor-1248	110	U
11097-69-1	Aroclor-1254	230	U
11096-82-5	Aroclor-1260	230	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-4A

Lab Name: U.S.T. CO. Contract: 68-01-7467

Lab Code: USTEST Case No.: 12104 SAS No.: _____ SDG No.: 8J04

Matrix: (soil/water) SOIL Lab Sample ID: 12104-1x5

Sample wt/vol: 30.7 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 12/30/89

% Moisture: not dec. 31 dec. ____ Date Extracted: 12/30/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/03/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	57	U
319-85-7	beta-BHC	57	U
319-86-8	delta-BHC	57	U
58-89-9	gamma-BHC (Lindane)	57	U
76-44-8	Heptachlor	57	U
309-00-2	Aldrin	57	U
1024-57-3	Heptachlor epoxide	57	U
959-98-8	Endosulfan I	57	U
60-57-1	Dieldrin	110	U
72-55-9	4,4'-DDE	110	U
72-20-8	Endrin	110	U
33213-65-9	Endosulfan II	110	U
72-54-8	4,4'-DDD	110	U
1031-07-8	Endosulfan sulfate	110	U
50-29-3	4,4'-DDT	110	U
72-43-5	Methoxychlor	570	U
53494-70-5	Endrin ketone	110	U
5103-71-9	alpha-Chlordane	570	U
5103-74-2	gamma-Chlordane	570	U
8001-35-2	Toxaphene	1100	U
12674-11-2	Aroclor-1016	570	U
11104-28-2	Aroclor-1221	570	U
11141-16-5	Aroclor-1232	570	U
53469-21-9	Aroclor-1242	570	U
12672-29-6	Aroclor-1248	570	U
11097-69-1	Aroclor-1254	1100	U
11096-82-5	Aroclor-1260	1100	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-11A

Lab Name: U.S.T. CO. Contract: 68-01-7473

Lab Code: USTEST Case No.: 12104 SAS No.: _____ SDG No.: AJ01

Matrix: (soil/water) SOIL Lab Sample ID: 12104-3X3

Sample wt/vol: 30.5 (g/ml.) G Lab File ID: _____

Level: (low/med) LOW Date Received: 12/30/89

% Moisture: not dec. 28 dec. ____ Date Extracted: 12/30/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/04/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	55	U
319-85-7	beta-BHC	55	U
319-86-8	delta-BHC	55	U
58-89-9	gamma-BHC (Lindane)	55	U
76-44-8	Heptachlor	55	U
309-00-2	Aldrin	55	U
1024-57-3	Heptachlor epoxide	55	U
959-98-8	Endosulfan I	55	U
60-57-1	Dieldrin	110	U
72-55-9	4,4'-DDE	110	U
72-20-8	Endrin	110	U
33213-65-9	Endosulfan II	110	U
72-54-8	4,4'-DDD	110	U
1031-07-8	Endosulfan sulfate	110	U
50-29-3	4,4'-DDT	110	U
72-43-5	Methoxychlor	550	U
53494-70-5	Endrin ketone	110	U
5103-71-9	alpha-Chlordane	550	U
5103-74-2	gamma-Chlordane	550	U
8001-35-2	Toxaphene	1100	U
12674-11-2	Aroclor-1016	550	U
11104-28-2	Aroclor-1221	550	U
11141-16-5	Aroclor-1232	550	U
53469-21-9	Aroclor-1242	550	U
12672-29-6	Aroclor-1248	550	U
11097-69-1	Aroclor-1254	1100	U
11096-82-5	Aroclor-1260	1100	U

10

EPA SAMPLE NO.

PESTICIDE/PCB IDENTIFICATION

TD-9A

Lab Name: U.S.T. CO. Contract: 68-01-7473

Lab Code: USTEST Case No.: 12104 SAS No.: _____ SDG No.: AJQ4

GC Column ID (1): SP2250 GC Column ID (2): SP2100

Instrument ID (1): GC9A4X Instrument ID (2): GC9A4X

Lab Sample ID: 12104-3X5

Lab File ID: _____ (only if confirmed by GCMS)

PESTICIDE/PCB	RETENTION TIME		RT WINDOW OF STANDARD FROM	TO	QUANT? (Y/N)	GC/MS? (Y/N)
01 Dieldrin	Column 1	9.69	9.34	10.16	Y	N
02	Column 2	7.70	7.53	7.83	N	N

Comments:

10

PESTICIDE/PCB IDENTIFICATION

EPA SAMPLE NO.

TB-6A

Lab Name: U.S.T. CO Contract: 68-01-7473

Lab Code: USTEST Case No.: 12104 SAS No.: _____ SDG No.: 4104

GC Column ID (1): SP2250 GC Column ID (2): SP2100

Instrument ID (1): GC9A4X Instrument ID (2): GC9A4X

Lab Sample ID: 12104-3

Lab File ID: _____ (only if confirmed by GCMS)

PESTICIDE/PCB	RETENTION TIME		RT WINDOW OF STANDARD FROM	TO	QUANT? (Y/N)	GC/MS? (Y/N)
01 Dieldrin	Column 1	9.73	9.34	10.16	Y	M
02	Column 2	7.77	7.53	7.83	N	N

Comments:

10
PESTICIDE/PCB IDENTIFICATION

EPA SAMPLE NO.

X-4

Lab Name: U.S.T. CO. Contract: 68-01-7473

Lab Code: USTEST Case No.: 12104 SAS No.: _____ SDG No.: AJ04

GC Column ID (1): SP2250 GC Column ID (2): SP2100

Instrument ID (1): GC9A4X Instrument ID (2): GC9A4X

Lab Sample ID: 12104--9X5

Lab File ID: _____ (only if confirmed by GCMS)

PESTICIDE/PCB	RETENTION TIME		RT WINDOW OF STANDARD FROM	TO	QUANT? (Y/N)	GC/MS? (Y/N)
01 Dieldrin	Column 1	9.67	9.34	10.16	Y	N
02	Column 2	7.68	7.53	7.83	N	N

Comments:

10

PESTICIDE/PCB IDENTIFICATION

EPA SAMPLE NO.

TD-5A

Name: U.S.T. CO. Contract: 68-01-7477

Code: USTEST Case No.: 12104 SAS No.: _____ SDG No.: AJQ4

Column ID (1): SP2250 GC Column ID (2): SP2100

Instrument ID (1): GC9A4X Instrument ID (2): GC9A4X

Sample ID: 12104-3X5

File ID: _____ (only if confirmed by GCMS)

PESTICIDE/PCB	RETENTION TIME		RT WINDOW OF STANDARD FROM	TO	QUANT? (Y/N)	GC/MS? (Y/N)
01 Dieldrin	Column 1	9.69	9.34	10.16	Y	N
02	Column 2	7.70	7.53	7.83	N	N

Comments:

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

DUNN GEOSCIENCE 11890

LABORATORY NUMBER: 1213901
SAMPLE IDENTIFICATION: SB-1A,S-2

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	15	UG/KG
BROMOMETHANE	ND	UG/KG	15	UG/KG
VINYL CHLORIDE	ND	UG/KG	15	UG/KG
CHLOROETHANE	ND	UG/KG	15	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	7	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	7	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
CHLOROFORM	ND	UG/KG	7	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	7	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	7	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	7	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	7	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	7	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	7	UG/KG
TRICHLOROETHYLENE	9	UG/KG	7	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	7	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	7	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	7	UG/KG
BENZENE	ND	UG/KG	7	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	15	UG/KG
BROMOFORM	ND	UG/KG	7	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	7	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	7	UG/KG
TOLUENE	ND	UG/KG	7	UG/KG
CHLOROBENZENE	ND	UG/KG	7	UG/KG
ETHYLBENZENE	ND	UG/KG	7	UG/KG
XYLENES, TOTAL	ND	UG/KG	7	UG/KG
STYRENE	ND	UG/KG	7	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	15	UG/KG
ACETONE	ND	UG/KG	15	UG/KG
2-HEXANONE	ND	UG/KG	15	UG/KG
VINYL ACETATE	ND	UG/KG	15	UG/KG
CARBON DISULFIDE	ND	UG/KG	7	UG/KG
2-BUTANONE	ND	UG/KG	15	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

DUNN GEOSCIENCE 11890

LABORATORY NUMBER: 1213902
SAMPLE IDENTIFICATION: SB-1A,S-3

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	15	UG/KG
BROMOMETHANE	ND	UG/KG	15	UG/KG
VINYL CHLORIDE	ND	UG/KG	15	UG/KG
CHLOROETHANE	ND	UG/KG	15	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	8	UG/KG
trans-1,2-DICHLOROETHYLENE	14	UG/KG	8	UG/KG
CHLOROFORM	ND	UG/KG	8	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	8	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	8	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	8	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	8	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	8	UG/KG
TRICHLOROETHYLENE	14	UG/KG	8	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	8	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	8	UG/KG
BENZENE	ND	UG/KG	8	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	15	UG/KG
BROMOFORM	ND	UG/KG	8	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	8	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	8	UG/KG
TOLUENE	20	UG/KG	8	UG/KG
CHLOROBENZENE	ND	UG/KG	8	UG/KG
ETHYLBENZENE	ND	UG/KG	8	UG/KG
XYLENES, TOTAL	ND	UG/KG	8	UG/KG
STYRENE	ND	UG/KG	8	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	15	UG/KG
ACETONE	67	UG/KG	15	UG/KG
2-HEXANONE	ND	UG/KG	15	UG/KG
VINYL ACETATE	ND	UG/KG	15	UG/KG
CARBON DISULFIDE	ND	UG/KG	8	UG/KG
2-BUTANONE	ND	UG/KG	15	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

DUNN GEOSCIENCE 11890

LABORATORY NUMBER: 1213903
SAMPLE IDENTIFICATION: TB-4C,S-10

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	17	UG/KG
BROMOMETHANE	ND	UG/KG	17	UG/KG
VINYL CHLORIDE	ND	UG/KG	17	UG/KG
CHLOROETHANE	ND	UG/KG	17	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	9	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	9	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	9	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	9	UG/KG
CHLOROFORM	ND	UG/KG	9	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	9	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	9	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	9	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	9	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	9	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	9	UG/KG
TRICHLOROETHYLENE	9	UG/KG	9	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	9	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	9	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	9	UG/KG
BENZENE	ND	UG/KG	9	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	17	UG/KG
BROMOFORM	ND	UG/KG	9	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	9	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	9	UG/KG
TOLUENE	ND	UG/KG	9	UG/KG
CHLOROBENZENE	ND	UG/KG	9	UG/KG
ETHYLBENZENE	ND	UG/KG	9	UG/KG
XYLENES, TOTAL	ND	UG/KG	9	UG/KG
STYRENE	ND	UG/KG	9	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	9	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	17	UG/KG
ACETONE	ND	UG/KG	17	UG/KG
2-HEXANONE	ND	UG/KG	17	UG/KG
VINYL ACETATE	ND	UG/KG	17	UG/KG
CARBON DISULFIDE	ND	UG/KG	9	UG/KG
2-BUTANONE	ND	UG/KG	17	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

DUNN GEOSCIENCE 11890

LABORATORY NUMBER: 1213904
SAMPLE IDENTIFICATION: TB-4C,S-11

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	16	UG/KG
BROMOMETHANE	ND	UG/KG	16	UG/KG
VINYL CHLORIDE	ND	UG/KG	16	UG/KG
CHLOROETHANE	ND	UG/KG	16	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	8	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
CHLOROFORM	ND	UG/KG	8	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	8	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	8	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	8	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	8	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	8	UG/KG
TRICHLOROETHYLENE	27	UG/KG	8	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	8	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	8	UG/KG
BENZENE	ND	UG/KG	8	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	16	UG/KG
BROMOFORM	ND	UG/KG	8	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	8	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	8	UG/KG
TOLUENE	15	UG/KG	8	UG/KG
CHLOROBENZENE	ND	UG/KG	8	UG/KG
ETHYLBENZENE	ND	UG/KG	8	UG/KG
XYLENES, TOTAL	ND	UG/KG	8	UG/KG
STYRENE	ND	UG/KG	8	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	16	UG/KG
ACETONE	18	UG/KG	16	UG/KG
2-HEXANONE	ND	UG/KG	16	UG/KG
VINYL ACETATE	ND	UG/KG	16	UG/KG
CARBON DISULFIDE	ND	UG/KG	8	UG/KG
2-BUTANONE	ND	UG/KG	16	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

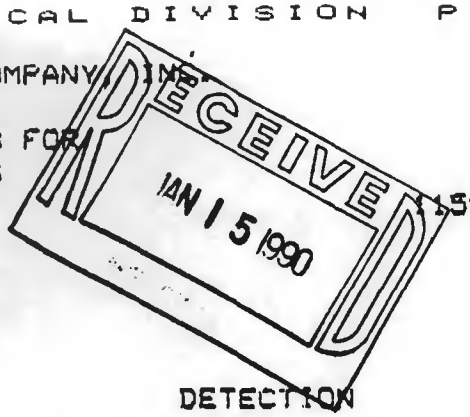
CLIENT
DG

11890

LABORATORY NUMBER: LOW BLANK
SAMPLE IDENTIFICATION:

COMPOUND	RESULT		DETECTION LIMIT
CHLOROMETHANE	ND	UG/KG	10 UG/KG
BROMOMETHANE	ND	UG/KG	10 UG/KG
VINYL CHLORIDE	ND	UG/KG	10 UG/KG
CHLOROETHANE	ND	UG/KG	10 UG/KG
METHYLENE CHLORIDE	ND	UG/KG	5 UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	5 UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	5 UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	5 UG/KG
CHLOROFORM	ND	UG/KG	5 UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	5 UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	5 UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	5 UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	5 UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	5 UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	5 UG/KG
TRICHLOROETHYLENE	ND	UG/KG	5 UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	5 UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	5 UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	5 UG/KG
BENZENE	ND	UG/KG	5 UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	10 UG/KG
BROMOFORM	ND	UG/KG	5 UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	5 UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	5 UG/KG
TOLUENE	ND	UG/KG	5 UG/KG
CHLOROBENZENE	ND	UG/KG	5 UG/KG
ETHYLBENZENE	ND	UG/KG	5 UG/KG
XYLENES, TOTAL	ND	UG/KG	5 UG/KG
STYRENE	ND	UG/KG	5 UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	5 UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	10 UG/KG
ACETONE	ND	UG/KG	10 UG/KG
2-HEXANONE	ND	UG/KG	10 UG/KG
VINYL ACETATE	ND	UG/KG	10 UG/KG
CARBON DISULFIDE	ND	UG/KG	5 UG/KG
2-BUTANONE	ND	UG/KG	10 UG/KG

UNITED STATES TESTING COMPANY, INC.



REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

1590

CLIENT
DG

LABORATORY NUMBER: 1213701
SAMPLE IDENTIFICATION: SB-4,S-2

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	15	UG/KG
BROMOMETHANE	ND	UG/KG	15	UG/KG
VINYL CHLORIDE	ND	UG/KG	15	UG/KG
CHLOROETHANE	ND	UG/KG	15	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	7	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	7	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
CHLOROFORM	ND	UG/KG	7	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	7	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	7	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	7	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	7	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	7	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	7	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	7	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	7	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	7	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	7	UG/KG
BENZENE	ND	UG/KG	7	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	15	UG/KG
BROMOFORM	ND	UG/KG	7	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	7	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	7	UG/KG
TOLUENE	ND	UG/KG	7	UG/KG
CHLOROBENZENE	ND	UG/KG	7	UG/KG
ETHYLBENZENE	ND	UG/KG	7	UG/KG
XYLENES, TOTAL	ND	UG/KG	7	UG/KG
STYRENE	ND	UG/KG	7	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	15	UG/KG
ACETONE	27	UG/KG	15	UG/KG
2-HEXANONE	ND	UG/KG	15	UG/KG
VINYL ACETATE	ND	UG/KG	15	UG/KG
CARBON DISULFIDE	ND	UG/KG	7	UG/KG
2-BUTANONE	ND	UG/KG	15	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT 11590
DG

LABORATORY NUMBER: 1213702
SAMPLE IDENTIFICATION: SB-4,S-3

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	20	UG/KG
BROMOMETHANE	ND	UG/KG	20	UG/KG
VINYL CHLORIDE	ND	UG/KG	20	UG/KG
CHLOROETHANE	ND	UG/KG	20	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	10	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	10	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	10	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	10	UG/KG
CHLOROFORM	ND	UG/KG	10	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	10	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	10	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	10	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	10	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	10	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	10	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	10	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	10	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	10	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	10	UG/KG
BENZENE	ND	UG/KG	10	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	20	UG/KG
BROMOFORM	ND	UG/KG	10	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	10	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	10	UG/KG
TOLUENE	ND	UG/KG	10	UG/KG
CHLOROBENZENE	ND	UG/KG	10	UG/KG
ETHYLBENZENE	ND	UG/KG	10	UG/KG
XYLENES, TOTAL	ND	UG/KG	10	UG/KG
STYRENE	ND	UG/KG	10	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	10	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	20	UG/KG
ACETONE	36	UG/KG	20	UG/KG
2-HEXANONE	ND	UG/KG	20	UG/KG
VINYL ACETATE	ND	UG/KG	20	UG/KG
CARBON DISULFIDE	ND	UG/KG	10	UG/KG
2-BUTANONE	ND	UG/KG	20	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT 11590
DG

LABORATORY NUMBER: 1213703
SAMPLE IDENTIFICATION: SB-4,S-4

COMPOUND	RESULT		DETECTION LIMIT
CHLOROMETHANE	ND	UG/KG	20 UG/KG
BROMOMETHANE	ND	UG/KG	20 UG/KG
VINYL CHLORIDE	ND	UG/KG	20 UG/KG
CHLOROETHANE	ND	UG/KG	20 UG/KG
METHYLENE CHLORIDE	ND	UG/KG	10 UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	10 UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	10 UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	10 UG/KG
CHLOROFORM	ND	UG/KG	10 UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	10 UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	10 UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	10 UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	10 UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	10 UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	10 UG/KG
TRICHLOROETHYLENE	ND	UG/KG	10 UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	10 UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	10 UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	10 UG/KG
BENZENE	ND	UG/KG	10 UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	20 UG/KG
BROMOFORM	ND	UG/KG	10 UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	10 UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	10 UG/KG
TOLUENE	ND	UG/KG	10 UG/KG
CHLOROBENZENE	ND	UG/KG	10 UG/KG
ETHYLBENZENE	ND	UG/KG	10 UG/KG
XYLENES, TOTAL	ND	UG/KG	10 UG/KG
STYRENE	ND	UG/KG	10 UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	10 UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	20 UG/KG
ACETONE	ND	UG/KG	20 UG/KG
2-HEXANONE	ND	UG/KG	20 UG/KG
VINYL ACETATE	ND	UG/KG	20 UG/KG
CARBON DISULFIDE	ND	UG/KG	10 UG/KG
2-BUTANONE	ND	UG/KG	20 UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT 11590
DG

LABORATORY NUMBER: LOWBLANK
SAMPLE IDENTIFICATION:

COMPOUND	RESULT		DETECTION LIMIT
CHLOROMETHANE	ND	UG/KG	10 UG/KG
BROMOMETHANE	ND	UG/KG	10 UG/KG
VINYL CHLORIDE	ND	UG/KG	10 UG/KG
CHLOROETHANE	ND	UG/KG	10 UG/KG
METHYLENE CHLORIDE	ND	UG/KG	5 UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	5 UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	5 UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	5 UG/KG
CHLOROFORM	ND	UG/KG	5 UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	5 UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	5 UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	5 UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	5 UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	5 UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	5 UG/KG
TRICHLOROETHYLENE	ND	UG/KG	5 UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	5 UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	5 UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	5 UG/KG
BENZENE	ND	UG/KG	5 UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	10 UG/KG
BROMOFORM	ND	UG/KG	5 UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	5 UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	5 UG/KG
TOLUENE	ND	UG/KG	5 UG/KG
CHLOROBENZENE	ND	UG/KG	5 UG/KG
ETHYLBENZENE	ND	UG/KG	5 UG/KG
XYLENES, TOTAL	ND	UG/KG	5 UG/KG
STYRENE	ND	UG/KG	5 UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	5 UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	10 UG/KG
ACETONE	ND	UG/KG	10 UG/KG
2-HEXANONE	ND	UG/KG	10 UG/KG
VINYL ACETATE	ND	UG/KG	10 UG/KG
CARBON DISULFIDE	ND	UG/KG	5 UG/KG
2-BUTANONE	ND	UG/KG	10 UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

10890

LABORATORY NUMBER: 1211901
SAMPLE IDENTIFICATION: SB-1,S-4

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	77	UG/KG
BROMOMETHANE	ND	UG/KG	77	UG/KG
VINYL CHLORIDE	240	UG/KG	77	UG/KG
CHLOROETHANE	ND	UG/KG	77	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	38	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	38	UG/KG
1,1-DICHLOROETHANE	419	UG/KG	38	UG/KG
trans-1,2-DICHLOROETHYLENE	1668	UG/KG	38	UG/KG
CHLOROFORM	ND	UG/KG	38	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	38	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	38	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	38	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	38	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	38	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	38	UG/KG
TRICHLOROETHYLENE	1584	UG/KG	38	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	38	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	38	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	38	UG/KG
BENZENE	ND	UG/KG	38	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	77	UG/KG
BROMOFORM	ND	UG/KG	38	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	38	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	38	UG/KG
TOLUENE	2357	UG/KG	38	UG/KG
CHLOROBENZENE	ND	UG/KG	38	UG/KG
ETHYLBENZENE	41	UG/KG	38	UG/KG
XYLENES, TOTAL	230	UG/KG	38	UG/KG
STYRENE	ND	UG/KG	38	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	38	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	77	UG/KG
ACETONE	273	UG/KG	77	UG/KG
2-HEXANONE	ND	UG/KG	77	UG/KG
VINYL ACETATE	ND	UG/KG	77	UG/KG
CARBON DISULFIDE	ND	UG/KG	38	UG/KG
2-BUTANONE	ND	UG/KG	77	UG/KG

6.8

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT 10890
DG

LABORATORY NUMBER: 1211902
SAMPLE IDENTIFICATION: SB-1,S-5

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	70	UG/KG
BROMOMETHANE	ND	UG/KG	70	UG/KG
VINYL CHLORIDE	173	UG/KG	70	UG/KG
CHLOROETHANE	ND	UG/KG	70	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	35	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	35	UG/KG
1,1-DICHLOROETHANE	397	UG/KG	35	UG/KG
trans-1,2-DICHLOROETHYLENE	935	UG/KG	35	UG/KG
CHLOROFORM	ND	UG/KG	35	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	35	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	35	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	35	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	35	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	35	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	35	UG/KG
TRICHLOROETHYLENE	935	UG/KG	35	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	35	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	35	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	35	UG/KG
BENZENE	ND	UG/KG	35	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	70	UG/KG
BROMOFORM	ND	UG/KG	35	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	35	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	35	UG/KG
TOLUENE	1258	UG/KG	35	UG/KG
CHLOROBENZENE	ND	UG/KG	35	UG/KG
ETHYLBENZENE	ND	UG/KG	35	UG/KG
XYLENES, TOTAL	127	UG/KG	35	UG/KG
STYRENE	ND	UG/KG	35	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	35	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	70	UG/KG
ACETONE	122	UG/KG	70	UG/KG
2-HEXANONE	ND	UG/KG	70	UG/KG
VINYL ACETATE	ND	UG/KG	70	UG/KG
CARBON DISULFIDE	ND	UG/KG	35	UG/KG
2-BUTANONE	ND	UG/KG	70	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

10890

LABORATORY NUMBER: 1211903
SAMPLE IDENTIFICATION: SB-1,S-6

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	64	UG/KG
BROMOMETHANE	ND	UG/KG	64	UG/KG
VINYL CHLORIDE	ND	UG/KG	64	UG/KG
CHLOROETHANE	ND	UG/KG	64	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	32	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	32	UG/KG
1,1-DICHLOROETHANE	287	UG/KG	32	UG/KG
trans-1,2-DICHLOROETHYLENE	208	UG/KG	32	UG/KG
CHLOROFORM	ND	UG/KG	32	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	32	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	32	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	32	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	32	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	32	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	32	UG/KG
TRICHLOROETHYLENE	437	UG/KG	32	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	32	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	32	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	32	UG/KG
BENZENE	ND	UG/KG	32	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	64	UG/KG
BROMOFORM	ND	UG/KG	32	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	32	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	32	UG/KG
TOLUENE	560	UG/KG	32	UG/KG
CHLOROBENZENE	ND	UG/KG	32	UG/KG
ETHYLBENZENE	ND	UG/KG	32	UG/KG
XYLENES, TOTAL	36	UG/KG	32	UG/KG
STYRENE	ND	UG/KG	32	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	32	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	64	UG/KG
ACETONE	ND	UG/KG	64	UG/KG
2-HEXANONE	ND	UG/KG	64	UG/KG
VINYL ACETATE	ND	UG/KG	64	UG/KG
CARBON DISULFIDE	ND	UG/KG	32	UG/KG
2-BUTANONE	ND	UG/KG	64	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

10890

LABORATORY NUMBER: 1211904
SAMPLE IDENTIFICATION: SB-2,S-1

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	74	UG/KG
BROMOMETHANE	ND	UG/KG	74	UG/KG
VINYL CHLORIDE	ND	UG/KG	74	UG/KG
CHLOROETHANE	ND	UG/KG	74	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	37	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	37	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	37	UG/KG
trans-1,2-DICHLOROETHYLENE	140	UG/KG	37	UG/KG
CHLOROFORM	ND	UG/KG	37	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	37	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	37	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	37	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	37	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	37	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	37	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	37	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	37	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	37	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	37	UG/KG
BENZENE	ND	UG/KG	37	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	74	UG/KG
BROMOFORM	ND	UG/KG	37	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	37	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	37	UG/KG
TOLUENE	142	UG/KG	37	UG/KG
CHLOROBENZENE	ND	UG/KG	37	UG/KG
ETHYLBENZENE	ND	UG/KG	37	UG/KG
XYLENES, TOTAL	ND	UG/KG	37	UG/KG
STYRENE	ND	UG/KG	37	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	37	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	74	UG/KG
ACETONE	496	UG/KG	74	UG/KG
2-HEXANONE	ND	UG/KG	74	UG/KG
VINYL ACETATE	ND	UG/KG	74	UG/KG
CARBON DISULFIDE	ND	UG/KG	37	UG/KG
2-BUTANONE	88	UG/KG	74	UG/KG

0.72

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

10890

LABORATORY NUMBER: 1211905
SAMPLE IDENTIFICATION: SB-2,S-2

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	69	UG/KG
BROMOMETHANE	ND	UG/KG	69	UG/KG
VINYL CHLORIDE	215	UG/KG	69	UG/KG
CHLOROETHANE	ND	UG/KG	69	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	34	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	34	UG/KG
1,1-DICHLOROETHANE	113	UG/KG	34	UG/KG
trans-1,2-DICHLOROETHYLENE	574	UG/KG	34	UG/KG
CHLOROFORM	ND	UG/KG	34	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	34	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	34	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	34	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	34	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	34	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	34	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	34	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	34	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	34	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	34	UG/KG
BENZENE	ND	UG/KG	34	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	69	UG/KG
BROMOFORM	ND	UG/KG	34	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	34	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	34	UG/KG
TOLUENE	388	UG/KG	34	UG/KG
CHLOROBENZENE	ND	UG/KG	34	UG/KG
ETHYLBENZENE	ND	UG/KG	34	UG/KG
XYLENES, TOTAL	54	UG/KG	34	UG/KG
STYRENE	ND	UG/KG	34	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	34	UG/KG
4-METHYL-2-PENTANONE	130	UG/KG	69	UG/KG
ACETONE	1380	UG/KG	69	UG/KG
2-HEXANONE	ND	UG/KG	69	UG/KG
VINYL ACETATE	ND	UG/KG	69	UG/KG
CARBON DISULFIDE	ND	UG/KG	34	UG/KG
2-BUTANONE	275	UG/KG	69	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

10890

LABORATORY NUMBER: 1211906
SAMPLE IDENTIFICATION: SB-2,3-4
3

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	73	UG/KG
BROMOMETHANE	ND	UG/KG	73	UG/KG
VINYL CHLORIDE	ND	UG/KG	73	UG/KG
CHLOROETHANE	ND	UG/KG	73	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	37	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	37	UG/KG
1,1-DICHLOROETHANE	45	UG/KG	37	UG/KG
trans-1,2-DICHLOROETHYLENE	272	UG/KG	37	UG/KG
CHLOROFORM	ND	UG/KG	37	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	37	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	37	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	37	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	37	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	37	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	37	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	37	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	37	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	37	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	37	UG/KG
BENZENE	ND	UG/KG	37	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	73	UG/KG
BROMOFORM	ND	UG/KG	37	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	37	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	37	UG/KG
TOLUENE	326	UG/KG	37	UG/KG
CHLOROBENZENE	ND	UG/KG	37	UG/KG
ETHYLBENZENE	ND	UG/KG	37	UG/KG
XYLENES, TOTAL	56	UG/KG	37	UG/KG
STYRENE	ND	UG/KG	37	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	37	UG/KG
4-METHYL-2-PENTANONE	172	UG/KG	73	UG/KG
ACETONE	1178	UG/KG	73	UG/KG
2-HEXANONE	ND	UG/KG	73	UG/KG
VINYL ACETATE	ND	UG/KG	73	UG/KG
CARBON DISULFIDE	ND	UG/KG	37	UG/KG
2-BUTANONE	277	UG/KG	73	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

10890

LABORATORY NUMBER: LOW BLANK
SAMPLE IDENTIFICATION:

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	10	UG/KG
BROMOMETHANE	ND	UG/KG	10	UG/KG
DICHLORODIFLUOROMETHANE	ND	UG/KG	5	UG/KG
VINYL CHLORIDE	ND	UG/KG	10	UG/KG
CHLOROETHANE	ND	UG/KG	10	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	5	UG/KG
TRICHLOROFLUOROMETHANE	ND	UG/KG	5	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	5	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	5	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	5	UG/KG
CHLOROFORM	ND	UG/KG	5	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	5	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	5	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	5	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	5	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	5	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	5	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	5	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	5	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	5	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	5	UG/KG
BENZENE	ND	UG/KG	5	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	10	UG/KG
BROMOFORM	ND	UG/KG	5	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	5	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	5	UG/KG
TOLUENE	ND	UG/KG	5	UG/KG
CHLOROBENZENE	ND	UG/KG	5	UG/KG
ETHYLBENZENE	ND	UG/KG	5	UG/KG
XYLENES, TOTAL	ND	UG/KG	5	UG/KG
1,2-DICHLOROBENZENE	ND	UG/KG	5	UG/KG
1,3-DICHLOROBENZENE	ND	UG/KG	5	UG/KG
1,4-DICHLOROBENZENE	ND	UG/KG	5	UG/KG
STYRENE	ND	UG/KG	5	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	5	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	10	UG/KG
ACETONE	13.6	UG/KG	10	UG/KG
2-HEXANONE	ND	UG/KG	10	UG/KG
VINYL ACETATE	ND	UG/KG	10	UG/KG
CARBON DISULFIDE	ND	UG/KG	5	UG/KG
2-BUTANONE	ND	UG/KG	10	UG/KG
ACROLEIN	ND	UG/KG	100	UG/KG
ACRYLONITRILE	ND	UG/KG	100	UG/KG

DATA REVIEW _____ DATE _____

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

10890

LABORATORY NUMBER: 1211301
SAMPLE IDENTIFICATION: SB-1,S-4

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	77	UG/KG
BROMOMETHANE	ND	UG/KG	77	UG/KG
VINYL CHLORIDE	240	UG/KG	77	UG/KG
CHLOROETHANE	ND	UG/KG	77	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	38	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	38	UG/KG
1,1-DICHLOROETHANE	419	UG/KG	38	UG/KG
trans-1,2-DICHLOROETHYLENE	1668	UG/KG	38	UG/KG
CHLOROFORM	ND	UG/KG	38	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	38	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	38	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	38	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	38	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	38	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	38	UG/KG
TRICHLOROETHYLENE	1584	UG/KG	38	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	38	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	38	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	38	UG/KG
BENZENE	ND	UG/KG	38	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	77	UG/KG
BROMOFORM	ND	UG/KG	38	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	38	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	38	UG/KG
TOLUENE	2357	UG/KG	38	UG/KG
CHLOROBENZENE	ND	UG/KG	38	UG/KG
ETHYLBENZENE	41	UG/KG	38	UG/KG
XYLENES, TOTAL	230	UG/KG	38	UG/KG
STYRENE	ND	UG/KG	38	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	38	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	77	UG/KG
ACETONE	273	UG/KG	77	UG/KG
2-HEXANONE	ND	UG/KG	77	UG/KG
VINYL ACETATE	ND	UG/KG	77	UG/KG
CARBON DISULFIDE	ND	UG/KG	38	UG/KG
2-BUTANONE	ND	UG/KG	77	UG/KG

VOA DATA REDUCTION SHEET #1

DG

10590
10690
1211902

SB-1,S-5

10890

% MATRIX 71.13%
PURGE VOL 5 MLS
PURGE WT. 5 GRAMS
DILUTION 250
UNITS UG/KG
MATRIX SOIL

COMPOUND	READING	RESULT	MDL	MATRIX MDL
CHLOROMETHANE	0	.0	10	3515
BROMOMETHANE	0	.0	10	3515
DICHLORODIFLUOROMETHANE	0	.0	5	1757
VINYL CHLORIDE	0	.0	10	3515
CHLOROETHANE	0	.0	10	3515
METHYLENE CHLORIDE	0	.0	5	1757
TRICHLOROFLUOROMETHANE	0	.0	5	1757
1,1-DICHLOROETHYLENE	0	.0	5	1757
1,1-DICHLOROETHANE	0	.0	5	1757
trans-1,2-DICHLOROETHYLENE	2.3	808.4	5	1757
CHLOROFORM	0	.0	5	1757
1,2-DICHLOROETHANE	0	.0	5	1757
1,1,1-TRICHLOROETHANE	0	.0	5	1757
CARBON TETRACHLORIDE	0	.0	5	1757
BROMODICHLOROMETHANE	0	.0	5	1757
1,2-DICHLOROPROPANE	0	.0	5	1757
trans-1,3-DICHLOROPROPENE	0	.0	5	1757
TRICHLOROETHYLENE	3.2	1124.7	5	1757
DIBROMOCHLOROMETHANE	0	.0	5	1757
1,1,2-TRICHLOROETHANE	0	.0	5	1757
cis-1,3-DICHLOROPROPYLENE	0	.0	5	1757
BENZENE	0	.0	5	1757
2-CHLOROETHYLVINYL ETHER	0	.0	10	3515
BROMOFORM	0	.0	5	1757
1,1,2,2-TETRACHLOROETHANE	0	.0	5	1757
TETRACHLOROETHYLENE	0	.0	5	1757
TOLUENE	4.2	1476.2	5	1757
CHLOROBENZENE	0	.0	5	1757
ETHYLBENZENE	0	.0	5	1757
XYLENES, TOTAL	0	.0	5	1757
1,2-DICHLOROBENZENE	0	.0	5	1757
1,3-DICHLOROBENZENE	0	.0	5	1757
1,4-DICHLOROBENZENE	0	.0	5	1757
STYRENE	0	.0	5	1757
cis-1,2-DICHLOROETHYLENE	0	.0	5	1757
4-METHYL-2-PENTANONE	0	.0	10	3515
ACETONE	0	.0	10	3515
2-HEXANONE	0	.0	10	3515
VINYL ACETATE	0	.0	10	3515
CARBON DISULFIDE	0	.0	5	1757
2-BUTANONE	0	.0	10	3515

3.4

VOA DATA REDUCTION SHEET #1

DG

10590
10690
1211903

SB-1,S-6

10890

% MATRIX 78.19%
PURGE VOL 5 MLS
PURGE WT. 5 GRAMS
DILUTION 1250
UNITS UG/KG
MATRIX SOIL

COMPOUND	READING	RESULT	MDL	MATRIX MDL
CHLOROMETHANE	0	.0	10	15987
BROMOMETHANE	0	.0	10	15987
DICHLORODIFLUOROMETHANE	0	.0	5	7993
VINYL CHLORIDE	0	.0	10	15987
CHLOROETHANE	0	.0	10	15987
METHYLENE CHLORIDE	0	.0	5	7993
TRICHLOROFLUOROMETHANE	0	.0	5	7993
1,1-DICHLOROETHYLENE	0	.0	5	7993
1,1-DICHLOROETHANE	0	.0	5	7993
trans-1,2-DICHLOROETHYLENE	0	.0	5	7993
CHLOROFORM	0	.0	5	7993
1,2-DICHLOROETHANE	0	.0	5	7993
1,1,1-TRICHLOROETHANE	0	.0	5	7993
CARBON TETRACHLORIDE	0	.0	5	7993
BROMODICHLOROMETHANE	0	.0	5	7993
1,2-DICHLOROPROPANE	0	.0	5	7993
trans-1,3-DICHLOROPROPENE	0	.0	5	7993
TRICHLOROETHYLENE	0	.0	5	7993
DIBROMOCHLOROMETHANE	0	.0	5	7993
1,1,2-TRICHLOROETHANE	0	.0	5	7993
cis-1,3-DICHLOROPROPYLENE	0	.0	5	7993
BENZENE	0	.0	5	7993
2-CHLOROETHYLVINYL ETHER	0	.0	10	15987
BROMOFORM	0	.0	5	7993
1,1,2,2-TETRACHLOROETHANE	0	.0	5	7993
TETRACHLOROETHYLENE	0	.0	5	7993
TOLUENE	0	.0	5	7993
CHLOROBENZENE	0	.0	5	7993
ETHYLBENZENE	0	.0	5	7993
XYLENES, TOTAL	0	.0	5	7993
1,2-DICHLOROBENZENE	0	.0	5	7993
1,3-DICHLOROBENZENE	0	.0	5	7993
1,4-DICHLOROBENZENE	0	.0	5	7993
STYRENE	0	.0	5	7993
cis-1,2-DICHLOROETHYLENE	0	.0	5	7993
4-METHYL-2-PENTANONE	0	.0	10	15987
ACETONE	0	.0	10	15987
2-HEXANONE	0	.0	10	15987
VINYL ACETATE	0	.0	10	15987
CARBON DISULFIDE	0	.0	5	7993
2-BUTANONE	0	.0	10	15987
ACROLEIN	0	.0	100	159867
ACRYLONITRILE	0	.0	100	159867

0

VOA DATA REDUCTION SHEET #1

DG
10590
10690
1211904
SB-2,S-1
10890

% MATRIX 67.38%
PURGE VOL 5 MLS
PURGE WT. 5 GRAMS
DILUTION 250
UNITS UG/KG
MATRIX SOIL

COMPOUND	READING	RESULT	MDL	MATRIX MDL
CHLOROMETHANE	0	.0	10	3710
BROMOMETHANE	0	.0	10	3710
DICHLORODIFLUOROMETHANE	0	.0	5	1855
VINYL CHLORIDE	0	.0	10	3710
CHLOROETHANE	0	.0	10	3710
METHYLENE CHLORIDE	0	.0	5	1855
TRICHLOROFLUOROMETHANE	0	.0	5	1855
1,1-DICHLOROETHYLENE	0	.0	5	1855
1,1-DICHLOROETHANE	0	.0	5	1855
trans-1,2-DICHLOROETHYLENE	2.8	1038.9	5	1855
CHLOROFORM	0	.0	5	1855
1,2-DICHLOROETHANE	0	.0	5	1855
1,1,1-TRICHLOROETHANE	0	.0	5	1855
CARBON TETRACHLORIDE	0	.0	5	1855
BROMODICHLOROMETHANE	0	.0	5	1855
1,2-DICHLOROPROPANE	0	.0	5	1855
trans-1,3-DICHLOROPROPENE	0	.0	5	1855
TRICHLOROETHYLENE	0	.0	5	1855
DIBROMOCHLOROMETHANE	0	.0	5	1855
1,1,2-TRICHLOROETHANE	0	.0	5	1855
cis-1,3-DICHLOROPROPYLENE	0	.0	5	1855
BENZENE	0	.0	5	1855
2-CHLOROETHYLVINYL ETHER	0	.0	10	3710
BROMOFORM	0	.0	5	1855
1,1,2,2-TETRACHLOROETHANE	0	.0	5	1855
TETRACHLOROETHYLENE	0	.0	5	1855
TOLUENE	3	1113.1	5	1855
CHLOROBENZENE	0	.0	5	1855
ETHYLBENZENE	0	.0	5	1855
XYLENES, TOTAL	0	.0	5	1855
1,2-DICHLOROBENZENE	0	.0	5	1855
1,3-DICHLOROBENZENE	0	.0	5	1855
1,4-DICHLOROBENZENE	0	.0	5	1855
STYRENE	0	.0	5	1855
cis-1,2-DICHLOROETHYLENE	0	.0	5	1855
4-METHYL-2-PENTANONE	0	.0	10	3710
ACETONE	21	7791.6	10	3710
2-HEXANONE	0	.0	10	3710
VINYL ACETATE	0	.0	10	3710
CARBON DISULFIDE	0	.0	5	1855
2-BUTANONE	0	.0	10	3710

2.1

VOA DATA REDUCTION SHEET #1

DG

10590
10690
1211905

SB-2,S-2

10890

% MATRIX 72.83%
PURGE VOL 5 MLS
PURGE WT. 5 GRAMS
DILUTION 250
UNITS UG/KG
MATRIX SOIL

COMPOUND	READING	RESULT	MDL	MATRIX MDL
CHLOROMETHANE	0	.0	10	3433
BROMOMETHANE	0	.0	10	3433
DICHLORODIFLUOROMETHANE	0	.0	5	1716
VINYL CHLORIDE	0	.0	10	3433
CHLOROETHANE	0	.0	10	3433
METHYLENE CHLORIDE	0	.0	5	1716
TRICHLOROFLUOROMETHANE	0	.0	5	1716
1,1-DICHLOROETHYLENE	0	.0	5	1716
1,1-DICHLOROETHANE	0	.0	5	1716
trans-1,2-DICHLOROETHYLENE	0	.0	5	1716
CHLOROFORM	0	.0	5	1716
1,2-DICHLOROETHANE	0	.0	5	1716
1,1,1-TRICHLOROETHANE	0	.0	5	1716
CARBON TETRACHLORIDE	0	.0	5	1716
BROMODICHLOROMETHANE	0	.0	5	1716
1,2-DICHLOROPROPANE	0	.0	5	1716
trans-1,3-DICHLOROPROPENE	0	.0	5	1716
TRICHLOROETHYLENE	0	.0	5	1716
DIBROMOCHLOROMETHANE	0	.0	5	1716
1,1,2-TRICHLOROETHANE	0	.0	5	1716
cis-1,3-DICHLOROPROPYLENE	0	.0	5	1716
BENZENE	0	.0	5	1716
2-CHLOROETHYLVINYL ETHER	0	.0	10	3433
BROMOFORM	0	.0	5	1716
1,1,2,2-TETRACHLOROETHANE	0	.0	5	1716
TETRACHLOROETHYLENE	0	.0	5	1716
TOLUENE	0	.0	5	1716
CHLOROBENZENE	0	.0	5	1716
ETHYLBENZENE	0	.0	5	1716
XYLENES, TOTAL	0	.0	5	1716
1,2-DICHLOROBENZENE	0	.0	5	1716
1,3-DICHLOROBENZENE	0	.0	5	1716
1,4-DICHLOROBENZENE	0	.0	5	1716
STYRENE	0	.0	5	1716
cis-1,2-DICHLOROETHYLENE	0	.0	5	1716
4-METHYL-2-PENTANONE	0	.0	10	3433
ACETONE	0	.0	10	3433
2-HEXANONE	0	.0	10	3433
VINYL ACETATE	0	.0	10	3433
CARBON DISULFIDE	0	.0	5	1716
2-BUTANONE	0	.0	10	3433

0

VOA DATA REDUCTION SHEET #1

DG

10590
10690
1211906

SB-2,S-3

10890

% MATRIX 68.32%
PURGE VOL 5 MLS
PURGE WT. 5 GRAMS
DILUTION 250
UNITS UG/KG
MATRIX SOIL

COMPOUND	READING	RESULT	MDL	MATRIX MDL
CHLOROMETHANE	0	.0	10	3659
BROMOMETHANE	0	.0	10	3659
DICHLORODIFLUOROMETHANE	0	.0	5	1830
VINYL CHLORIDE	0	.0	10	3659
CHLOROETHANE	0	.0	10	3659
METHYLENE CHLORIDE	0	.0	5	1830
TRICHLOROFLUOROMETHANE	0	.0	5	1830
1,1-DICHLOROETHYLENE	0	.0	5	1830
1,1-DICHLOROETHANE	0	.0	5	1830
trans-1,2-DICHLOROETHYLENE	0	.0	5	1830
CHLOROFORM	0	.0	5	1830
1,2-DICHLOROETHANE	0	.0	5	1830
1,1,1-TRICHLOROETHANE	0	.0	5	1830
CARBON TETRACHLORIDE	0	.0	5	1830
BROMODICHLOROMETHANE	0	.0	5	1830
1,2-DICHLOROPROPANE	0	.0	5	1830
trans-1,3-DICHLOROPROPENE	0	.0	5	1830
TRICHLOROETHYLENE	0	.0	5	1830
DIBROMOCHLOROMETHANE	0	.0	5	1830
1,1,2-TRICHLOROETHANE	0	.0	5	1830
cis-1,3-DICHLOROPROPYLENE	0	.0	5	1830
BENZENE	0	.0	5	1830
2-CHLOROETHYLVINYL ETHER	0	.0	10	3659
BROMOFORM	0	.0	5	1830
1,1,2,2-TETRACHLOROETHANE	0	.0	5	1830
TETRACHLOROETHYLENE	0	.0	5	1830
TOLUENE	3	1097.8	5	1830
CHLOROBENZENE	0	.0	5	1830
ETHYLBENZENE	0	.0	5	1830
XYLENES, TOTAL	0	.0	5	1830
1,2-DICHLOROBENZENE	0	.0	5	1830
1,3-DICHLOROBENZENE	0	.0	5	1830
1,4-DICHLOROBENZENE	0	.0	5	1830
STYRENE	0	.0	5	1830
cis-1,2-DICHLOROETHYLENE	0	.0	5	1830
4-METHYL-2-PENTANONE	0	.0	10	3659
ACETONE	0	.0	10	3659
2-HEXANONE	0	.0	10	3659
VINYL ACETATE	0	.0	10	3659
CARBON DISULFIDE	0	.0	5	1830
2-BUTANONE	0	.0	10	3659

1.1

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT 11290
DG

LABORATORY NUMBER: 1213001
SAMPLE IDENTIFICATION: DGC-16D, 0-15
5

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	16	UG/KG
BROMOMETHANE	ND	UG/KG	16	UG/KG
VINYL CHLORIDE	ND	UG/KG	16	UG/KG
CHLOROETHANE	ND	UG/KG	16	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	8	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
CHLOROFORM	ND	UG/KG	8	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	8	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	8	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	8	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	8	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	8	UG/KG
TRICHLOROETHYLENE	8	UG/KG	8	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	8	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	8	UG/KG
BENZENE	ND	UG/KG	8	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	16	UG/KG
BROMOFORM	ND	UG/KG	8	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	8	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	8	UG/KG
TOLUENE	9	UG/KG	8	UG/KG
CHLOROBENZENE	ND	UG/KG	8	UG/KG
ETHYLBENZENE	ND	UG/KG	8	UG/KG
XYLENES, TOTAL	ND	UG/KG	8	UG/KG
STYRENE	ND	UG/KG	8	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	16	UG/KG
ACETONE	ND	UG/KG	16	UG/KG
2-HEXANONE	ND	UG/KG	16	UG/KG
VINYL ACETATE	ND	UG/KG	16	UG/KG
CARBON DISULFIDE	125	UG/KG	8	UG/KG
2-BUTANONE	ND	UG/KG	16	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT 11290
DG

LABORATORY NUMBER: 1213002
SAMPLE IDENTIFICATION: D6C-16D, 0-1.6
5

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	16	UG/KG
BROMOMETHANE	ND	UG/KG	16	UG/KG
VINYL CHLORIDE	ND	UG/KG	16	UG/KG
CHLOROETHANE	ND	UG/KG	16	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	8	UG/KG
trans-1,2-DICHLOROETHYLENE	10	UG/KG	8	UG/KG
CHLOROFORM	ND	UG/KG	8	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	8	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	8	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	8	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	8	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	8	UG/KG
TRICHLOROETHYLENE	25	UG/KG	8	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	8	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	8	UG/KG
BENZENE	ND	UG/KG	8	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	16	UG/KG
BROMOFORM	ND	UG/KG	8	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	8	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	8	UG/KG
TOLUENE	14	UG/KG	8	UG/KG
CHLOROBENZENE	ND	UG/KG	8	UG/KG
ETHYLBENZENE	ND	UG/KG	8	UG/KG
XYLENES, TOTAL	ND	UG/KG	8	UG/KG
STYRENE	ND	UG/KG	8	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	16	UG/KG
ACETONE	26	UG/KG	16	UG/KG
2-HEXANONE	ND	UG/KG	16	UG/KG
VINYL ACETATE	ND	UG/KG	16	UG/KG
CARBON DISULFIDE	16	UG/KG	8	UG/KG
2-BUTANONE	ND	UG/KG	16	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

11290

LABORATORY NUMBER: 1213003
SAMPLE IDENTIFICATION: DGC-16D,S-17

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	16	UG/KG
BROMOMETHANE	ND	UG/KG	16	UG/KG
VINYL CHLORIDE	ND	UG/KG	16	UG/KG
CHLOROETHANE	ND	UG/KG	16	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	8	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
CHLOROFORM	ND	UG/KG	8	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	8	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	8	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	8	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	8	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	8	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	8	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	8	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	8	UG/KG
BENZENE	ND	UG/KG	8	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	16	UG/KG
BROMOFORM	ND	UG/KG	8	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	8	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	8	UG/KG
TOLUENE	ND	UG/KG	8	UG/KG
CHLOROBENZENE	ND	UG/KG	8	UG/KG
ETHYLBENZENE	ND	UG/KG	8	UG/KG
XYLENES, TOTAL	ND	UG/KG	8	UG/KG
STYRENE	ND	UG/KG	8	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	16	UG/KG
ACETONE	24	UG/KG	16	UG/KG
2-HEXANONE	ND	UG/KG	16	UG/KG
VINYL ACETATE	ND	UG/KG	16	UG/KG
CARBON DISULFIDE	ND	UG/KG	8	UG/KG
2-BUTANONE	ND	UG/KG	16	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT 11290
DG

LABORATORY NUMBER: LOW BLANK
SAMPLE IDENTIFICATION:

COMPOUND	RESULT		DETECTION LIMIT
CHLOROMETHANE	ND	UG/KG	10 UG/KG
BROMOMETHANE	ND	UG/KG	10 UG/KG
VINYL CHLORIDE	ND	UG/KG	10 UG/KG
CHLOROETHANE	ND	UG/KG	10 UG/KG
METHYLENE CHLORIDE	ND	UG/KG	5 UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	5 UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	5 UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	5 UG/KG
CHLOROFORM	ND	UG/KG	5 UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	5 UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	5 UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	5 UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	5 UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	5 UG/KG
trans-1,3-DICHLOROPPROPENE	ND	UG/KG	5 UG/KG
TRICHLOROETHYLENE	ND	UG/KG	5 UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	5 UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	5 UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	5 UG/KG
BENZENE	ND	UG/KG	5 UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	10 UG/KG
BROMOFORM	ND	UG/KG	5 UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	5 UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	5 UG/KG
TOLUENE	ND	UG/KG	5 UG/KG
CHLOROBENZENE	ND	UG/KG	5 UG/KG
ETHYLBENZENE	ND	UG/KG	5 UG/KG
XYLENES, TOTAL	ND	UG/KG	5 UG/KG
STYRENE	ND	UG/KG	5 UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	5 UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	10 UG/KG
ACETONE	15	UG/KG	10 UG/KG
2-HEXANONE	ND	UG/KG	10 UG/KG
VINYL ACETATE	ND	UG/KG	10 UG/KG
CARBON DISULFIDE	ND	UG/KG	5 UG/KG
2-BUTANONE	ND	UG/KG	10 UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

11190

CLIENT
DG

LABORATORY NUMBER: 1212101
SAMPLE IDENTIFICATION: TB-6B,S-6

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	74	UG/KG
BROMOMETHANE	ND	UG/KG	74	UG/KG
VINYL CHLORIDE	ND	UG/KG	74	UG/KG
CHLOROETHANE	ND	UG/KG	74	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	37	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	37	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	37	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	37	UG/KG
CHLOROFORM	ND	UG/KG	37	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	37	UG/KG
1,1,1-TRICHLOROETHANE	74	UG/KG	37	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	37	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	37	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	37	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	37	UG/KG
TRICHLOROETHYLENE	715	UG/KG	37	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	37	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	37	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	37	UG/KG
BENZENE	ND	UG/KG	37	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	74	UG/KG
BROMOFORM	ND	UG/KG	37	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	37	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	37	UG/KG
TOLUENE	580	UG/KG	37	UG/KG
CHLOROBENZENE	ND	UG/KG	37	UG/KG
ETHYLBENZENE	ND	UG/KG	37	UG/KG
XYLENES, TOTAL	62	UG/KG	37	UG/KG
STYRENE	ND	UG/KG	37	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	37	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	74	UG/KG
ACETONE	ND	UG/KG	74	UG/KG
2-HEXANONE	ND	UG/KG	74	UG/KG
VINYL ACETATE	ND	UG/KG	74	UG/KG
CARBON DISULFIDE	62	UG/KG	37	UG/KG
2-BUTANONE	ND	UG/KG	74	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

11190

CLIENT
DG

LABORATORY NUMBER: 1212102
SAMPLE IDENTIFICATION: TB-68,S-7

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	15	UG/KG
BROMOMETHANE	ND	UG/KG	15	UG/KG
VINYL CHLORIDE	ND	UG/KG	15	UG/KG
CHLOROETHANE	ND	UG/KG	15	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	7	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	7	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
CHLOROFORM	ND	UG/KG	7	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	7	UG/KG
1,1,1-TRICHLOROETHANE	20	UG/KG	7	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	7	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	7	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	7	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	7	UG/KG
TRICHLOROETHYLENE	106	UG/KG	7	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	7	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	7	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	7	UG/KG
BENZENE	ND	UG/KG	7	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	15	UG/KG
BROMOFORM	ND	UG/KG	7	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	7	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	7	UG/KG
TOLUENE	90	UG/KG	7	UG/KG
CHLOROBENZENE	ND	UG/KG	7	UG/KG
ETHYLBENZENE	ND	UG/KG	7	UG/KG
XYLENES, TOTAL	ND	UG/KG	7	UG/KG
STYRENE	ND	UG/KG	7	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	15	UG/KG
ACETONE	88	UG/KG	15	UG/KG
2-HEXANONE	ND	UG/KG	15	UG/KG
VINYL ACETATE	ND	UG/KG	15	UG/KG
CARBON DISULFIDE	24	UG/KG	7	UG/KG
2-BUTANONE	ND	UG/KG	15	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

11190

CLIENT
DG

LABORATORY NUMBER: 1212103
SAMPLE IDENTIFICATION: TB-6B,S-B

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	14	UG/KG
BROMOMETHANE	ND	UG/KG	14	UG/KG
VINYL CHLORIDE	ND	UG/KG	14	UG/KG
CHLOROETHANE	ND	UG/KG	14	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	7	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	7	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
CHLOROFORM	ND	UG/KG	7	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	7	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	7	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	7	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	7	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	7	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	7	UG/KG
TRICHLOROETHYLENE	7	UG/KG	7	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	7	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	7	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	7	UG/KG
BENZENE	ND	UG/KG	7	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	14	UG/KG
BROMOFORM	ND	UG/KG	7	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	7	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	7	UG/KG
TOLUENE	7	UG/KG	7	UG/KG
CHLOROBENZENE	ND	UG/KG	7	UG/KG
ETHYLBENZENE	ND	UG/KG	7	UG/KG
XYLENES, TOTAL	ND	UG/KG	7	UG/KG
STYRENE	ND	UG/KG	7	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	14	UG/KG
ACETONE	71	UG/KG	14	UG/KG
2-HEXANONE	ND	UG/KG	14	UG/KG
VINYL ACETATE	ND	UG/KG	14	UG/KG
CARBON DISULFIDE	17	UG/KG	7	UG/KG
2-BUTANONE	ND	UG/KG	14	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

11190

LABORATORY NUMBER: 1212501
SAMPLE IDENTIFICATION: TB-9B,S-11

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	16	UG/KG
BROMOMETHANE	ND	UG/KG	16	UG/KG
VINYL CHLORIDE	ND	UG/KG	16	UG/KG
CHLOROETHANE	ND	UG/KG	16	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	8	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
CHLOROFORM	ND	UG/KG	8	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	8	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	8	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	8	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	8	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	8	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	8	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	8	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	8	UG/KG
BENZENE	ND	UG/KG	8	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	16	UG/KG
BROMOFORM	ND	UG/KG	8	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	8	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	8	UG/KG
TOLUENE	ND	UG/KG	8	UG/KG
CHLOROBENZENE	ND	UG/KG	8	UG/KG
ETHYLBENZENE	ND	UG/KG	8	UG/KG
XYLENES, TOTAL	ND	UG/KG	8	UG/KG
STYRENE	ND	UG/KG	8	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	16	UG/KG
ACETONE	70	UG/KG	16	UG/KG
2-HEXANONE	ND	UG/KG	16	UG/KG
VINYL ACETATE	ND	UG/KG	16	UG/KG
CARBON DISULFIDE	23	UG/KG	8	UG/KG
2-BUTANONE	ND	UG/KG	16	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

11190

CLIENT
DG

LABORATORY NUMBER: 1212502
SAMPLE IDENTIFICATION: TB-9B,S-12

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	16	UG/KG
BROMOMETHANE	ND	UG/KG	16	UG/KG
VINYL CHLORIDE	ND	UG/KG	16	UG/KG
CHLOROETHANE	ND	UG/KG	16	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	8	UG/KG
trans-1,2-DICHLOROETHYLENE	16	UG/KG	8	UG/KG
CHLOROFORM	ND	UG/KG	8	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	8	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	8	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	8	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	8	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	8	UG/KG
TRICHLOROETHYLENE	44	UG/KG	8	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	8	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	8	UG/KG
BENZENE	ND	UG/KG	8	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	16	UG/KG
BROMOFORM	ND	UG/KG	8	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	8	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	8	UG/KG
TOLUENE	22	UG/KG	8	UG/KG
CHLOROBENZENE	ND	UG/KG	8	UG/KG
ETHYLBENZENE	ND	UG/KG	8	UG/KG
XYLENES, TOTAL	ND	UG/KG	8	UG/KG
STYRENE	ND	UG/KG	8	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	16	UG/KG
ACETONE	62	UG/KG	16	UG/KG
2-HEXANONE	ND	UG/KG	16	UG/KG
VINYL ACETATE	ND	UG/KG	16	UG/KG
CARBON DISULFIDE	19	UG/KG	8	UG/KG
2-BUTANONE	ND	UG/KG	16	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

11190

LABORATORY NUMBER: 1212503
SAMPLE IDENTIFICATION: TB-9B,S-13

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	16	UG/KG
BROMOMETHANE	ND	UG/KG	16	UG/KG
VINYL CHLORIDE	ND	UG/KG	16	UG/KG
CHLOROETHANE	ND	UG/KG	16	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	8	UG/KG
trans-1,2-DICHLOROETHYLENE	8	UG/KG	8	UG/KG
CHLOROFORM	ND	UG/KG	8	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	8	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	8	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	8	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	8	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	8	UG/KG
TRICHLOROETHYLENE	14	UG/KG	8	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	8	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	8	UG/KG
BENZENE	ND	UG/KG	8	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	16	UG/KG
BROMOFORM	ND	UG/KG	8	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	8	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	8	UG/KG
TOLUENE	8	UG/KG	8	UG/KG
CHLOROBENZENE	ND	UG/KG	8	UG/KG
ETHYLBENZENE	ND	UG/KG	8	UG/KG
XYLENES, TOTAL	ND	UG/KG	8	UG/KG
STYRENE	ND	UG/KG	8	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	16	UG/KG
ACETONE	42	UG/KG	16	UG/KG
2-HEXANONE	ND	UG/KG	16	UG/KG
VINYL ACETATE	ND	UG/KG	16	UG/KG
CARBON DISULFIDE	14	UG/KG	8	UG/KG
2-BUTANONE	ND	UG/KG	16	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

11190

CLIENT
DG

LABORATORY NUMBER: 1212104
SAMPLE IDENTIFICATION: TB-11B,S-8

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	16	UG/KG
BROMOMETHANE	ND	UG/KG	16	UG/KG
VINYL CHLORIDE	ND	UG/KG	16	UG/KG
CHLOROETHANE	ND	UG/KG	16	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	8	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
CHLOROFORM	ND	UG/KG	8	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	8	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	8	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	8	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	8	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	8	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	8	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	8	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	8	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	8	UG/KG
BENZENE	ND	UG/KG	8	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	16	UG/KG
BROMOFORM	ND	UG/KG	8	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	8	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	8	UG/KG
TOLUENE	8	UG/KG	8	UG/KG
CHLOROBENZENE	ND	UG/KG	8	UG/KG
ETHYLBENZENE	ND	UG/KG	8	UG/KG
XYLENES, TOTAL	ND	UG/KG	8	UG/KG
STYRENE	ND	UG/KG	8	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	8	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	16	UG/KG
ACETONE	38	UG/KG	16	UG/KG
2-HEXANONE	ND	UG/KG	16	UG/KG
VINYL ACETATE	ND	UG/KG	16	UG/KG
CARBON DISULFIDE	ND	UG/KG	8	UG/KG
2-BUTANONE	ND	UG/KG	16	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

11190

LABORATORY NUMBER: 1212105
SAMPLE IDENTIFICATION: TB-11B,S-9

COMPOUND	RESULT		DETECTION LIMIT
CHLOROMETHANE	ND	UG/KG	15 UG/KG
BROMOMETHANE	ND	UG/KG	15 UG/KG
VINYL CHLORIDE	ND	UG/KG	15 UG/KG
CHLOROETHANE	ND	UG/KG	15 UG/KG
METHYLENE CHLORIDE	ND	UG/KG	8 UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	8 UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	8 UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	8 UG/KG
CHLOROFORM	ND	UG/KG	8 UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	8 UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	8 UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	8 UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	8 UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	8 UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	8 UG/KG
TRICHLOROETHYLENE	ND	UG/KG	8 UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	8 UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	8 UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	8 UG/KG
BENZENE	ND	UG/KG	8 UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	15 UG/KG
BROMOFORM	ND	UG/KG	8 UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	8 UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	8 UG/KG
TOLUENE	ND	UG/KG	8 UG/KG
CHLOROBENZENE	ND	UG/KG	8 UG/KG
ETHYLBENZENE	ND	UG/KG	8 UG/KG
XYLENES, TOTAL	ND	UG/KG	8 UG/KG
STYRENE	ND	UG/KG	8 UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	8 UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	15 UG/KG
ACETONE	70	UG/KG	15 UG/KG
2-HEXANONE	ND	UG/KG	15 UG/KG
VINYL ACETATE	ND	UG/KG	15 UG/KG
CARBON DISULFIDE	ND	UG/KG	8 UG/KG
2-BUTANONE	ND	UG/KG	15 UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

11190

CLIENT
DG

LABORATORY NUMBER: LOW BLANK
SAMPLE IDENTIFICATION:

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	10	UG/KG
BROMOMETHANE	ND	UG/KG	10	UG/KG
VINYL CHLORIDE	ND	UG/KG	10	UG/KG
CHLOROETHANE	ND	UG/KG	10	UG/KG
METHYLENE CHLORIDE	7	UG/KG	5	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	5	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	5	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	5	UG/KG
CHLOROFORM	ND	UG/KG	5	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	5	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	5	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	5	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	5	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	5	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	5	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	5	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	5	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	5	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	5	UG/KG
BENZENE	ND	UG/KG	5	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	10	UG/KG
BROMOFORM	ND	UG/KG	5	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	5	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	5	UG/KG
TOLUENE	ND	UG/KG	5	UG/KG
CHLOROBENZENE	ND	UG/KG	5	UG/KG
ETHYLBENZENE	ND	UG/KG	5	UG/KG
XYLENES, TOTAL	ND	UG/KG	5	UG/KG
STYRENE	ND	UG/KG	5	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	5	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	10	UG/KG
ACETONE	42	UG/KG	10	UG/KG
2-HEXANONE	ND	UG/KG	10	UG/KG
VINYL ACETATE	ND	UG/KG	10	UG/KG
CARBON DISULFIDE	ND	UG/KG	5	UG/KG
2-BUTANONE	ND	UG/KG	10	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

11990

LABORATORY NUMBER: 1214101
SAMPLE IDENTIFICATION: SB-1A,S-1

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	14	UG/KG
BROMOMETHANE	ND	UG/KG	14	UG/KG
VINYL CHLORIDE	ND	UG/KG	14	UG/KG
CHLOROETHANE	ND	UG/KG	14	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	7	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	7	UG/KG
trans-1,2-DICHLOROETHYLENE	10	UG/KG	7	UG/KG
CHLOROFORM	ND	UG/KG	7	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	7	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	7	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	7	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	7	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	7	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	7	UG/KG
TRICHLOROETHYLENE	23	UG/KG	7	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	7	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	7	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	7	UG/KG
BENZENE	ND	UG/KG	7	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	14	UG/KG
BROMOFORM	ND	UG/KG	7	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	7	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	7	UG/KG
TOLUENE	ND	UG/KG	7	UG/KG
CHLOROBENZENE	ND	UG/KG	7	UG/KG
ETHYLBENZENE	ND	UG/KG	7	UG/KG
XYLENES, TOTAL	ND	UG/KG	7	UG/KG
STYRENE	ND	UG/KG	7	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	14	UG/KG
ACETONE	18	UG/KG	14	UG/KG
2-HEXANONE	ND	UG/KG	14	UG/KG
VINYL ACETATE	ND	UG/KG	14	UG/KG
CARBON DISULFIDE	ND	UG/KG	7	UG/KG
2-BUTANONE	ND	UG/KG	14	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

11990

LABORATORY NUMBER: 1214507
SAMPLE IDENTIFICATION: SB-3,S-3

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	23	UG/KG
BROMOMETHANE	ND	UG/KG	23	UG/KG
VINYL CHLORIDE	ND	UG/KG	23	UG/KG
CHLOROETHANE	ND	UG/KG	23	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	12	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	12	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	12	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	12	UG/KG
CHLOROFORM	ND	UG/KG	12	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	12	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	12	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	12	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	12	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	12	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	12	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	12	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	12	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	12	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	12	UG/KG
BENZENE	ND	UG/KG	12	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	23	UG/KG
BROMOFORM	ND	UG/KG	12	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	12	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	12	UG/KG
TOLUENE	ND	UG/KG	12	UG/KG
CHLOROBENZENE	ND	UG/KG	12	UG/KG
ETHYLBENZENE	ND	UG/KG	12	UG/KG
XYLENES, TOTAL	ND	UG/KG	12	UG/KG
STYRENE	ND	UG/KG	12	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	12	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	23	UG/KG
ACETONE	43	UG/KG	23	UG/KG
2-HEXANONE	ND	UG/KG	23	UG/KG
VINYL ACETATE	ND	UG/KG	23	UG/KG
CARBON DISULFIDE	ND	UG/KG	12	UG/KG
2-BUTANONE	ND	UG/KG	23	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

11990

LABORATORY NUMBER: 1214508
SAMPLE IDENTIFICATION: SB-3,S-4

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	15	UG/KG
BROMOMETHANE	ND	UG/KG	15	UG/KG
VINYL CHLORIDE	ND	UG/KG	15	UG/KG
CHLOROETHANE	ND	UG/KG	15	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	7	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	7	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
CHLOROFORM	ND	UG/KG	7	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	7	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	7	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	7	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	7	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	7	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	7	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	7	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	7	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	7	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	7	UG/KG
BENZENE	ND	UG/KG	7	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	15	UG/KG
BROMOFORM	ND	UG/KG	7	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	7	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	7	UG/KG
TOLUENE	ND	UG/KG	7	UG/KG
CHLOROBENZENE	ND	UG/KG	7	UG/KG
ETHYLBENZENE	ND	UG/KG	7	UG/KG
XYLENES, TOTAL	ND	UG/KG	7	UG/KG
STYRENE	ND	UG/KG	7	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	15	UG/KG
ACETONE	49	UG/KG	15	UG/KG
2-HEXANONE	ND	UG/KG	15	UG/KG
VINYL ACETATE	ND	UG/KG	15	UG/KG
CARBON DISULFIDE	ND	UG/KG	7	UG/KG
2-BUTANONE	ND	UG/KG	15	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

11990

LABORATORY NUMBER: 1214506
SAMPLE IDENTIFICATION: SB-3,S-2

COMPOUND	RESULT		DETECTION LIMIT
CHLOROMETHANE	ND	UG/KG	30 UG/KG
BROMOMETHANE	ND	UG/KG	30 UG/KG
VINYL CHLORIDE	ND	UG/KG	30 UG/KG
CHLOROETHANE	ND	UG/KG	30 UG/KG
METHYLENE CHLORIDE	ND	UG/KG	15 UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	15 UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	15 UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	15 UG/KG
CHLOROFORM	ND	UG/KG	15 UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	15 UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	15 UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	15 UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	15 UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	15 UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	15 UG/KG
TRICHLOROETHYLENE	ND	UG/KG	15 UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	15 UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	15 UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	15 UG/KG
BENZENE	ND	UG/KG	15 UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	30 UG/KG
BROMOFORM	ND	UG/KG	15 UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	15 UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	15 UG/KG
TOLUENE	ND	UG/KG	15 UG/KG
CHLOROBENZENE	ND	UG/KG	15 UG/KG
ETHYLBENZENE	ND	UG/KG	15 UG/KG
XYLENES, TOTAL	ND	UG/KG	15 UG/KG
STYRENE	ND	UG/KG	15 UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	15 UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	30 UG/KG
ACETONE	59	UG/KG	30 UG/KG
2-HEXANONE	ND	UG/KG	30 UG/KG
VINYL ACETATE	ND	UG/KG	30 UG/KG
CARBON DISULFIDE	ND	UG/KG	15 UG/KG
2-BUTANONE	ND	UG/KG	30 UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

~~CLIENT~~ - D G
CLIENT NAME

DATE 1/19/90

LABORATORY NUMBER: LOW BLANK - 1/11/90
SAMPLE IDENTIFICATION:

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	10	UG/KG
BROMOMETHANE	ND	UG/KG	10	UG/KG
VINYL CHLORIDE	ND	UG/KG	10	UG/KG
CHLOROETHANE	ND	UG/KG	10	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	5	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	5	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	5	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	5	UG/KG
CHLOROFORM	ND	UG/KG	5	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	5	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	5	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	5	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	5	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	5	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	5	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	5	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	5	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	5	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	5	UG/KG
BENZENE	ND	UG/KG	5	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	10	UG/KG
BROMOFORM	ND	UG/KG	5	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	5	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	5	UG/KG
TOLUENE	ND	UG/KG	5	UG/KG
CHLOROBENZENE	ND	UG/KG	5	UG/KG
ETHYLBENZENE	ND	UG/KG	5	UG/KG
XYLENES, TOTAL	ND	UG/KG	5	UG/KG
STYRENE	ND	UG/KG	5	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	5	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	10	UG/KG
ACETONE	ND	UG/KG	10	UG/KG
2-HEXANONE	ND	UG/KG	10	UG/KG
VINYL ACETATE	ND	UG/KG	10	UG/KG
CARBON DISULFIDE	ND	UG/KG	5	UG/KG
2-BUTANONE	ND	UG/KG	10	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

DATE
20190

LABORATORY NUMBER: 1217301
SAMPLE IDENTIFICATION: SB-6,S-1

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	12	UG/KG
BROMOMETHANE	ND	UG/KG	12	UG/KG
VINYL CHLORIDE	ND	UG/KG	12	UG/KG
CHLOROETHANE	ND	UG/KG	12	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	6	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	6	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
CHLOROFORM	ND	UG/KG	6	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	6	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	6	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	6	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	6	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	6	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	6	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	6	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	6	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	6	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	6	UG/KG
BENZENE	ND	UG/KG	6	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	12	UG/KG
BROMOFORM	ND	UG/KG	6	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	6	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	6	UG/KG
TOLUENE	ND	UG/KG	6	UG/KG
CHLOROBENZENE	ND	UG/KG	6	UG/KG
ETHYLBENZENE	7	UG/KG	6	UG/KG
XYLENES, TOTAL	6	UG/KG	6	UG/KG
STYRENE	ND	UG/KG	6	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	12	UG/KG
ACETONE	109	UG/KG	12	UG/KG
2-HEXANONE	ND	UG/KG	12	UG/KG
VINYL ACETATE	ND	UG/KG	12	UG/KG
CARBON DISULFIDE	ND	UG/KG	6	UG/KG
2-BUTANONE	ND	UG/KG	12	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

DATE
20190

LABORATORY NUMBER: 1217302
SAMPLE IDENTIFICATION: SB-6,S-2

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	12	UG/KG
BROMOMETHANE	ND	UG/KG	12	UG/KG
VINYL CHLORIDE	ND	UG/KG	12	UG/KG
CHLOROETHANE	ND	UG/KG	12	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	6	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	6	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
CHLOROFORM	ND	UG/KG	6	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	6	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	6	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	6	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	6	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	6	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	6	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	6	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	6	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	6	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	6	UG/KG
BENZENE	ND	UG/KG	6	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	12	UG/KG
BROMOFORM	ND	UG/KG	6	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	6	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	6	UG/KG
TOLUENE	ND	UG/KG	6	UG/KG
CHLOROBENZENE	ND	UG/KG	6	UG/KG
ETHYLBENZENE	ND	UG/KG	6	UG/KG
XYLENES, TOTAL	ND	UG/KG	6	UG/KG
STYRENE	ND	UG/KG	6	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	12	UG/KG
ACETONE	165	UG/KG	12	UG/KG
2-HEXANONE	ND	UG/KG	12	UG/KG
VINYL ACETATE	ND	UG/KG	12	UG/KG
CARBON DISULFIDE	ND	UG/KG	6	UG/KG
2-BUTANONE	23	UG/KG	12	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

DATE
20190

LABORATORY NUMBER: 1217303
SAMPLE IDENTIFICATION: SB-6,S-3

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	12	UG/KG
BROMOMETHANE	ND	UG/KG	12	UG/KG
VINYL CHLORIDE	ND	UG/KG	12	UG/KG
CHLOROETHANE	ND	UG/KG	12	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	6	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	6	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
CHLOROFORM	ND	UG/KG	6	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	6	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	6	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	6	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	6	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	6	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	6	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	6	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	6	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	6	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	6	UG/KG
BENZENE	ND	UG/KG	6	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	12	UG/KG
BROMOFORM	ND	UG/KG	6	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	6	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	6	UG/KG
TOLUENE	ND	UG/KG	6	UG/KG
CHLOROBENZENE	ND	UG/KG	6	UG/KG
ETHYLBENZENE	ND	UG/KG	6	UG/KG
XYLENES, TOTAL	ND	UG/KG	6	UG/KG
STYRENE	ND	UG/KG	6	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	12	UG/KG
ACETONE	270	UG/KG	12	UG/KG
2-HEXANONE	ND	UG/KG	12	UG/KG
VINYL ACETATE	ND	UG/KG	12	UG/KG
CARBON DISULFIDE	ND	UG/KG	6	UG/KG
2-BUTANONE	65	UG/KG	12	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

DATE
20190

LABORATORY NUMBER: 1217305
SAMPLE IDENTIFICATION: SB-7,S-2

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	13	UG/KG
BROMOMETHANE	ND	UG/KG	13	UG/KG
VINYL CHLORIDE	ND	UG/KG	13	UG/KG
CHLOROETHANE	ND	UG/KG	13	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	7	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	7	UG/KG
trans-1,2-DICHLOROETHYLENE	7	UG/KG	7	UG/KG
CHLOROFORM	ND	UG/KG	7	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	7	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	7	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	7	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	7	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	7	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	7	UG/KG
TRICHLOROETHYLENE	13	UG/KG	7	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	7	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	7	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	7	UG/KG
BENZENE	ND	UG/KG	7	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	13	UG/KG
BROMOFORM	ND	UG/KG	7	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	7	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	7	UG/KG
TOLUENE	15	UG/KG	7	UG/KG
CHLOROBENZENE	ND	UG/KG	7	UG/KG
ETHYLBENZENE	11	UG/KG	7	UG/KG
XYLENES, TOTAL	86	UG/KG	7	UG/KG
STYRENE	ND	UG/KG	7	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	7	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	13	UG/KG
ACETONE	133	UG/KG	13	UG/KG
2-HEXANONE	ND	UG/KG	13	UG/KG
VINYL ACETATE	ND	UG/KG	13	UG/KG
CARBON DISULFIDE	ND	UG/KG	7	UG/KG
2-BUTANONE	ND	UG/KG	13	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

DATE
20190

LABORATORY NUMBER: 1217306
SAMPLE IDENTIFICATION: SB-7,S-3

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	12	UG/KG
BROMOMETHANE	ND	UG/KG	12	UG/KG
VINYL CHLORIDE	ND	UG/KG	12	UG/KG
CHLOROETHANE	ND	UG/KG	12	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	6	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	6	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
CHLOROFORM	ND	UG/KG	6	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	6	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	6	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	6	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	6	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	6	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	6	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	6	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	6	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	6	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	6	UG/KG
BENZENE	ND	UG/KG	6	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	12	UG/KG
BROMOFORM	ND	UG/KG	6	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	6	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	6	UG/KG
TOLUENE	11	UG/KG	6	UG/KG
CHLOROBENZENE	ND	UG/KG	6	UG/KG
ETHYLBENZENE	9	UG/KG	6	UG/KG
XYLENES, TOTAL	68	UG/KG	6	UG/KG
STYRENE	ND	UG/KG	6	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	12	UG/KG
ACETONE	78	UG/KG	12	UG/KG
2-HEXANONE	ND	UG/KG	12	UG/KG
VINYL ACETATE	ND	UG/KG	12	UG/KG
CARBON DISULFIDE	ND	UG/KG	6	UG/KG
2-BUTANONE	ND	UG/KG	12	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

DATE
20190

LABORATORY NUMBER: 1217307
SAMPLE IDENTIFICATION: SB-8,S-1

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	12	UG/KG
BROMOMETHANE	ND	UG/KG	12	UG/KG
VINYL CHLORIDE	ND	UG/KG	12	UG/KG
CHLOROETHANE	ND	UG/KG	12	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	6	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	6	UG/KG
trans-1,2-DICHLOROETHYLENE	14	UG/KG	6	UG/KG
CHLOROFORM	ND	UG/KG	6	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	6	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	6	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	6	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	6	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	6	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	6	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	6	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	6	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	6	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	6	UG/KG
BENZENE	ND	UG/KG	6	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	12	UG/KG
BROMOFORM	ND	UG/KG	6	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	6	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	6	UG/KG
TOLUENE	ND	UG/KG	6	UG/KG
CHLOROBENZENE	ND	UG/KG	6	UG/KG
ETHYLBENZENE	ND	UG/KG	6	UG/KG
XYLENES, TOTAL	ND	UG/KG	6	UG/KG
STYRENE	ND	UG/KG	6	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	12	UG/KG
ACETONE	131	UG/KG	12	UG/KG
2-HEXANONE	ND	UG/KG	12	UG/KG
VINYL ACETATE	ND	UG/KG	12	UG/KG
CARBON DISULFIDE	ND	UG/KG	6	UG/KG
2-BUTANONE	ND	UG/KG	12	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
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DATE
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LABORATORY NUMBER: 1217308
SAMPLE IDENTIFICATION: SB-8,S-2

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	12	UG/KG
BROMOMETHANE	ND	UG/KG	12	UG/KG
VINYL CHLORIDE	ND	UG/KG	12	UG/KG
CHLOROETHANE	ND	UG/KG	12	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	6	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	6	UG/KG
trans-1,2-DICHLOROETHYLENE	15	UG/KG	6	UG/KG
CHLOROFORM	ND	UG/KG	6	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	6	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	6	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	6	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	6	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	6	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	6	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	6	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	6	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	6	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	6	UG/KG
BENZENE	ND	UG/KG	6	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	12	UG/KG
BROMOFORM	ND	UG/KG	6	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	6	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	6	UG/KG
TOLUENE	ND	UG/KG	6	UG/KG
CHLOROBENZENE	ND	UG/KG	6	UG/KG
ETHYLBENZENE	36	UG/KG	6	UG/KG
XYLENES, TOTAL	9	UG/KG	6	UG/KG
STYRENE	ND	UG/KG	6	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	12	UG/KG
ACETONE	187	UG/KG	12	UG/KG
2-HEXANONE	ND	UG/KG	12	UG/KG
VINYL ACETATE	ND	UG/KG	12	UG/KG
CARBON DISULFIDE	ND	UG/KG	6	UG/KG
2-BUTANONE	24	UG/KG	12	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
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DATE
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LABORATORY NUMBER: 1217309
SAMPLE IDENTIFICATION: SB-8,S-3

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	12	UG/KG
BROMOMETHANE	ND	UG/KG	12	UG/KG
VINYL CHLORIDE	ND	UG/KG	12	UG/KG
CHLOROETHANE	ND	UG/KG	12	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	6	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	6	UG/KG
trans-1,2-DICHLOROETHYLENE	12	UG/KG	6	UG/KG
CHLOROFORM	ND	UG/KG	6	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	6	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	6	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	6	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	6	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	6	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	6	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	6	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	6	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	6	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	6	UG/KG
BENZENE	ND	UG/KG	6	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	12	UG/KG
BROMOFORM	ND	UG/KG	6	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	6	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	6	UG/KG
TOLUENE	ND	UG/KG	6	UG/KG
CHLOROBENZENE	ND	UG/KG	6	UG/KG
ETHYLBENZENE	9	UG/KG	6	UG/KG
XYLENES, TOTAL	ND	UG/KG	6	UG/KG
STYRENE	ND	UG/KG	6	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	12	UG/KG
ACETONE	262	UG/KG	12	UG/KG
2-HEXANONE	ND	UG/KG	12	UG/KG
VINYL ACETATE	ND	UG/KG	12	UG/KG
CARBON DISULFIDE	ND	UG/KG	6	UG/KG
2-BUTANONE	32	UG/KG	12	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
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DATE
20190

LABORATORY NUMBER: LAB BLANK
SAMPLE IDENTIFICATION:

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	10	UG/KG
BROMOMETHANE	ND	UG/KG	10	UG/KG
VINYL CHLORIDE	ND	UG/KG	10	UG/KG
CHLOROETHANE	ND	UG/KG	10	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	5	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	5	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	5	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	5	UG/KG
CHLOROFORM	ND	UG/KG	5	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	5	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	5	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	5	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	5	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	5	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	5	UG/KG
TRICHLOROETHYLENE	ND	UG/KG	5	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	5	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	5	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	5	UG/KG
BENZENE	ND	UG/KG	5	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	10	UG/KG
BROMOFORM	ND	UG/KG	5	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	5	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	5	UG/KG
TOLUENE	ND	UG/KG	5	UG/KG
CHLOROBENZENE	ND	UG/KG	5	UG/KG
ETHYLBENZENE	ND	UG/KG	5	UG/KG
XYLENES, TOTAL	ND	UG/KG	5	UG/KG
STYRENE	ND	UG/KG	5	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	5	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	10	UG/KG
ACETONE	ND	UG/KG	10	UG/KG
2-HEXANONE	ND	UG/KG	10	UG/KG
VINYL ACETATE	ND	UG/KG	10	UG/KG
CARBON DISULFIDE	ND	UG/KG	5	UG/KG
2-BUTANONE	ND	UG/KG	10	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

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LABORATORY NUMBER: 1217304
SAMPLE IDENTIFICATION: SB-7,S-1

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/KG	13	UG/KG
BROMOMETHANE	ND	UG/KG	13	UG/KG
VINYL CHLORIDE	ND	UG/KG	13	UG/KG
CHLOROETHANE	ND	UG/KG	13	UG/KG
METHYLENE CHLORIDE	ND	UG/KG	6	UG/KG
1,1-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
1,1-DICHLOROETHANE	ND	UG/KG	6	UG/KG
trans-1,2-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
CHLOROFORM	ND	UG/KG	6	UG/KG
1,2-DICHLOROETHANE	ND	UG/KG	6	UG/KG
1,1,1-TRICHLOROETHANE	ND	UG/KG	6	UG/KG
CARBON TETRACHLORIDE	ND	UG/KG	6	UG/KG
BROMODICHLOROMETHANE	ND	UG/KG	6	UG/KG
1,2-DICHLOROPROPANE	ND	UG/KG	6	UG/KG
trans-1,3-DICHLOROPROPENE	ND	UG/KG	6	UG/KG
TRICHLOROETHYLENE	9	UG/KG	6	UG/KG
DIBROMOCHLOROMETHANE	ND	UG/KG	6	UG/KG
1,1,2-TRICHLOROETHANE	ND	UG/KG	6	UG/KG
cis-1,3-DICHLOROPROPYLENE	ND	UG/KG	6	UG/KG
BENZENE	ND	UG/KG	6	UG/KG
2-CHLOROETHYLVINYL ETHER	ND	UG/KG	13	UG/KG
BROMOFORM	ND	UG/KG	6	UG/KG
1,1,2,2-TETRACHLOROETHANE	ND	UG/KG	6	UG/KG
TETRACHLOROETHYLENE	ND	UG/KG	6	UG/KG
TOLUENE	14	UG/KG	6	UG/KG
CHLOROBENZENE	ND	UG/KG	6	UG/KG
ETHYLBENZENE	36	UG/KG	6	UG/KG
XYLENES, TOTAL	138	UG/KG	6	UG/KG
STYRENE	ND	UG/KG	6	UG/KG
cis-1,2-DICHLOROETHYLENE	ND	UG/KG	6	UG/KG
4-METHYL-2-PENTANONE	ND	UG/KG	13	UG/KG
ACETONE	75	UG/KG	13	UG/KG
2-HEXANONE	ND	UG/KG	13	UG/KG
VINYL ACETATE	ND	UG/KG	13	UG/KG
CARBON DISULFIDE	ND	UG/KG	6	UG/KG
2-BUTANONE	ND	UG/KG	13	UG/KG

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
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DATE
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LABORATORY NUMBER: LAB BLANK-W
SAMPLE IDENTIFICATION:

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/L	10	UG/L
BROMOMETHANE	ND	UG/L	10	UG/L
VINYL CHLORIDE	ND	UG/L	10	UG/L
CHLOROETHANE	ND	UG/L	10	UG/L
METHYLENE CHLORIDE	ND	UG/L	5	UG/L
1,1-DICHLOROETHYLENE	ND	UG/L	5	UG/L
1,1-DICHLOROETHANE	ND	UG/L	5	UG/L
trans-1,2-DICHLOROETHYLENE	ND	UG/L	5	UG/L
CHLOROFORM	ND	UG/L	5	UG/L
1,2-DICHLOROETHANE	ND	UG/L	5	UG/L
1,1,1-TRICHLOROETHANE	ND	UG/L	5	UG/L
CARBON TETRACHLORIDE	ND	UG/L	5	UG/L
BROMODICHLOROMETHANE	ND	UG/L	5	UG/L
1,2-DICHLOROPROPANE	ND	UG/L	5	UG/L
trans-1,3-DICHLOROPROPENE	ND	UG/L	5	UG/L
TRICHLOROETHYLENE	ND	UG/L	5	UG/L
DIBROMOCHLOROMETHANE	ND	UG/L	5	UG/L
1,1,2-TRICHLOROETHANE	ND	UG/L	5	UG/L
cis-1,3-DICHLOROPROPYLENE	ND	UG/L	5	UG/L
BENZENE	ND	UG/L	5	UG/L
2-CHLOROETHYLVINYL ETHER	ND	UG/L	10	UG/L
BROMOFORM	ND	UG/L	5	UG/L
1,1,2,2-TETRACHLOROETHANE	ND	UG/L	5	UG/L
TETRACHLOROETHYLENE	ND	UG/L	5	UG/L
TOLUENE	ND	UG/L	5	UG/L
CHLOROBENZENE	ND	UG/L	5	UG/L
ETHYLBENZENE	ND	UG/L	5	UG/L
XYLENES, TOTAL	ND	UG/L	5	UG/L
STYRENE	ND	UG/L	5	UG/L
cis-1,2-DICHLOROETHYLENE	ND	UG/L	5	UG/L
4-METHYL-2-PENTANONE	ND	UG/L	10	UG/L
ACETONE	ND	UG/L	10	UG/L
2-HEXANONE	ND	UG/L	10	UG/L
VINYL ACETATE	ND	UG/L	10	UG/L
CARBON DISULFIDE	ND	UG/L	5	UG/L
2-BUTANONE	ND	UG/L	10	UG/L

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
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LABORATORY NUMBER: 1218801
SAMPLE IDENTIFICATION: DGC-14D

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/L	10	UG/L
BROMOMETHANE	ND	UG/L	10	UG/L
VINYL CHLORIDE	ND	UG/L	10	UG/L
CHLOROETHANE	ND	UG/L	10	UG/L
METHYLENE CHLORIDE	ND	UG/L	5	UG/L
1,1-DICHLOROETHYLENE	ND	UG/L	5	UG/L
1,1-DICHLOROETHANE	10	UG/L	5	UG/L
trans-1,2-DICHLOROETHYLENE	19	UG/L	5	UG/L
CHLOROFORM	ND	UG/L	5	UG/L
1,2-DICHLOROETHANE	ND	UG/L	5	UG/L
1,1,1-TRICHLOROETHANE	ND	UG/L	5	UG/L
CARBON TETRACHLORIDE	ND	UG/L	5	UG/L
BROMODICHLOROMETHANE	ND	UG/L	5	UG/L
1,2-DICHLOROPROPANE	ND	UG/L	5	UG/L
trans-1,3-DICHLOROPROPENE	ND	UG/L	5	UG/L
TRICHLOROETHYLENE	40	UG/L	5	UG/L
DIBROMOCHLOROMETHANE	ND	UG/L	5	UG/L
1,1,2-TRICHLOROETHANE	ND	UG/L	5	UG/L
cis-1,3-DICHLOROPROPYLENE	ND	UG/L	5	UG/L
BENZENE	ND	UG/L	5	UG/L
2-CHLOROETHYLVINYL ETHER	ND	UG/L	10	UG/L
BROMOFORM	ND	UG/L	5	UG/L
1,1,2,2-TETRACHLOROETHANE	ND	UG/L	5	UG/L
TETRACHLOROETHYLENE	ND	UG/L	5	UG/L
TOLUENE	23	UG/L	5	UG/L
CHLOROBENZENE	ND	UG/L	5	UG/L
ETHYLBENZENE	ND	UG/L	5	UG/L
XYLENES, TOTAL	ND	UG/L	5	UG/L
STYRENE	ND	UG/L	5	UG/L
cis-1,2-DICHLOROETHYLENE	ND	UG/L	5	UG/L
4-METHYL-2-PENTANONE	ND	UG/L	10	UG/L
ACETONE	20	UG/L	10	UG/L
2-HEXANONE	ND	UG/L	10	UG/L
VINYL ACETATE	ND	UG/L	10	UG/L
CARBON DISULFIDE	ND	UG/L	5	UG/L
2-BUTANONE	ND	UG/L	10	UG/L

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
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DATE
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LABORATORY NUMBER: 1218802
SAMPLE IDENTIFICATION: DGC-15D

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/L	10	UG/L
BROMOMETHANE	ND	UG/L	10	UG/L
VINYL CHLORIDE	ND	UG/L	10	UG/L
CHLOROETHANE	ND	UG/L	10	UG/L
METHYLENE CHLORIDE	ND	UG/L	5	UG/L
1,1-DICHLOROETHYLENE	ND	UG/L	5	UG/L
1,1-DICHLOROETHANE	ND	UG/L	5	UG/L
trans-1,2-DICHLOROETHYLENE	ND	UG/L	5	UG/L
CHLOROFORM	ND	UG/L	5	UG/L
1,2-DICHLOROETHANE	ND	UG/L	5	UG/L
1,1,1-TRICHLOROETHANE	ND	UG/L	5	UG/L
CARBON TETRACHLORIDE	ND	UG/L	5	UG/L
BROMODICHLOROMETHANE	ND	UG/L	5	UG/L
1,2-DICHLOROPROPANE	ND	UG/L	5	UG/L
trans-1,3-DICHLOROPROPENE	ND	UG/L	5	UG/L
TRICHLOROETHYLENE	ND	UG/L	5	UG/L
DIBROMOCHLOROMETHANE	ND	UG/L	5	UG/L
1,1,2-TRICHLOROETHANE	ND	UG/L	5	UG/L
cis-1,3-DICHLOROPROPYLENE	ND	UG/L	5	UG/L
BENZENE	ND	UG/L	5	UG/L
2-CHLOROETHYLVINYL ETHER	ND	UG/L	10	UG/L
BROMOFORM	ND	UG/L	5	UG/L
1,1,2,2-TETRACHLOROETHANE	ND	UG/L	5	UG/L
TETRACHLOROETHYLENE	ND	UG/L	5	UG/L
TOLUENE	ND	UG/L	5	UG/L
CHLOROBENZENE	ND	UG/L	5	UG/L
ETHYLBENZENE	ND	UG/L	5	UG/L
XYLENES, TOTAL	ND	UG/L	5	UG/L
STYRENE	ND	UG/L	5	UG/L
cis-1,2-DICHLOROETHYLENE	ND	UG/L	5	UG/L
4-METHYL-2-PENTANONE	ND	UG/L	10	UG/L
ACETONE	ND	UG/L	10	UG/L
2-HEXANONE	ND	UG/L	10	UG/L
VINYL ACETATE	ND	UG/L	10	UG/L
CARBON DISULFIDE	ND	UG/L	5	UG/L
2-BUTANONE	ND	UG/L	10	UG/L

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
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DATE
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LABORATORY NUMBER: 1218803
SAMPLE IDENTIFICATION: DGC-16D

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/L	10	UG/L
BROMOMETHANE	ND	UG/L	10	UG/L
VINYL CHLORIDE	ND	UG/L	10	UG/L
CHLOROETHANE	ND	UG/L	10	UG/L
METHYLENE CHLORIDE	ND	UG/L	5	UG/L
1,1-DICHLOROETHYLENE	ND	UG/L	5	UG/L
1,1-DICHLOROETHANE	10	UG/L	5	UG/L
trans-1,2-DICHLOROETHYLENE	ND	UG/L	5	UG/L
CHLOROFORM	ND	UG/L	5	UG/L
1,2-DICHLOROETHANE	ND	UG/L	5	UG/L
1,1,1-TRICHLOROETHANE	28	UG/L	5	UG/L
CARBON TETRACHLORIDE	ND	UG/L	5	UG/L
BROMODICHLOROMETHANE	ND	UG/L	5	UG/L
1,2-DICHLOROPROPANE	ND	UG/L	5	UG/L
trans-1,3-DICHLOROPROPENE	ND	UG/L	5	UG/L
TRICHLOROETHYLENE	244	UG/L	5	UG/L
DIBROMOCHLOROMETHANE	ND	UG/L	5	UG/L
1,1,2-TRICHLOROETHANE	ND	UG/L	5	UG/L
cis-1,3-DICHLOROPROPYLENE	ND	UG/L	5	UG/L
BENZENE	ND	UG/L	5	UG/L
2-CHLOROETHYLVINYL ETHER	ND	UG/L	10	UG/L
BROMOFORM	ND	UG/L	5	UG/L
1,1,2,2-TETRACHLOROETHANE	ND	UG/L	5	UG/L
TETRACHLOROETHYLENE	ND	UG/L	5	UG/L
TOLUENE	167	UG/L	5	UG/L
CHLOROBENZENE	ND	UG/L	5	UG/L
ETHYLBENZENE	ND	UG/L	5	UG/L
XYLENES, TOTAL	5	UG/L	5	UG/L
STYRENE	ND	UG/L	5	UG/L
cis-1,2-DICHLOROETHYLENE	ND	UG/L	5	UG/L
4-METHYL-2-PENTANONE	ND	UG/L	10	UG/L
ACETONE	19	UG/L	10	UG/L
2-HEXANONE	ND	UG/L	10	UG/L
VINYL ACETATE	ND	UG/L	10	UG/L
CARBON DISULFIDE	ND	UG/L	5	UG/L
2-BUTANONE	11	UG/L	10	UG/L

UNITED STATES TESTING COMPANY, INC.

REPORT OF ANALYSIS FOR
VOLATILE COMPOUNDS

CLIENT
DG

DATE
20690

LABORATORY NUMBER: 1218804
SAMPLE IDENTIFICATION: DGC-17D

COMPOUND	RESULT		DETECTION LIMIT	
CHLOROMETHANE	ND	UG/L	10	UG/L
BROMOMETHANE	ND	UG/L	10	UG/L
VINYL CHLORIDE	ND	UG/L	10	UG/L
CHLORDETHANE	ND	UG/L	10	UG/L
METHYLENE CHLORIDE	ND	UG/L	5	UG/L
1,1-DICHLOROETHYLENE	ND	UG/L	5	UG/L
1,1-DICHLOROETHANE	ND	UG/L	5	UG/L
trans-1,2-DICHLOROETHYLENE	12	UG/L	5	UG/L
CHLOROFORM	ND	UG/L	5	UG/L
1,2-DICHLOROETHANE	ND	UG/L	5	UG/L
1,1,1-TRICHLOROETHANE	ND	UG/L	5	UG/L
CARBON TETRACHLORIDE	ND	UG/L	5	UG/L
BROMODICHLOROMETHANE	ND	UG/L	5	UG/L
1,2-DICHLOROPROPANE	ND	UG/L	5	UG/L
trans-1,3-DICHLOROPROPENE	ND	UG/L	5	UG/L
TRICHLOROETHYLENE	ND	UG/L	5	UG/L
DIBROMOCHLOROMETHANE	ND	UG/L	5	UG/L
1,1,2-TRICHLOROETHANE	ND	UG/L	5	UG/L
cis-1,3-DICHLOROPROPYLENE	ND	UG/L	5	UG/L
BENZENE	ND	UG/L	5	UG/L
2-CHLOROETHYLVINYL ETHER	ND	UG/L	10	UG/L
BROMOFORM	ND	UG/L	5	UG/L
1,1,2,2-TETRACHLOROETHANE	ND	UG/L	5	UG/L
TETRACHLOROETHYLENE	ND	UG/L	5	UG/L
TOLUENE	15	UG/L	5	UG/L
CHLOROBENZENE	ND	UG/L	5	UG/L
ETHYLBENZENE	ND	UG/L	5	UG/L
XYLENES, TOTAL	ND	UG/L	5	UG/L
STYRENE	ND	UG/L	5	UG/L
cis-1,2-DICHLOROETHYLENE	ND	UG/L	5	UG/L
4-METHYL-2-PENTANONE	ND	UG/L	10	UG/L
ACETONE	ND	UG/L	10	UG/L
2-HEXANONE	ND	UG/L	10	UG/L
VINYL ACETATE	ND	UG/L	10	UG/L
CARBON DISULFIDE	ND	UG/L	5	UG/L
2-BUTANONE	ND	UG/L	10	UG/L

APPENDIX B

JOHN P. STOPEN
ENGINEERING PARTNERSHIP

JOHN P. STOPEN, P.E.
ROLF LEININGER, PH.D., P.E.
JOHN SODJA, P.E.
JAMES F. KAPLAN, P.E.

January 24, 1990

Dunn Geoscience Corporation
24 Aviation Road
Albany, New York 12205

ATTN: Mr. Thomas Johnson

RE: Carousel Center
Subsurface Conditions and their Relation to the Concept of Foundation Design
#4-87159

Gentlemen:

1. INTRODUCTION

Pursuant to your request, we are providing this letter report to assist you in your effort to resolve the problem of subgrade contamination in the area of the Clark property. The report includes the following information:

1. description of soil and groundwater conditions;
2. description of compensated mat foundation approach; and
3. description of pertinent aspects of foundation design.

While the topics in this letter apply in a general sense to the entire site, conditions do vary across the site. Therefore, in matters where a difference exists, the descriptions in this letter apply essentially to the area of your particular interest which is located near and south of the existing cement bentonite slurry cut-off wall shown on the attached Site Plan.

As described in our January 15, 1990 letter, it will be feasible to hydraulically isolate the contaminated area from the rest of the building area. It is also feasible to modify or eliminate, for the contaminated area, certain features of the foundation design that were incorporated into the area north of the slurry wall.

2. SITE AND PROJECT DESCRIPTION

The approximately 60-acre Carousel Center site is located about two miles northwest of the central business district of Syracuse, New York. The site is bounded by Hiawatha Boulevard, the New York State Barge Canal, Interstate Highway 81, and Conrail railroad tracks. Onondaga Lake is a few hundred feet beyond the railroad tracks.

In the area of the proposed buildings, preconstruction grades varied from about 10 to 15 feet above City of Syracuse datum, which is 362 feet above mean sea level.

The site has been used for mixed purposes including a salvage yard for scrap metal, a concrete batch plant and oil storage tanks.

The shopping center will consist of a steel-framed superstructure and will have a poured-in-place concrete substructure. Footprint area will be about 900,000 square feet.

Finished ground floor level of the shopping center will be at elevation +18.0 feet. Finished basement floor level will be at elevation +1.0 foot.

It is our understanding that the potentially contaminated area is located in an area where the building will consist of two stories above grade and where the basement portion will be used for parking.

The basement floor, in the potentially contaminated area, will consist of a 24-inch-thick reinforced structural concrete mat that also serves as the building foundation. Building column loads are supported directly on the concrete mat, which in turn transfers those loads to the subgrade at a nearly uniform bearing pressure over the entire building area.

3. LOCAL GEOLOGY AND SOILS

The Carousel Center site is located at the southeast end of Onondaga Lake in an area well-known for its unusual depth to bedrock and substantial thickness of soft soil overburden. The area owes these unusual characteristics to the glaciation that ended about 10,000 years ago. During the glaciation, ice ploughed through existing valleys and gouged deep troughs into the bedrock, including a trough parallel to and beneath Onondaga Lake. The site is located on the sideslope of this bedrock trough that is now buried deeply beneath soft soils.

Bedrock at and near Carousel Center was encountered and documented through drilling of salt brine wells at the site during the 1800's. The wells showed the bedrock to be nearly flat-lying, Silurian-aged Vernon Shale. Old geological studies, based in part on the salt well data, determined bedrock depth in the area to range from a few feet just northeast of the site to over 400 feet just south of the site.

Based on the results of engineering studies for nearby projects, the bedrock trough at the south end of Onondaga Lake is filled with a sequence of natural overburden soils that begin at the bottom with relatively hard glacial till. Cohesionless soil, probably subaqueous glacial outwash, covers the till. The cohesionless soils are covered with thick, soft lacustrine varved silts and clays of which the deeper portions may be of glacial age and the shallower portions of post-glacial age. The upper soils are slightly organic, consisting predominantly of calcareous sand and silt known locally as marl. The marl is capped with organic silt or peat.

Surficial soils are man-made fills of varied textures and consistency including Solvay Waste. The fills are thick and may have been deposited in several separate episodes, perhaps as late as the mid 1970's, but most fill was placed earlier.

4. SUBSURFACE CONDITIONS

Test borings confirmed the subsurface conditions described in Section 3. Results showed that the compressible marls, varved silts and clays thicken from north to south toward the center of the Onondaga Lake trough. Soil stratigraphy around the contaminated area is represented on the attached Soil Profiles C-1 and C-2 for the sections indicated on the attached Site Plan.

As discussed in our letter dated January 15, 1990, two water bearing units were disclosed by the test borings and can be seen on the profiles. The lower water bearing unit is Stratum S3; the upper water bearing unit includes the near surface fill and Stratum S1. Groundwater levels observed near the contaminated area were close to elevation +8.0 for the upper water bearing unit and elevation +12.0 for the lower water bearing unit. Those results indicate an artesian condition in the lower water bearing unit.

5. COMPENSATED MAT FOUNDATION - CONCEPT AND REQUIREMENTS

5.1. Design Concept

Field explorations showed that shopping center site is underlain by compressible Strata C and S2 as shown on the Soil Profiles. The combined thickness of the two strata is about 150 feet around the area south of the slurry wall. According to consolidation tests performed on undisturbed soil samples, Strata C and S2 are normally consolidated. This means that if effective stress in compressible deposits were increased by placing fill or by adding building loads, it would lead to primary consolidation of compressible strata and to settlement of undesirable magnitudes especially at the south end of the proposed development where compressible strata are the thickest.

The compensated mat foundation approach is based on the premise that primary consolidation and resulting excessive settlement can be avoided by unloading existing subgrade through excavating existing fill and organic natural subgrade and by managing permanent water table within the building area in such a way that the proposed development reduces the effective stress in the compressible strata to values below the preconstruction levels.

5.2 Engineering Verification of Compensated Mat Foundation Concept

Feasibility of compensated mat foundation approach has been evaluated for the entire project. General evaluation was made on the basis of the following assumptions:

1. Finished ground floor will be at El. +18 feet.

2. Basement floor will be at El. +1 foot.

3. Compensated mat foundation will consist of a continuous, waterproofed reinforced concrete mat typically 24 inches thick as shown on the attached Foundation Concept Drawing.

4. Mat foundation will be constructed on a blanket of porous drainage fill 18 to 24 inches thick, placed on an overlapping layer of geotextile.

5. Groundwater table will be maintained after construction at approximately El. +6 feet.

6. Perimeter backfill and fill will have appropriate unit weights in order to avoid that required site regrading will lead to primary consolidation of compressible subgrade under building and at building perimeter.

Engineering evaluation made on the basis of the above assumptions showed that, except at the building perimeter, constructing the building on a mat foundation would result in a significant decrease of the effective soil pressure in the underlying lacustrine subgrade with the effect that no building settlement would have to be expected due to primary consolidation. Settlement due to secondary consolidation was estimated to be up to several inches over a 50 year period, but would not have any detrimental effect on integrity of waterproofing membrane.

6. FOUNDATION DESIGN AND CONSTRUCTION

Based on the results of the engineering verification of the compensated mat foundation concept, a decision was made to utilize the approach for supporting the development.

Structural analyses showed that, with basement floor at El. +1.0 foot and with permanent water table at El. +6.0 feet, thickness of mat foundation would have to be approximately 24 inches in order to resist expected soil and water pressures for a two-story building. As a consequence, since it was determined that approximately 18 inches of porous fill should be provided to assure stabilization of natural subgrade, bottom of excavation would be at about El. -2.5 feet, or deeper.

A. Construction Dewatering and Excavation

Construction of the load compensated mat requires excavating 12 to 15 feet of fill and natural overburden. Since excavation level extends below the water table, construction dewatering is required.

It was determined that dewatering of building subgrade was necessary prior to excavation and that construction should follow this sequence:

1. Surround building area with a seepage cut-off wall extending sufficiently into the marl deposit (Stratum S2) to minimize underseepage and prevent lateral flow of groundwater into building excavation through porous surface layer.

2. Follow the procedures described on our Site Preparation Plan (Drawing SP-1, dated 6/28/89).

As was recommended, excavation to building subgrade and construction of porous base under mat foundation, to date, has been carried out as follows:

1. Accomplish building excavation by making open cuts leaving sides of excavations sloping not steeper than one vertical to two horizontal and by having toe of slope not less than 4 feet from edge of mat foundation.

2. Excavate to specified subgrade elevation in the presence of the Geotechnical Engineer or his representative using methods and procedures that will minimize disturbance and prevent destabilization of subgrade. If, at specified excavation level, subgrade is unsuitable, excavate deeper as directed.

   During excavation to subgrade, provide supplementary means of temporary subgrade dewatering, if necessary, to maintain stability of building subgrade prior to and during placement of geofabric and drainage course.

3. Cover approved subgrade with one overlapping layer of approved geofabric. Subsequently, cover geofabric with specified type of drainage fill without delay.

   Place drainage course effectively in a single lift by running fill in with a wide-track bulldozer working from a stable base and maintaining adequate fill thickness under tracks to prevent destabilization of sensitive natural subgrade.

   After initial placement of fill layer, fine-grade surface of drainage course using a capping layer of manufactured sand corresponding to NYSDOT Item 1B crushed stone.

4. Compact drainage course with approved vibratory plate compactors weighing in the range of 400 to 600 lbs.

B. Waterproofing of Substructures

Since permanent water table is to be located 5 feet above the basement floor, mat foundation and perimeter building walls require waterproofing to keep moisture out. This is to be accomplished by use of the Paraseal system which consists of a heavy polyethylene sheet with granulated bentonite backing. The Paraseal system will form a continuous membrane for substructures below the top of the foundation wall (about Elevation +17 feet).

Manufacturer's literature for the Paraseal waterproofing system is attached in an Appendix. Waterproofing details at the expansion joints are shown on the attached sheets WP-1 and 2.

Below the water table, we would require only one penetration through the waterproofing within the area south of the existing slurry wall. It will be for a 1-inch-diameter PVC standpipe piezometer. The open end of the piezometer will be sealed with an air-tight locking cap. A detail of waterproofing around this penetration is on the attached sheet WP-3.

Some penetrations of the waterproofing membrane will likely be required above the water table in the area south of the slurry wall where underground utilities enter the building. These penetrations should be flashed and sealed with rubber compression donuts that are used to provide a waterproof pressure seal.

C. Long-Term Water Table Management

The Compensated Mat Foundation approach requires that, after completion of building construction and backfilling along building perimeter, construction dewatering be terminated and groundwater table be maintained at or near El. +6 feet.

Water table level at the north end of the mall will be maintained by pumping from wet wells located inside the building basement. The wet wells will be connected to the extensive underdrain system provided beneath the mat foundation.

Isolating the building area south of the slurry wall hydraulically from the north end will require independent management of south end water table. For this purpose, necessary wet well could be located outside the building foundation.

D. Overexcavation

In order to preserve the feasibility of supporting the building on a compensated mat, it is required that the foundation be constructed on a granular base course that is placed over undisturbed soil. In order that subgrade soils remain essentially undisturbed during overexcavation, areas must be dewatered below overexcavation level in advance.

It would be important to note that prior to any overexcavations, their limits need to be defined in order to study the implications with respect to extent of predewatering and backfilling with material of acceptable properties.

Since the natural soils are fairly light in weight, to achieve the required load balance, it may be necessary to use a type of backfill material that is lighter than the lightweight aggregate being used for the north end of the building.

7. SUMMARY

In summary, the design of the Carousel Center compensated mat foundation requires that groundwater levels be controlled by a permanent groundwater maintenance system. That system is compatible with the potential need to isolate and separately treat effluent from the south end of the site.

Overexcavation of soils existing below elevation -3.0 feet can only be accomplished in conjunction with predewatering.

Overexcavation to elevations lower than -6 or -7 feet may require additional considerations including the stability of the soft soils and the use of lightweight backfill.

Please contact me if you require additional information about the foundation design for Carousel Center.

Sincerely,

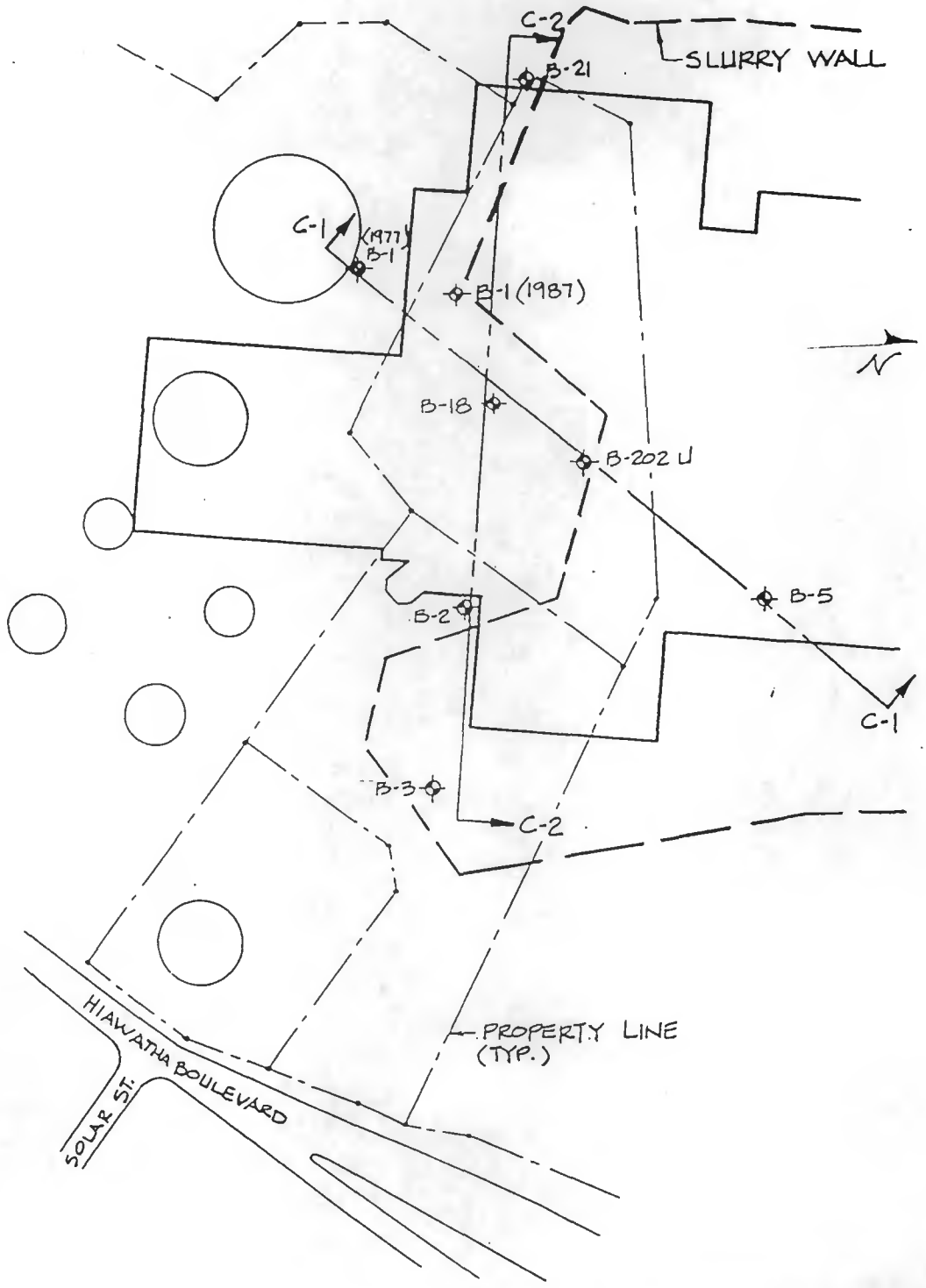
JOHN P. STOPEN ENGINEERING PARTNERSHIP

James P. Stewart

JAMES P. STEWART, P.E.
Geotechnical Engineer

JPS/RL/sh

Attachments: Site Plan
Soil Profiles
Foundation Concept
Waterproofing Details
Appendix - Manufacturer's Literature for Waterproofing



PYRAMID CAROUSEL CENTER

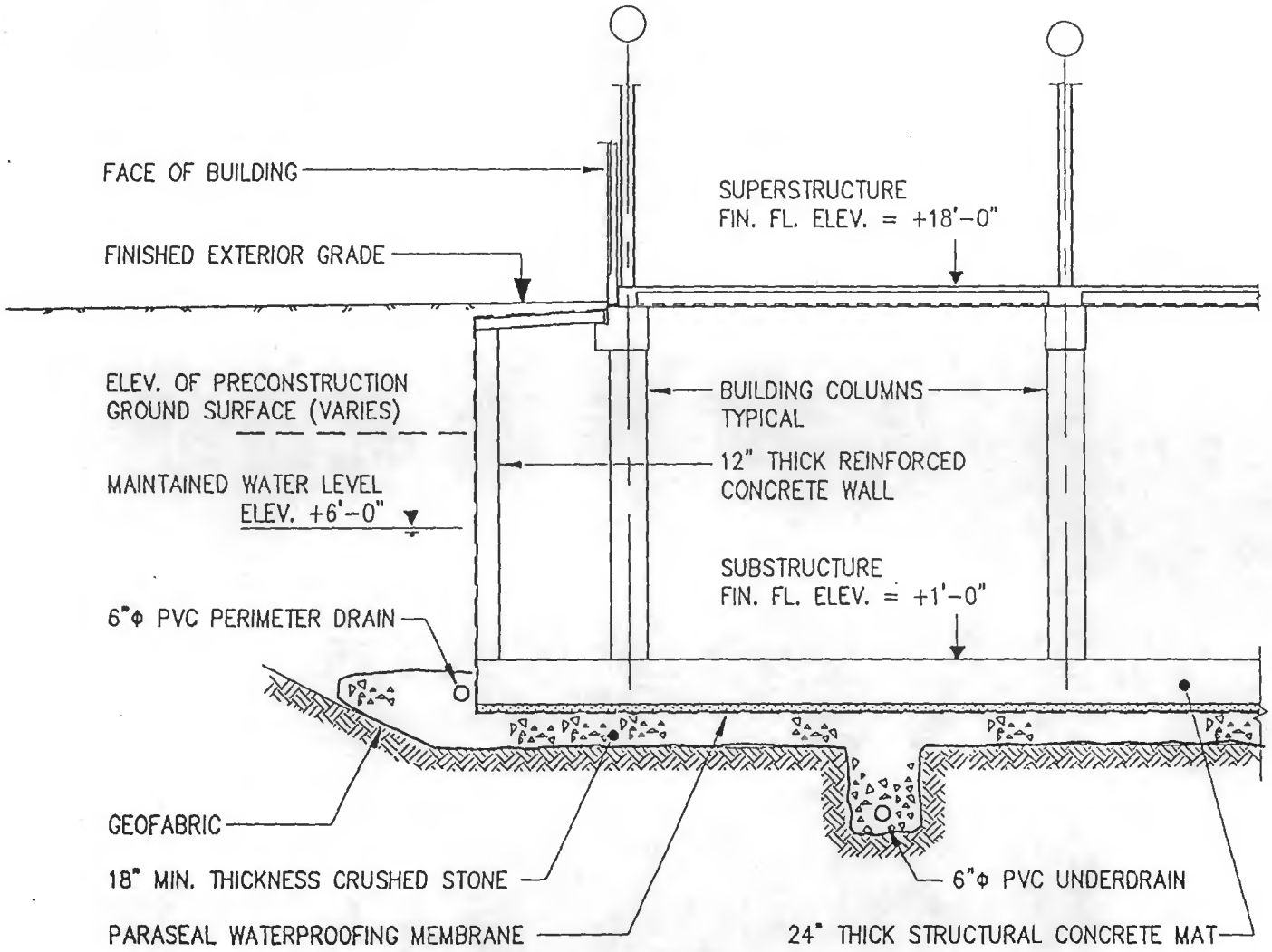
SITE PLAN - SOUTH END

1" = 200'

DRAWN:	CHECKED:	JOB NO.:	DATE:
PDG	JS	487159.01	1-29-90

JOHN P. STOPEN
ENGINEERING PARTNERSHIP
SYRACUSE, NEW YORK 315-472-5238

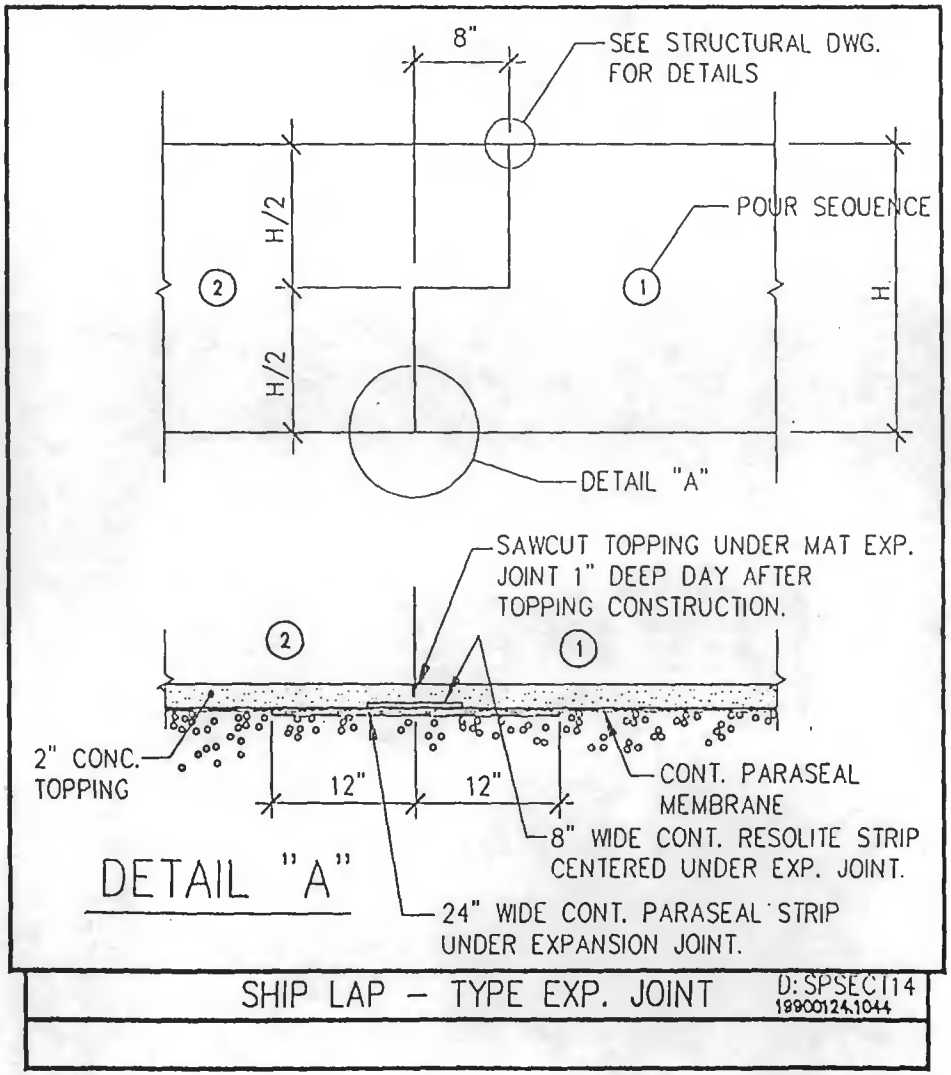
DRAWING NO.



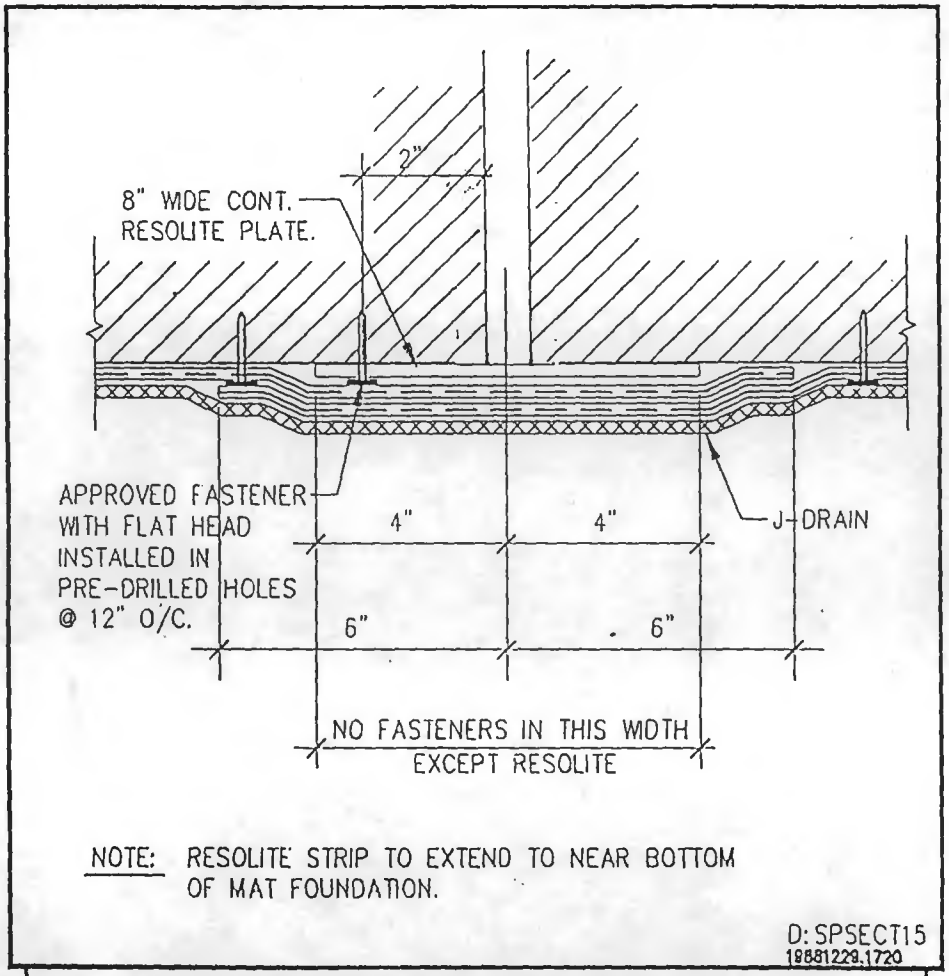
FOUNDATION CONCEPT

1/8"=1'-0"

D:\CCFILL5
19900129.1534

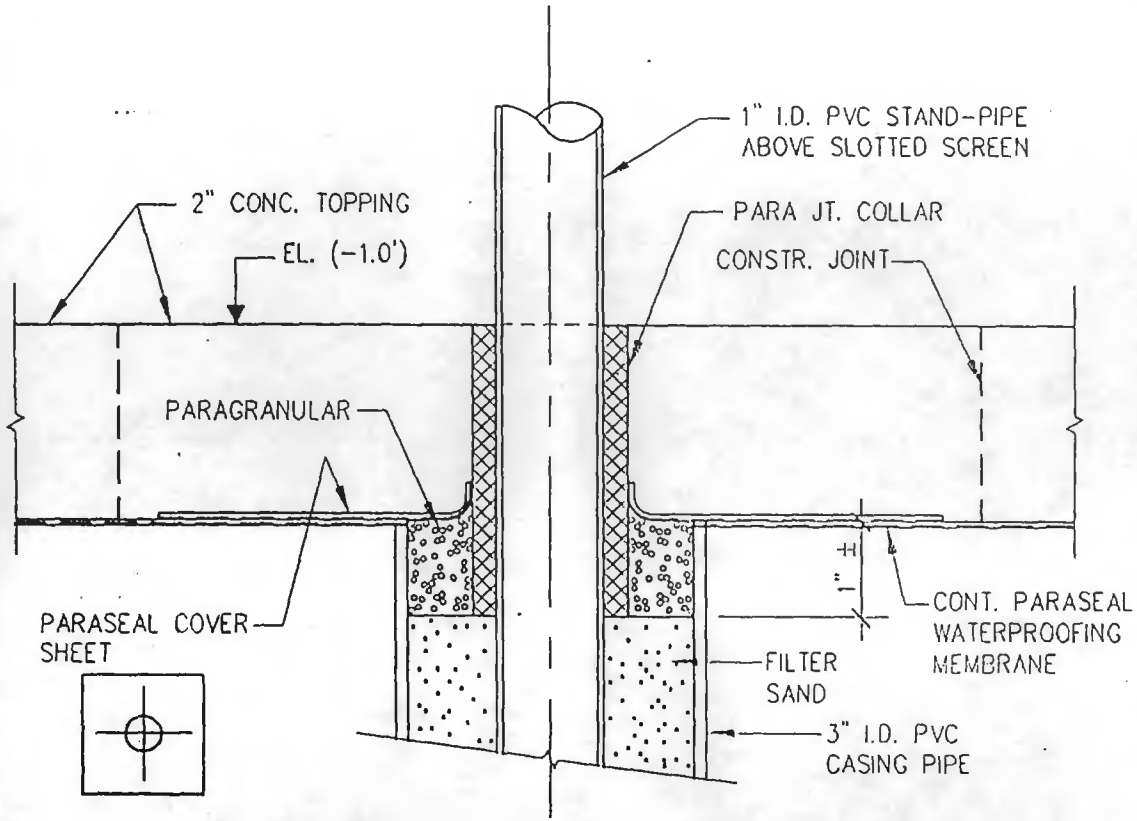


SHIP LAP – TYPE EXP. JOINT D:SPSECT14 19900124.1044



WATERPROOFING OF MAJOR WALL EXP. JT.

3" = 1'-0"



SEQUENCE OF CONSTRUCTION

1. INSTALL CASING PIPE IN ACCORDANCE WITH DETAIL 4/SP-1.
2. COMPLETE FINE GRADING AND INSTALL PARASEAL MEMBRANE.
3. COVER STANDPIPE WITH 12"x12" MIN. 2" THK. STYROFOAM PANEL.
4. CONSTRUCT CONCRETE TOPPING.
5. REMOVE STYROFOAM PANEL AND CUT MEMBRANE ALONG INSIDE FACE OF CASING PIPE.
6. INSTALL SLOTTED SCREEN & STANDPIPE INSIDE CASING PIPE.
7. FILL ANNULAR SPACE WITH FILTER SAND TO EXTENT SHOWN ON DRAWING.
8. INSTALL PARA JOINT COLLAR AROUND STANDPIPE.
9. PLACE PARA GRANULAR AS INDICATED.
10. PULL PARASEAL COVER SHEET OVER STANDPIPE & PARA JOINT COLLAR.
11. COMPLETE CONCRETE TOPPING AROUND STANDPIPE.

D:SPSECT13
19900124.0940

WATERPROOFING OF INTERIOR OBSERVATION WELL

6" = 1'-0"

APPENDIX C

JOHN P. STOPEN
ENGINEERING PARTNERSHIP

JOHN P STOPEN PE
ROLF LEININGER PH D PE
JOHN SODJA PE
JAMES F KAPLAN P.E.

January 15, 1990

Dunn Geoscience Corp.
24 Aviation Road
Albany, NY 12205

ATTN: Mr. Thomas Johnson

RE: Carousel Center
Groundwater Table and Its Effect on Construction
and Relation with Design of Building Foundations

Gentlemen:

We have reviewed the compatibility of the compensated mat foundation design approach with the potential need you described to withdraw and treat groundwater from a portion of the future building area which may be contaminated with volatile organic compounds. Our review showed that it is feasible to hydraulically isolate a portion of the contemplated building area in such a way that contaminated groundwater may be withdrawn and treated separately from the groundwater of the rest of the mall. This conclusion is substantiated in the following paragraphs.

1. Natural Groundwater Conditions

As the lead geotechnical engineer for the Carousel Center project, this office has been involved with subsurface and groundwater explorations since the fall of 1987. These explorations disclosed the existence of two water-bearing units that are separated by a thick deposit of varved silt and clay.

The upper unit includes natural soils and fills and extends down to about El. -10 ft., Syracuse Datum (Syracuse Datum = 362 ft. USGS Datum).

The lower unit consists of deposits of sand and gravel which are located below about El. -60 ft. at the north end of the site and below about El. -190 ft. at the south end of the site.

Observation wells installed in the upper unit prior to building construction showed a water table sloping from about El. +10 ft. at the north end of the site to about El. +6 ft. at the south end of the site.

103 EAST WATER STREET / SYRACUSE, NEW YORK 13202 / TELEPHONE: 315-472-5238

For the lower unit, piezometers that were installed in the deep-seated deposits of sand and gravel showed the existence of an artesian condition with respect to the water table of upper unit - a condition that was also observed some years ago during subsurface explorations for the expansion of the Onondaga County Sewage Treatment plant which is located to the south of the Carousel Center site.

2. Relations between Groundwater Table and Foundation Design

As the geotechnical and structural engineer of record, this office has proposed and designed a compensated mat foundation for supporting building loads for Carousel Center. This approach requires that, after completion of building construction, the major portion of the building load be supported by groundwater buoyancy with the effect that the portion of the building load that will be supported by the subgrade will cause a level of effective soil stress under the building that is lower than that existing prior to construction.

In order to meet the requirements of the compensated mat foundation approach, it will be necessary that the water table under and adjacent to the building area be maintained at about El. +6 ft.

3. Management of Groundwater Table

A. Construction Phase

Based on on-site investigations, it was determined that construction dewatering of building subgrade would best be accomplished in the following way:

1. Enclose building areas with a continuous slurry trench seepage cutoff wall that extends to the bottom of the upper water-bearing unit.

2. Drain groundwater from the upper fill layer through ditching and sumping.

3. Prior to building excavation, lower water table in natural subgrade through a preinstalled grid of 6" diameter continuous underdrain pipes located at El. -5 ft. and spaced 60 to 70 feet apart.

4. Keep water table depressed during construction by pumping from a series of pump wells located along the building perimeter and connected to the underdrain grid.

The slurry trench seepage cutoff wall that now surrounds the portion of the development presently under construction has been very effective and the groundwater table has been depressed to about El. -4 ft, which is a decrease of about 12 ft.

B. Permanent Groundwater Management

Compensated mat foundation approach requires that groundwater table be maintained at about El. +6 ft. after completion of building construction.

Permanent groundwater management will be facilitated by a grid of underdrains that is located at El. -5 ft. and that will be connected to a 6-inch diameter continuous perforated pipe located at the building perimeter with invert at El. +0.5 ft.

C. Effect of Development on Natural Groundwater Table

Observation wells installed outside the bentonite slurry trench cutoff walls have indicated that natural water table outside cutoff wall has essentially been unaffected by depressing water table inside cutoff wall to about El. -4 ft. As a consequence, since integrity of cutoff is to be maintained after completion of construction, maintaining water table inside cutoff wall at El. +6 ft. should not have any effect on natural water table outside of cutoff wall.

4. Waterproofing of Substructure

Basement floor will be located at El. +1.0 ft. or 5 ft. below the design water table. In order to assure dry conditions for the basement level, substructures will have an external waterproofing membrane consisting of a polyethylene sheet with bentonite granule backing as manufactured by Paramount Technical Products under the trade name of Paraseal.

5. Isolation of Contaminated Area

In order to accomplish the desired subgrade isolation of certain portions of building area, features of compensated mat foundation approach and methods to accomplish necessary construction and permanent groundwater control can be utilized to facilitate withdrawal of contaminated groundwater. In order to accomplish this, the following steps will have to be taken to hydraulically isolate areas of subgrade contamination:

1. Install a series of secondary cutoff walls that will extend between perimeter cutoff wall and that will isolate area of contamination by extending secondary cutoff walls to underside of mat foundation and by making underdrain system and perimeter drain discontinuous at isolation boundaries.

2. Design and construct underdrain system, porous base and waterproofing for mat foundation as specified and detailed on Site Preparation SP-1 or modify as necessitated by special requirements.

Isolation of groundwater in area of contamination can be maintained with water table at the same elevation north and south of the secondary cutoff wall. This is based on our opinion that underseepage of building areas enclosed by perimeter seepage cutoff walls is essentially upward as a result of the documented artesian condition in the lower water-bearing unit.

In response to your question regarding groundwater replacement, it should be feasible to inject and simultaneously withdraw water from the isolated underdrain system.

Sincerely,

JOHN P. STOPEN ENGINEERING PARTNERSHIP

Rolf Leininger

ROLF LEININGER

RL/sh

APPENDIX D

CARBON TREATMENT ANALYSIS
CLARK PROPERTY, SYRACUSE, N.Y.
01/22/90

		CONC. (ppb)							
COMPOUND	METHOD	BC	LRL *	IC	LRL	AC-1	LRL	AC-2	LRL
Acetone	624	2200	1000	1700	500	1000	10	1500	10
2-Butanone	624	ND	1000	ND	500	ND	10	25	10
Methylene chloride	601	640	500	730	250	6.7	5	ND	5
	624	640	500	ND	250	ND	5	ND	5
1,1-Dichloroethane	624	700	500	340	250	7.9	5	14	5
	601	830	100	390	50	10	1	15	1
Toluene	624	3300	500	1100	250	11	5	14	5
	602	4100	50	1200	50	12	1	ND	1
1,1,1-Trichloroethane	601	910	100	350	50	7.9	1	14	1
	624	820	500	410	250	7.4	5	13	5
Trichloroethene	601	6000	100	1900	50	22	1	31	1
	624	5200	500	1800	250	17	5	32	5
1,2-Dichloroethene (total)	601	1500	100	610	50	7.6	1	14	1
	624	1300	500	480	250	ND	5	9.9	5
Xylenes (total)	602	350	50	140	50	24	1	6.9	1
Phenols	604	95	1	89	1	4.5	1	ND	1
PAH's	610	490	10	430	10	48	10	NO	10
Oil & Grease	413.1	20000	5000	72000	5000	ND	5000	ND	5000
TSS	Inorganics	19000	5000	40500	5000	10500	5000	8000	5000
Iron	Metals	1200	200	5700	200	3400	200	4200	100
Lead	Metals	ND	100	ND	100	ND	100	60	50
Manganese	Metals	520	20	560	20	570	20	660	10

*LRL = Laboratory Reporting Limit
**ND = Not Detected

Note: Parameters for which concentrations in all samples were ND, are not included on this summary.

Note: Carbon canisters for the water treatment at the site were changed out on January 2, 1990 at 09:00.

Note: The second round of AC samples were collected on 1/25/90 at 14:10.

CARBON TREATMENT ANALYSIS
CLARK PROPERTY, SYRACUSE, N.Y.
01/16/90

				CONC. (ppb)							
COMPOUND	METHOD	BS#	LRL*	BC	LRL	IC	LRL	AC-1	LRL	AC-2	LRL
Acetone	624	4100	1000	4100	250	2400	50	320	10	280	10
Benzene	602	2900	250	900	50	450	1	ND	1	ND	1
2-Butanone	624	ND	1000	1700	250	1100	50	ND	10	ND	10
1,1-Dichloroethane	624	5800	500	1400	120	650	25	ND	5	ND	5
	601	1300	500	1700	50	780	50	ND	1	1.1	1
Ethylbenzene	624	ND	500	ND	120	27	25	ND	5	ND	5
	602	470	250	100	50	25	1	ND	1	ND	1
Methylene Chloride	601	8800	2500	290	250	ND	250	ND	5	ND	5
	624	ND	500	ND	120	47	25	ND	5	ND	5
4-Methyl-2-pentanone	624	ND	1000	660	250	370	50	ND	10	ND	10
Toluene	624	35000	500	7900	120	2300	25	ND	5	ND	5
	602	37000	250	6600	50	2400	1	ND	1	ND	1
1,1,1-Trichloroethane	601	1800	500	2400	50	930	50	ND	1	ND	1
	624	17000	500	2200	120	890	25	ND	5	ND	5
Trichloroethene	601	13000	500	13000	50	4200	50	ND	1	ND	1
	624	70000	500	13000	120	4000	25	ND	5	ND	5
1,2-Dichloroethene (total)	601	1600	500	2200	50	940	50	ND	1	ND	1
	624	6700	500	2100	120	870	25	ND	5	ND	5
Xylenes (total)	602	3200	250	710	50	190	1	ND	1	ND	1
	624	3200	500	660	120	190	25	ND	5	ND	5
PAH's	610	NR	10	27	10	ND	10	ND	10	ND	10
Phenols	604	NR	1	25	1	3.5	1	ND	1	ND	1
Oil & Grease	413.1	47000	5000	11000	5000	14000	5000	ND	5000	ND	5000
TSS	Inorganics	32000	5000	22000	5000	47000	5000	10500	5000	ND	5000
Aluminum	Metals	ND	200	500	200	300	200	ND	200	ND	100
Iron	Metals	1700	200	2500	200	5800	200	2900	200	2100	100
Manganese	Metals	510	20	570	20	620	20	610	20	310	10

*LRL = Laboratory Reporting Limit
ND = Not Detected
NR = Not Recorded (sample bottles were broken upon receipt)
#BS = Before Sparger

Note: Parameters for which concentrations in all samples were ND, are not included on this summary.

Note: Carbon canisters for the water treatment at the site were changed out on January 2, 1990 at 09:00.

Note: The second round "AC" samples were taken on Jan. 18, 1990.

CARBON TREATMENT ANALYSIS
CLARK PROPERTY, SYRACUSE, N.Y.
1/8/90 from 11:30 to 16:30

						CONC. (ppb)					
COMPOUND	METHOD	BS	LRL	BC	LRL*	IC	LRL	AC-1	LRL	AC-2	LRL
Acetone	624	1900	250	2100	250	310	10	ND	10	77	10
2-Butanone	624	ND	250	340	250	27	10	ND	10	ND	10
1,1-Dichloroethane	624	3100	120	290	120	6.1	5	ND	5	ND	5
	601	3200	500	350	50	7.2	1	ND	1	ND	1
Methylene Chloride	601	2900	2500	ND	250	ND	5	ND	5	ND	5
	624	ND	120	190	120	8.9	5	ND	5	5.3	5
4-Methyl-2-pentanone	624	ND	250	350	250	ND	10	ND	10	ND	10
Toluene	624	9800	120	1100	120	ND	5	ND	5	ND	5
	602	8200	250	680	25	4.1	1	ND	1	ND	1
1,1,1-Trichloroethane	601	1500	500	68	50	ND	1	ND	1	ND	1
	624	1700	120	130	120	ND	5	ND	5	ND	5
Trichloroethene	601	14000	500	1100	50	6.1	1	ND	1	ND	1
	624	14000	120	1200	120	6.4	5	ND	5	ND	5
1,2-Dichloroethene (total)	601	10000	500	1400	50	17	1	ND	1	ND	1
	624	9500	120	1300	120	15	5	ND	5	ND	5
Xylenes (total)	602	530	250	ND	25	ND	1	ND	1	ND	1
	624	350	120	ND	120	ND	5	ND	5	ND	5
PAH's	610	9.3	10	6.5	10	ND	10	ND	10	ND	10
Phenols	604	13	1	2.5	1	ND	1	ND	1	ND	1
Oil & Grease	413.1	9100	5000	6300	5000	ND	5000	ND	5000	ND	5000
TSS	Inorganics	11000	5000	ND	5000	14000	5000	13000	5000	21000	5000
Iron	Metals	2800	200	2800	200	8300	200	8200	200	9200	200
Manganese	Metals	590	20	590	20	600	20	720	20	660	20

*LRL = Laboratory Reporting Limit
**ND = Not Detected
 #BS = Before Sparger

Note: Parameters for which concentrations in all samples were ND, are not included on this summary.

Note: Carbon canisters for the water treatment at the site were changed out on January 2, 1990 at 09:00.

Note: The second round "AC" samples were taken on Jan. 12, 1990.

CARBON TREATMENT ANALYSIS
CLARK PROPERTY, SYRACUSE, N.Y.
1/2/90 from 15:40 to 17:40

		CONC. (ppb)									
COMPOUND	METHOD	BS	LRL	BC	LRL*	IC	LRL	AC-1	LRL	AC-2	LRL
Acetone	624	5000	2500	1500	250	150	10	11	10	11	10
2-Butanone	624	ND	2500	530	250	26	10	ND	10	ND	10
1,1-Dichloroethane	624	3600	1200	410	120	5	5	ND	5	ND	5
	601	3800	500	400	50	4.9	1	ND	1	ND	1
1,1-Dichloroethene	601	ND	1200	ND	50	ND	1	ND	1	ND	1
Methylene Chloride	624	ND	1200	ND	120	6.4	5	7.8	5	ND	5
4-Methyl-2-pentanone	624	ND	2500	310	250	ND	10	ND	10	ND	10
Toluene	624	13000	1200	1500	120	ND	5	ND	5	ND	5
	602	15000	250	1500	25	3.2	1	ND	1	ND	1
1,1,1-Trichloroethane	601	6300	500	280	50	ND	1	ND	1	ND	1
	624	4300	1200	260	120	ND	5	ND	5	ND	5
Trichloroethene	601	29000	500	2300	50	4.2	1	ND	1	ND	1
	624	28000	1200	2300	120		5		5	ND	5
1,2-Dichloroethene (total)	601	12000	500	1500	50	12	1	ND	1	ND	1
	624	9100	1200	1400	120	11	5		5	ND	5
Xylenes (total)	602	680	250	91	25	ND	1	ND	1	ND	1
PAH's	610	14	10	7.5	10	ND	10	ND	10	ND	10
Phenols	604	30	1	5.5	1	ND	1	ND	1	ND	1
Oil & Grease	413.1	11000	5000	ND	5000	ND	5000	ND	5000	ND	5000
TSS	Inorganics	12000	5000	ND	5000	29000	5000	15000	5000	18000	5000
Iron	Metals	1600	300	1000	300	13000	300	9000	300	8400	300
Manganese	Metals	700	30	750	30	1100	30	1200	30	830	30

*LRL = Laboratory Reporting Limit
**ND = Not Detected
#BS = Before Sparger

Note: Parameters for which concentrations in all samples were ND, are not included on this summary.

Note: Carbon canisters for the water treatment at the site were changed out on January 2, 1990 at 09:00.

Note: The second round "AC" samples were taken on 1/4/90 at 13:30.

CARBON TREATMENT ANALYSIS
CLARK PROPERTY, SYRACUSE, N.Y.
12/26/89 from 17:30 to 19:00

		CONC. (ppb)							
COMPOUND	METHOD	BC	LRL*	IC	LRL	AC-1	LRL	AC-2	LRL
Acetone	624	ND	2500	270	10	ND	10	20	10
Benzene	602	6400	1	2.2	1	ND	1	ND	1
2-Butanone	624	3500	2500	ND	10	ND	10	ND	10
1,1-Dichloroethane	624	5200	1200	ND	5	ND	5	ND	5
	601	5300	250	3.8	1	ND	1	ND	1
1,1-Dichloroethene	601	ND	250	1.2	1	ND	1	ND	1
Ethylbenzene	602	210	1	ND	1	ND	1	ND	1
Methylene Chloride	624	ND	1200	ND	5	ND	5	6.6	5
Toluene	624	20000	1200	10	5	ND	5	ND	5
	602	13000	1	6.9	1	ND	1	ND	1
1,1,1-Trichloroethane	601	5800	250	27	1	ND	1	ND	1
	624	6200	1200	31	5	ND	5	ND	5
Trichloroethene	601	26000	250	33	1	ND	1	ND	1
	624	34000	1200	42	5	ND	5	ND	5
1,2-Dichloroethene (total)	601	17000	250	2.5	1	ND	1	ND	1
	624	14000	1200	ND	5	ND	5	ND	5
Vinyl Chloride	601	2300	250	21	1	ND	1	ND	1
	624	ND	2500	17	10	ND	10	ND	10
Xylenes (total)	602	11000	1	ND	1	ND	1	ND	1
PAH's	610	13	10	ND	10	ND	10	ND	10
Phenols	604	22	1	ND	1	ND	1	ND	1
Oil & Grease	413.1	11000	5000	ND	5000	ND	5000	ND	5000
TSS	Inorganics	16000	5000	ND	5000	ND	5000	ND	5000
Iron	Metals	1700	500	ND	500	ND	200	400	300
Manganese	Metals	710	50	690	50	660	50	1100	30

*LRL = Laboratory Reporting Limit
**ND = Not Detected

Note: Parameters for which concentrations in all samples were ND, are not included on this summary.

Note: Carbon canisters for the water treatment at the site were changed out on ~~December 11 at 14:00.~~ January 2.

Note: The second round "AC" samples were taken on 12/28/89 at 16:12.

CARBON TREATMENT ANALYSIS
CLARK PROPERTY, SYRACUSE, N.Y.
12/12/89 from 08:55 to 09:38

		CONC. (ppb)							
COMPOUND	METHOD	BC	LRL*	IC	LRL	AC-1	LRL	AC-2	LRL
Acetone	624	3100	2500	4400	250	11	10	28	10
1,1-Dichloroethane	624	1300	1200	ND	120	ND	5	ND	5
	601	2500	250	ND	1	ND	1	2.9	1
Toluene	624	4000	1200	ND	120	ND	5	ND	5
	602	5500	100	ND	1	ND	1	ND	1
1,1,1-Trichloroethane	601	1700	250	ND	1	ND	1	1.9	1
Trichloroethene	601	10000	250	ND	1	ND	1	1.4	1
	624	7900	1200	ND	120	ND	5	ND	5
Dibromochloromethane	601	390	250	ND	1	ND	1	ND	1
1,2-Dichloroethene (total)	601	6300	250	ND	1	ND	1	1.1	1
	624	3000	1200	ND	120	ND	5	ND	5
Xylenes (total)	602	190	100	ND	1	ND	1	ND	1
PAH's	610	7	10	ND	10	ND	10	ND	10
Oil & Grease	413.1	15000	5000	ND	5000	ND	5000	ND	5000
TSS	Inorganics	10000	5000	5000	5000	5000	5000	15000	5000
Iron	Metals	1900	300	600	300	1100	300	900	100
Manganese	Metals	720	30	680	30	670	30	580	10

*LRL = Laboratory Reporting Limit
**ND = Not Detected

Note: Parameters for which concentrations in all samples were ND, are not included on this summary.

Note: Carbon canisters for the water treatment at the site were changed out on December 4 at 12:00 and on December 11 at 14:00.

Note: The second round "AC" samples were taken on 12/14/89 at 11:15.

CARBON TREATMENT ANALYSIS
CLARK PROPERTY, SYRACUSE. N.Y.
12/7/89 from 13:59 to 14:47

		CONC. (ppb)							
COMPOUND	METHOD	BC	LRL*	IC	LRL	AC-1	LRL	AC-2	LRL
Acetone	624	ND	2500	4700	200	40	10	ND	10
Chloroform	601	210	200	ND	1	ND	1	ND	5
Vinyl Chloride	601	240	200	ND	1	ND	1	ND	1
Methylene chloride	601	ND	1000	ND	5	ND	5	9.2	5
1,1-Dichloroethane	624	1700	1200	ND	100	ND	5	ND	5
	601	2500	200	1.4	1	1.2	1	ND	1
Toluene	624	5400	1200	ND	100	ND	5	ND	5
	602	6600	100	ND	1	ND	1	ND	1
1,1,1-Trichloroethane	601	1800	200	ND	1	ND	1	ND	1
Trichloroethene	601	13000	200	ND	1	ND	1	ND	1
	624	10000	1200	ND	100	ND	5	ND	5
1,2-Dichloroethene (total)	601	7400	200	ND	1	ND	1	ND	1
	624	5300	1200	ND	100	ND	5	ND	5
2-Butanone	624	1400	1200	ND	200	ND	10	ND	10
Xylenes (total)	602	150	100	ND	1	ND	1	ND	1
Phenols	604	2.6	1	ND	1	ND	1	ND	1
PAH's	610	9.3	10	ND	10	ND	10	ND	10
Oil & Grease	413.1	ND	5	ND	5	ND	5	ND	5000
TSS	Inorganics	14000	5000	ND	5000	10000	5000	6000	5000
Aluminum	Metals	100	100	ND	100	ND	100	ND	100
Iron	Metals	1400	100	300	100	1200	100	400	100
Manganese	Metals	650	10	640	10	730	10	580	10

*LRL = Laboratory Reporting Limit
**ND = Not Detected

Note: Parameters for which concentrations in all samples were ND, are not included on this summary.

Note: Carbon canisters for the water treatment at the site were changed out on December 4 at 12:00 and on December 11 at 14:00.

Note: The second round "AC" samples were taken on 12/5/89 at 09:18.

CARBON TREATMENT ANALYSIS
CLARK PROPERTY, SYRACUSE, N.Y.
11/27/89 from 10:04 to 11:11

COMPOUND	METHOD	CONC. (ppb) BC	LRL*	IC	LRL	AC-1	LRL	AC-2	LRL
Acetone	624	ND	2500	6300	250	4300	10	290	10
Chloroform	601	980	250	ND	5	ND	1	ND	1
Vinyl Chloride	601	870	250	270	5	ND	1	ND	1
Methylene chloride	601	ND	1200	98	25	ND	5	ND	5
	624	ND	1200	ND	120	ND	5	ND	5
1,1-Dichloroethane	624	2200	1200	230	120	ND	5	ND	5
	601	3400	250	350	5	ND	1	ND	1
Toluene	624	12000	1200	ND	120	ND	5	ND	5
	602	10000	500	17	1	ND	1	ND	1
1,1,1-Trichloroethane	601	3500	250	210	5	ND	1	ND	1
	624	2800	1200	160	120	ND	5	ND	5
Trichloroethene	601	20000	250	170	5	ND	1	ND	1
	624	19000	1200	150	120	ND	5	ND	5
1,2-Dichloroethene (total)	601	15000	250	460	5	ND	1	ND	1
	624	9400	1200	260	120	ND	5	ND	5
2-Butanone	624	ND	2500	340	250	ND	10	ND	10
Phenols	604	38	1	0.7	1	ND	1	ND	1
PAH's	610	8.7	10	ND	10	ND	10	ND	10
Oil & Grease	413.1	7800	5000	ND	5000	ND	5000	ND	5000
TSS	Inorganics	12000	5000	ND	5000	ND	5000	ND	5000
Aluminum	Metals	650	200	360	200	530	200	ND	100
Iron	Metals	1500	200	880	200	590	200	300	100
Manganese	Metals	780	20	760	20	740	20	660	10

*LRL = Laboratory Reporting Limit
**ND = Not Detected

Note: Parameters for which concentrations in all samples were ND, are not included on this summary.

Note: Carbon canisters for the water treatment at the site were changed out on November 20 at 16:00 and on November 28 at 08:00.

Note: The second round "AC" samples were taken on 11/30/89 at 08:42.

CARBON TREATMENT ANALYSIS
CLARK PROPERTY, SYRACUSE, N.Y.
11/20/89 (between 15:15 and 20:15)

		CONC. (ppb)							
COMPOUND	METHOD	BC	LRL*	IC	LRL	AC-1	LRL	AC-2	LRL
Acetone	624	5000	10	9200	10	ND	10	ND	10
Vinyl Chloride	601	ND	500	300	5	ND	1	ND	1
	624	ND	10	260	10	ND	10	ND	10
Methylene chloride	601	3800	2500	200	25	ND	5	5.4	5
	624	ND	5	320	5	ND	5	ND	5
1,1-Dichloroethane	624	2100	5	140	5	ND	5	ND	5
	601	2600	500	180	5	ND	1	ND	1
Toluene	624	10000	5	ND	5	ND	5	ND	5
	602	9700	250	21	1	ND	1	ND	1
1,1,1-Trichloroethane	601	3900	500	100	5	ND	1	ND	1
	624	3300	5	ND	5	ND	5	ND	5
Trichloroethene	601	23000	500	92	5	ND	1	ND	1
	624	20000	5	ND	5	ND	5	ND	5
1,2-Dichloroethene (total)	601	13000	500	270	5	ND	1	ND	1
	624	11000	5	230	5	ND	5	ND	5
2-Butanone	624	ND	2500	510	10	ND	10	120	10
Tetrachloroethene	601	4900	500	ND	5	ND	1	ND	1
Phenols	604	24	10	ND	10	ND	10	ND	1
PAH's	610	5.6	5	ND	5	ND	5	ND	10
Oil & Grease	413.1	6800	5000	ND	5000	ND	5000	ND	5000
TSS	Inorganics	25000	5000	10000	5000	7000	5000	ND	5000
Aluminum	Metals	600	100	ND	100	ND	100	ND	200
Iron	Metals	1200	100	500	100	200	100	1200	200
Manganese	Metals	530	10	460	10	380	10	710	20

*LRL = Laboratory Reporting Limit
**ND = Not Detected

Note: Parameters for which concentrations in all samples were ND, are not included on this summary.

Note: Carbon canisters for the water treatment at the site were changed out on November 13 at 11:25 and on Novemeber 20 at 16:00.

Note: The second round "AC" samples were taken on 11/22/89 between 08:39 and 09:01.

CARBON TREATMENT ANALYSIS
CLARK PROPERTY, SYRACUSE, N.Y.
11/13/89 at 18:15, 18:30, & 18:45

		CONC. (ppb)						
COMPOUND	METHOD	BC	LRL*	IC	LRL	AC-1	AC-2	LRL
Acetone	624	6000	2500	17000	1000	2900	28	10
Chloroethane	601	ND**	2500	5.5	5	ND	ND	5
Vinyl Chloride	601	700	500	180	1	ND	ND	1
Methylene chloride	601	ND	2500	99	5	ND	10	5
	624	ND	1200	1700	500	18	ND	5
1,1-Dichloroethane	601	2800	500	78	1	ND	ND	1
	624	2600	1200	ND	500	ND	ND	5
1,1-Dichloroethene	601	ND	500	5.7	1	ND	ND	1
Toluene	624	14000	1200	ND	500	ND	ND	5
	602	14000	500	7.9	1	ND	ND	1
1,1,1-Trichloroethane	601	3500	500	46	1	ND	ND	1
	624	4100	1200	ND	500	ND	ND	5
Trichloroethene	601	26000	500	27	1	ND	ND	1
	624	31000	1200	ND	500	ND	ND	5
1,2-Dichloroethane	601	ND	500	1.7	1	ND	ND	1
1,2-Dichloroethene (total)	601	17000	500	120	1	ND	ND	1
	624	16000	1200	ND	500	ND	ND	5
Xylenes (total)	602	2900	500	ND	1	ND	ND	1
Phenols	604	40	1	ND	1	ND	ND	1
PAH's	610	4.9	10	ND	10	ND	ND	10
Oil & Grease	413.1	5500	5000	ND	5000	ND	ND	5000
TSS	Inorganics	18000	5000	8000	5000	ND	11000	5000
Aluminum	Metals	200	100	ND	100	ND	100	100
Iron	Metals	800	100	400	100	200	600	100
Manganese	Metals	640	10	590	10	680	590	10

*LRL = Laboratory Reporting Limit
**ND = NOT DETECTED

Note: Parameters for which concentrations in all samples were ND, are not included on this summary.

Note: Carbon canisters for the water treatment at the site were changed out on November 9 at 16:42 and on November 13 at 11:25.

Note: The second round "AC" samples were taken on 11/16/89 at 09:33.

CARBON TREATMENT ANALYSIS
CLARK PROPERTY, SYRACUSE, N.Y.
11/07/89

COMPOUND	METHOD	CONC. (ppb) BC	IC	AC-1	AC-2
Acetone	624	ND	24000	150	65
Vinyl Chloride	601	1300	18	ND	ND
Methylene chloride	601	ND	67	ND	ND
	624	ND	ND	8.5	ND
1,1-Dichloroethane	601	3200	2.9	ND	ND
Tetrachloroethene	624	18000	ND	ND	ND
Toluene	624	ND	ND	ND	13
	602	ND	ND	ND	14
1,1,1-Trichloroethane	601	3900	2	ND	ND
	624	3400	ND	ND	ND
Trichloroethylene	601	33000	3.4	ND	17
	624	32000	ND	ND	18
	624	17000	3.1	ND	ND
1,2-Dichloroethene (total) *	601	19000	3.3	ND	1.3
	624	19000	ND	ND	ND
Phenols	604	63	ND	ND	ND
PAH's	610	9.1	ND	ND	ND
Oil & Grease	413.1	10000	ND	ND	ND
TSS	Inorganics	74000	12000	10000	8000
Aluminum	Metals	ND	100	ND	ND
Iron	Metals	1300	300	200	300
Manganese	Metals	10	660	630	540

ND = NOT DETECTED

Note: Parameters for which concentrations in all samples were ND, are not included on this summary.

Note: Carbon canisters for the water treatment at the site were changed out on November 6 at 16:30.

Note: The second round "AC" samples were taken on 11/09/89.

CARBON TREATMENT ANALYSIS
CLARK PROPERTY, SYRACUSE, N.Y.
10/30/89 at 09:16, 09:30, & 09:40

COMPOUND	METHOD	CONC. (ppb) BC	IC	AC-1	AC-2
Acetone	624	110000	16000	19000	12000
2-Butanone	624	9200	5200	110	ND
Vinyl Chloride	601	2600	2000	1.1	ND
	624	ND	1800	ND	ND
Methylene chloride	601	3200	700	7.2	ND
	624	1300	850	ND	ND
1,1-Dichloroethane	601	5700	970	ND	ND
	624	4600	1000	ND	ND
1,1-Dichloroethylene	624	1300	100	ND	ND
4-Methyl-2-pentanone	624	3000	350	ND	ND
1,1,1-Trichloroethane	601	13000	720	ND	ND
	624	12000	980	ND	ND
Trichloroethylene	601	51000	590	ND	ND
	624	76000	900	ND	ND
Toluene	602	24000	160	ND	ND
	624	36000	200	ND	ND
1,2-Dichloroethene (total) &	601	42000	2900	ND	ND
	624	32000	2400	ND	ND
Phenols	604	25	ND	ND	ND
Xylenes (total)	602	710	4.7	ND	ND
	624	1600	ND	ND	ND
PAH's	610	15	ND	ND	ND
Oil & Grease	413.1	11000	11000	ND	ND
TSS	Inorganics	91000	19000	8000	11000
Aluminum	Metals	1300	300	ND	100
Iron	Metals	2900	700	500	300
Lead	Metals	100	ND	ND	ND
Manganese	Metals	970	830	730	550

ND = NOT DETECTED
NR = NOT REPORTED

Note: Parameters for which concentrations in all samples were ND, are not included on this summary.

Note: The second round of "AC" samples were taken on 11/02/89 at 15:25.

Note: Carbon canisters for the water treatment at the site were changed out on October 27 at 14:00 and on October 30 at 18:30.

CARBON TREATMENT ANALYSIS
CLARK PROPERTY, SYRACUSE, N.Y.
10/23/89 at 10:30, 10:52, & 11:10

		CONC. (ppb)			
COMPOUND	METHOD	BC	IC	AC-1	AC-2
Acetone	624	NR	1600	ND	B10
Vinyl Chloride	601	1300	1.7	ND	ND
1,1-Dichloroethane	601	1100	ND	ND	ND
Trichloroethylene	601	6700	ND	ND	ND
Toluene	602	7100	ND	ND	ND
1,2-Dichloroethene (total) *	601	9500	ND	ND	ND
	624	8900	ND	ND	ND
Phenols	604	14	ND	ND	ND
PAH's	610	8.1	ND	ND	ND
Toluene	624	7500	ND	ND	ND
Trichloroethene	624	6900	ND	ND	ND
Oil & Grease	413.1	6200	ND	ND	ND
Aluminum	Metals	600	ND	ND	ND
Iron	Metals	600	ND	ND	ND
Lead	Metals	60	ND	ND	ND
Manganese	Metals	50	ND	ND	60

ND = NOT DETECTED
NR = NOT REPORTED

Note: Parameters for which concentrations in all samples were ND, are not included on this summary.

Note: The second round of "AC" samples were taken on 10/26/89 at 09:30.

Note: Carbon canisters for the water treatment at the site were changed out on October 27 at 14:00.

CARBON TREATMENT ANALYSIS
CLARK PROPERTY, SYRACUSE, N.Y.
10/20/89 at 09:17, 09:56, & 10:09

COMPOUND	METHOD	CONC. (ppb) BC	IC	AC
Acetone	624	ND	51	ND
Vinyl Chloride	601	770	ND	ND
1,1-Dichloroethane	601	1400	ND	ND
1,1,1-Trichloroethane	601	4000	ND	ND
Trichloroethylene	601	24000	ND	ND
	624	23000	ND	ND
Toluene	602	32000	ND	ND
	624	14000	ND	ND
Total Xylenes	602	4100	ND	ND
1,2-Dichloroethene (total) *	601	6600	ND	ND
	624	5300	ND	ND
Oil & Grease	413.1	8900	ND	ND
TSS	Inorganics	60000	ND	ND

ND = NOT DETECTED
NR = NOT REPORTED

Note: Parameters for which concentrations in all samples were ND, are not included on this summary.

Note: Carbon canisters for the water treatment at the site were changed out on October 27 at 14:00.

CARBON TREATMENT ANALYSIS
CLARK PROPERTY, SYRACUSE, N.Y.
09/30/89 at 11:28, 16:03, & 16:51

COMPOUND	METHOD	CONC. (ppb) BC	IC	AC
Vinyl Chloride	601	3200	ND	ND
Methylene Chloride	601	ND	7.2	ND
1,1-Dichloroethane	601	10000	ND	ND
	624	6900	ND	ND
cis-1,2-Dichloroethylene	*	*	ND	ND
1,1,1-Trichloroethane	601	20000	ND	ND
	624	20000	ND	ND
Trichloroethylene	601	78000	ND	ND
	624	130000	ND	ND
Toluene	602	22000	1.7	ND
	624	33000	ND	ND
Total Xylenes	602	3200	ND	ND
1,2-Dichloroethene (total) *	601	40000	ND	ND
	624	32000	ND	ND
Oil & Grease	413.1	8600	ND	ND
Aluminum	Metals	400	ND	ND
Iron	Metals	2600	1000	800
Lead	Metals	1000	ND	ND
Manganese	Metals	290	290	270

ND = NOT DETECTED
NR = NOT REPORTED

Note: Parameters for which concentrations in all samples were ND, are not included on this summary.

Note: Carbon canisters for the water treatment at the site were changed out on October 27 at 14:00.

APPENDIX E

APPENDIX E

Risk Evaluation

Risk Assessment Conclusion

In the opinion of Dunn, given the numerous design features, only a complete failure of the design characteristics could allow air and water from beneath or adjacent to the building to enter the garage. In the event of a catastrophic failure of the foundation design features, and based on the occupational exposure limits of the modeled compounds, there will be no significant risk associated with exposure to these compounds.

Building Design Features

The Carousel Center consists of a subgrade level and multiple levels of retail space above grade. Above the VOC-contaminated area, the subgrade level is an open area to be used as a garage. The air handling systems for the proposed garage and retail spaces are separate. The air handling systems will be operated to maintain a higher pressure in the retail space than in the designated garage area. This practice, which is required by New York State Building Codes, ensures a gradient for air movement away from the retail space toward the garage areas.

This design feature is advantageous when considering the potential exposure of workers and shoppers. The forced movement of air from the mall to the garage eliminates the influx of contaminants from the garage to the retail space. Therefore, the risk to people inside the shopping center is considered minimal from this possible exposure route.

Air Quality Evaluation Procedure

The foundation design incorporates an underdrain system to control groundwater beneath a 24-inch compensated mat sealed with Paraseal. Paraseal is a heavy polyethylene sheet with granulated bentonite backing that has been successfully used to prevent water infiltration in construction applications. Although water leakage into the foundation is extremely unlikely based on the design, the garage air quality

has been evaluated under several scenarios of water leakage into the basement and garage ventilation.

The evaluation of the scenarios was accomplished using a mathematical model developed for the USEPA's Office of Air and Radiation by the Air and Energy Engineering Research Laboratory at Research Triangle Park. The model is entitled "Indoor Air Quality Model" Version 1.0. The operation's manual is Document No. EPA-600/8-08-097a. The model requires the following input data:

- o Source emission rate(s) as a function of location within the building.
- o Air movement rates between the indoor and outdoor air spaces, and
- o Air movement within the building.

Internal air movements were developed using the following assumptions:

- o Air in and out of any area must be balanced.
- o All air which enters an area from the portals through which shopping center air moves exits to the outside air space from that area.
- o Half of the shopping center air moves through the escalator and shopping center-entranceway vestibules (combined). The remaining half of the air moves through the doorways between the garage and egress hallways.
- o Once air moves out of one area to another, it will not return.

Model Input

The program input data are defined based on a telephone conversation with Mr. Leslie Sparks of the USEPA (the curator of the Indoor Air Quality Model), groundwater quality as measured by Dunn at the Clark Site, emission estimation techniques documented in the EPA-Superfund Exposure Assessment Manual (Document No. EPA/540/1-88/001), building configuration as defined by Conklin, Ltd., and the garage ventilation system as described by Robson & Woese Inc.,

Consulting Engineers. Only the south end of the shopping center has been modeled in this evaluation. The south end of the shopping center is defined by the outside garage walls and the south wall of the garage level retail space (Figure E-1).

The south end of the mall was divided into 3 areas for modeling purposes (Figure E-1). The air flows in and out of the garage are also depicted on Figure E-1.

Area of modeled "rooms"

Area 1 16,990 m2
Area 2 11,985 m2
Area 3 3,015 m2

Height of Garage 4.9 m

The following summarizes the data used as model inputs:

Emission Rates (1) Vinyl Chloride 4x10-10 g/sec/cm2 (2)
Trichloroethylene 1 x 10-9 g/sec/cm2

Emission rates were determined by the procedures presented at the end of this Appendix.

Estimated Air Model

Seven different scenarios which were evaluated are described below. Various source strengths and garage ventilation rates were used in the model to estimate the garage air quality. Under all of the scenarios described, the one constant is assumed to be the air flow from the mall to the garage (estimated to be 10,080 CFM. The probability of occurrence of the various scenarios listed is considered to be highly unlikely. They have been developed only to provide a means of showing the minimal risk even in the event of catastrophic failure of the numerous safeguards which are part of the foundation design.

Scenarios 1, 2, 3 and 4 are based on a constant emission rate of volatile organics from groundwater which enter the south end of the mall from a catastrophic event that includes failure of the waterproofing membrane, the 24 inch

concrete foundation, the dewatering mechanism, the gradient sump pumps outside the building, the positive air flow ventilation system and the VOC screening device which may be in operated. The event hypothetically results in water leaking into the south end of the garage. Even in the event of such a complete failure it must be recognized that such leaking would prohibit the use of the garage. Therefore, other than maintenance personnel who would enter the flooded area under an appropriate health and safety plan, there will be no exposure to personnel or the public.

Scenario 1 - Continued use of the garage ventilation system as envisioned by the mall's mechanical engineer i.e., sufficient air movement to maintain the carbon monoxide level in the garage below OSHA-TLV values as monitored using sensors in the garage. This is estimated to require approximately 62,750 CFM on the average during the hours the mall is occupied. The garage ventilation system is capable of 6 complete air changes of the garage per hour.

Scenario 2 - The total flow from the garage to the outside is reduced to 30,000 CFM.

Scenario 3 - Only the air from the shopping center to the garage is released to the outside.

Scenario 4 - The same as Scenario 1 except vinyl chloride (VC) concentration was modeled instead of the trichloroethylene (TCE) concentration, and the ventilation system continues to operate.

Scenarios 5, 6 & 7 were based on a 1/2 acre (2023 m2) puddle of groundwater entering the garage through a noncatastrophic failure of the waterproofing membrane. In both scenarios 5 & 6, the puddle is located in Room 1. In Scenario 7, the puddle is located in Room 3. A scenario of the puddle located in Room 2 is not explored because the assumption about air flow indicates the concentration would be lower in all rooms than predicted for the modeled scenarios.

Scenario 5 - Normal air flow through the garage is used to model the TCE concentration.

Scenario 6 - the same as Scenario 5 except the concentration of VC is modeled.

Scenario 7 - the modeling of the VC concentration is in the garage.

The emission rates for the contaminants of concern are based on the anticipated groundwater quality after shopping center construction based on recently acquired groundwater quality data.

The groundwater quality assumed for the emission rate calculations (provided at the end of this Appendix) described herein is:

1000 ug/l	Trichloroethylene
570 ug/l	Toluene
250 ug/l	Vinyl Chloride*

*Note: Vinyl chloride (VC) had not been quantified during the Supplemental RI at the time the modeling was performed. The VC concentration in the water used for this effort was estimated using the trichloroethylene (TCE) concentration measured during the Supplemental RI and the TCE:VC ratio obtained by averaging the TCE:VC ratio for groundwater samples collected during the initial RI.

Other constituents are present at concentrations less than 25 ug/l. Because their respective toxicities are lower than TCE or VC and they are at significantly lower concentrations, they are not considered further in this study. Toluene is not considered further either because its emission rate to the garage in the study scenario is less than that of TCE, its toxicity is lower than that of TCE, and, as will be discussed below, TCE concentrations are not considered to be a significant risk.

The emission rates are as follows:

Scenarios 1, 2, 3 & 5: TCE 1x10-9 g/sec cm
Scenarios 4, 6 and 7: VC 4x10-10 g/sec cm

The groundwater concentrations shown above to calculate emission rates and to determine the corresponding vapor concentrations were the best available data at the time the risk evaluation was performed. However, the most recent data collected at the site from the deep monitoring wells indicates concentrations substantially lower than the previous data since the wells have been allowed to equilibrate. The range

of concentrations in the deep wells in samples collected on February 1, 1990 are as follows:

Non-detect to 244 ug/l - Trichlorethylene
Non-detect to 167 ug/l - Toluene
Non-detect - Vinyl Chloride

These concentrations are believed to be representative of the potential groundwater quality beneath the completed shopping center. It should be noted here that these levels are far below the measurements taken previously at the site. Particularly, vinyl chloride was not detected in any of the groundwater samples collected from the deep wells.

The model results for TCE and VC in the garage air space are depicted in Figures E-2 through E-8. These figures represent the modeled air concentration for Scenarios 1 through 7 respectively. The following conclusions have been reached based on the modeled air quality.

The air quality in the south end of the garage can be maintained within an acceptable concentration, when compared to 8-hour exposure based Threshold Limit Value (TLV) using normal or extended ventilation even during catastrophic failure of the waterproofing membrane. All TCE concentrations determined under Scenarios 1, 2 and 3 are below the TLV of 269 mg/m3. The stable concentration of vinyl chloride for this scenario (approximately 6 mg/m3 as compared to the TLV of 13 mg/m3) prior to the shutdown of the garage ventilation system for the unoccupied period would be maintained through continued operation of the ventilation system during the period necessary to repair the break in the membrane. Continuous operation of the ventilation system during such an event will minimize potential risk.

Even a leak resulting in a 1/2 acre puddle in the garage, regardless of its location or depth would not result in levels exceeding the respective TLVs with normal garage ventilation.

The design of the shopping center is such that the entrance of water into the garage is impossible. Therefore, it is highly unlikely that a 1/2 acre puddle could even develop before repairs could be initiated.

APPENDIX

Calculations Used to Estimate Volatile Emissions from Surface Waters

I. Q_i: Calculation of the overall emission rate

$$Q_i = (MW_i)(K_L)(A)(X_i)$$

- Q_i overall emission rate of compound i (g/sec)
- MW_i molecular weight of compound i (g)
- $K_{L,i}$ overall mass transfer coefficient for compound$_i$ (g-mole/cm^2 · sec)
- A exposed surface area (cm^2)
- X_i mole fraction of compound i in the solution

II. $K_{L,i}$: Calculation of the overall mass transfer coefficient

$$\frac{1}{K_{L,i}} = \frac{1}{k_{L,i}} + \frac{1}{(K)(k_{g,i})}$$

- $k_{L,i}$ liquid-phase mass transfer coefficient for compound i (g-mole/cm^2·sec)
- $k_{g,i}$ gas-phase mass transfer coefficient for compound i (g-mole/cm^2·sec)
- K vapor-liquid equilibrium constant based on the Henry's Law constant for compound i

III. $k_{L,i}$: Calculation of the liquid-phase mass transfer coefficient.

$$k_{L,i} = (MW_{O2}/MW_i)^{0.5} \times (273+0/298) \times k_{L,O2}$$

$k_{L,O2}$ liquid-phase mass transfer coefficient for oxygen at $25^{o}C$ = 1.23×10^{-4} g-mole/cm^2 . sec

MW_{O2} molecular weight of Oxygen

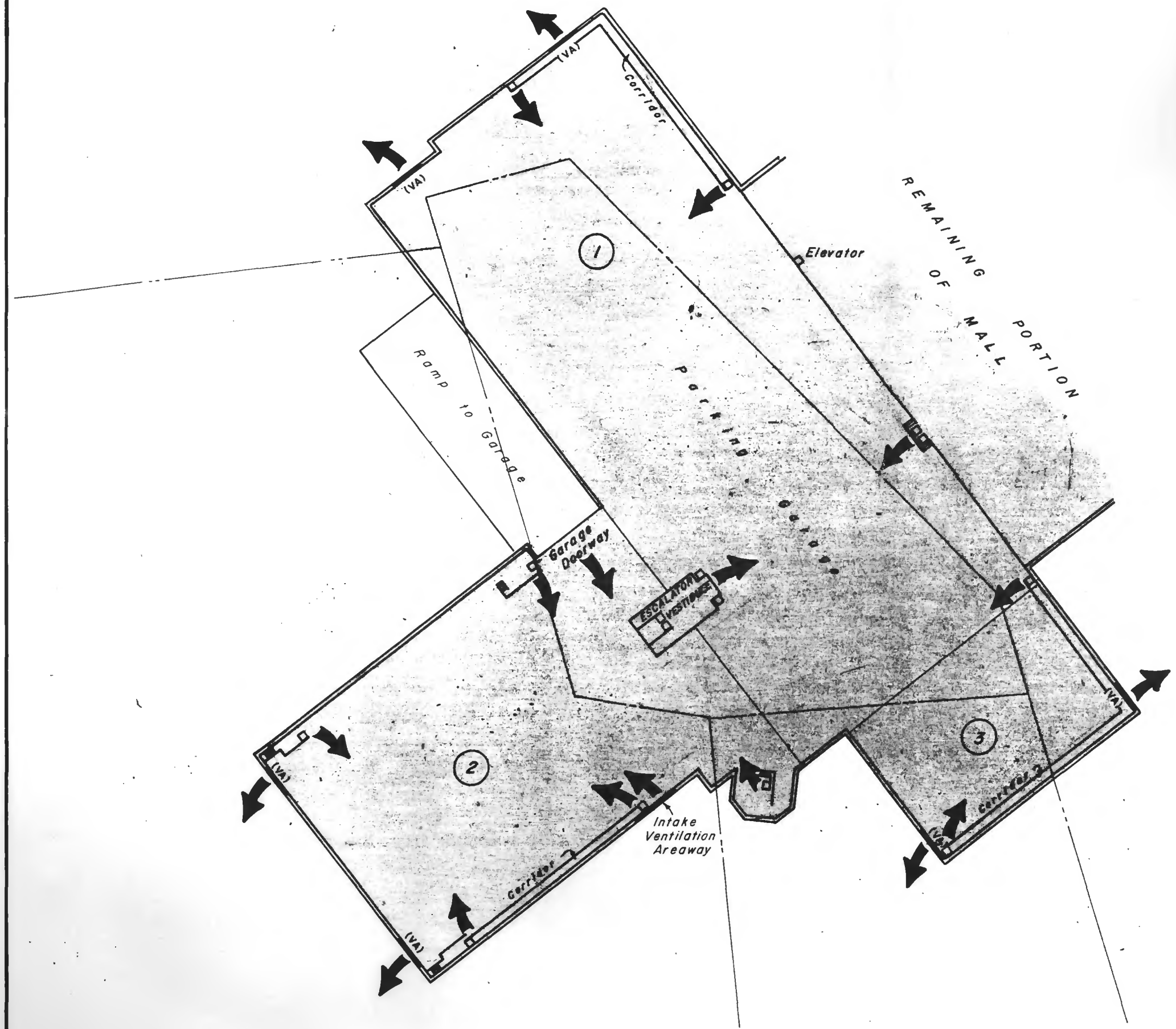
273+0/298 = ratio of the temperature of the solvent (^{o}K) to $298^{o}K$

IV. $k_{g,i}$: Calculation of the gas-phase mass transfer coefficient

$$k_{g,i} = (MW_{H2O}/MW_i)^{0.335} \times (273+0/298)^{1.005} k_{g,H2O}$$

$k_{g,H2O}$ gas phase mass transfer coefficient of water = 5.8×10^{-5} g-mole/$cm^2 \cdot$sec

MW_{H2O} molecular weight of water



North

100 0 100

SCALE IN FEET

NOTES:

1.) This plat has been prepared from the "Carousel Center, Construction Documents No. A1.0 Parking Level Plan" Prepared by dd-pos Associates and dated September 1, 1989.

LEGEND:

- Doorway
- Stairs
- (VA) Exhaust Ventilation Areaway
- Parcel line (Former)
- Air Flow Direction
- (2) Hypothetical Room number

The location, size, and configuration shown hereon are approximate only and the actual location, size, and configuration may vary from that shown.

FIGURE E-1

GARAGE VENTILATION DETAIL

CAROUSEL CENTER MALL

CITY OF SYRACUSE, NEW YORK

PROJECT NO.: 2371-01-455	DATE: January 24, 1990

DUNN GEOSCIENCE CORPORATION
12 Metro Park Road
Albany, N.Y. 12205

SCENARIO 1 - FLOODED BASEMENT AND NORMAL VENTILATION TCE CONCENTRATION

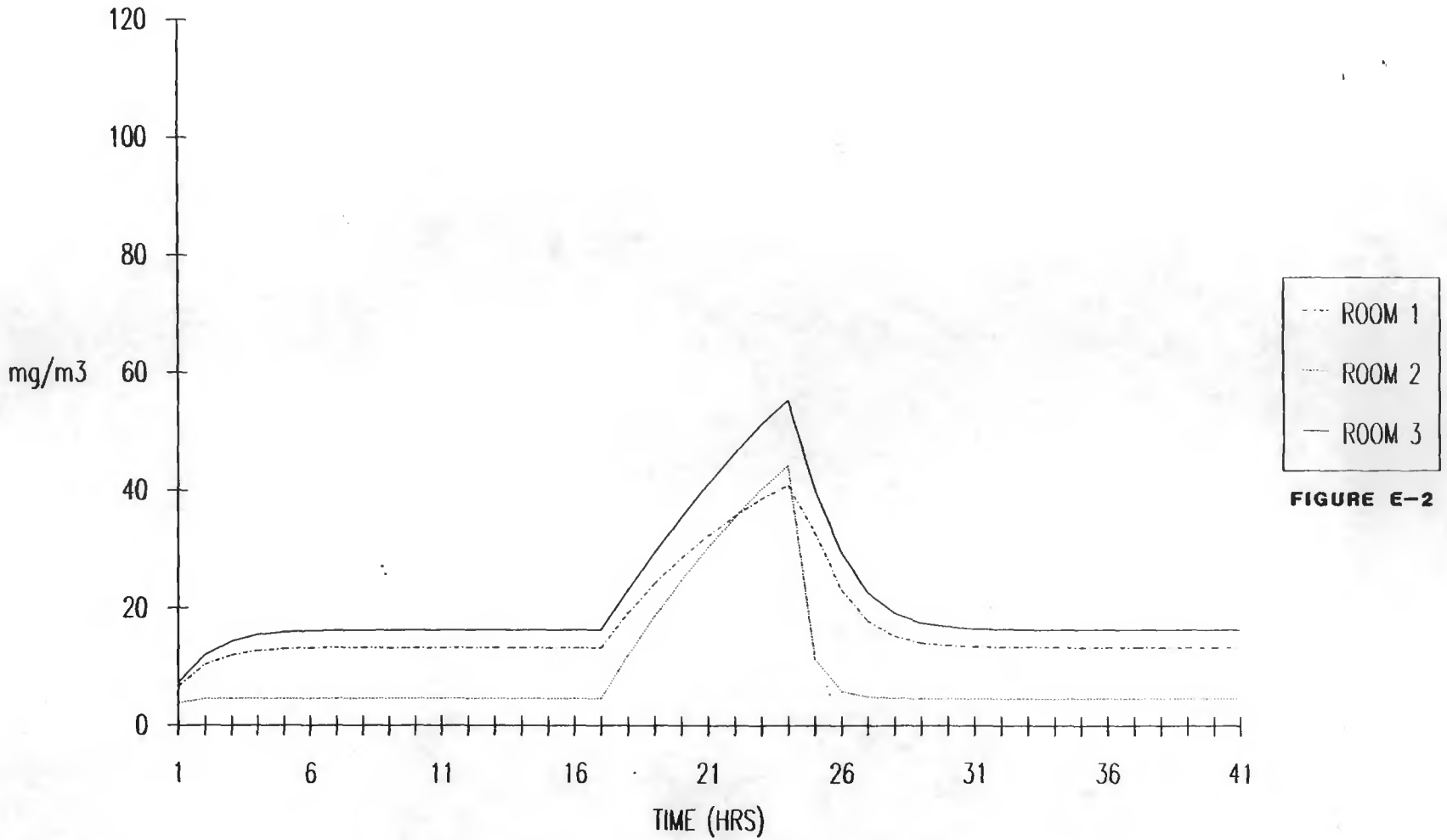


FIGURE E-2

SCENARIO 2 - FLOODED BASEMENT AND HALF-NORMAL VENTILATION TCE CONCENTRATION

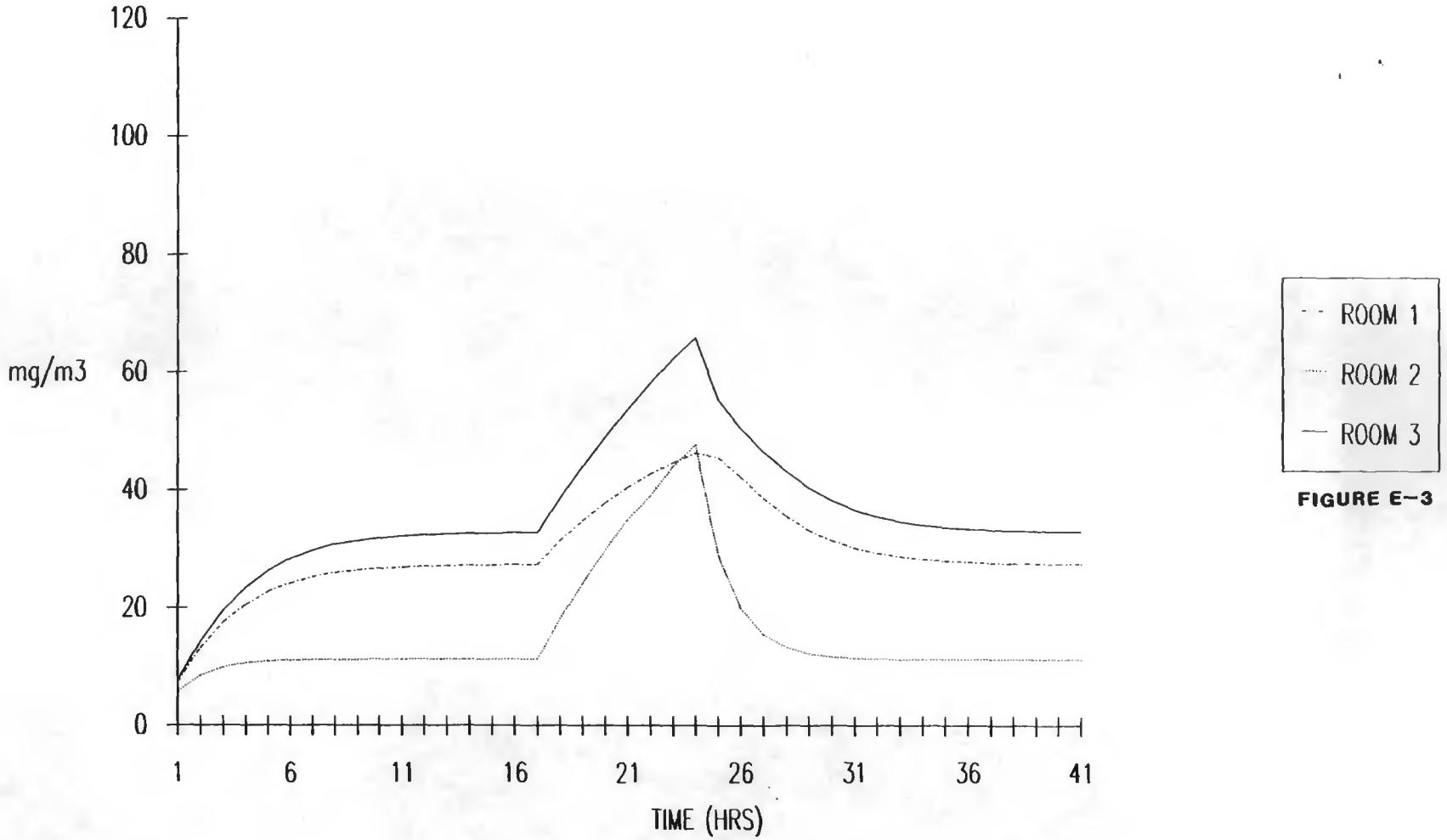


FIGURE E-3

SCENARIO 3: FLOODED BASEMENT MALL TO GARAGE AIR FLOW ONLY TCE CONCENTRATION

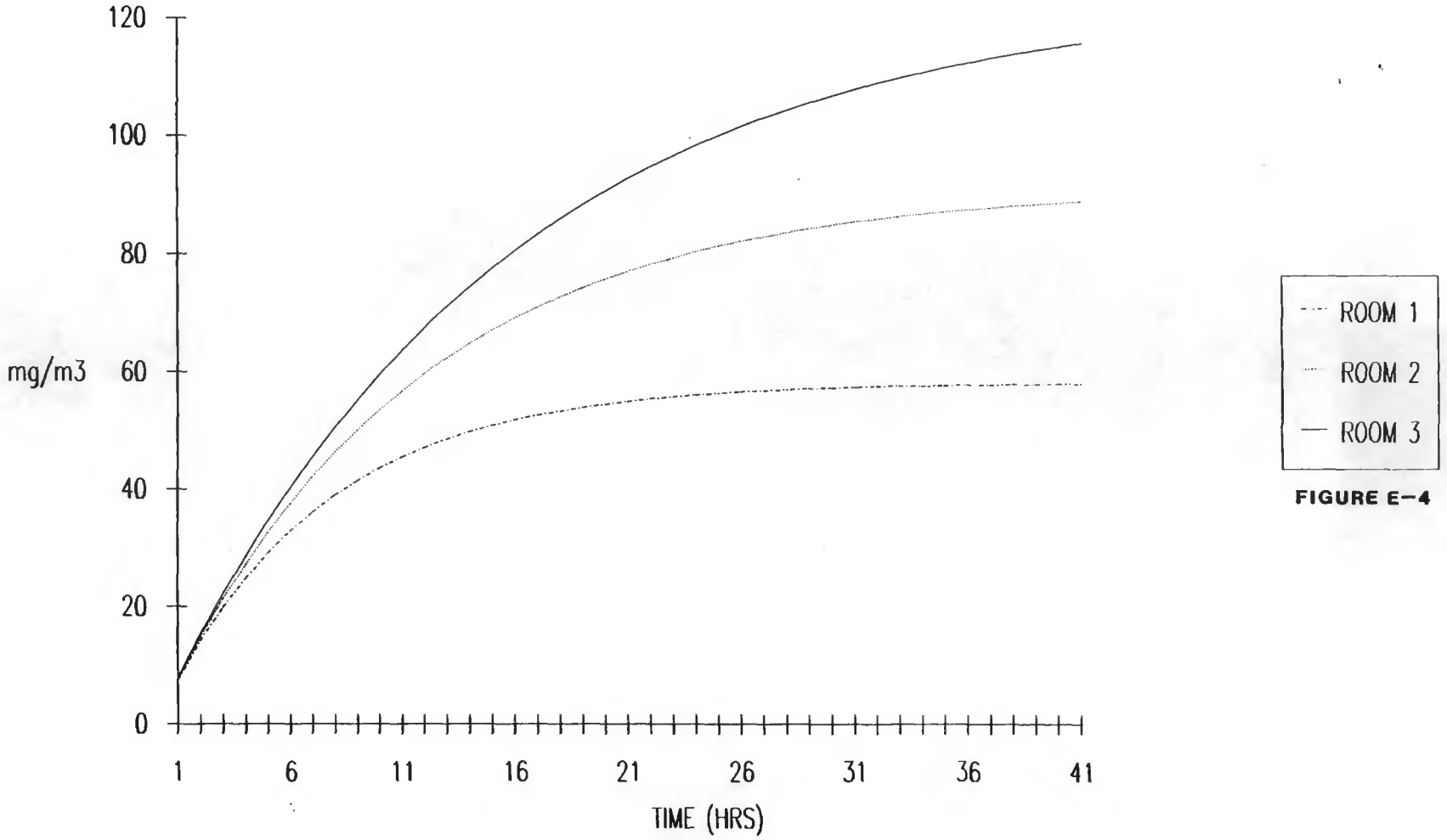


FIGURE E–4

SCENARIO 4: FLOODED BASEMENT NORMAL VENTILATION VINYL CHLORIDE CONCENTRATION

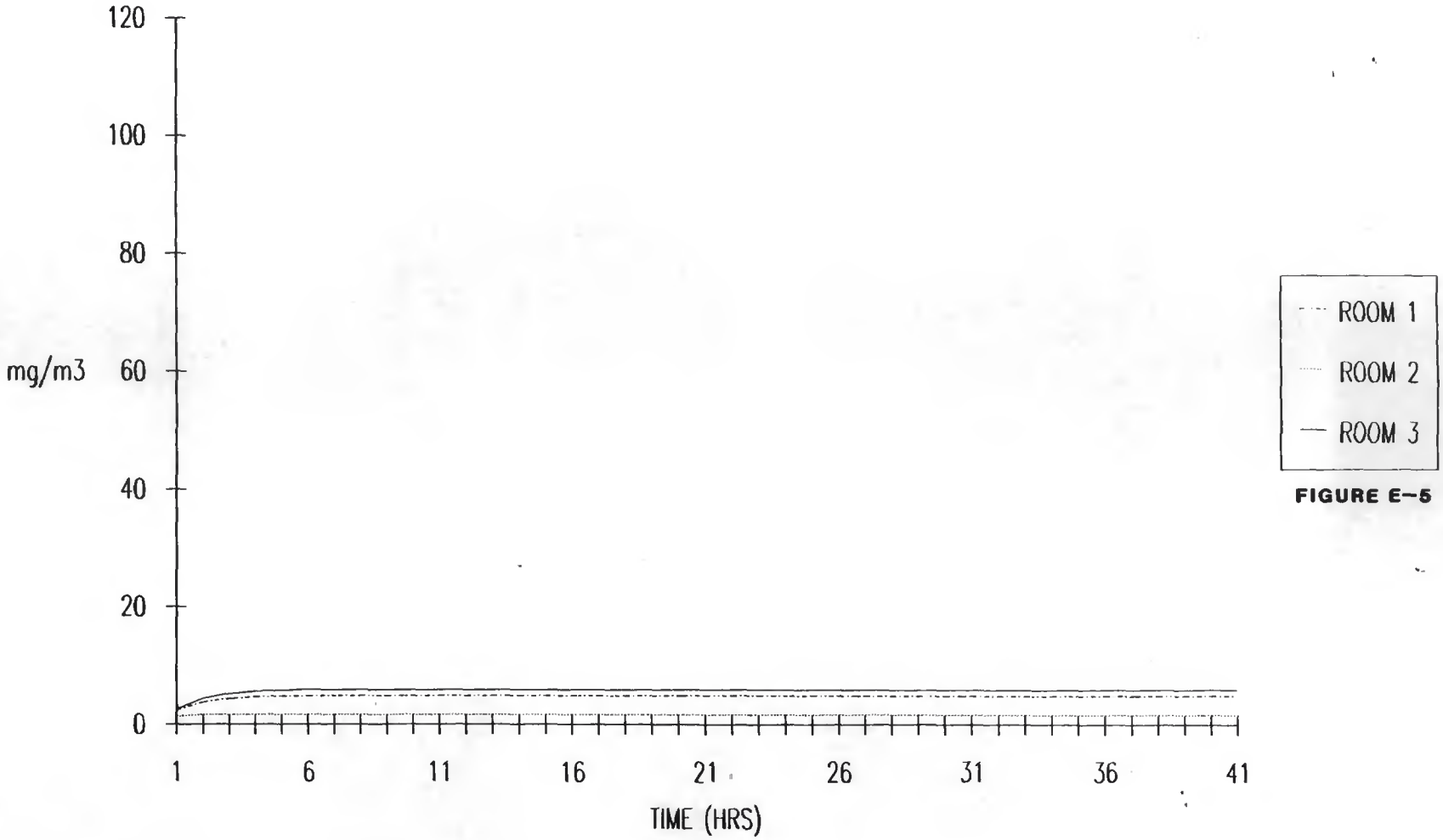


FIGURE E–5

SCENARIO 5: 1/2 ACRE PUDDLE IN ROOM 1 NORMAL VENTILATION TCE CONCENTRATION

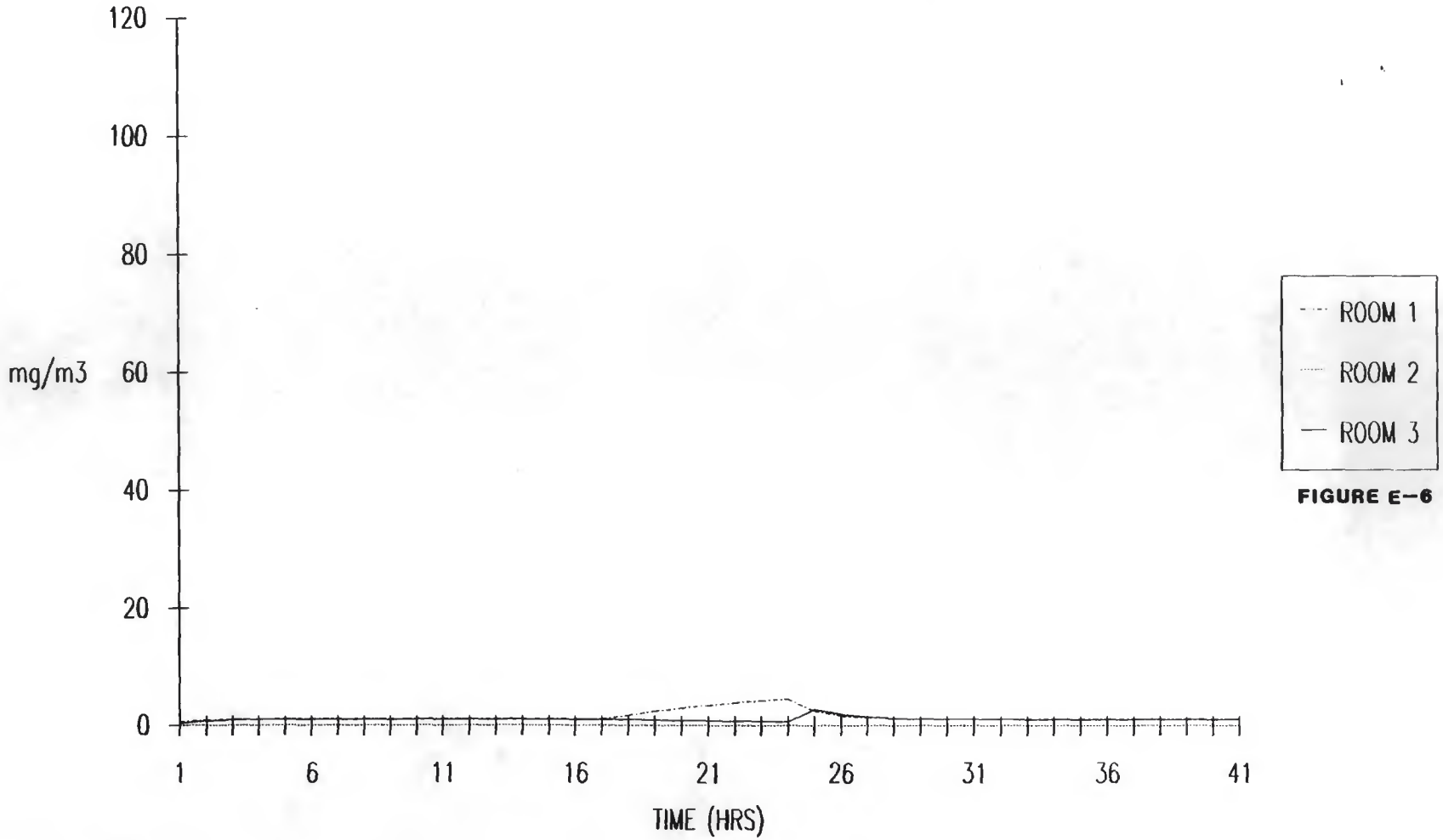


FIGURE E-6

SCENARIO 6: 1/2 ACRE PUDDLE ROOM 1 NORMAL VENTILATION VINYL CHLORIDE CONCENTRATION

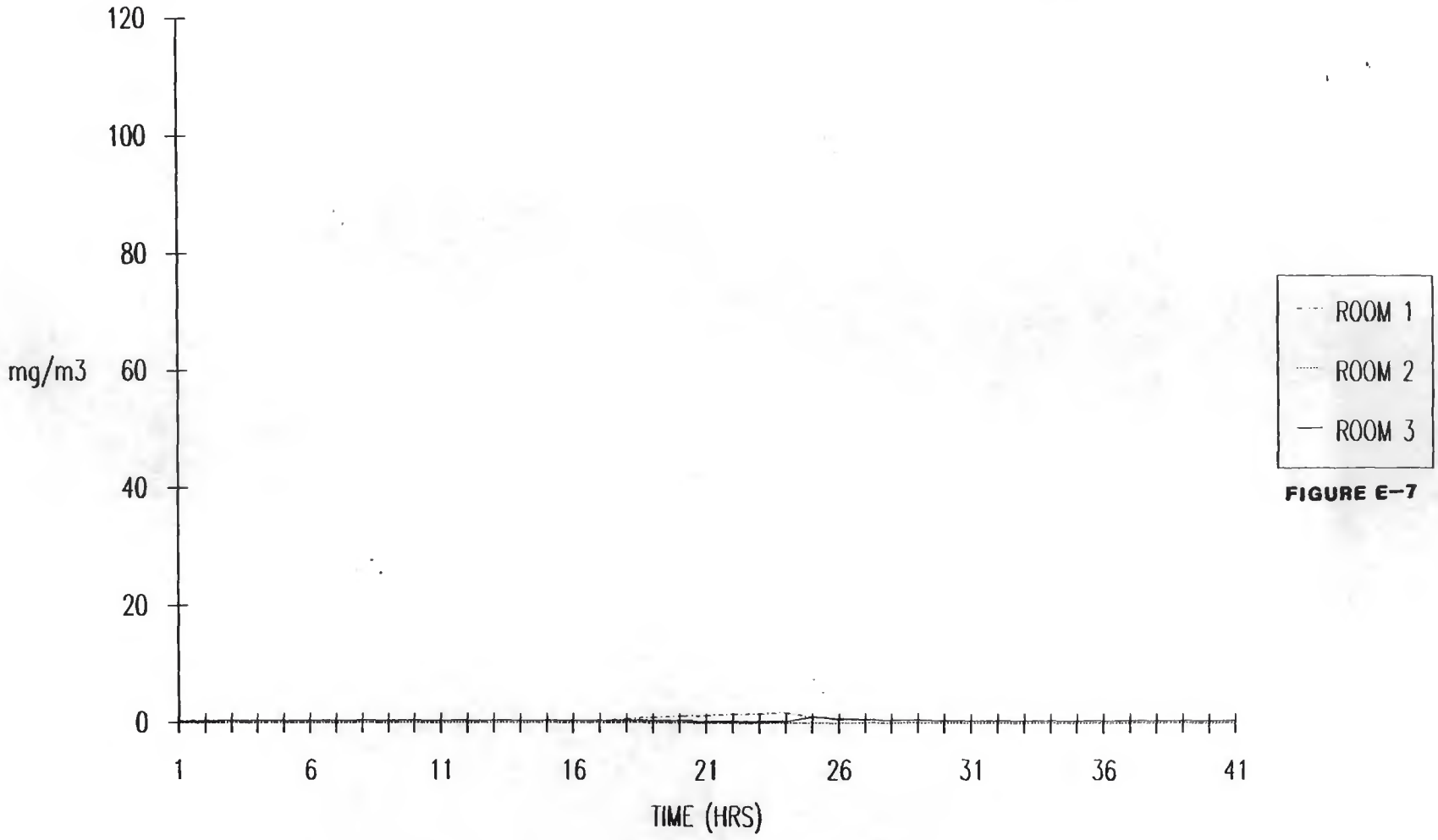


FIGURE E–7

SCENARIO 7: 1/2 ACRE PUDDLE IN ROOM 3 NORMAL VENTILATION VINYL CHLORIDE CONCENTRATION

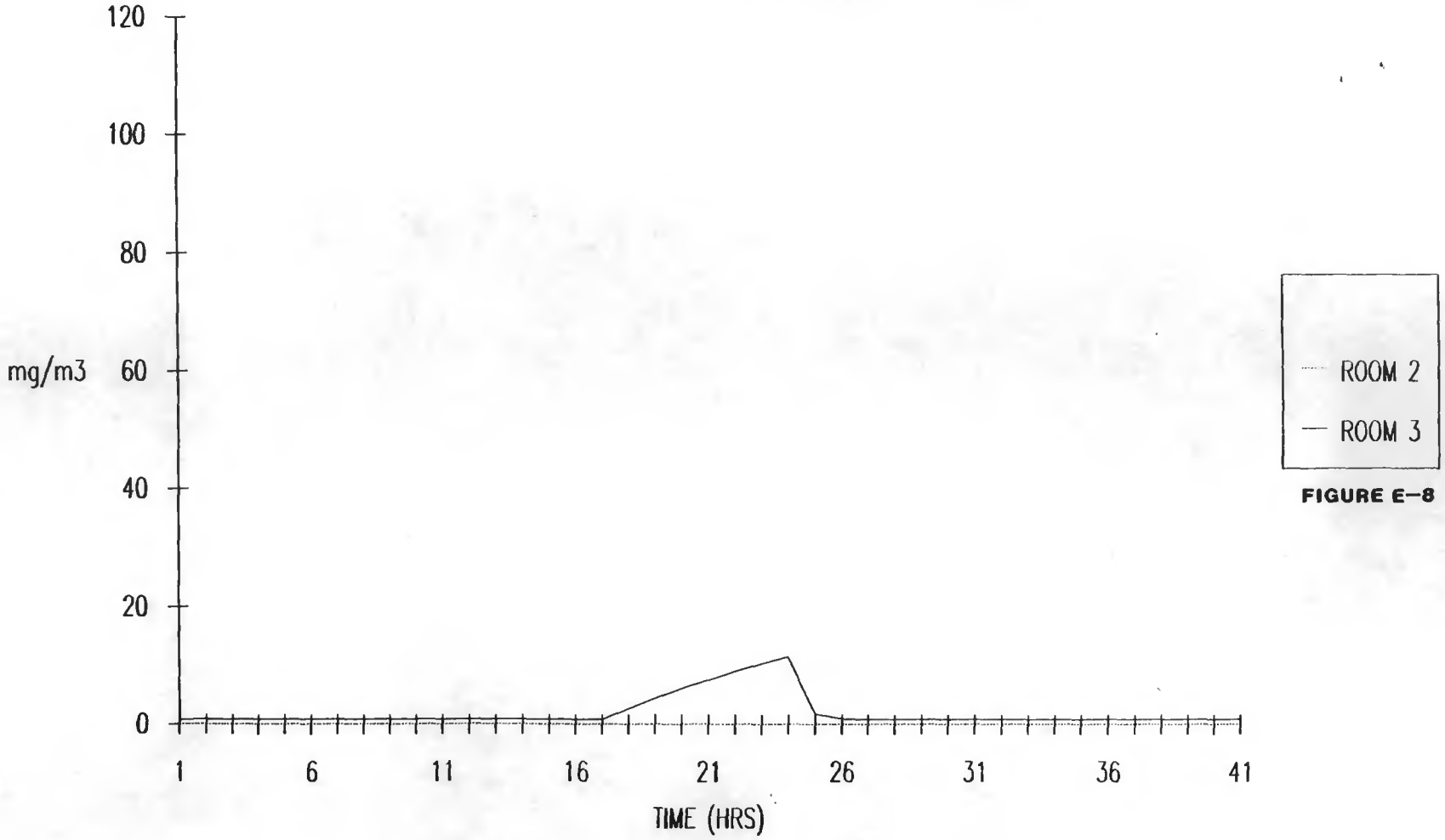


FIGURE E–8

APPENDIX F

FIELD HEALTH AND SAFETY PLAN

Clark Property

1.0 INTRODUCTION

This Field Health and Safety Plan (FHSP) has been developed to identify hazardous substances and conditions known or suspected to be present on the site and ensure that they do not adversely impact the health or safety of personnel conducting field activities. It is also intended to ensure that the procedures used during these field activities meet reasonable professional standards to protect human health and safety of workers and the surrounding community. This plan incorporates by reference the applicable requirements of the Occupational Safety and Health Administration in 29 CFR Parts 1910 and 1926.

The requirements and guidelines in this FHSP are based on a review of all available site specific information and an evaluation of potential hazards. They have been developed to minimize the potential for exposures of field personnel. These requirements can and will be modified by the Project Manager, the Corporate Health and Safety Officer (CHSO), or the Site Health and Safety Officer (SHSO) in response to additional information regarding the potential for exposure to hazards.

All field personnel working on this project must familiarize themselves with this FHSP and abide by its requirements. Since every potential health and safety hazard encountered at a site cannot be anticipated, it is imperative that personnel are equipped and trained to respond promptly to a variety of possible hazards. Adherence to this FHSP will minimize the possibility that personnel at the site and the public will be injured or exposed to significant health hazards. Information on potential health, safety and environmental hazards is discussed in conjunction with appropriate protective measures including assignment of responsibility, personal protective equipment requirements, work practices, and emergency response procedures.

In general, subcontractors are responsible for complying with all regulations and client policies applicable to the work they are performing. Subcontractors must develop their own FHSP's which must be at least as stringent as this one. With Dunn's permission, a subcontractor may adopt this FHSP.

Dunn personnel can and must stop work by a Dunn subcontractor who is observed to not be following health and safety procedures required by the plan.

This FHSP is specifically intended for those personnel who will be conducting activities within the defined scope of work in specified areas of the facility. Future actions or actions outside the scope of this plan that may be conducted at this site may necessitate the development of additional task-specific health and safety requirements.

2.0 SCOPE OF WORK

Specific tasks covered by this FHSP may include, but are not limited to:

- o Performing inspections to characterize environmental or other hazards.
- o Collecting soil samples using a drilling rig, excavation equipment, or hand tools.
- o Conducting non-intrusive inspections and instrument surveys.
- o Excavating earthen materials, fill, debris, etc.
- o Remediating areas where hazardous substances are, or may be present.
- o Decontaminating personnel and equipment.
- o Performing tasks considered immediately dangerous to life and health (IDLH) such as, entry to confined spaces.

3.0 DESIGNATION OF RESPONSIBILITIES

The responsibility for implementing this FHSP is shared by the Project Manager, the CHSO and the SHSO. The Project Manager will recommend policy on all safety matters including work practices, training and response actions, and will provide the necessary resources to conduct the project safely. Responsibility for proper implementation of this FHSP lies jointly with the Project Manager, SHSO, and the Regional Office Manager.

The CHSO has overall responsibility for developing safety procedures and training programs, maintaining a high level of safety awareness; ensuring compliance with applicable federal, state and local health and safety regulations; determining appropriate protection including the selection of protective equipment, maintenance schedules and monitoring protocols; and maintaining close communication with the SHSO and field

personnel. The CHSO is the final decision point for determination of health and safety policies and protocols for all projects.

The SHSO is responsible for establishing operating standards and coordinating all safety activities occurring at the site, with guidance from the CHSO. Specifically, the SHSO is responsible for:

- Assuring that a complete copy of this FHSP is at the site prior to the start of field activities and that all workers are familiar with it.
- Conducting training and briefing sessions if appropriate, prior to the start of field activities at the site and repeat sessions as necessary.
- Ensuring the availability, use, and proper maintenance of specified personal protective, decontamination, and other health or safety equipment.
- Maintaining a high level of safety awareness among team members and communicating pertinent matters to them promptly.
- Assuring that all field activities are performed in a manner consistent with Company policy and this FHSP.
- Monitoring for dangerous conditions during field activities.
- Assuring proper decontamination of personnel and equipment.
- Coordinating with emergency response personnel and medical support facilities, and other Health and Safety representatives of the client and co-contractors.
- Initiating immediate corrective actions in the event of an emergency or unsafe condition.
- Notifying the Project Manager and CHSO promptly of any emergency, unsafe condition, problem encountered, or significant exceptions to the requirements in this FHSP.
- Recommending improved health and safety measures to the Project Manager, or the CHSO.

The SHSO has the authority to:

- Suspend field activities or otherwise limit exposures if the health or safety of any person appears to be endangered.
- Direct Company or subcontractor personnel to alter work practices that are deemed not properly protective of human health or the environment.

- o Suspend an individual from field activities for significant infraction of the requirements in this FHSP.

However, the presence of the SHSO shall in no way relieve any person or company of its obligations to comply with the requirements of this Plan and all applicable federal, state and local laws and regulations.

The key element in the responsibility for health and safety is the individual field team member. Everyone must be familiar with and conform to the safety protocols prescribed in this FHSP, and communicate any relevant experience or observations to provide valuable inputs to improving overall safety.

4.0 SITE-SPECIFIC HEALTH AND SAFETY CONCERNS

Site History and Setting

1. Available historical information indicates that the Clark property site was previously a concrete manufacturing firm. A site investigation has revealed no buried metals, containers or vessels containing pockets of chemicals.

2. The most recent site monitoring has found the following chemicals to be present in soil at varying depths:

Trichloroethylene	(to 1601 ppm)
1,1,1 Trichloroethane	(to 631 ppm)
Toluene	(to 948 ppm)
Xylenes	(to 77 ppm)
Acetone	(to 150 ppm)
Ethyl Benzene	(to 6 ppm)

Site Concerns

All work on this project will be in areas which have been previously characterized for health and safety risks via visual inspection and soil and groundwater analyses.

The primary health hazards at this site are inhalation of volatile organic compounds and ingestion or inhalation of particles contaminated with a hazardous substance. Exposure will be controlled by use of respiratory protection during soil excavation and handling and some sample collection operations. (See Section 5 - Air Monitoring). The potential for exposure will be further reduced by prohibiting eating, drinking or smoking during all activities within the field work areas.

Skin and eye contact hazards are low. The protective equipment specified in Section 5.0 will provide adequate protection. Any symptoms are to be reported to the SHSO immediately and to the CHSO promptly.

No safety hazards were identified other than those normally associated with this type of activity and therefore well-known to the personnel involved. Use of the personal protective equipment specified in Table 4 will minimize the risks.

Suspect Chemicals

Table 1 lists those substances which are known or suspected to be present at the site at concentrations of concern for human health, and Table 2 lists any published permissible exposure limits for those substances.

Unknown or unexpected materials of a hazardous nature may be encountered during site activities. No work will be conducted if field measurements or observations indicate that a potential exposure is greater than the protection afforded by the requirements in this Plan.

Table 1

Hazardous Substances Known or Suspected To Be Present

Substance	Known to be Present or Suspected	In Which Media	Known/Expected Concentration Range	Quality and Quantity of Available Data*
Trichloro-ethylene	Known	Soil/Water	(to 1601 ppm)	2
1,1,1 Tri-chloroethane	Known	Soil/Water	(to 631 ppm)	2
Toluene	Known	Soil/Water	(to 948 ppm)	2
Xylenes	Known	Soil/Water	(to 77 ppm)	2
Acetone	Known	Soil/Water	(to 150 ppm)	2

* Level (1) - Considerable data available and substantial level of comfort data is reliable and adequately characterizes expected site conditions.

Level (2) - Limited data or data of uncertain representativeness

Level (3) - No data, or data not considered representative

Table 2

Published Airborne Exposure Limits For
Substances Known or Suspected To Be Present

SUBSTANCE	OSHA PEL/STEL	ACGIH TLV/STEL	IDLH	CARCINOGEN
Trichloroethylene	50/200	50/200	1000	Suspect
1,1,1 Trichloroethane	350/450	350/450	1000	Suspect
Toluene	100	100/500	2000	
Xylenes	100/150	100/150	10,000	No
Acetone	100/150	750/1000	20,000	Suspect

Notes:

"Carcinogen" means a substance identified as a suspect or confirmed human carcinogen in one or more of the following documents:

- National Toxicology Program (NTP) Annual Report on Carcinogens
- International Agency for Research on Cancer (IARC) Monographs
- OSHA regulations on Occupational Health and Environmental Control at 29 CFR 1910, Subpart Z.

Definitions of PEL, REL, STEL, TLV and IDLH are on the next page.

Attach as appropriate updated "Chemical Hot Sheets" - Contact Corporate Manager Toxicology and Risk Assessment. Chemical Hot Sheets contain basic toxicological and physical/chemical data for each chemical substance.

ABBREVIATIONS

PEL: The Occupational Health and Safety Administration's Permissible Exposure Limit for airborne contaminants as a time-weighted average for an 8 - hour work shift, as listed in 29 CFR 1910.1000.

REL: The National Institute for Occupational Safety and Health's Recommended Exposure Level for a work shift.

STEL: A Short Term Exposure Limit as a 15-minute time-weighted average. (No more than four (4) exposures per shift.)

TLV: The American Conference of Governmental Industrial Hygienists' Threshold Limit Value for airborne concentrations to which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect.

IDLH: The Immediately Dangerous to Life and Health maximum concentration from which one could escape within 30 minutes without experiencing any escape - impairing or irreversible health effects. (Note: Level C air-purifying respirators do <u>not</u> adequately protect an individual exposed to these concentrations.) These IDHL values were established by NIOSH and have not been peer reviewed. Caution is recommended in their application.

5.0 SITE-SPECIFIC HEALTH AND SAFETY REQUIREMENTS (Italicized information is for example only. Site specific details are to be included).

Key Personnel

Project Manager -

Tom Johnson (518) 458-1313

Corporate Health and Safety Officer -

Mark Falerios (201) 299-9001

Home: (201) 538-9709

Site Health and Safety Officer -

Senior Dunn Representative on the Site

Regional Office Manager -

Dave King (518) 458-1313

Training

The Project Manager, SHSO and all personnel working inside a regulated area must have received training at least meeting the requirements established by the Occupational Safety and Health Administration in 29 CFR 1910.120 prior to the start of field activities.

Before authorized persons enter the active site for the first time, they will be briefed by the Project Manager or SHSO as to the potential hazards which may be encountered. Topics will include:

- This FHSP and the nature of its contents.
- General site hazards and specific hazards in the work areas including those attributable to the chemicals listed in Table 1.
- Selection, use, testing, and care of body, head, eye, hand, foot and respiratory protection to be worn, along with the limitations of each.
- The demarcation system that will be used to identify restricted-access, decontamination, and contamination-free zones.
- Decontamination procedures for personal protective and other equipment.

- o Emergency alarm systems and other forms of notification, and evacuation routes to be followed.
- o Prohibitions on smoking and carrying of tobacco products, eating, drinking, and open fires (except by permit) in the work area.
- o Method o Methods to obtain outside emergency assistance and
- o Specific health, safety, and emergency response requirements imposed by the facility's owner or operator.

Air Emission - Monitoring

The planned excavation activities also increase the potential for generation of emissions of airborne chemicals. An on-site monitoring program and feasible emission suppression strategies will be implemented to closely monitor and control emissions.

The following chemicals are those most likely to be present in airborne emissions as a result of excavation activities:
Trichloroethylene, Toluene, 1,1,1 Trichloroethane and Xylene

Real-time exposure monitoring will be conducted rather than indirect monitoring methods because real-time monitoring allows for exposure intervention and control. Indirect monitoring may be more accurate but is not useful as a preventative tool due to the time lag between sample collection and analysis.

Real-time monitoring of employee breathing zones at the source of emissions will be performed using a photoionization detector calibrated according to manufacturer's specifications. Calibrations will include appropriate instrument adjustments to enable accurate detection of Trichloroethylene.

Proposed work site action levels include protective equipment upgrades at work zone exposures of 5 ppm (Level C) and 50 ppm (Level B). The threshold limit values for the parameters of concern are shown on Table 4.

Perimeter Monitoring

Prior to the initiation of excavation for the foundation, background concentrations will be established. Detection of work zone concentrations at greater than 5 ppm above

background will trigger property perimeter monitoring using the photoionization detector. Detection of property perimeter readings 5 ppm above background will activate investigation and implementation of emission control measures (e.g. ground cover, vapor suppression foams, temporary work stoppage) until these perimeter levels decrease to below 5 ppm above background. In addition, work zone levels greater that 5 ppm will trigger monitoring for vinyl chloride and benzene to assure emissions remain below threshold limit values as shown on the following table.

Concentrations of vinyl chloride and benzene have historically been well below 50 ppm (airborne PID measurement); a 5 ppm threshold will provide more than adequate health and safety protection.

THRESHOLD LIMIT VALUES

COMPOUND	THRESHOLD LIMIT VALUE
1,1,1 Trichloroethane	350 ppm
Trichloroethylene	50 ppm
Toluene	100 ppm
Xylene	100 ppm
Acetone	750 ppm
Vinyl Chloride	1 ppm
Benzene	1 ppm/5 ppm

Personal Protective Equipment:

The following procedures should be followed when donning protective equipment: (NOTE: Specific donning and doffing procedures for each protection level are found in the attached appendices).

- o Inspect equipment to ensure it is in good condition.
- o Don protective suit and gather suit around waist.
- o Put on outer boots over feet of the suit and tape at boot/suit junction.
- o Don inner gloves.
- o Don top half of protective suit and seal (as necessary).
- o Don respiratory protection (if necessary).
- o Don outer gloves and tape at glove/suit junction (as necessary).
- o Have assistant check all closures and observe wearer to ensure fit and durability of protective gear.

Table 3 indicates the general levels of personal protective equipment (PPE) that will be used on-site. Site and task specific levels of PPE assigned according to the chemicals of concern are listed in Table 4 below.

Table 3

Protection Levels

	B	C	D
Air-purifying respirator	No	Yes	No
Chemical-resistant disposable coveralls	Yes	Yes	(2)
Chemical-resistant outer gloves	Yes	Yes	(2)
Disposable inner gloves	Yes	Yes	No
Overboots (chemically resistant)	Yes	Yes	(2)
Leather shoes/boots or safety shoes	Yes	Yes	Yes
Safety glasses, goggles, or face shield	No	Yes	Yes
Hard hat	Yes	Yes	(2)
Coveralls	(2)	(2)	(2)

(1) Required when handling subsurface soil samples. Also required if a steady-state HNU reading in the breathing zone exceeds 5 ppm above the background reading or if site specific information includes likely exposure to highly toxic particulates (e.g. lead, cadmium, asbestos). Otherwise optional at the discretion of the employee and SHSO.

(2) Optional at the discretion of the employee and SHSO depending on site specific hazards.

Level C respiratory protection is to be full-face-piece or half-face-piece NIOSH - approved air purifying respirators equipped with organic vapor cartridges and/or high efficiency particulate filters.

Level B respiratory protection is to be supplied air or SCBA.

Table 4 lists the chemicals and chemical classes of concern on the site, along with the specific protection level and PPE materials of construction for each.

Table 4

Task-Specific PPE

Task(s)	Chemicals of of Concern	PPE Level	Cartridge Type	Gloves	Coveralls
General field surveys (No direct chemical contact)	Volatile Organics	D	----------	Viton or North Silver Shield	Optional
Well drilling or handling of contaminated soils or sludges (direct skin contact possible)	" "	D/C*	Organic Vapor Cartridges (if HNU readings > 5 ppm)	Viton or Silver Shield	Tyvek, Polycoated-Tyvek or Sararex-Tyvek
Well sampling - pump tests etc. (whole body direct skin contact not likely)	" "	D/C	" "	Viton or Silver Shield	" "
Direct Skin contact likely	" "	C/B**	No	Viton or Silver Shield	" "

* If Levels of Volatile Organics as determined by HNu (or equivalent are greater than 5 ppm above background.

** If Levels of Volatile Organics as determined by HNu (or equivalent are greater than 50 ppm above background.

Unless the SHSO directs otherwise, when air purifying respirators are used, the cartridges should be changed after eight house of use, or at the end of each shift, or when any indication of breakthrough or excess resistance to breathing is detected.

Other Protective Equipment

A first aid kit, portable eyewash, and vehicle will be kept in close proximity to the site. If the SHSO determines that a potential for fire exists, a fire extinguisher rated 20A-B-C (or higher) will be kept in, or at the perimeter of, each work area.

Decontamination Procedures

To minimize the movement of contaminants from the work areas to other areas, a decontamination station will be established in a designated contaminant reduction zone at one edge of each area where Level A, B or C activities occur. This station will consist at a minimum of a plastic covered work table with decontamination supplies and a plastic covered seat. Galvanized or plastic tubs will be used to hold detergent solution and rinse water. Walkways and the area under the decontamination tubs will be plastic covered. Heavy vehicle decontamination will be conducted on a specially constructed decontamination pad using high pressure water or steam to remove visible residue before relocating off-site.

The following steps must be taken to decontaminate personnel leaving a Level A, B, or C work area: (NOTE: Specific donning and doffing procedures for each protection level are found in the attached appendices).

- Place equipment and sample containers that must be decontaminated on a plastic drop cloth.
- Place disposable supplies and equipment in a labeled drum.
- Scrub non-disposable gloves and outer boots (if used) with a brush in detergent water, then rinse in clear water.
- Remove outer gloves and boot covers.
- Remove protective garments, safety boots and hard hat.
- Wash inner gloves.
- Remove and wash respiratory protection (if worn).

- o Remove inner gloves (as necessary).
- o Remove inner clothing (as necessary for final decontamination at end of shift).
- o Thoroughly wash face, hands and body.
- o Redress.

Personnel must take the following steps to decontaminate equipment and sample containers leaving Level A, B, or C work area:

- o Don protective equipment at Modified Level C.
- o Wash reusable equipment in detergent solution and/or an appropriate solvent, or steam clean.
- o Dry sample containers, etc., with paper towels (if necessary) and place on a clean drop cloth.
- o Remove and discard used respirator cartridges. Wash respirators in fresh detergent water, rinse in clear water, and disinfectant.* Store in a closed plastic bag, away from sources of contamination.
- o Launder clothing before reuse (or place in appropriately labeled impervious containers for transport to laundry).

Personnel must take the following steps to clean up following completion of work in a Level A, B or C work area:

- o Dispose of all washing and rinsing solutions into a drum or an approved wastewater treatment system.
- o Place all solid waste materials (disposable gloves and garments, tape, plastic drop cloths, etc.) into labeled drums for disposal.

Responsibility for treatment and disposal of decontamination waste products is the sole responsibility of the site owner/operator unless specific contractual arrangements have been established for the project. At no time will Dunn or its agents become the owner of the wastes.

* Respirator face pieces and rubber components should be disinfected with commercially available disinfectants designed for respirator cleaning. Isopropyl

alcohol or solutions of chlorine or iodine can be used if absolutely necessary, but they may degrade respirator rubber components.

6.0 SITE CONTROL

If appropriate, the work site will be segregated into work zones based upon monitoring data the nature of work to be performed and topography. The on site coordinator will establish and clearly mark the following areas with consultation of the project health and safety coordinator and project team lead:

1. Exclusion Zone - This will be the actual work site involved with the site activity. An outer boundary will be established and clearly marked. The area of the exclusion zone will be established based on on-site work conditions, exposure monitoring, etc.

    a. Access to the exclusion zone will be limited to those employees who have the requisite training, protective equipment and responsibilities for work in this area. A log of employees who enter the exclusion zone shall be maintained. (This may take the form of a sign-in sheet). The entry of unauthorized personnel into a restricted area will be prohibited.

    b. The area of exclusion zone will be changed as necessary depending on the site coordinators judgement regarding work conditions, air sampling, etc.

2. Contamination Reduction Zone (CRZ) - An area between the actual work site (exclusion zone) and support zone will be established to facilitate employee and equipment decontamination, protective equipment storage and supply, and employee rest areas (wash and toilet facilities, liquids, benches, etc.).

    a. The location of the CRZ will be established in an area offering minimal contamination and will be subject to charge based on the site coordinators judgement considering work conditions, air monitoring, etc.

3. Support Zone - An area free of contamination will be identified and clearly marked where administrative and other support functions (not requiring

entrance to the exclusion or contamination reduction zone) can be performed. The actual siting of the support zone will be established by the project leader and site coordinator considering distance from exclusion zone, visibility, accessibility, freedom of cross contamination from the exclusion zone, air monitoring data, etc.

Security measures will be established by the site coordinator in conjunction with other project team members to control access to the site and prevent unauthorized access during working and non-working hours.

7.0 EMERGENCY ACTION PLAN

The following standard emergency procedures will be used by on-site personnel. The SHSO will be notified of any on-site emergency and be responsible for ensuring that the appropriate procedures are followed and the CHSO and Project Manager are notified. A first aid kit, eye wash unit, and fire extinguisher will be readily available to field personnel. Questions regarding procedures and practices described in this plan should be directed to the CHSO.

Notification

Upon the occurrence of an emergency including an unplanned chemical release, fire or explosion, personnel will be alerted and the restricted area evacuated immediately. Re-entry to the site will be limited to that necessary to assist injured personnel and only after appropriate protective equipment is donned.

A hand operated horn will alert personnel to evacuate the restricted area. If at any time two horn blasts are heard, all personnel are to immediately evacuate the restricted area.

The following standard hand signals will also be used as necessary:

Hand gripping throat	Can't breath/Out of air
Grip partner's wrist	Leave area immediately - No debate!
Hands on top of head	Need assistance
Thumbs up	Yes/Okay
Thumbs down	No/A problem

Upon activation of the alarm, employees will proceed to the designated assembly area. The designated assembly area will be determined on a daily basis and updated as necessary depending upon work conditions, weather, air monitoring, etc. The location of the designated assembly area will be clearly marked and communicated to employees daily or upon relocation of the area.

Employees gathered in the designated assembly area will remain there until their presence has been noted. A comparison of employees against the daily restricted area access roster will be made as necessary to assure all employees have been properly evacuated.

Personnel Injury

If anyone within a restricted area is injured and cannot leave the restricted area without assistance, all site personnel will assemble in the decontamination area. After donning appropriate protective equipment as determined by the SHSO, a rescue team will enter the area to assist or remove the injured person. If entry requires the use of P.P.E. for I.D.L.H. Environments (S.C.B.A. or Equivalent), similarly equipped support personnel shall be on hand to lend assistance as necessary. The SHSO will evaluate the nature of the injury, and the affected person will be decontaminated to the extent feasible prior to movement. Appropriate first aid will be initiated, and if required, contact will be made for an ambulance and with the designated medical facility. No person will reenter the work area until the cause of the injury or symptoms is determined.

Fire/Explosion

Upon the occurrence of a fire beyond the incipient stage or an explosion anywhere on the site, the fire department will be alerted and all personnel moved to a safe distance from the involved area.

Personal Protective Equipment Failure

If any worker in a Level A, B or C area experiences a failure or alteration of protective equipment that affects the protection factor (e.g. torn protective suit, odor inside respirator), that person (and his/her buddy, if in a regulated area) will immediately leave the work area. Re-entry will not be permitted until the equipment has been repaired or replaced and the cause of the problem is known.

Other Equipment Failure

If any other equipment at the work site fails to operate properly, the Project Manager and/or SHSO will be notified and will then determine the effect of this failure on continuing operations. If the failure affects the safety of personnel (e.g. failure of monitoring equipment) or prevents completion of the planned tasks, all personnel will leave the work area until appropriated corrective actions have been taken.

Off-site Emergency Response

Emergency response requiring actions beyond evacuation of personnel from the work area will be handled by notification of off-site emergency response agencies. Phone numbers for these agencies and other support services are listed below:

Emergency Services

Emergency Service	Telephone Number
Fire Department	(315) 471-1161
Police Department	(315) 425-6111
Ambulance	(315) 471-0102
Hospital/Emergency Care Facility - St. Joseph's Hospital	(315) 424-5111
Poison Control Center	(800) 282-3171 or (315) 476-4766
Chemical Emergency Advice (CHEMTREC)	(800) 424-9300

Directions to St. Joseph's Hospital:

- On leaving site through main gate, make a left onto W. Hiawatha Blvd.,
- Continue approximately 1/2 mile - cross over Route 81,
- Make a right onto North Salina Street,
- Continue on Salina (veers right) for approximately 1 mile,
- At intersection of Prospect and Salina, continue straight onto Prospect Avenue,
- Follow Prospect Street 2 blocks to St. Joseph's Hospital

8.0 APPENDICES

Work practices and controls for activities planned as part of this project are in the Appendices. These practices include:

General Field Safety Rules
Drilling Safety Concerns
Trench/Test Pit Excavation Concerns
Confined Space Entry

9.0 APPROVALS

See Approval Form

FIELD SAFETY
GENERAL SAFETY RULES

1. Field Service personnel should maintain communications with their office counterparts. Periodic phone calls may be warranted to assure no mishaps have occurred.

2. The location and phone numbers of the nearest emergency care facility and local fire and police department should be determined and be readily available to field service employees prior to site access.

3. During initial site characterization potential hazards arising from unstable topography, presence of water, construction debris, plants, insects or animals should be identified and measures taken to avoid them.

4. Access to remote locations warrants careful consideration of protective clothing and/or first aid supplies to prevent and/or address insect or animal bites/stings etc. Proper first aid supplies and use of a buddy system are especially important for employees who have known allergies . Employees requiring immediate access to special first aid supplies (e.g. prescription drugs for allergies), shall be responsible for obtaining and arranging for administration of these medications as prescribed by their physician.

5. Dunn Geoscience employees who are at a customer's facility will be expected to adhere to the plant or facility safety and health rules in addition to the health and safety plan for the project. Where there are conflicts between the facility rules and the Dunn Geoscience's health and safety plan, the project manager and corporate health and safety officer should be contacted for resolution of inconsistencies. Wherever possible, the two plans should be reviewed prior to site access to identify and resolve any conflicts.

DRILLING - GENERAL HEALTH AND SAFETY CONCERNS

1. Work around heavy equipment has potential for trauma due to contact with overhead objects, cables etc. Minimum protection for protection from these hazards includes safety shoes, hard hats and safety glasses.

2. Special precautions may be necessary to assure the drilling is performed in an area free of underground objects including power or gas lines (generally less than 4 feet deep). Precautionary measures include a thorough review of plans and careful siting of the rig. Surveys using metal detectors (or equivalent) may be necessary.

3. Care must be taken in the positioning of drilling and or other heavy equipment such that it is unstable or blocks emergency access or site evacuation routes.

4. Equipment operators and field personnel should be familiar with the proper selection and operation of fire extinguishing equipment. Fully charged and inspected fire extinguishers should be immediately available at the drilling site. Contingency plans should be adopted to assure safe and timely evacuation and recruitment of outside assistance.

5. Field service personnel should be alert to the potential for exposure to noise levels in excess of 90 dBA. Hearing protection should be available if work patterns will require sustained exposure (> 1 hour) to noise.

6. NIOSH has recently declared that diesel exhaust fumes should be considered carcinogenic. Unnecessary exposure to diesel exhaust fumes should be avoided by positioning (upwind, etc.) or respiratory protection (organic vapor cartridges with filters for dust and mist) where avoidance of exposure is impossible.

7. Appropriate emergency and backup personnel should remain in immediate access to drilling or sampling activity where practical.

8. Drilling operators are to be responsible for the safety of their rigs. This includes maintaining the proper grounding on set up, support (e.g., blocks and guy wires), installation guards, inspection of wire, rope, etc.

9. On finished wells, covers equipped with vent plugs should be securely installed over the open well casing.

10. The Drill Rig operator will practice fire prevention measures including periodic cleaning of the drill rig to remove combustible/flammable residues (oil, grease, etc.).

TRENCH OR TEST PIT DIGGING

Trench or test pit digging can be expected to present hazards in addition to those encountered during general field work or drilling. Added control measures to be considered include the following:

1. Careful positioning of equipment with respect to the presence of known submerged objects.

    a. Where possible, power to underground electrical lines should be turned off (and locked out) while excavation activities are in process or until the area is secure from entrance of personnel.

    b. Known gas (or chemical) lines adjacent to the immediate excavation site should also be secured (valves turned off and locked out) while excavation is underway or access by outside personnel possible. Where possible, it is desirable to purge these lines of their contents prior to start of excavation.

2. Controlled digging under careful observation of a watch person who has clear communication with the equipment operator. The watch person should be alert to notice the presence of (unknown) buried objects by visual inspection or metal detection surveyance of the immediate excavation area.

3. Significant surface area of ground is exposed to the atmosphere as part of the trenching process. This may increase vapor exposures from volatile contaminants. Provisions should be made for air monitoring to trigger appropriate protective actions including temporary work stoppage. Use of vapor emissions controls or suppressants or use of personal protective equipment may be necessary.

4. Trenches or pits greater than 4 feet deep should be considered confined spaces which may contain concentrated vapors, gases or oxygen deficient atmospheres. These areas must be checked to assure non-explosive, non-hazardous atmospheres before allowing entry and periodically (or

continuously) thereafter. See confined space entry procedures for greater details regarding control measures considerations.

5. OSHA provisions regarding shoring and sloping of trench sides may apply. Subcontractors performing trenching or pit digging as part of sub-surface investigation must be made aware that they will be expected to follow provisions under 29 CFR 1926.

6. Pits or trenches should be inspected daily for evidence of cracks, slides or scaling. Inspection should be more frequent if it is raining.

7. Heavy equipment should be kept away from the sides of trenches or pits.

8. Means of egress (e.g., steps, ladders) should be readily available (within 25') of employees working in pits or other excavations from which rapid exit is difficult.

9. Excavations, mud pits, etc., must be protected with barricades or covers. Temporary pits/trenches should be backfilled upon completion of work.

CONFINED SPACE ENTRY PROGRAM

Purpose

Confined spaces are potential sources of immediately dangerous to life and health environments which must be treated with special caution. A confined space is any area where toxic, flammable or oxygen deficient (<19.5%) atmospheres could develop or where entrance and escape routes are difficult due to the size of openings etc. Examples of equipment related confined spaces include tanks, vessels, hoppers, boilers, chimneys and baghouses. Other structures such as underground tunnels and pits or trenches greater than 4 feet in depth should be considered confined spaces.

The most common causes of confined-space related mishaps are improper training of employees who must enter confined spaces or observers who must watch the entry and trigger evacuation or render first aid assistance. Detailed procedures and good communication systems are necessary for safe confined space related work.

General Procedures

The following are recommended procedures to be utilized, where applicable, in work involving confined space entry. Site specific procedures will be documented in the form of a permit system which is described later. Any proposed variation in procedures from those described below, must be reviewed and approved by the corporate health and safety officer.

1. The confined space must be physically isolated from all supply, vent or exit lines or other connections which introduce chemicals or gases to the confined area. Physical isolation includes disconnection and blanking of chemical or gas lines and closing and locking of water or steam line valves.

2. Sources of electrical power to the confined space must be locked out or otherwise disconnected (e.g. pulling of fuses) and so tagged to prevent accidental actuation during the entry.

3. Chemicals in the confined space must be removed and the space cleaned of residues by washing, purging with water or other appropriate inert agent, where possible.

4. The atmosphere within the confined space must be tested for the presence of flammables, toxic materials and oxygen deficiency using properly calibrated equipment prior to entry. Frequent (approximately every 15 minutes) or continuous (where feasible) monitoring of the atmosphere must be performed throughout the duration of the entry.

   Entry shall not be allowed (or will be suspended) if airborne levels of toxics exceed exposure limits (established in consultation with the health and safety manager), or if flammables exceed 1000 ppm or if oxygen deficient conditions (< 19.5%) are noted.

5. Entry into enclosed vessels will require provision of fresh air using a forced draft supply introduced so as to thoroughly purge the confined space (i.e. no "dead air" spaces) throughout the duration of entry. Provision of air to other confined space structures is desirable, where feasible. Manholes or other vessel openings will be secured in the open position to facilitate air movement.

6. Illumination to confined spaces must be provided using explosion proof, low voltage (< 24 volt) lighting supplies. Only properly grounded tools with perfect electrical connections will be allowed in confined spaces. In locations where flammable atmospheres could develop or flammable residues are present, the space must be isolated from all sources of ignition.

7. Respiratory protection for confined space entry must be selected (in consultation with the safety and health manager) based upon anticipated hazards including toxic chemicals with poor warning properties or potential oxygen deficient atmospheres.

8. Personnel who must enter confined spaces should be equipped with life lines, harnesses or wristlets. Wristlets are preferred where removal of the individual is complicated by tight access or small openings (e.g. manholes).

9. Where ladders are necessary for entry to confined areas, they must be made secure at the top and remain in place throughout the entry. Any ladders used for entry must be in good condition, properly positioned

(approximately 1/4 of the climbing height away from the wall at the base) and equipped with non-slip feet.

10. Entry shall be under the continuous watch of a designated observer who is knowledgeable in the use of emergency rescue equipment and has immediate access to communication equipment, alarms or other means to summon emergency assistance including personnel trained in appropriate first aid procedures. The observer shall be alert to developing signs of hazardous exposure or conditions, and be in constant communication with the personnel inside.

    a. The observer will not enter the confined space, but will initiate evacuation or trigger emergency rescue should the need arise.

11. Emergency equipment necessary to effect emergency rescue including, life lines, positive pressure self contained breathing apparatus, and fire extinguishers (where flammability is a concern) must be immediately available at the confined space entry site.

12. Sufficient standby personnel shall be immediately available to effect emergency rescue and render first aid.

13. The occurrence of an injury, a spill or fire in the confined space, or job interruption for more than one hour, shall void the current confined space entry permit. Re-entry will require a new permit and re-initiation of these general procedures.

Authorization Procedure

A authorization procedure for confined space entry is necessary to assure adequate support personnel and supplies are present and proper procedures are followed. Completed authorizations shall be signed by employees who perform the entry, designated observers and the project manager's on site delegate.

Authorizations should be considered valid for one shift only. The authorization shall be immediately available at the job site. Completed authorizations shall be retained as part of project documentation.

The authorization will contain site specific details regarding hazards anticipated and precautions to be used during the entry.

CONFINED SPACE AUTHORIZATION

NO TANK OR ENCLOSED SPACE MAY BE ENTERED UNTIL THIS AUTHORIZATION HAS BEEN COMPLETED, CHECKED AND SIGNED.

LOCATION:_____ DATE:_____
(Good this date only)

TIME STARTED:_____TIME FINISHED:_____

EQUIPMENT:

WORK TO BE DONE/SPECIAL PRECAUTIONS:

HAZARDS ANTICIPATED:

TYPE OF PROTECTION REQUIRED:

I CERTIFY TO THE ACCURACY OF THIS AUTHORIZATION AND THAT ALL SAFETY PRECAUTIONS ON THE REVERSE SIDE HAVE BEEN CONSIDERED.

Title Signed

_____ _____

Inspector and/or tester:_____

I HAVE BEEN INSTRUCTED ON PROPER SAFE CONFINED SPACE PROCEDURES.

Persons Authorized to Enter Space. _____

_____

_____

Safety Observer _____

AUTHORIZATION GRANTED

_____
Authorized Signature
Health & Safety Officer

THIS AUTHORIZATION MUST BE POSTED AT ALL TIMES WHILE WORK IS IN PROGRESS

		YES	NO	N/A
1.	Have all supply vent and exit lines been disconnected?	___	___	___
2.	Have all chemicals been removed?	___	___	___
3.	Has the tank been cleaned, washed and purged or ventilated?	___	___	___
4.	Has the atmosphere been tested for O_2 Deficiency, combustible gases, toxic gases? Specify toxic gases checked for:_____	___	___	___
5.	Have all electrical sources been lock out, tagged, and tested?	___	___	___
6.	Has a supply of fresh air been provided?	___	___	___
7.	Are life lines and safety harness or wristlets being worn by those entering?	___	___	___
8.	Are tie lines attached?	___	___	___
9.	Has respiratory protection and other personal protective equipment been provided?	___	___	___
10.	Has adequate explosion proof lighting been provided?	___	___	___
11.	Are personnel trained in rescue procedures standing by?	___	___	___
12.	Has extra help been alerted in case of need?	___	___	___
13.	Have all surrounding conditions been inspected so as to authorization the work to be done safely?	___	___	___
14.	Is emergency rescue equipment (SCBA, life lines, etc.) available?	___	___	___

15. Comments:

_____

_____

_____

UPON JOB COMPLETION RETAIN THIS AUTHORIZATION FOR FILING