UNIFIRST SOIL DATA

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA. 02173

Superfund Records Center
SITE: Wells G&H
BREAK: 3.2
OTHER: 549605
SDMS DocID 549605

DATE: 10-22-87

SUBJECT: Unifirst Corp., MA--Volatile Organic Screening
Samples Analyzed: 86528-530,532-538

FROM: Mary Jane Cuzzupe, Chemist

TO: William Walsh, Chief Water Section

THRU: Dr. William Andrade
Chief, Chemistry Section

PROJECT NUMBER: 880001 and 880004

DATE(S) SAMPLES RECEIVED BY THE LABORATORY: 10/2 and 6/87

DATE(S) SAMPLES ANALYZED: 10/13,14/87

ANALYTICAL PROCEDURE:
Approximately 10 grams (wet weight) of sample is tared in a 40 ml VOA vial. Ten mls of pesticide grade methanol is added to the sample and the vial is then sonicated for one minute.

A one to fifty dilution was made on the methanol extract in organic free water and then analyzed as per the EPA Region I headspace technique on a Photovac Moded 10A10 gas chromatograph equipped with a photoionization detector and a 4' x 1/8" SE-30 Column.

Concentrations are based on the dry weight of the samples analyzed.

Aqueous samples were analyzed as per the Region I headspace technique.

METHOD OF QUANTITATION:
Concentration of volatile organics in samples was calculated using the external standard technique.

QUALITY CONTROL
1. Field Blanks are analyzed with all sample surveys.

2. Syringe checks are run routinely to check for cross-over contamination from one sample to the next.

cc: R. Ankstitus
M. Lataille

ANALYTICAL PARAMETERS
VOLATILE ORGANIC ANALYSIS
HEADSPACE TECHNIQUE

NSTRUMENTATION: PHOTOVAC 10A10 GAS CHROMATOGRAPH

ETECTOR: PHOTOIONIZATION DETECTOR

HROMATOGRAPH

Column:	4' x 1/8" SE-30
Gas:	Air--zero grade
Program:	Isothermal at amb approximately 15 minutes
Gas flow:	Approximately 40

630

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY

VOLATILE ORGANIC ANALYSIS--HEADSPACE TECHNIQUE

Soil

SAMPLE NO.: 86530
SAMPLE LOCATION: UC 15
DATE OF COLLECTION:
PERCENT SOLID: 91%

REFERENCE BOOK: Screen #3

TENTATIVE IDENTIFICATION AND QUANTITATION

Target Compound	ppb Conc. (ug/Kg)	Det. Limit (ug/Kg)	Comments
1,1 Dichloroethylene	ND	54	
Trans 1,2 Dichloroethylene	ND	54	
Cis 1,2 Dichloroethylene	ND	54	
1,1,1 Trichloroethane	ND	2700	
Benzene	ND	54	
Trichloroethylene	ND	54	
Tetrachloroethylene	ND	54	
Chlorobenzene	ND	108	
Ethyl benzene	ND	108	
Total Xylenes/styrene	ND	54	
Toluene	ND	54	

Other Compounds Tentatively identified: None

<=Less than
=Greater than
~=Approximately
ND=Not detected

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY

VOLATILE ORGANIC ANALYSIS--HEADSPACE TECHNIQUE

Soil

SAMPLE NO.: 86532
SAMPLE LOCATION: UC16
DATE OF COLLECTION:
PERCENT SOLID: 97%

REFERENCE BOOK: Screen #3

TENTATIVE IDENTIFICATION AND QUANTITATION

Target Compound	ppb Conc. (ug/Kg)	Det. Limit (ug/Kg)	Comments
1,1 Dichloroethylene	ND	49	
Trans 1,2 Dichloroethylene	ND	49	
Cis 1,2 Dichloroethylene	ND	49	
1,1,1 Trichloroethane	ND	2450	
Benzene	ND	49	
Trichloroethylene	ND	49	
Tetrachloroethylene	ND	49	
Chlorobenzene	ND	98	
Ethyl benzene	ND	98	
Total Xylenes/styrene	ND	49	
Toluene	ND	49	

Other Compounds Tentatively identified: None

<=Less than
>=Greater than
~=Approximately
ND=Not detected

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REGION I LABORATORY

VOLATILE ORGANIC ANALYSIS--HEADSPACE TECHNIQUE

Soil

SAMPLE NO.: 86533
SAMPLE LOCATION:
DATE OF COLLECTION: UC 17
PERCENT SOLID: 96%

REFERENCE BOOK: Screen #3

TENTATIVE IDENTIFICATION AND QUANTITATION

Target Compound	ppb Conc. (ug/Kg)	Det. Limit (ug/kg)	Comments
1,1 Dichloroethylene	ND	51	
Trans 1,2 Dichloroethylene	ND	51	
Cis 1,2 Dichloroethylene	ND	51	
1,1,1 Trichloroethane	ND	2550	
Benzene	ND	51	
Trichloroethylene	ND	51	
Tetrachloroethylene	290	51	
Chlorobenzene	ND	102	
Ethyl benzene	ND	102	
Total Xylenes/styrene	ND	51	
Toluene	ND	51	

Other Compounds Tentatively identified: None

<=Less than
=Greater than
~=Approximately
ND=Not detected

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY

VOLATILE ORGANIC ANALYSIS--HEADSPACE TECHNIQUE

Soil

SAMPLE NO.: 86534
SAMPLE LOCATION: UC 18 dup.
DATE OF COLLECTION:
PERCENT SOLID: 94.0%

REFERENCE BOOK: Screen #3

TENTATIVE IDENTIFICATION AND QUANTITATION

Target Compound	ppb Conc. (ug/Kg)	Det. Limit (ug/Kg)	Comments
1,1 Dichloroethylene	ND	51	
Trans 1,2 Dichloroethylene	ND	51	
Cis 1,2 Dichloroethylene	ND	51	
1,1,1 Trichloroethane	ND	2550	
Benzene	ND	51	
Trichloroethylene	ND	51	
Tetrachloroethylene	ND	51	
Chlorobenzene	ND	102	
Ethyl benzene	ND	102	
Total Xylenes/styrene	ND	51	
Toluene	ND	51	

Other Compounds Tentatively identified: None

<=Less than
>=Greater than
~=Approximately
ND=Not detected

US ENVIRONMENTAL PROTECTION
REGION I LABORATORY

VOLATILE ORGANIC ANALYSIS--HEADSPACE TECHNIQUE

Soil

SAMPLE NO.: 86535
SAMPLE LOCATION:
DATE OF COLLECTION:
PERCENT SOLID: 95%

UC 18 dup

REFERENCE BOOK: Screen #3

TENTATIVE IDENTIFICATION AND QUANTITATION

Target / Compound	ppb Conc. (ug/Kg)	Det. Limit (ug/Kg)	Comments
1,1 Dichloroethylene	ND	50	
Trans 1,2 Dichloroethylene	ND	50	
Cis 1,2 Dichloroethylene	ND	50	
1,1,1 Trichloroethane	ND	2500	
Benzene	ND	50	
Trichloroethylene	ND	50	
Tetrachloroethylene	ND	50	
Chlorobenzene	ND	100	
Ethyl benzene	ND	100	
Total Xylenes/styrene	ND	50	
Toluene	ND	50	

Other Compounds Tentatively identified: None

<=Less than
>=Greater than
~=Approximately
ND=Not detected

US ENVIRONMENTAL PROTECTION
REGION I LABORATORY

VOLATILE ORGANIC ANALYSIS--HEADSPACE TECHNIQUE

Soil

SAMPLE NO.: 86537
SAMPLE LOCATION:
DATE OF COLLECTION:
PERCENT SOLID: **90%**

UC 20

REFERENCE BOOK: Screen #3

TENTATIVE IDENTIFICATION AND QUANTITATION

Target Compound	ppb Conc. (ug/Kg)	Det. Limit (ug/Kg)	Comments
1,1 Dichloroethylene	ND	53	
Trans 1,2 Dichloroethylene	ND	53	
Cis 1,2 Dichloroethylene	ND	53	
1,1,1 Trichloroethane	ND	2650	
Benzene	ND	53	
Trichloroethylene	ND	53	
Tetrachloroethylene	ND	53	
Chlorobenzene	ND	106	
Ethyl benzene	ND	106	
Total Xylenes/styrene	ND	53	
Toluene	ND	53	

Other Compounds Tentatively identified: None

<=Less than
>=Greater than
~=Approximately
ND=Not detected

US ENVIRONMENTAL PROTECTION
REGION I LABORATORY

VOLATILE ORGANIC ANALYSIS--HEADSPACE TECHNIQUE

Soil

SAMPLE NO.: 86538 ?
SAMPLE LOCATION:
DATE OF COLLECTION:
PERCENT SOLID: 96 %

REFERENCE BOOK: Screen #3

TENTATIVE IDENTIFICATION AND QUANTITATION

Target Compound	ppb Conc. (ug/Kg)	Det. Limit (ug/Kg)	Comments
1,1 Dichloroethylene	ND	48	
Trans 1,2 Dichloroethylene	ND	48	
Cis 1,2 Dichloroethylene	ND	48	
1,1,1 Trichloroethane	ND	2400	
Benzene	ND	48	
Trichloroethylene	ND	48	
Tetrachloroethylene	ND	48	
Chlorobenzene	ND	96	
Ethyl benzene	ND	96	
Total Xylenes/styrene	ND	48	
Toluene	ND	48	

Other Compounds Tentatively identified: None

<=Less than
=Greater than
~=Approximately
ND=Not detected

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY

VOLATILE ORGANIC ANALYSIS--HEADSPACE TECHNIQUE
Aqueous

SAMPLE NO.: 86528
SAMPLE LOCATION: **Trip Blank**
DATE OF COLLECTION:

REFERENCE BOOK: Screen #3

TENTATIVE IDENTIFICATION AND QUANTITATION

Target Compound	ppb Conc. (ug/l)	Det. Limit (ug/l)	Comments
1,1 Dichloroethylene	ND	1	
Trans 1,2 Dichloroethylene	ND	1	
Cis 1,2 Dichloroethylene	ND	1	
1,1,1 Trichloroethane	ND	50	
Benzene	ND	1	
Trichloroethylene	ND	1	
Tetrachloroethylene	ND	1	
Chlorobenzene	ND	2	
Ethyl benzene	ND	2	
Total Xylenes/styrene	ND	1	
Toluene	ND	1	

Other Compounds Tentatively identified: None

<=Less than
=Greater than
~=Approximately
ND=Not detected

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY

VOLATILE ORGANIC ANALYSIS--HEADSPACE TECHNIQUE

)LE NO.: 86529
)LE LOCATION: RiNOOl
: OF COLLECTION:

REFERENCE BOOK: Screen #3

TENTATIVE IDENTIFICATION AND QUANTITATION

Target Compound	ppb Conc. (ug/l)	Det. Limit (ug/l)	Comments
1,1 Dichloroethylene	ND	1	
Trans 1,2 Dichloroethylene	ND	1	
Cis 1,2 Dichloroethylene	ND	1	
1,1,1 Trichloroethane	ND	50	
Benzene	ND	1	
Trichloroethylene	ND	1	
Tetrachloroethylene	ND	1	
Chlorobenzene	ND	2	
Ethyl benzene	ND	2	
Total Xylenes/styrene	ND	1	
Toluene	ND	1	

)ther Compounds Tentatively identified: None

(=Less than
·=Greater than
~=Approximately
ND=Not detected

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY

VOLATILE ORGANIC ANALYSIS--HEADSPACE TECHNIQUE

Aqueous

SAMPLE NO.: 86536
SAMPLE LOCATION: UC 19
DATE OF COLLECTION:

REFERENCE BOOK: Screen #3

TENTATIVE IDENTIFICATION AND QUANTITATION

Target Compound	ppb Conc. (ug/l)	Det. Limit (ug/l)	Comments
1,1 Dichloroethylene	ND	1	
Trans 1,2 Dichloroethylene	ND	1	
Cis 1,2 Dichloroethylene	ND	1	
1,1,1 Trichloroethane	ND	50	
Benzene	ND	1	
Trichloroethylene	ND	1	
Tetrachloroethylene	ND	1	
Chlorobenzene	ND	2	
Ethyl benzene	ND	2	
Total Xylenes/styrene	ND	1	
Toluene	ND	1	

Other Compounds Tentatively identified: None

<=Less than
=Greater than
~=Approximately
ND=Not detected

Table II
Votalile Organic Analysis by
EPA Region I Headspace Technique
Compound list and Detection Limits

Target Compound	Detection Limit (ppb)
1,1 Dichloroethylene	51
Trans 1,2 Dichloroethylene	51
Cis 1,2 Dichloroethylene	51
1,1,1 Trichloroethane	2550
Benzene	51
Trichloroethylene	51
Tetrachloroethylene	51
Chlorobenzene	102
Ethyl benzene	102
Total Xylenes/styrene	51
Toluene	51

Other Compounds Tentatively Identified: None