UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE November 13, 1985

Superfund Records Center
SITE: Wo
BREAK:
OTHER:
626407

SUBJECT: Woburn, MA - Juniper Realty - Volatile Organic Screening

FROM Scott Clifford
Chemist

TO Daniel Granz
Water Section

THRU: Dr. William J. Andrade
Chief, Chemistry Section

Project Number: 85126

Date Samples Received by Laboratory: 9/17/85

Date Samples Analyzed: 9/25/85

Reference Book: G.C. Screening Book #2

Analytical Procedure:

Samples were analyzed using the headspace technique on a Photovac Model 10A10 GC equipped with a photoionization detector and a 4' x 1/8" SE-30 column.

Method of Quantitation:

Concentration of volatile organics in samples were calculated using the external standard technique.

Data and Additional Comments:

| Sample Number | Photovac Screening Results Approximate Concentrations |
|---|---|
| 82264 - DRUM # 1 | TCE 100 ppb<br>$C_2Cl_4$ 10 ppb<br>Two early eluting unidentified peaks |
| 82265 - DRUM # 2 | Two small early eluting unidentified peaks |
| 82260 - FIELD BLANK | Two small early eluting unidentified peaks |

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

DATE: 11-7-85

SUBJECT: Juniper Realty--Purgeable Organic Analyis--Soils Samples Analyzed by GC/MS

FROM: Moira Lataille, Chemist

TO: William Walsh, Chief Water Section

THRU: Dr. William Andrade for WWA
Chief, Chemistry Section

PROJECT NUMBER: 85126

DATE(S) SAMPLES RECEIVED BY THE LABORATORY: 9-17-85

ANALYTICAL PROCEDURE:

Approximately 5 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.

One ml of extract is diluted to 25 mls or greater in organic free water and then analyzed as per a modified version of Method 624, Federal Register, Volume 49, #209, Oct 26, 1984. Analysis time does not include the determination of the dichlorobenzene isomers.

QUALITY CONTROL:

1. A methanol blank was analyzed prior to sample analysis.

2. Each sample was spiked with several surrogate compounds at approximately 30 ppb concentration. The results for the surrogate recoveries are reported for each sample.

3. Sample 82261 was analyzed in duplicate to determine analytical precision and average concentrations were reported.

4. A Cincinnati QC check sample was spiked into sample 82261 to determine analytical accuracy. The following results were obtained:

| Compound | % Recovery | Acceptable Range |
|---|---|---|
| Methylene Chloride | 119 | D-221 |
| 1,1 Dichloroethylene | 86 | D-234 |
| T 1,2 Dichloroethylene | 90 | 54-156 |
| 1,2 Dichloroethane | 100 | 49-155 |
| Carbon Tetrachloride | 76 | 70-140 |
| Trichloroethylene | 94 | 71-157 |
| Dibromochloromethane | 59 | 53-149 |
| Chlorobenzene | 75 | 37-160 |
| 1,1,2,2, Tetrachloroethane | 45 | 46-157 |
| 1,2 Dichloropropane | 98 | D-210 |

# ANALYTICAL PARAMETERS
# PURGEABLE ORGANIC ANALYSIS

| | |
|---|---|
| INSTRUMENTS: | Tekmar ALS<br>Tekmar LSC-2<br>Finnigan OWA 30B |

PURGE CONDITIONS:

| | |
|---|---|
| Gas: | Helium |
| Purge Time and Flow: | 11 min.,40 ml/min |
| Trap: | 25 cm stainles steel (1/8 in.OD) packed with 15 cm 60/80 mesh Tenax-GC plus 8 cm 35/80 mesh Davison type 15 Silica Gel |
| Desorption Time,Flow, Temperature: | 4 min, 20ml/min.,180C |
| Bake out cycle: | 7 min. |

CHROMATOGRAPHIC CONDITIONS:

| | |
|---|---|
| Column: | 2 meter by 2 mm ID glass column packed with 1% SP-1000 on 60/80 mesh Carbopack B. |
| Program: | Isothermal at 45 C for 3 min the programmed at 8 C/min to 220 C and held for the total time of 38.5 min. |
| Injector, Separator,and Transfer Temperatures: | 220 C,250 C,250 C |
| Carrier Gas and Flow: | Helium, 30 ml/min |

MASS SPECTROMETER CONDITIONS:

| | |
|---|---|
| Electron Energy: | 70 V |
| Mass Range: | 35,260 |
| Scan Rate: | 3 seconds |

FACILITY SAMPLED: Juniper Realty, Woburn

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE NO.: 82261
SAMPLE LOCATION: soil under pesticide caps
DATE OF COLLECTION: 9/17/85
TIME OF COLLECTION: 0805

DATE OF ANALYSIS: 10-18-85
REFERENCE BOOK: 68

SAMPLE RESULTS:

Dry weight

| CAS NO. | STORET NO. | Compound | ppb Conc. (ng/gm) | Det. Limit (ng/gm) | Comments |
|---|---|---|---|---|---|
| | | **Priority Pollutants** | | | |
| 74-87-3 | 34418 | Chloromethane | ND | 462 | |
| 74-83-9 | 34413 | Bromomethane | ND | 154 | |
| 75-01-4 | 39175 | Vinyl Chloride | ND | 308 | |
| 75-00-3 | 34311 | Chloroethane | ND | 308 | |
| 75-09-2 | 34423 | Methylene Chloride | ND | 77 | |
| 75-69-4 | 34488 | Trichlorofluoromethane | present | * | |
| 75-35-4 | 34501 | 1,1-Dichloroethylene | ND | 77 | |
| 75-34-3 | 34496 | 1,1-Dichloroethane | ND | 77 | |
| 156-60-5 | 34546 | 1,2-Dichloroethylene isomers | ND | 77 | |
| 67-66-3 | 32106 | Chloroform | ND | 77 | |
| 107-06-2 | 34531 | 1,2-Dichloroethane | ND | 385 | |
| 71-55-6 | 34506 | 1,1,1-Trichloroethane | 1500 | 77 | |
| 56-23-5 | 32102 | Carbon Tetrachloride | ND | 77 | |
| 75-27-4 | 32101 | Bromodichloromethane | ND | 77 | |
| 78-87-5 | 34541 | 1,2-Dichloropropane | ND | 77 | |
| 10061-02-6 | 34699 | t-1,3-Dichloropropene | ND | 77 | |
| 79-01-6 | 39180 | Trichloroethylene | 1000 | 77 | |
| 124-48-1 | 32105 | Dibromochloromethane | ND | 77 | |
| 10061-01-5 | 34704 | c-1,3-Dichloropropene | ND | 308 | |
| 79-00-5 | 34511 | 1,1,2-Trichloroethane | ND | 77 | |
| 71-43-2 | 34030 | Benzene | ND | 154 | |
| 110-75-8 | 34576 | 2-Chloroethylvinyl ether | ND | 154 | |
| 75-25-2 | 32104 | Bromoform | ND | 77 | |
| 127-18-4 | 34475 | Tetrachloroethylene | 380 | 77 | |
| 79-34-5 | 34516 | 1,1,2,2-Tetrachloroethane | ND | 77 | |
| 108-88-3 | 34010 | Toluene | 1100 | 77 | |
| 108-90-7 | 34301 | Chlorobenzene | 680 | 77 | |
| 100-41-4 | 34371 | Ethylbenzene | 130 | 77 | |
| 107-02-8 | 34210 | Acrolein | ND | 2310 | |
| 107-13-1 | 34215 | Acrylonitrile | ND | 2310 | |
| | | **Hazardous Substances** | | | |
| 67-64-1 | 81552 | Acetone | ND | 1155 | |
| 75-15-0 | 77041 | Carbon Disulfide | ND | 77 | |

(con't)

* Trapping efficiency of Tenax trap is low

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE NO.: 82261
Sample Results Continued:

| CAS NO. | STORET NO. | Compound | ppb Conc. (ng/gm) | Det. Limit (ng/gm) | Comments |
|---|---|---|---|---|---|
| 78-93-3 | 81595 | 2-Butanone | ND | 1155 | |
| 108-05-4 | 77057 | Vinyl Acetate | ND | 231 | |
| 591-10-6 | 77103 | 2-Hexanone | ND | 231 | |
| 108-10-1 | 81596 | 4-Methyl-2-Pentanone | ND | 77 | |
| 100-42-5 | 81708 | Styrene | ND | 154 | |
| 133-02-7 | 81551 | Xylenes (total) | 860 | 154 | |
| | | Other Compounds Quantitated | | | |
| | | Other Compounds Tentatively Identified | | | |
| | | Cyclobutane | | | |

| Sample Recoveries for Surrogate Compounds: | Observed Recoveries | 95% onfidence Limits |
|---|---|---|
| 1,2-Dichloroethane,d4 | 124 | 115-137 |
| Benzene,d6 | 157 | 110-178 |
| Toluene,d8 | 111 | 97-113 |
| 1,4-Bromofluorobenzene | 85 | 80-104 |

Notes:
ND=none detected
~=approximate
<=less than
>=greater than

FACILITY SAMPLED: Juniper Realty, Woburn

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE NO.: 82262
SAMPLE LOCATION: Soil adjacent to leaking drum #1 which was sampled # 82264
DATE OF COLLECTION: 9/17/85
TIME OF COLLECTION: 0815

DATE OF ANALYSIS: 10-18-85
REFERENCE BOOK: 68

SAMPLE RESULTS:

Dry weight

| CAS NO. | STORET NO. | Compound | ppb Conc. (ng/gm) | Det. Limit (ng/gm) | Comments |
|---|---|---|---|---|---|
| | | **Priority Pollutants** | | | |
| 74-87-3 | 34418 | Chloromethane | ND | 18600 | |
| 74-83-9 | 34413 | Bromomethane | ND | 6200 | |
| 75-01-4 | 39175 | Vinyl Chloride | ND | 12400 | |
| 75-00-3 | 34311 | Chloroethane | ND | 12400 | |
| 75-09-2 | 34423 | Methylene Chloride | ND | 3100 | |
| 75-69-4 | 34488 | Trichlorofluoromethane | ND | * | |
| 75-35-4 | 34501 | 1,1-Dichloroethylene | ND | 3100 | |
| 75-34-3 | 34496 | 1,1-Dichloroethane | 11000 | 3100 | |
| 156-60-5 | 34546 | 1,2-Dichloroethylene isomers | ND | 3100 | |
| 67-66-3 | 32106 | Chloroform | <3100 | 3100 | |
| 107-06-2 | 34531 | 1,2-Dichloroethane | ND | 15500 | |
| 71-55-6 | 34506 | 1,1,1-Trichloroethane | 49000 | 3100 | |
| 56-23-5 | 32102 | Carbon Tetrachloride | ND | 3100 | |
| 75-27-4 | 32101 | Bromodichloromethane | ND | 3100 | |
| 78-87-5 | 34541 | 1,2-Dichloropropane | ND | 3100 | |
| 10061-02-6 | 34699 | t-1,3-Dichloropropene | ND | 3100 | |
| 79-01-6 | 39180 | Trichloroethylene | 390000 | 3100 | |
| 124-48-1 | 32105 | Dibromochloromethane | ND | 3100 | |
| 10061-01-5 | 34704 | c-1,3-Dichloropropene | ND | 12400 | |
| 79-00-5 | 34511 | 1,1,2-Trichloroethane | ND | 3100 | |
| 71-43-2 | 34030 | Benzene | ND | 6200 | |
| 110-75-8 | 34576 | 2-Chloroethylvinyl ether | ND | 6200 | |
| 75-25-2 | 32104 | Bromoform | ND | 3100 | |
| 127-18-4 | 34475 | Tetrachloroethylene | 32000 | 3100 | |
| 79-34-5 | 34516 | 1,1,2,2-Tetrachloroethane | ND | 3100 | |
| 108-88-3 | 34010 | Toluene | 4100 | 3100 | |
| 108-90-7 | 34301 | Chlorobenzene | ND | 3100 | |
| 100-41-4 | 34371 | Ethylbenzene | <3100 | 3100 | |
| 107-02-8 | 34210 | Acrolein | ND | 93000 | |
| 107-13-1 | 34215 | Acrylonitrile | ND | 93000 | |
| | | **Hazardous Substances** | | | |
| 67-64-1 | 81552 | Acetone | ND | 46500 | |
| 75-15-0 | 77041 | Carbon Disulfide | ND | 3100 | |

(con't)

* Trapping efficiency of Tenax trap is low

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE NO.: 82262
Sample Results Continued:

| CAS NO. | STORET NO. | Compound. | ppb Conc. (ng/gm) | Det. Limit (ng/gm) | Comments |
|---|---|---|---|---|---|
| 78-93-3 | 81595 | 2-Butanone | ND | 46500 | |
| 108-05-4 | 77057 | Vinyl Acetate | ND | 9300 | |
| 591-10-6 | 77103 | 2-Hexanone | ND | 9300 | |
| 108-10-1 | 81596 | 4-Methyl-2-Pentanone | ND | 3100 | |
| 100-42-5 | 81708 | Styrene | ND | 6200 | |
| 133-02-7 | 81551 | Xylenes (total) | 6900 | 6200 | |

Other Compounds Quantitated

Other Compounds
Tentatively Identified

1,1,2,Trichloro 1,2,2 trifluoromethane
Dimethyl disulfide
Thio bis methane

| Sample Recoveries for Surrogate Compounds: | Observed Recoveries | 95% Confidence Limits |
|---|---|---|
| 1,2-Dichloroethane,d4 | 124 | 115-137 |
| Benzene,d6 | 125 | 110-178 |
| Toluene,d8 | 102 | 97-113 |
| 1,4-Bromofluorobenzene | 98 | 80-104 |

Notes:
ND=none detected
~=approximate
<=less than
>=greater than

FACILITY SAMPLED: Juniper Realty, Woburn

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE NO.: 82263
SAMPLE LOCATION: SOIL ADJACENT TO DRUMS; NO VISIBLE CONTAMINATION
DATE OF COLLECTION: 9/17/85
TIME OF COLLECTION: 0825

DATE OF ANALYSIS: 10-18-85
REFERENCE BOOK: 68

SAMPLE RESULTS:

Dry weight

| CAS NO. | STORET NO. | Compound | ppb Conc. (ng/gm) | Det. Limit (ng/gm) | Comments |
|---|---|---|---|---|---|
| | | **Priority Pollutants** | | | |
| 74-87-3 | 34418 | Chloromethane | ND | 342 | |
| 74-83-9 | 34413 | Bromomethane | ND | 114 | |
| 75-01-4 | 39175 | Vinyl Chloride | ND | 228 | |
| 75-00-3 | 34311 | Chloroethane | ND | 228 | |
| 75-09-2 | 34423 | Methylene Chloride | ND | 57 | |
| 75-69-4 | 34488 | Trichlorofluoromethane | ND | * | |
| 75-35-4 | 34501 | 1,1-Dichloroethylene | ND | 57 | |
| 75-34-3 | 34496 | 1,1-Dichloroethane | ND | 57 | |
| 156-60-5 | 34546 | 1,2-Dichloroethylene isomers | ND | 57 | |
| 67-66-3 | 32106 | Chloroform | ND | 57 | |
| 107-06-2 | 34531 | 1,2-Dichloroethane | ND | 285 | |
| 71-55-6 | 34506 | 1,1,1-Trichloroethane | ND | 57 | |
| 56-23-5 | 32102 | Carbon Tetrachloride | ND | 57 | |
| 75-27-4 | 32101 | Bromodichloromethane | ND | 57 | |
| 78-87-5 | 34541 | 1,2-Dichloropropane | ND | 57 | |
| 10061-02-6 | 34699 | t-1,3-Dichloropropene | ND | 57 | |
| 79-01-6 | 39180 | Trichloroethylene | 460 | 57 | |
| 124-48-1 | 32105 | Dibromochloromethane | ND | 57 | |
| 10061-01-5 | 34704 | c-1,3-Dichloropropene | ND | 228 | |
| 79-00-5 | 34511 | 1,1,2-Trichloroethane | ND | 57 | |
| 71-43-2 | 34030 | Benzene | ND | 114 | |
| 110-75-8 | 34576 | 2-Chloroethylvinyl ether | ND | 114 | |
| 75-25-2 | 32104 | Bromoform | ND | 57 | |
| 127-18-4 | 34475 | Tetrachloroethylene | 57 | 57 | |
| 79-34-5 | 34516 | 1,1,2,2-Tetrachloroethane | ND | 57 | |
| 108-88-3 | 34010 | Toluene | ND | 57 | |
| 108-90-7 | 34301 | Chlorobenzene | ND | 57 | |
| 100-41-4 | 34371 | Ethylbenzene | ND | 57 | |
| 107-02-8 | 34210 | Acrolein | ND | 1710 | |
| 107-13-1 | 34215 | Acrylonitrile | ND | 1710 | |
| | | **Hazardous Substances** | | | |
| 67-64-1 | 81552 | Acetone | ND | 855 | |
| 75-15-0 | 77041 | Carbon Disulfide | ND | 57 | |

(con't)

*Trapping efficiency of Tenax trap is low

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE NO.: 82263
Sample Results Continued:

| CAS NO. | STORET NO. | Compound | ppb Conc. (ng/gm) | Det. Limit (ng/gm) | Comments |
|---|---|---|---|---|---|
| 78-93-3 | 81595 | 2-Butanone | ND | 855 | |
| 108-05-4 | 77057 | Vinyl Acetate | ND | 171 | |
| 591-10-6 | 77103 | 2-Hexanone | ND | 171 | |
| 108-10-1 | 81596 | 4-Methyl-2-Pentanone | ND | 57 | |
| 100-42-5 | 81708 | Styrene | ND | 114 | |
| 133-02-7 | 81551 | Xylenes (total) | 74 | 114 | |
| | | Other Compounds Quantitated | | | |
| | | Other Compounds Tentatively Identified | | | |

| Sample Recoveries for Surrogate Compounds: | Observed Recoveries | 95% Confidence Limits |
|---|---|---|
| 1,2-Dichloroethane,d4 | 133 | 115-137 |
| Benzene,d6 | 160 | 110-178 |
| Toluene,d8 | 109 | 97-113 |
| 1,4-Bromofluorobenzene | 87 | 80-104 |

Notes:
ND=none detected
~=approximate
<=less than
>=greater than

FACILITY SAMPLED: Juniper Realty, Woburn

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE NO.: 82266
SAMPLE LOCATION: DRUM # 3 - YELLOW WAXY/MASTIC MATERIAL
DATE OF COLLECTION: 9/17/85
TIME OF COLLECTION: 0945

DATE OF ANALYSIS: 10-18-85
REFERENCE BOOK: 68

SAMPLE RESULTS:

wet weight

| CAS NO. | STORET NO. | Compound | ppb Conc. (ng/gm) | Detection Limit (ng/gm) | Comments |
|---|---|---|---|---|---|
| | | **Priority Pollutants** | | | |
| 74-87-3 | 34418 | Chloromethane | ND | 18318 | |
| 74-83-9 | 34413 | Bromomethane | ND | 6106 | |
| 75-01-4 | 39175 | Vinyl Chloride | ND | 12212 | |
| 75-00-3 | 34311 | Chloroethane | ND | 12212 | |
| 75-09-2 | 34423 | Methylene Chloride | ND | 3053 | |
| 75-69-4 | 34488 | Trichlorofluoromethane | ND | * | |
| 75-35-4 | 34501 | 1,1-Dichloroethylene | ND | 3053 | |
| 75-34-3 | 34496 | 1,1-Dichloroethane | ND | 3053 | |
| 156-60-5 | 34546 | 1,2-Dichloroethylene isomers | ND | 3053 | |
| 67-66-3 | 32106 | Chloroform | ND | 3053 | |
| 107-06-2 | 34531 | 1,2-Dichloroethane | ND | 15265 | |
| 71-55-6 | 34506 | 1,1,1-Trichloroethane | 3000 | 3053 | |
| 56-23-5 | 32102 | Carbon Tetrachloride | ND | 3053 | |
| 75-27-4 | 32101 | Bromodichloromethane | ND | 3053 | |
| 78-87-5 | 34541 | 1,2-Dichloropropane | ND | 3053 | |
| 10061-02-6 | 34699 | t-1,3-Dichloropropene | ND | 3053 | |
| 79-01-6 | 39180 | Trichloroethylene | ND | 3053 | |
| 124-48-1 | 32105 | Dibromochloromethane | ND | 3053 | |
| 10061-01-5 | 34704 | c-1,3-Dichloropropene | ND | 12212 | |
| 79-00-5 | 34511 | 1,1,2-Trichloroethane | ND | 3053 | |
| 71-43-2 | 34030 | Benzene | ND | 6106 | |
| 110-75-8 | 34576 | 2-Chloroethylvinyl ether | ND | 6106 | |
| 75-25-2 | 32104 | Bromoform | ND | 3053 | |
| 127-18-4 | 34475 | Tetrachloroethylene | 74000 | 3053 | |
| 79-34-5 | 34516 | 1,1,2,2-Tetrachloroethane | ND | 3053 | |
| 108-88-3 | 34010 | Toluene | <3000 | 3053 | |
| 108-90-7 | 34301 | Chlorobenzene | ND | 3053 | |
| 100-41-4 | 34371 | Ethylbenzene | ND | 3053 | |
| 107-02-8 | 34210 | Acrolein | ND | 91590 | |
| 107-13-1 | 34215 | Acrylonitrile | ND | 91590 | |
| | | **Hazardous Substances** | | | |
| 67-64-1 | 81552 | Acetone | ND | 45795 | |
| 75-15-0 | 77041 | Carbon Disulfide | ND | 3053 | |

(con't)

* Trapping efficiency of Tenax trap is low

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE NO.: 82266
Sample Results Continued:

| CAS NO. | STORET NO. | Compound | ppb Conc. (ng/gm) | Det. Limit (ng/gm | Comments |
|---|---|---|---|---|---|
| 78-93-3 | 81595 | 2-Butanone | ND | 45795 | |
| 108-05-4 | 77057 | Vinyl Acetate | ND | 9159 | |
| 591-10-6 | 77103 | 2-Hexanone | ND | 9159 | |
| 108-10-1 | 81596 | 4-Methyl-2-Pentanone | ND | 3053 | |
| 100-42-5 | 81708 | Styrene | ND | 6106 | |
| 133-02-7 | 81551 | Xylenes (total). | 6100 | 6106 | |

Other Compounds Quantitated

Other Compounds Tentatively Identified

Dimethyl disulfide

| Sample Recoveries for Surrogate Compounds: | Observed Recoveries | 95% Confidence Limits |
|---|---|---|
| 1,2-Dichloroethane,d4 | 125 | 115-137 |
| Benzene,d6 | 117 | 110-178 |
| Toluene,d8 | 104 | 97-113 |
| 1,4-Bromofluorobenzene | 101 | 80-104 |

Notes:
ND=none detected
~=approximate
<=less than
>=greater than