nobis

MEMORANDUM

To:	EPA
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From:	J. Lambert, J. Brunelle
Subject:	Olin: Containment Area soil evaluation
Date:	7/22/19

This Technical Memorandum (Memo) evaluates the available data regarding the soils within the Containment Area at the Olin Chemical Superfund Site (the Site).

1.0 AVAILABLE DATA

Attachment A provides the available soil data for the Containment Area. These results include the results from Appendix F-7 from the OU1/OU2 Remedial Investigation (RI) (AMEC, 2015), in addition to the OU1/OU2 RI surface soil samples (location IDs starting with "SS-"). This data set does not include samples representative of soils that had been previously excavated.

The results included 108 analytes that were detected in 193 samples. Of these, 42 analytes were detected in fewer than five samples. Polychlorinated biphenyls (PCBs) were not detected in any of the samples.

The following analytes were detected in more than 50 samples:

- Bis(2-ethylhexyl)phthalate (BEHP): 139 detections
- N-nitrosodiphenylamine (NDMA): 63 detections
- Aluminum: 51 detections
- Chromium: 170 detections
- Lead: 107 detections

Olin did not analyze all samples for the full range of analytes. Pesticides, polychlorinated biphenyls (PCBs), extractable petroleum hydrocarbons (EPH) and most metals were not regularly

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included for analysis and specialty compounds such as formaldehyde and hydrazine were only included in the RI sampling. Olin collected surface soil samples only during the OU1/OU2 RI.

2.0 CONTAMINANT DISTRIBUTION

The OU1/OU2 RI (AMEC, 2015) provided contaminant distribution maps for selected chemicals in surface soil, shallow soil (1-10 feet below ground surface [bgs]), and deep soil (more than 10 feet bgs). Olin only conducted deep overburden soil sampling in the northwest corner of the Containment Area. Distribution maps for the following contaminants are included in Attachment B:

- Arsenic
- Chromium
- Total trimethylpentenes (TMPs)
- Benzo(a)pyrene
- BEHP
- NDMA
- Hydrazine (only available for surface soils)

The OU1/OU2 RI also included distribution maps for hexavalent chromium and for C11-C12 aromatics, but no samples were collected for these analytes within the Containment Area (the only C11-C12 aromatic samples were collected at the outer edge).

3.0 COMPARISON TO CRITERIA

Nobis compared soil results to three sets of criteria, including:

- Direct contact (May 2018 residential and industrial regional screening levels [RSLs]).
- Massachusetts Department of Environmental Protection (MassDEP) background values for natural soils and ash fill.
- RSL soil screening levels (SSLs) for residential tapwater and maximum contaminant levels (MCLs) in groundwater.

Table 1 summarizes the results for direct contact/background criteria and Table 2 summarizes the results for leaching criteria. These are described in the subsections below.

3.1 Direct Contact – Residential and Industrial RSLs

Table 3 compares the analytical soil results to the residential and industrial direct contact RSLs (EPA, 2018). Table 1 summarizes these results. The direct contact RSL comparisons are as follows:

- Twelve analytes exceeded at least one direct contact RSL.
- Several chemicals exceeded the residential RSL in more than 5 samples:
    - BEHP: maximum value almost 2 orders of magnitude [OOM] above the RSL.
    - Aluminum: maximum value slightly above the RSL.
    - Arsenic: maximum value more than 2 OOM above the RSL.
    - Cobalt: maximum value more than 5x the RSL.
    - Iron: maximum value approximately 5x the RSL.
    - Manganese: maximum value approximately 3x the RSL.
- Contaminants with sporadic exceedances of the RSL (5 or fewer detections) included NDMA, 3 pesticides (aldrin, alpha-BHC and gamma-BHC/lindane), and t2metals (cadmium thallium).
- Two analytes frequently exceeded the industrial RSL:
    - BEHP: 20 exceedances, maximum more than 1 OOM above the RSL.
    - Arsenic: 33 exceedances, maximum more than 1 OOM above the RSL.
    - Thallium: 2 exceedances, maximum slightly above the RSL.

  BEHP and arsenic are both included in the OU1/OU2 RI figures (Attachment B).
- NDMA, alpha-BHC and thallium exceeded the residential RSL in fewer than 3 samples each.

3.2 Comparison to Background

Table 4 compares the analytical soil results to the MassDEP historic fill/anthropogenic background levels in soil (MassDEP, 2016), as well as to the Olin Site-specific background values that were derived using the 95% Upper Prediction Limit (UPL) based on 9 soil samples (AMEC, 2015 Table 2.4-2).

Analytes exceeding background may not represent a risk to human health; therefore, only the background results for the analytes that exceeded direct contact screening criteria are discussed below. Table 1 summarizes the results. These include the following:

- Although aluminum direct contact RSL exceedances are slightly above MassDEP natural and fill background, the highest value is below the calculated site-specific background. Aluminum concentrations likely represent natural conditions.
- Arsenic concentrations likely do not represent natural conditions as the maximum concentration is above site-specific background and more than four times the MassDEP natural and fill background.
- Cadmium concentrations likely do not represent natural conditions as the maximum concentration is higher than the site-specific background and more than 1 OOM above MassDEP natural and fill backgrounds.
- Cobalt concentrations likely do not represent natural conditions as the maximum concentration is slightly higher than the site-specific background and more than three times the MassDEP natural and fill background.
- The highest iron concentrations may not represent natural conditions as the maximum concentration is higher than the site-specific values and slightly above the MassDEP natural and fill background.
- Manganese concentrations may not represent natural conditions, as the maximum concentration is significantly higher than the site-specific values and slightly above natural and fill background.

Background values are not available for aldrin, Alpha-BHC, BEHP, Gamma-BHC, and NDMA.

3.3 Comparison to Leaching Criteria

Table 5 compares the soil results to the RSL SSLs for residential tapwater and MCLs in groundwater. In some cases, the tapwater SSL is much lower than the applicable detection limit. Olin noted that the published SSLs for tapwater are extremely conservative in its response to comments regarding the OU1/OU2 RI (AMEC, 2015, Appendix L) and in its leaching discussion (AMEC, 2015, Appendix J). Therefore, Table 5 includes a comparison to 100x the SSL (2 OOM above) to account for this. Table 2 summarizes the results.

58 analytes exceeded one or more leaching criteria. Most of the analytes exceeded the tapwater-based SSL. The MCL-based SSL is generally higher and had fewer exceedances overall. Locations with significant exceedances of leaching criteria (more than 30 exceedances of the tapwater-based SSL, more than 10 exceedances of the MCL-based SSL, and/or more than 5 exceedances of 100x the tapwater-based SSL) are described below.

- VOCs - Methylene chloride is frequently considered to be a laboratory contaminant; however, detections of methylene chloride exceeded both the tapwater- and MCL-based SSL and 9 samples were more than 2 OOM above the tapwater-based SSL.
- SVOCs - BEHP exceeded the tapwater- and MCL-based SSLs in more than 90 samples, and 23 samples were more than 2 OOM above the tapwater-based SSL. The maximum detected concentration was more than 3 OOM above the tapwater-based SSL.
- NDMA exceeded the tapwater-based SSL in more than 50 samples, and 12 samples were more than 2 OOM above the tapwater-based SSL. An MCL-based SSL is not available for NDMA. The maximum detected concentration was more than 3 OOM above the tapwater-based SSL.
- Pesticides:
    - Alpha-BHC exceeded the tapwater-based SSL in all samples where it was detected; most of these detections (9) also exceeded the tapwater-based SSL by more than 2 OOM.
    - Gamma-BHC/Lindane exceeded the tapwater-based SSL in all samples where it was detected; approximately 2/3 of these detections (23) also exceeded the tapwater-based SSL by more than 2 OOM.
- Metals:
    - Aluminum exceeded the tapwater-based SSL in 45 samples (most of the detections), and the maximum concentration was approximately 4x the tapwater-based SSL. Most of the detections were relatively close to the tapwater-based SSL. An MCl-based SSL is not available for aluminum.
    - Arsenic exceeded all screening criteria in all samples where it was detected (39 samples), with the maximum concentration more than 4 OOM above the tapwater-based SSL.
    - Cadmium exceeded the tapwater- and MCL-based SSL in more than 30 samples, with a relatively low number of samples (3) more than 2 OOM above the tapwater-based SSL.

- Cobalt exceeded the tapwater-based SSL in all samples where it was detected, and most of those samples (21) also exceeded the tapwater-based SSL by more than 2 OOM.
- Iron exceeded the tapwater-based SSL in all samples where it was detected (50); most of these detections also exceeded the tapwater-based SSL by more than 2 OOM.

4.0 LEACHING POTENTIAL

Section 3.2 provides an initial summary of the primary contaminants that may cause impacts to groundwater. Ten contaminants were considered to have potential for impacts to groundwater based on number and degree of exceedances of screening criteria. Nobis further evaluated leaching impacts by comparing these contaminants to associated groundwater concentrations, as Olin did in the OU1/OU2 RI leaching evaluation (AMEC, 2015, Appendix J).

The leaching comparison used data from MP-1, which was the only monitoring well with screened intervals less than 15 feet bgs. This allowed for a more direct comparison to existing soil samples. Soils in the Containment Area were shallower than 10.5 feet bgs. MP-1 #14, MP-1 #16, MP-1 #17, and MP-1 #18 are the only intervals screened entirely above 15 feet bgs.

Table 6 summarizes the detected results from these wells exceeding screening criteria (Tapwater RSL, MCL, and Secondary Maximum Contaminant Level [SMCL]) based on results from 2003 to 2012. Results after 2012 were not available for these locations. Table 7 provides the complete detected results.

The following analytes exceeded screening criteria for groundwater:

- NDMA: Both detections exceeded the Tapwater RSL. NDMA detections in shallow overburden groundwater (well above the DAPL pool) may be partially caused by soil impacts given that NDMA exceeded the Tapwater SSL in soil.
- Arsenic: One groundwater sample exceeded the Tapwater RSL and MCL by more than 3 and 1 OOM, respectively. The arsenic exceedance is likely due to soil leaching since arsenic in soil exceeded the MCL-based SSL and RSL-based SSL by more than 2 OOM.
- Iron: One groundwater sample exceeded the SMCL. Iron in groundwater may be from leaching given that iron exceeded its SSL by more than 2 OOM in most of the soil samples.

- Manganese: Three groundwater samples exceeded the SMCL and Tapwater RSL by almost 2 OOM. Concentrations in groundwater may be from leaching since manganese concentrations in soil exceed the Tapwater-based SSL (some samples by more than 2 OOM).
- Nickel: Nickel in soil may contribute to the slightly elevated groundwater concentrations since all but one of the nickel soil results exceeded the Tapwater SSL; however, groundwater concentrations were relatively low with only one sample slightly exceeding the Tapwater RSL.
- Nitrogen (nitrate/nitrite/ammonia): SSLs were not available for ammonia; however, with a maximum concentration of 363 mg/kg and an average detected concentration of 91 mg/kg, it is possible that the detected nitrate/nitrite exceedances of the Tapwater RSL and MCL are due to leaching.
- Sulfate: SSLs were not available for sulfate; however, it is possible that the detected exceedances of the SMCL are from leaching, due to high soil sulfate concentrations (a maximum concentration of 33,000 mg/kg and an average detected concentration of 6,979 mg/kg in soil).

Soil leaching criteria exceedances appear to correlate with groundwater concentrations above screening criteria. However, given the absence of soil data set below 10.5 feet bgs and the limited groundwater data set above 15 feet bgs (8 samples from 2000 to 2012), additional soil and groundwater data are needed to determine the extent of the potential for leaching.

Based on these uncertainties, other contaminants that exceeded soil screening levels but have not exceeded groundwater screening levels should be retained as potential groundwater contaminants. These include:

- Methylene chloride
- BEHP
- Alpha BHC
- Gamma BHC/Lindane
- Aluminum
- Cadmium

- Cobalt

5.0 DATA COMPLETENESS AND QUALITY

Nobis identified several data gaps based on the Containment Area data review:

Sample Depth

Only four samples were collected below 10 feet bgs: BD-C10, BD-C13, WD-C15, and WD-C16. These samples were collected from the northwest corner of the Containment Area only and were all collected from less than 10.5 feet bgs. The contaminant concentrations below this depth are unknown.

Although only a few organic compounds were detected in these four samples and the detected concentrations did not exceed direct contact or background criteria, some of these samples exceeded leaching criteria.

Collection of samples below 10.5 feet bgs for full-suite analysis would determine if there are potential impacts to groundwater from sources other than the DAPL pool (estimated top elevation more than 25 feet bgs).

Soil Stockpiles

The December 2000 Release Abatement Measure Status Report (GEI Consultants, Inc. [GEI], 2000) indicates that Olin used 300 cubic yards of granular soil, sandy soil, and floc from three stockpiles (SP-7A, SP13A, and SP17A) as backfill material in the containment area; however areas where this material was used for backfill is not well documented and the existing location of this material is unknown.

Appendix F-7 in the OU1/OU2 RI (AMEC, 2015) includes 25 stockpile samples collected in August and September 2000. Approximately half of the samples exceeded residential and industrial direct contact RSLs for BEHP and 8 exceeded industrial RSLs for BEHP. Olin only sampled stockpiles for a limited number of metals (cadmium, chromium, and lead) and like the other pre-RI soil samples and were not analyzed for specialty compounds.

Olin should collect additional soil samples throughout the containment area to provide coverage of the containment area (not just at the identified source areas). Olin should sample shallow soil (1-10 feet bgs) at the center, northern portion, and southwest portion to address this data gap.

Specialty Compounds

The only soil samples from the Containment Area analyzed for specialty compounds were collected as part of the OU1/OU2 RI. Olin collected samples from 0-1 feet bgs only. EPA has indicated that these samples may have been collected from bedding material and may not be representative of deeper soils.

Although formaldehyde and hydrazine were detected in multiple samples at concentrations below direct contact RSLs, the maximum hydrazine concentration indicates a potential for leaching as the concentrations were more than 3 OOM above the tapwater-based SSL.

Olin should collect additional samples from soils below 1-foot bgs (preferably throughout the soil column) since formaldehyde and hydrazine were detected in surface soil samples and since the type of material sampled (i.e. bedding material) is not well documented.

6.0 REFERENCES

AMEC, 2015. Final Remedial Investigation Report, Operable Unit 1 & Operable Unit 2. Olin Chemical Superfund Site, Wilmington, Massachusetts. July 24.

EPA, 2019. Regional Screening Levels (RSLs). May 2018.

GEI, 2000. Part 2, Construction-Related Release Abatement Measure Status Report No. 1, Olin Property, Wilmington, MA, RTN 3-0471. December 27.

MassDEP, 2016. Historic Fill/Anthropogenic Background Levels in Soil, Draft Technical Update. May.

Table 1
Containment Area Direct Contact/Background Soil Summary
Olin Chemical Superfund Site
Wilmington, Massachusetts

Analyte	Max. Conc.	No. Detect	Direct Contact Exceedances				Background Exceedances					
			Res. Soil RSL		Ind. Soil RSL		MassDEP Natural		MassDEP Fill		Site Specific	
			Criterion	No. Exceed	Criterion	No. Exceed	Criterion	No. Exceed	Criterion	No. Exceed	Criterion	No. Exceed
Semivolatile Organic Compounds												
Bis(2-Ethylhexyl)phthalate	2356	139	39	27	160	20	NA	--	NA	--	0.031	138
N-Nitrosodiphenylamine	473	63	110	1	470	1	NA	--	NA	--	NA	--
Pesticides/PCBs												
Aldrin	0.59	8	0.039	1	0.18	0	NA	--	NA	--	NA	--
Alpha-BHC	0.43	11	0.086	3	0.36	1	NA	--	NA	--	NA	--
Gamma-BHC/Lindane	1.2	34	0.57	3	2.5	0	NA	--	NA	--	NA	--
Inorganics												
Aluminum	13,000	51	7,700	13	110,000	0	10,000	2	10,000	2	16,279	0
Arsenic	89	39	0.68	40	3	33	20	5	20	5	11.7	11
Cadmium	54	41	7.1	4	98	0	2	8	3	6	0.32	38
Cobalt	15	27	2.3	21	35	0	4	13	4	13	3.41	19
Iron	25,000	50	5,500	28	82,000	0	20,000	1	20,000	1	15,564	6
Manganese	530	30	180	8	2600	0	300	4	300	4	75.3	23
Thallium	1.8	2	0.078	2	1.2	2	30	0	30	0	NA	--

Notes:
See Tables 3-5 and Attachment A for full results.
All results in milligrams per kilogram (mg/kg).
Background exceedances only depicted for contaminants exceeding direct contact criteria.

Table 2
Containment Area Leaching Criteria Soil Summary
Olin Chemical Superfund Site
Wilmington, Massachusetts

Analyte	Max. Conc.	No. Detect	Leaching Exceedances					
			Tapwater SSL		MCL SSL		100x Tapwater	
			Criterion	No. Exceed	Criterion	No. Exceed	Criterion	No. Exceed
Volatile Organic Compounds								
1,1,1-Trichloroethane	0.23	11	0.28	0	0.07	2	28	0
1,1-Dichloroethene	0.018	1	0.01	1	0.0025	1	1	0
1,2,3-Trichlorobenzene	0.16	4	0.0021	4	NA	--	0.21	0
1,2,4-Trichlorobenzene	0.79	8	0.0012	8	0.2	4	0.12	5
1,2,4-Trimethylbenzene	4.6	11	0.0081	11	NA	--	0.81	4
1,3,5-Trimethylbenzene	2.9	11	0.0087	11	NA	--	0.87	3
2-Butanone	0.49	6	0.12	1	NA	--	12	0
2-Hexanone	0.061	1	0.00088	1	NA	--	0.088	0
Acetone	17	22	0.29	3	NA	--	29	0
Benzene	0.1	1	0.00023	1	0.0026	0	0.023	1
Chloroform	0.002	1	0.000061	1	0.022	0	0.0061	1
Ethyl benzene	0.62	5	0.0017	5	0.78	0	0.17	2
Isopropylbenzene	0.65	6	0.074	6	NA	--	7.4	0
Methylene chloride	2	46	0.0027	46	0.0013	46	0.27	9
Naphthalene	0.62	1	0.00054	1	NA	--	0.054	1
Propylbenzene	0.59	4	0.12	3	NA	--	12	0
Styrene	0.81	5	0.13	3	0.11	4	13	0
Toluene	14	25	0.076	15	0.69	7	7.6	2
Trichloroethene	0.08	2	0.0001	2	0.0018	2	0.01	1
Xylene, o	0.53	6	0.019	6	9.9	0	1.9	0
Xylenes, Total	0.88	4	0.019	4	9.9	0	1.9	0
Semivolatile Organic Compounds								
1,2,4-Trichlorobenzene	0.61	9	0.0012	9	0.2	4	0.12	4
2-Methylnaphthalene	0.067	1	0.019	1	NA	--	1.9	0
4-Methylphenol	0.34	1	0.15	1	NA	--	15	0
Benzaldehyde	0.06	3	0.0041	3	NA	--	0.41	0
Benzo(a)anthracene	0.099	7	0.011	7	NA	--	1.1	0
Benzo(a)pyrene	0.059	7	0.029	4	0.24	0	2.9	0
Bis(2-Ethylhexyl)phthalate	2356	139	1.3	97	1.4	95	130	23
Di-n-butylphthalate	109	20	0.23	12	NA	--	23	4
Diphenyl ether	0.015	2	0.00034	2	NA	--	0.034	0
Naphthalene	0.63	4	0.00054	4	NA	--	0.054	3
N-Nitrosodiphenylamine	473	63	0.067	54	NA	--	6.7	12
Phenol	2.4	5	0.33	2	NA	--	33	0
Pesticides/PCBs								
4,4'-DDD	0.017	6	0.0015	4	NA	--	0.15	0
Aldrin	0.059	8	0.00015	6	NA	--	0.015	1
Alpha-BHC	0.43	11	0.000042	11	NA	--	0.0042	9
Beta-BHC	0.15	5	0.00015	5	NA	--	0.015	4
Dieldrin	0.0069	6	0.000071	6	NA	--	0.0071	0
Endrin	0.022	1	0.0092	1	NA	--	0.92	0
Gamma-BHC/Lindane	1.2	34	0.00024	34	NA	--	0.024	23
Heptachlor	0.00087	2	0.00012	2	NA	--	0.012	0
Heptachlor epoxide	0.0028	1	0.000028	1	NA	--	0.0028	0

Table 2
Containment Area Leaching Criteria Soil Summary
Olin Chemical Superfund Site
Wilmington, Massachusetts

Analyte	Max.	No.	Leaching Exceedances					
Inorganics								
Aluminum	13,000	51	3,000	45	NA	--	300,000	0
Arsenic	89	39	0.0015	39	0.29	39	0.15	39
Barium	83	31	16	21	82	1	1600	0
Cadmium	54	41	0.069	41	0.38	31	6.9	3
Cobalt	15	27	0.027	27	NA	--	2.7	21
Copper	47	26	2.8	26	46	1	280	0
Iron	25,000	50	35	50	NA	--	3,500	34
Lead	58	107	NA	--	14	7	NA	--
Manganese	530	30	2.8	30	NA	--	280	4
Mercury	0.91	8	0.0033	8	0.1	6	0.33	2
Nickel	35	28	2.6	27	NA	--	260	0
Silver	1.2	10	0.08	10	NA	--	8	0
Thallium	1.8	2	0.0014	2	0.14	2	0.14	2
Vanadium	36	29	9	25	NA	--	860	0
Zinc	84	29	37	5	NA	--	3,700	0
Other Analyses								
Formaldehyde	0.17	3	0.000087	3	NA	--	0.0087	3

Notes:
See Tables 3-5 and Attachment A for full results.
All results in milligrams per kilogram (mg/kg).

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			AREA-1		AREA-1		AREA 1-1		AREA 1-2		AREA 1-4		AREA 1-5		AREA-2		BD-C1		BD-C10		BD-C13		BD-C4		BD-C7		BH1		BH2		BH3		BH4	
Sample ID			AREA 01		AREA 1 (COMP)		AREA 1-1		AREA 1-2		AREA 1-4		AREA 1-5		AREA 02		1120-BD-C1		1120-BD-C10		1120-BD-C13		1120-BD-C4		1120-BD-C7		BH-01		BH-02		BH-03		BH-04	
Date	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	7/8/1991		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		7/9/1991		10/10/2000		10/12/2000		10/12/2000		10/10/2000		10/12/2000		6/5/1991		6/5/1991		6/5/1991		6/5/1991	
Depth (feet)			0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		4.6 - 4.6		10.3-10.3		10.1 - 10.1		7.5 - 7.5		7.96 - 7.9		4.3 - 6.3		3.5 - 5.5		4.2 - 6.2		6.3 - 8.3	
Volatile Organics (mg/kg)																																		
1,1,1-Trichloroethane	810	3,600									0.23																							
1,1-Dichloroethene	23	100									0.018																							
1,2,3-Trichlorobenzene	6.3	93																																
1,2,4-Trichlorobenzene	5.8	26																																
1,2,4-Trimethylbenzene	30	180																																
1,3,5-Trimethylbenzene	27	150																																
2-Butanone	2,700	19,000																									0.49	J			0.001	J	0.003	J
2-Hexanone	20	130																																
Acetone	6,100	67,000					0.029	B	0.01	J	0.036		0.005	J													17		0.5		0.13		0.46	
Benzene	1.2	5.1																									0.1	J						
Chloroform	0.32	1.4																																
Ethyl benzene	5.8	25																																
Isopropylbenzene	190	990																																
Methylene chloride	35	320																									2							
Naphthalene	3.8	17																																
Propylbenzene	380	2,400																																
sec-Butylbenzene	780	12,000																																
Styrene	600	3,500																																
Tetrachloroethene	8.1	39																																
Toluene	490	4700									0.003	J															0.15	J						
Trichloroethene	0.41	1.9									0.009																0.08	J						
Xylene, o	65	280																																
Xylenes, Total	58	250																																
Semivolatile Organics (mg/kg)																																		
1,2,4-Trichlorobenzene	5.8	26																																
2-Methylnaphthalene	24	300													0.067	J																		
2-Methylphenol	320	4,100																																
4-Methylphenol	630	8,200																																
Anthracene	1,800	23,000																																
Benzaldehyde	170	820																																
Benzo(a)anthracene	1.1	21	0.099	J											0.075	J																		
Benzo(a)pyrene	0.11	2.1	0.059	J											0.057	J																		
Benzo(b)fluoranthene	1.1	21	0.18	J											0.13	J																		
Benzo(k)fluoranthene	11	210	0.065	J											0.042	J																		
Benzoic Acid	25,000	330,000																																
Bis(2-Ethylhexyl)phthalate	*39*	160	2.9		0.13	JB									0.13	J							3.9						3.5		1.7		27	J
Butylbenzylphthalate	290	1,200																																
Chrysene	110	2,100	0.17	J											0.15	J																		
Dibenz(a,h)anthracene	0.11	2.1																																
Diethylphthalate	5,100	66,000			0.044	JB																												
Di-n-butylphthalate	630	8,200			0.027	JB									0.014	J																		
Di-n-octylphthalate	63	820																															0.073	J
Diphenyl ether	3.4	14																																
Diphenylamine	630	8,200																																
Fluoranthene	240	3,000	0.25	J											0.19	J																		
Fluorene	240	3,000																																
Indeno(1,2,3-cd)pyrene	1.1	21	0.064	J											0.051	J																		
Naphthalene	3.8	17													0.049	J																		

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			AREA-1		AREA-1		AREA 1-1		AREA 1-2		AREA 1-4		AREA 1-5		AREA-2		BD-C1		BD-C10		BD-C13		BD-C4		BD-C7		BH1		BH2		BH3		BH4	
Sample ID	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	AREA 01		AREA 1 (COMP)		AREA 1-1		AREA 1-2		AREA 1-4		AREA 1-5		AREA 02		1120-BD-C1		1120-BD-C10		1120-BD-C13		1120-BD-C4		1120-BD-C7		BH-01		BH-02		BH-03		BH-04	
Date			7/8/1991		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		7/9/1991		10/10/2000		10/12/2000		10/12/2000		10/10/2000		10/12/2000		6/5/1991		6/5/1991		6/5/1991		6/5/1991	
Depth (feet)			0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		4.6 - 4.6		10.3-10.3		10.1 - 10.1		7.5 - 7.5		7.96 - 7.9		4.3 - 6.3		3.5 - 5.5		4.2 - 6.2		6.3 - 8.3	
N-Nitrosodiphenylamine	*110*	470																															0.29	J
Phenol	1900	25000																																
Pyrene	180	2300	0.16	J											0.14	J																		
Pesticides/PCBs (mg/kg)																																		
4,4'-DDD	0.19	2.5																																
4,4'-DDE	2	9.3																																
4,4'-DDT	1.9	8.5																																
Aldrin	*0.039*	0.18																																
Alpha-BHC	*0.086*	0.36																																
Beta-BHC	0.3	1.3																																
Dieldrin	0.034	0.14																																
Endrin	1.9	25																																
Gamma-BHC/Lindane	*0.57*	2.5																													0.048			
Heptachlor	0.13	0.63																																
Heptachlor epoxide	0.07	0.33																																
Inorganics (mg/kg)																																		
Aluminum	*7,700*	110,000	*8,000*		2,250	E									5,900		3,400		2,600		2,600		3,700		4,200		7,600		*8,300*		*9,000*		*9,200*	
Arsenic	*0.68*	3	*24*		*1.2*	*B*									*7*										*2*		*8*		*12*		*21*		*13*	
Barium	1500	22000	25		5.8	B									38												16		30		29		36	
Beryllium	16	230																																
Cadmium	*7.1*	98																													1.8		1.4	
Chromium	12,000	180,000	320		9.1	E									8.8		5.3		4.8		5		4.9		6.2		100		21		36		41	
Cobalt	*2.3*	35	*9.9*		1.3	B																					*2.9*		*3.8*		*5*		*6.2*	
Copper	310	4700	14		2.9	B									12												8.2		9.8		10		47	
Iron	*5,500*	82,000	*16,000*		2,090	E									*6,900*		2,700		2,300		2,500		2,100		2,900		*7,800*		*9,500*		*11,000*		*14,000*	
Lead	400	800	58		2										36		1.8		2		1.8		2.1		1.9				11				52	
Manganese	*180*	2,600	*530*		27.7	E									40												72		140		130		*230*	
Mercury	1.1	4.6			0.11	N									0.15																			
Nickel	150	2200	5.8		4	B									4.7												6.7		11		18		14	
Silver	39	580																																
Thallium	*0.078*	1.2																																
Tin	4,700	70,000																																
Vanadium	39	580	18		4.3	B									18												12		12		17		21	
Zinc	2,300	35,000	24		13.1										31												21		24		30		84	
Other Analyses (mg/kg)																																		
Formaldehyde	17	73																																
Hydrazine	230	1100																																

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			BH6		BH7		BH8		BH9		BH10		BS017PND		CP-C36		CP-C38		CP-C39		CP-C41		CP-C42		CP-C43		CP-C45		CP-C46		CP-C47		CP-C49	
Sample ID			BH-06		BH-07		BH-08		BH-09		BH-10		BS017PND		1140-CP-C36		1140-CP-C38		1140-CP-C39		1140-CP-C41		1140-CP-C42		1140-CP-C43		1140-CP-C45		1140-CP-C46		1140-CP-C47		1140-CP-C49	
Date	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	6/6/1991		6/6/1991		6/7/1991		6/7/1991		6/7/1991		1/21/1997		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000	
Depth (feet)			4.4 - 6.4		3 - 5		3 - 5		2.6 - 4.6		3.8 - 5.8		0 - 0		5.4 - 5.4		6.2 - 6.2		6.7 - 6.7		6.5 - 6.5		6.3 - 6.3		5 - 5		6.6 - 6.6		6.1 - 6.1		5.4 - 5.4		6.8 - 6.8	
Volatile Organics (mg/kg)																																		
1,1,1-Trichloroethane	810	3,600																																
1,1-Dichloroethene	23	100																																
1,2,3-Trichlorobenzene	6.3	93																																
1,2,4-Trichlorobenzene	5.8	26																																
1,2,4-Trimethylbenzene	30	180																																
1,3,5-Trimethylbenzene	27	150																																
2-Butanone	2,700	19,000	0.001	J																														
2-Hexanone	20	130							0.061																									
Acetone	6,100	67,000																																
Benzene	1.2	5.1																																
Chloroform	0.32	1.4							0.002	J																								
Ethyl benzene	5.8	25																																
Isopropylbenzene	190	990																																
Methylene chloride	35	320																	0.3	B											0.21	B	0.44	B
Naphthalene	3.8	17																																
Propylbenzene	380	2,400																																
sec-Butylbenzene	780	12,000																																
Styrene	600	3,500																																
Tetrachloroethene	8.1	39							0.001	J																								
Toluene	490	4700					0.001	J	0.001	J	0.001	J																						
Trichloroethene	0.41	1.9																																
Xylene, o	65	280																																
Xylenes, Total	58	250																																
Semivolatile Organics (mg/kg)																																		
1,2,4-Trichlorobenzene	5.8	26					0.086	J			0.075	J																						
2-Methylnaphthalene	24	300																																
2-Methylphenol	320	4,100																																
4-Methylphenol	630	8,200																																
Anthracene	1,800	23,000							0.028	J			0.01	J																				
Benzaldehyde	170	820																																
Benzo(a)anthracene	1.1	21							0.08	J																								
Benzo(a)pyrene	0.11	2.1							0.055	J																								
Benzo(b)fluoranthene	1.1	21							0.084	J																								
Benzo(k)fluoranthene	11	210																																
Benzoic Acid	25,000	330,000																																
Bis(2-Ethylhexyl)phthalate	*39*	160			2.5		3.9				8.2		8.6	B	6.2		2				0.54										0.25	J		
Butylbenzylphthalate	290	1,200									0.035	J																						
Chrysene	110	2,100							0.086	J																								
Dibenz(a,h)anthracene	0.11	2.1																																
Diethylphthalate	5,100	66,000											0.053	JB																				
Di-n-butylphthalate	630	8,200											0.046	JB																				
Di-n-octylphthalate	63	820	0.06	J	0.014	J																												
Diphenyl ether	3.4	14																																
Diphenylamine	630	8,200																																
Fluoranthene	240	3,000							0.16	J			0.037	J																				
Fluorene	240	3,000																																
Indeno(1,2,3-cd)pyrene	1.1	21																																
Naphthalene	3.8	17									0.63	J																						

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			BH6		BH7		BH8		BH9		BH10		BS017PND		CP-C36		CP-C38		CP-C39		CP-C41		CP-C42		CP-C43		CP-C45		CP-C46		CP-C47		CP-C49	
Sample ID			BH-06		BH-07		BH-08		BH-09		BH-10		BS017PND		1140-CP-C36		1140-CP-C38		1140-CP-C39		1140-CP-C41		1140-CP-C42		1140-CP-C43		1140-CP-C45		1140-CP-C46		1140-CP-C47		1140-CP-C49	
Date	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	6/6/1991		6/6/1991		6/7/1991		6/7/1991		6/7/1991		1/21/1997		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000	
Depth (feet)			4.4 - 6.4		3 - 5		3 - 5		2.6 - 4.6		3.8 - 5.8		0 - 0		5.4 - 5.4		6.2 - 6.2		6.7 - 6.7		6.5 - 6.5		6.3 - 6.3		5 - 5		6.6 - 6.6		6.1 - 6.1		5.4 - 5.4		6.8 - 6.8	
N-Nitrosodiphenylamine	*110*	470			0.15	J	0.57	J			0.98		0.26	J																				
Phenol	1900	25000					0.1	J			0.075	J																						
Pyrene	180	2300							0.13	J			0.039	J																				
Pesticides/PCBs (mg/kg)																																		
4,4'-DDD	0.19	2.5											0.00019	J																				
4,4'-DDE	2	9.3											0.0016	J																				
4,4'-DDT	1.9	8.5											0.0032	J																				
Aldrin	*0.039*	0.18																																
Alpha-BHC	*0.086*	0.36											0.00056	J																				
Beta-BHC	0.3	1.3																																
Dieldrin	0.034	0.14											0.0004	J																				
Endrin	1.9	25																																
Gamma-BHC/Lindane	*0.57*	2.5											0.0014	J																				
Heptachlor	0.13	0.63																																
Heptachlor epoxide	0.07	0.33																																
Inorganics (mg/kg)																																		
Aluminum	*7,700*	110,000	*10,000*		*7,900*		4,100		*9,800*		460		4,810						5,000												4,400		3,700	
Arsenic	*0.68*	3	*16*		*4.3*		*4.6*		*13*		*1.1*		*24.5*						*4.8*												*2.8*		*3.2*	
Barium	1500	22000	39		28		14		23		6.6		9.2	B																				
Beryllium	16	230																																
Cadmium	*7.1*	98	1.2				1.4		1.2																									
Chromium	12,000	180,000	25		160		22		27		7.3		305		500		490		1600		230		710		490		560		420		260		660	
Cobalt	*2.3*	35	*7.2*		2.3		1.8		*5.2*				1.9	B																				
Copper	310	4700	14		12		4		10				4.3	B																				
Iron	*5,500*	82,000	*13,000*		*9,400*		5,100		*15,000*		840		*20,000*	*					3,800												5,400		4,000	
Lead	400	800											14.1						4												2.6		2.2	
Manganese	*180*	2,600	*250*		140		76		*320*		7.6		99.9																					
Mercury	1.1	4.6																																
Nickel	150	2200	18		8.9		4.8		12				1.8	B																				
Silver	39	580																																
Thallium	*0.078*	1.2																																
Tin	4,700	70,000																																
Vanadium	39	580	18		16		5.9		18				18.4																					
Zinc	2,300	35,000	31		17		14		27				7	E																				
Other Analyses (mg/kg)																																		
Formaldehyde	17	73																																
Hydrazine	230	1100																																

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			CP-C50		CP-C52		CP-C53		CP-C54		CP-C55		CP-C56		CP-C57		CP-C58		CP-C59		CP-C60		CP-C61		CP-C62		CP-C64		CP-C65		CP-C66		CP-C67	
Sample ID	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	1140-CP-C50		1140-CP-C52		1140-CP-C53		1140-CP-C54		1140-CP-C55		1140-CP-C56		1140-CP-C57		1140-CP-C58		1140-CP-C59		1140-CP-C60		1140-CP-C61		1140-CP-C62		1140-CP-C64		1140-CP-C65		1140-CP-C66		1140-CP-C67	
Date			10/5/2000		10/9/2000		10/9/2000		10/10/2000		10/10/2000		10/10/2000		10/10/2000		10/10/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000	
Depth (feet)			4.8 - 4.8		8.7 - 8.7		8.5 - 8.5		3.3 - 3.3		4.1 - 4.1		4.1 - 4.1		4.4 - 4.4		4.5 - 4.5		4.9 - 4.9		5.5 - 5.5		5.4 - 5.4		3.7 - 3.7		5.2 - 5.2		5.3 - 5.3		5.1 - 5.1		4.7 - 4.7	
Volatile Organics (mg/kg)																																		
1,1,1-Trichloroethane	810	3,600																																
1,1-Dichloroethene	23	100																																
1,2,3-Trichlorobenzene	6.3	93																																
1,2,4-Trichlorobenzene	5.8	26																																
1,2,4-Trimethylbenzene	30	180																																
1,3,5-Trimethylbenzene	27	150																																
2-Butanone	2,700	19,000																																
2-Hexanone	20	130																																
Acetone	6,100	67,000																																
Benzene	1.2	5.1																																
Chloroform	0.32	1.4																																
Ethyl benzene	5.8	25																																
Isopropylbenzene	190	990																																
Methylene chloride	35	320																																
Naphthalene	3.8	17																																
Propylbenzene	380	2,400																																
sec-Butylbenzene	780	12,000																																
Styrene	600	3,500																																
Tetrachloroethene	8.1	39																																
Toluene	490	4700																											0.23					
Trichloroethene	0.41	1.9																																
Xylene, o	65	280																																
Xylenes, Total	58	250																																
Semivolatile Organics (mg/kg)																																		
1,2,4-Trichlorobenzene	5.8	26																																
2-Methylnaphthalene	24	300																																
2-Methylphenol	320	4,100																																
4-Methylphenol	630	8,200																																
Anthracene	1,800	23,000																																
Benzaldehyde	170	820																																
Benzo(a)anthracene	1.1	21																																
Benzo(a)pyrene	0.11	2.1																																
Benzo(b)fluoranthene	1.1	21																																
Benzo(k)fluoranthene	11	210																																
Benzoic Acid	25,000	330,000																																
Bis(2-Ethylhexyl)phthalate	*39*	160							0.46				1.1		1		0.67		26	C	5	J	5.5		7.9		22	C	*46*	*C*	0.22	J	0.54	
Butylbenzylphthalate	290	1,200																																
Chrysene	110	2,100																																
Dibenz(a,h)anthracene	0.11	2.1																																
Diethylphthalate	5,100	66,000																																
Di-n-butylphthalate	630	8,200																																
Di-n-octylphthalate	63	820																																
Diphenyl ether	3.4	14																																
Diphenylamine	630	8,200																																
Fluoranthene	240	3,000																																
Fluorene	240	3,000																																
Indeno(1,2,3-cd)pyrene	1.1	21																																
Naphthalene	3.8	17																																

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			CP-C50		CP-C52		CP-C53		CP-C54		CP-C55		CP-C56		CP-C57		CP-C58		CP-C59		CP-C60		CP-C61		CP-C62		CP-C64		CP-C65		CP-C66		CP-C67	
Sample ID			1140-CP-C50		1140-CP-C52		1140-CP-C53		1140-CP-C54		1140-CP-C55		1140-CP-C56		1140-CP-C57		1140-CP-C58		1140-CP-C59		1140-CP-C60		1140-CP-C61		1140-CP-C62		1140-CP-C64		1140-CP-C65		1140-CP-C66		1140-CP-C67	
Date	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	10/5/2000		10/9/2000		10/9/2000		10/10/2000		10/10/2000		10/10/2000		10/10/2000		10/10/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000	
Depth (feet)			4.8 - 4.8		8.7 - 8.7		8.5 - 8.5		3.3 - 3.3		4.1 - 4.1		4.1 - 4.1		4.4 - 4.4		4.5 - 4.5		4.9 - 4.9		5.5 - 5.5		5.4 - 5.4		3.7 - 3.7		5.2 - 5.2		5.3 - 5.3		5.1 - 5.1		4.7 - 4.7	
N-Nitrosodiphenylamine	*110*	470																	11	C	3.1	J			9.9		54	C	15	C				
Phenol	1900	25000																																
Pyrene	180	2300																																
Pesticides/PCBs (mg/kg)																																		
4,4'-DDD	0.19	2.5																																
4,4'-DDE	2	9.3																																
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Endrin	1.9	25																																
Gamma-BHC/Lindane	*0.57*	2.5																																
Heptachlor	0.13	0.63																																
Heptachlor epoxide	0.07	0.33																																
Inorganics (mg/kg)																																		
Aluminum	*7,700*	110,000											5,700								6,600								5,500					
Arsenic	*0.68*	3											*4.9*								*8.8*								*6*					
Barium	1500	22000																																
Beryllium	16	230																																
Cadmium	*7.1*	98																											0.36					
Chromium	12,000	180,000	630		970		29		510		410		680		240		530		27		100		350		88		20		52		470		250	
Cobalt	*2.3*	35																																
Copper	310	4700																																
Iron	*5,500*	82,000											5,000								*9,000*								*6,900*					
Lead	400	800											3.1								17								6.6					
Manganese	*180*	2,600																																
Mercury	1.1	4.6																			0.12													
Nickel	150	2200																																
Silver	39	580																																
Thallium	*0.078*	1.2																																
Tin	4,700	70,000																																
Vanadium	39	580																																
Zinc	2,300	35,000																																
Other Analyses (mg/kg)																																		
Formaldehyde	17	73																																
Hydrazine	230	1100																																

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			CP-C68		CP-C69		CP-C70		CPDA-1-A		CPDA-1		CPDA-2		CPDA-3		CPDA-4		DA-C10		DA-C11		DA-C12		DA-C13		DA-C14		DA-C15		DA-C16		DA-C17	
Sample ID	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	1140-CP-C68		1140-CP-C69		1140-CP-C70		CPD-1-A (0-3 FT)		CPDA-1		CPDA-2		CPDA-3		CPDA-4		1120-DA-C10		1120-DA-C11		1120-DA-C12		1120-DA-C13		1120-DA-C14		1120-DA-C15		1120-DA-C16		1120-DA-C17	
Date			10/20/2000		10/20/2000		10/20/2000		1/24/2000		12/16/1996		12/16/1996		12/16/1996		12/16/1996		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000	
Depth (feet)			4.1 - 4.1		4.3 - 4.3		4.2 - 4.2		2.90 - 5.09		0 - 1		0 - 1		0 - 1		0 - 1		-0.2 - 1.8		0 - 3		7 - 7		7 - 7		5.9 - 5.9		1.2 - 4.2		1.2 - 4.2		6.2 - 6.2	
Volatile Organics (mg/kg)																																		
1,1,1-Trichloroethane	810	3,600																																
1,1-Dichloroethene	23	100																																
1,2,3-Trichlorobenzene	6.3	93																																
1,2,4-Trichlorobenzene	5.8	26																																
1,2,4-Trimethylbenzene	30	180																																
1,3,5-Trimethylbenzene	27	150																																
2-Butanone	2,700	19,000																																
2-Hexanone	20	130																																
Acetone	6,100	67,000									0.013	J	0.056																					
Benzene	1.2	5.1																																
Chloroform	0.32	1.4																																
Ethyl benzene	5.8	25																																
Isopropylbenzene	190	990																															0.22	
Methylene chloride	35	320			0.15								0.004	J					0.21	B	0.17	B	0.15	JB					0.18	B	0.16	B		
Naphthalene	3.8	17																																
Propylbenzene	380	2,400																																
sec-Butylbenzene	780	12,000																																
Styrene	600	3,500																																
Tetrachloroethene	8.1	39																																
Toluene	490	4700															0.005	J																
Trichloroethene	0.41	1.9																																
Xylene, o	65	280																																
Xylenes, Total	58	250																																
Semivolatile Organics (mg/kg)																																		
1,2,4-Trichlorobenzene	5.8	26																																
2-Methylnaphthalene	24	300																																
2-Methylphenol	320	4,100																																
4-Methylphenol	630	8,200																																
Anthracene	1,800	23,000															0.057	J																
Benzaldehyde	170	820																																
Benzo(a)anthracene	1.1	21									0.035	J																						
Benzo(a)pyrene	0.11	2.1									0.042	J																						
Benzo(b)fluoranthene	1.1	21									0.051	J																						
Benzo(k)fluoranthene	11	210									0.055	J																						
Benzoic Acid	25,000	330,000											0.2	J			0.26	J																
Bis(2-Ethylhexyl)phthalate	*39*	160	0.54								0.85	B	0.54	JB	5.3		1.1		3.8		5.8		8.2		*448*	*C*	*1582*		1.2		0.42		*381*	
Butylbenzylphthalate	290	1,200																																
Chrysene	110	2,100									0.052	J																						
Dibenz(a,h)anthracene	0.11	2.1																																
Diethylphthalate	5,100	66,000									0.036	J	0.024	J																				
Di-n-butylphthalate	630	8,200									0.067	JB	0.023	JB											98	C	109							
Di-n-octylphthalate	63	820																																
Diphenyl ether	3.4	14																																
Diphenylamine	630	8,200																																
Fluoranthene	240	3,000									0.1	J					0.098	J																
Fluorene	240	3,000																																
Indeno(1,2,3-cd)pyrene	1.1	21																																
Naphthalene	3.8	17																																

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			CP-C68		CP-C69		CP-C70		CPDA-1-A		CPDA-1		CPDA-2		CPDA-3		CPDA-4		DA-C10		DA-C11		DA-C12		DA-C13		DA-C14		DA-C15		DA-C16		DA-C17	
Sample ID			1140-CP-C68		1140-CP-C69		1140-CP-C70		CPD-1-A (0-3 FT)		CPDA-1		CPDA-2		CPDA-3		CPDA-4		1120-DA-C10		1120-DA-C11		1120-DA-C12		1120-DA-C13		1120-DA-C14		1120-DA-C15		1120-DA-C16		1120-DA-C17	
Date	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	10/20/2000		10/20/2000		10/20/2000		1/24/2000		12/16/1996		12/16/1996		12/16/1996		12/16/1996		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000	
Depth (feet)			4.1 - 4.1		4.3 - 4.3		4.2 - 4.2		2.90 - 5.09		0 - 1		0 - 1		0 - 1		0 - 1		-0.2 - 1.8		0 - 3		7 - 7		7 - 7		5.9 - 5.9		1.2 - 4.2		1.2 - 4.2		6.2 - 6.2	
N-Nitrosodiphenylamine	*110*	470																	0.24	J	0.32	J	6				49							
Phenol	1900	25000																																
Pyrene	180	2300									0.076	J					0.068	J																
Pesticides/PCBs (mg/kg)																																		
4,4'-DDD	0.19	2.5									0.0016	J			0.0013	J																		
4,4'-DDE	2	9.3									0.002	J			0.0026	J																		
4,4'-DDT	1.9	8.5													0.012	J																		
Aldrin	*0.039*	0.18											0.00096	J			0.00011	J																
Alpha-BHC	*0.086*	0.36																																
Beta-BHC	0.3	1.3																																
Dieldrin	0.034	0.14																																
Endrin	1.9	25																																
Gamma-BHC/Lindane	*0.57*	2.5									0.00073	J			0.0061																			
Heptachlor	0.13	0.63															0.0004	J																
Heptachlor epoxide	0.07	0.33																																
Inorganics (mg/kg)																																		
Aluminum	*7,700*	110,000			5,500				4,800																									
Arsenic	*0.68*	3			*89*																													
Barium	1500	22000							9.1																									
Beryllium	16	230							0.12																									
Cadmium	*7.1*	98			0.37																				0.56								1.4	
Chromium	12,000	180,000	280		540		37		24		3010	*N	3.6	*N	270		17		27		10		30		10				7.8		23		20	
Cobalt	*2.3*	35							1.7																									
Copper	310	4700																																
Iron	*5,500*	82,000			*25,000*				3,500																									
Lead	400	800			4.2				3.4										2		3		4.2		2.4		3		2		6.1		3.4	
Manganese	*180*	2,600							34																									
Mercury	1.1	4.6																																
Nickel	150	2200							4.4																									
Silver	39	580																																
Thallium	*0.078*	1.2																																
Tin	4,700	70,000																																
Vanadium	39	580							6.7																									
Zinc	2,300	35,000							11																									
Other Analyses (mg/kg)																																		
Formaldehyde	17	73																																
Hydrazine	230	1100																																

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			DA-C18		DA-C19		DA-C2		DA-C20		DA-C21		DA-C22		DA-C23		DA-C24		DA-C27		DA-C28		DA-C29		DA-C3		DA-C30		DA-C31		DA-C32		DA-C35	
Sample ID	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	1120-DA-C18		1120-DA-C19		1120-DA-C2		1120-DA-C20		1120-DA-C21		1120-DA-C22		1120-DA-C23		1120-DA-C24		1120-DA-C27		1120-DA-C28		1120-DA-C29-RISK		1120-DA-C3		1120-DA-C30		1120-DA-C31		1120-DA-C32		1120-DA-C35	
Date			9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/29/2000		9/29/2000		9/29/2000		9/29/2000		9/29/2000		9/29/2000		9/29/2000		9/29/2000	
Depth (feet)			6.3 - 6.3		1.3 - 4.3		1.4 - 4.4		0.3 - 3.3		6.4 - 6.4		6 - 6		6.1 - 6.1		5.7 - 5.7		1.6 - 4.6		2.7 - 5.7		6.2 - 6.2		1.6 - 4.6		6.5 - 9.5		4.9 - 7.9		5 - 8		7.9 - 7.9	
Volatile Organics (mg/kg)																																		
1,1,1-Trichloroethane	810	3,600																																
1,1-Dichloroethene	23	100																																
1,2,3-Trichlorobenzene	6.3	93																																
1,2,4-Trichlorobenzene	5.8	26																																
1,2,4-Trimethylbenzene	30	180																																
1,3,5-Trimethylbenzene	27	150																																
2-Butanone	2,700	19,000																																
2-Hexanone	20	130																																
Acetone	6,100	67,000																																
Benzene	1.2	5.1																																
Chloroform	0.32	1.4																																
Ethyl benzene	5.8	25																															0.62	
Isopropylbenzene	190	990																															0.37	
Methylene chloride	35	320	0.19		0.18		0.16	B	0.17		0.23		0.18		0.21		0.19								0.16	B								
Naphthalene	3.8	17																																
Propylbenzene	380	2,400																																
sec-Butylbenzene	780	12,000																																
Styrene	600	3,500																																
Tetrachloroethene	8.1	39																																
Toluene	490	4700													0.51												0.45						13	
Trichloroethene	0.41	1.9																																
Xylene, o	65	280																																
Xylenes, Total	58	250																									0.096	JB						
Semivolatile Organics (mg/kg)																																		
1,2,4-Trichlorobenzene	5.8	26																																
2-Methylnaphthalene	24	300																																
2-Methylphenol	320	4,100																																
4-Methylphenol	630	8,200																																
Anthracene	1,800	23,000																																
Benzaldehyde	170	820																																
Benzo(a)anthracene	1.1	21																																
Benzo(a)pyrene	0.11	2.1																																
Benzo(b)fluoranthene	1.1	21																																
Benzo(k)fluoranthene	11	210																																
Benzoic Acid	25,000	330,000																																
Bis(2-Ethylhexyl)phthalate	*39*	160	*370*		1.1		8.5				*73*		*94*		*1590*		16		7.2		6.2		*119*	*C*	9.6		3.4		12		0.86		7.9	
Butylbenzylphthalate	290	1,200																																
Chrysene	110	2,100																																
Dibenz(a,h)anthracene	0.11	2.1																																
Diethylphthalate	5,100	66,000																																
Di-n-butylphthalate	630	8,200					0.39	J																										
Di-n-octylphthalate	63	820																																
Diphenyl ether	3.4	14																																
Diphenylamine	630	8,200																																
Fluoranthene	240	3,000																																
Fluorene	240	3,000																																
Indeno(1,2,3-cd)pyrene	1.1	21																																
Naphthalene	3.8	17																																

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	Res. Soil RSL May 2018	Ind. Soil RSL May 2018	DA-C18	DA-C19	DA-C2	DA-C20	DA-C21	DA-C22	DA-C23	DA-C24	DA-C27	DA-C28	DA-C29	DA-C3	DA-C30	DA-C31	DA-C32	DA-C35
Sample ID			1120-DA-C18	1120-DA-C19	1120-DA-C2	1120-DA-C20	1120-DA-C21	1120-DA-C22	1120-DA-C23	1120-DA-C24	1120-DA-C27	1120-DA-C28	1120-DA-C29-RISK	1120-DA-C3	1120-DA-C30	1120-DA-C31	1120-DA-C32	1120-DA-C35
Date			9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000
Depth (feet)			6.3 - 6.3	1.3 - 4.3	1.4 - 4.4	0.3 - 3.3	6.4 - 6.4	6 - 6	6.1 - 6.1	5.7 - 5.7	1.6 - 4.6	2.7 - 5.7	6.2 - 6.2	1.6 - 4.6	6.5 - 9.5	4.9 - 7.9	5 - 8	7.9 - 7.9
N-Nitrosodiphenylamine	110	470			1.2			2.8 J				0.8	6.5 JC	0.48 J	0.48			
Phenol	1900	25000																
Pyrene	180	2300																
Pesticides/PCBs (mg/kg)																		
4,4'-DDD	0.19	2.5																
4,4'-DDE	2	9.3																
4,4'-DDT	1.9	8.5																
Aldrin	0.039	0.18											0.014		0.015			
Alpha-BHC	0.086	0.36																
Beta-BHC	0.3	1.3																
Dieldrin	0.034	0.14																
Endrin	1.9	25													0.022			
Gamma-BHC/Lindane	0.57	2.5			0.69 F		0.2				0.17	0.047		0.027	0.028			
Heptachlor	0.13	0.63																
Heptachlor epoxide	0.07	0.33																
Inorganics (mg/kg)																		
Aluminum	7,700	110,000																
Arsenic	0.68	3																
Barium	1500	22000																
Beryllium	16	230																
Cadmium	7.1	98	1.4		1.4				2.3			0.82		7.3				
Chromium	12,000	180,000	15	41	94	23	6.8	5.7	8.4	5.8	13	22	50	42	27	34	5.8	7.7
Cobalt	2.3	35																
Copper	310	4700																
Iron	5,500	82,000																
Lead	400	800	2.6	2.8	3.9	6.1	2	2.5	2.8	2	1.7	3.6	2.6	4.3	3	1.8	2.4	2.5
Manganese	180	2,600																
Mercury	1.1	4.6																
Nickel	150	2200																
Silver	39	580																
Thallium	0.078	1.2																
Tin	4,700	70,000																
Vanadium	39	580																
Zinc	2,300	35,000																
Other Analyses (mg/kg)																		
Formaldehyde	17	73																
Hydrazine	230	1100																

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			DA-C4		DA-C5		DA-C6		DA-C7		DA-C8		DA-C9		DB-C10		DB-C11		DB-C12		DB-C13		DB-C14		DB-C15		DB-C16		DB-C3		DB-C4		DB-C5	
Sample ID			1120-DA-C4		1120-DA-C5		1120-DA-C6		1120-DA-C7		1120-DA-C8		1120-DA-C9		97598-DB-C10		97598-DB-C11		97598-DB-C12		97598-DB-C13		97598-DB-C14		97598-DB-C15		97598-DB-C16		97598-DB-C3		97598-DB-C4		97598-DB-C5	
Date	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000	
Depth (feet)			1.7 - 4.7		0.3 - 2.3		0.5 - 3.5		7.2 - 7.2		6.9 - 6.9		0.3 - 0.3		0.8 - 3.8		6.2 - 6.2		5.9 - 5.9		1.9 - 4.9		-1.3 - 1.7		1.9 - 4.9		5.3 - 5.3		1.2 - 4.2		6.8 - 6.8		1.4 - 4.4	
Volatile Organics (mg/kg)																																		
1,1,1-Trichloroethane	810	3,600																			0.087													
1,1-Dichloroethene	23	100																																
1,2,3-Trichlorobenzene	6.3	93																			0.16													
1,2,4-Trichlorobenzene	5.8	26																			0.79				0.071	J								
1,2,4-Trimethylbenzene	30	180																			3.9		0.13		0.37								0.13	
1,3,5-Trimethylbenzene	27	150																			2.6		0.06		0.25								0.085	
2-Butanone	2,700	19,000																																
2-Hexanone	20	130																																
Acetone	6,100	67,000																																
Benzene	1.2	5.1																																
Chloroform	0.32	1.4																																
Ethyl benzene	5.8	25																			0.12													
Isopropylbenzene	190	990																			0.47													
Methylene chloride	35	320	0.17	B	0.2	B	0.17	B	0.18	B	0.24	B	0.17	B	0.58	B	0.64	B	0.31	B	0.88	B	0.12	B	0.37	B	0.2	B	0.32	B	0.4	B	0.5	B
Naphthalene	3.8	17																			0.62													
Propylbenzene	380	2,400																			0.56													
sec-Butylbenzene	780	12,000																			0.15													
Styrene	600	3,500																			0.29													
Tetrachloroethene	8.1	39																																
Toluene	490	4700									1.5																							
Trichloroethene	0.41	1.9																																
Xylene, o	65	280																			0.45				0.042	J								
Xylenes, Total	58	250																			0.74				0.042	J								
Semivolatile Organics (mg/kg)																																		
1,2,4-Trichlorobenzene	5.8	26																															0.27	JF
2-Methylnaphthalene	24	300																																
2-Methylphenol	320	4,100																																
4-Methylphenol	630	8,200																																
Anthracene	1,800	23,000																																
Benzaldehyde	170	820																																
Benzo(a)anthracene	1.1	21																																
Benzo(a)pyrene	0.11	2.1																																
Benzo(b)fluoranthene	1.1	21																																
Benzo(k)fluoranthene	11	210																																
Benzoic Acid	25,000	330,000																							0.38	J							0.77	F
Bis(2-Ethylhexyl)phthalate	*39*	160	3.9		1.7		19		7.6		0.98		2.3		1.1	B					16		1.4	B	3.5	B	0.09	JB	0.86	B	0.81	B	10	F
Butylbenzylphthalate	290	1,200																																
Chrysene	110	2,100																																
Dibenz(a,h)anthracene	0.11	2.1																																
Diethylphthalate	5,100	66,000																																
Di-n-butylphthalate	630	8,200	1.6																		0.22	J											0.48	F
Di-n-octylphthalate	63	820																																
Diphenyl ether	3.4	14																																
Diphenylamine	630	8,200																																
Fluoranthene	240	3,000																																
Fluorene	240	3,000																																
Indeno(1,2,3-cd)pyrene	1.1	21																																
Naphthalene	3.8	17																			0.26	J												

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			DA-C4		DA-C5		DA-C6		DA-C7		DA-C8		DA-C9		DB-C10		DB-C11		DB-C12		DB-C13		DB-C14		DB-C15		DB-C16		DB-C3		DB-C4		DB-C5	
Sample ID			1120-DA-C4		1120-DA-C5		1120-DA-C6		1120-DA-C7		1120-DA-C8		1120-DA-C9		97598-DB-C10		97598-DB-C11		97598-DB-C12		97598-DB-C13		97598-DB-C14		97598-DB-C15		97598-DB-C16		97598-DB-C3		97598-DB-C4		97598-DB-C5	
Date	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000	
Depth (feet)			1.7 - 4.7		0.3 - 2.3		0.5 - 3.5		7.2 - 7.2		6.9 - 6.9		0.3 - 0.3		0.8 - 3.8		6.2 - 6.2		5.9 - 5.9		1.9 - 4.9		-1.3 - 1.7		1.9 - 4.9		5.3 - 5.3		1.2 - 4.2		6.8 - 6.8		1.4 - 4.4	
N-Nitrosodiphenylamine	*110*	470																			1.6				0.33						0.12	J	1.4	F
Phenol	1900	25000																																
Pyrene	180	2300																																
Pesticides/PCBs (mg/kg)																																		
4,4'-DDD	0.19	2.5																																
4,4'-DDE	2	9.3																																
4,4'-DDT	1.9	8.5																																
Aldrin	*0.039*	0.18																																
Alpha-BHC	*0.086*	0.36																																
Beta-BHC	0.3	1.3													0.063																			
Dieldrin	0.034	0.14																																
Endrin	1.9	25																																
Gamma-BHC/Lindane	*0.57*	2.5					0.074		0.02												0.12		0.02		0.13						0.028		0.23	
Heptachlor	0.13	0.63																																
Heptachlor epoxide	0.07	0.33																																
Inorganics (mg/kg)																																		
Aluminum	*7,700*	110,000																																
Arsenic	*0.68*	3																																
Barium	1500	22000																																
Beryllium	16	230																																
Cadmium	*7.1*	98	0.32						0.35				0.71																					
Chromium	12,000	180,000	43		52		60		73		5.1		4.5		25		8.7		7.1		39		21		79		9.8		4		27		88	
Cobalt	*2.3*	35																																
Copper	310	4700																																
Iron	*5,500*	82,000																																
Lead	400	800	10		7.1		4.4		2.5		2.1		1.5						2.1	J	4.2		4		5.5		3.6		3.9				3.6	
Manganese	*180*	2,600																																
Mercury	1.1	4.6																																
Nickel	150	2200																																
Silver	39	580																																
Thallium	*0.078*	1.2																																
Tin	4,700	70,000																																
Vanadium	39	580																																
Zinc	2,300	35,000																																
Other Analyses (mg/kg)																																		
Formaldehyde	17	73																																
Hydrazine	230	1100																																

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			DB-C6		DB-C7		DB-C8		DB-C9		DRMA-COMP-A		DRMA-COMP-B		DRMB-COMP		G1-DRMB		G2-DRMB		G3-DRMB		G4-DRMB		GA1-DRMA		GA2-DRMA		GA3-DRMA		GA4-DRMA		GB1-DRMA	
Sample ID			97598-DB-C6		97598-DB-C7		97598-DB-C8		97598-DB-C9		DRMA (COMP A)		DRMA (COMP B)		DRMB (COMP)		G1-DRMB		G2-DRMB		G3-DRMB		G4-DRMB		GA1-DRMA		GA2-DRMA		GA3-DRMA		GA4-DRMA		GB1-DRMA	
Date	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	8/10/2000		8/10/2000		8/10/2000		8/10/2000		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996	
Depth (feet)			1.4 - 4.4		6 - 6		5.7 - 5.7		1.6 - 4.6		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1	
Volatile Organics (mg/kg)																																		
1,1,1-Trichloroethane	810	3,600															0.013		0.016		0.01		0.008		0.002	J					0.008		0.009	
1,1-Dichloroethene	23	100																																
1,2,3-Trichlorobenzene	6.3	93	0.15																															
1,2,4-Trichlorobenzene	5.8	26	0.69																															
1,2,4-Trimethylbenzene	30	180	4.6																															
1,3,5-Trimethylbenzene	27	150	2.9																															
2-Butanone	2,700	19,000															0.001	J	0.004	J														
2-Hexanone	20	130																																
Acetone	6,100	67,000															0.008	JB	0.022	B	0.009	JB	0.01	JB	0.006	JB	0.007	JB	0.01	JB	0.021	B	0.01	JB
Benzene	1.2	5.1																																
Chloroform	0.32	1.4																																
Ethyl benzene	5.8	25	0.16																															
Isopropylbenzene	190	990	0.65																															
Methylene chloride	35	320	0.3	B	0.15	B	0.29	B	0.42	B																								
Naphthalene	3.8	17																																
Propylbenzene	380	2,400	0.59																															
sec-Butylbenzene	780	12,000	0.21																															
Styrene	600	3,500	0.43																															
Tetrachloroethene	8.1	39																																
Toluene	490	4700	0.094																		0.0007	J												
Trichloroethene	0.41	1.9																																
Xylene, o	65	280	0.53																															
Xylenes, Total	58	250	0.88																															
Semivolatile Organics (mg/kg)																																		
1,2,4-Trichlorobenzene	5.8	26													0.1	J																		
2-Methylnaphthalene	24	300																																
2-Methylphenol	320	4,100													0.049	J																		
4-Methylphenol	630	8,200													0.34	J																		
Anthracene	1,800	23,000													0.02	J																		
Benzaldehyde	170	820																																
Benzo(a)anthracene	1.1	21													0.047	J																		
Benzo(a)pyrene	0.11	2.1																																
Benzo(b)fluoranthene	1.1	21																																
Benzo(k)fluoranthene	11	210																																
Benzoic Acid	25,000	330,000	1.1												0.64	J																		
Bis(2-Ethylhexyl)phthalate	*39*	160	8.6								1.3	JB	5.3	B	2.9	B																		
Butylbenzylphthalate	290	1,200																																
Chrysene	110	2,100													0.052	J																		
Dibenz(a,h)anthracene	0.11	2.1																																
Diethylphthalate	5,100	66,000																																
Di-n-butylphthalate	630	8,200	0.99								0.2	JB	0.13	JB	0.33	JB																		
Di-n-octylphthalate	63	820																																
Diphenyl ether	3.4	14																																
Diphenylamine	630	8,200																																
Fluoranthene	240	3,000											0.045	J	0.11	J																		
Fluorene	240	3,000																																
Indeno(1,2,3-cd)pyrene	1.1	21																																
Naphthalene	3.8	17													0.099	J																		

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			DB-C6		DB-C7		DB-C8		DB-C9		DRMA-COMP-A		DRMA-COMP-B		DRMB-COMP		G1-DRMB		G2-DRMB		G3-DRMB		G4-DRMB		GA1-DRMA		GA2-DRMA		GA3-DRMA		GA4-DRMA		GB1-DRMA	
Sample ID			97598-DB-C6		97598-DB-C7		97598-DB-C8		97598-DB-C9		DRMA (COMP A)		DRMA (COMP B)		DRMB (COMP)		G1-DRMB		G2-DRMB		G3-DRMB		G4-DRMB		GA1-DRMA		GA2-DRMA		GA3-DRMA		GA4-DRMA		GB1-DRMA	
Date	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	8/10/2000		8/10/2000		8/10/2000		8/10/2000		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996	
Depth (feet)			1.4 - 4.4		6 - 6		5.7 - 5.7		1.6 - 4.6		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1	
N-Nitrosodiphenylamine	*110*	470	0.7								2.8	J	2.7		1																			
Phenol	1900	25000													2.4																			
Pyrene	180	2300													0.12	J																		
Pesticides/PCBs (mg/kg)																																		
4,4'-DDD	0.19	2.5									0.0034	J	0.0017	J	0.017	J																		
4,4'-DDE	2	9.3											0.0019	J																				
4,4'-DDT	1.9	8.5									0.0031	J	0.0064		0.03																			
Aldrin	*0.039*	0.18									0.00046	J	0.0012	J																				
Alpha-BHC	*0.086*	0.36									0.005		0.0016	J																				
Beta-BHC	0.3	1.3																																
Dieldrin	0.034	0.14											0.0069																					
Endrin	1.9	25																																
Gamma-BHC/Lindane	*0.57*	2.5	*0.66*								0.0047		0.0034		0.17																			
Heptachlor	0.13	0.63											0.00087	J																				
Heptachlor epoxide	0.07	0.33											0.0028																					
Inorganics (mg/kg)																																		
Aluminum	*7,700*	110,000									5,560		*12,900*		4,070																			
Arsenic	*0.68*	3									*9.7*		*30.9*		*3.8*																			
Barium	1500	22000									22.3	B	43.2		13.9	B																		
Beryllium	16	230									0.32	B	0.61	B																				
Cadmium	*7.1*	98																																
Chromium	12,000	180,000	240		6.8		5		15		24.1	*N	40.2	*N	52.6	*N																		
Cobalt	*2.3*	35									*3.9*	*B*	*11.3*		1.9	B																		
Copper	310	4700									9.7		21.7		6.2																			
Iron	*5,500*	82,000									*7,580*		*17,200*		3,720																			
Lead	400	800	4.2				1.8	J	3.5		9.4		17		19.5																			
Manganese	*180*	2,600									109		*351*		44.5																			
Mercury	1.1	4.6									0.11				0.38																			
Nickel	150	2200									10.2		30.1		3.5	B																		
Silver	39	580																																
Thallium	*0.078*	1.2									*1.8*	*B*	*1.8*	*B*																				
Tin	4,700	70,000																																
Vanadium	39	580									11.3		24.9		7.2	B																		
Zinc	2,300	35,000									37.2	E	63	E	41.4	E																		
Other Analyses (mg/kg)																																		
Formaldehyde	17	73																																
Hydrazine	230	1100																																

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			GB2-DRMA		GB3-DRMA		GB4-DRMA		OSFILL-450		RSO-14		RSO-15		RSO-15		SD-C24		SD-C24B		SS-420		SS-421		SS-422		SS-423		SS-424		SS-425		SS-426	
Sample ID			GB2-DRMA		GB3-DRMA		GB4-DRMA		1130-OSFILL-450		RSO-14-S1 (0-3 FT)		RSO-15-S1 (0-3 FT)		RSO-15-S1 (0-3)		1140-SD-C24		1140-SD-C24B-RISK		OC-SS-420-0.0/1.0-XXX		OC-SS-421-0.0/1.0-XXX		OC-SS-422-0.0/1.0-XXX		OC-SS-423-0.0/1.0-XXX		OC-SS-424-0.0/1.0-XXX		OC-SS-425-0.0/1.0-XXX		OC-SS-426-0.0/1.0-XXX	
Date	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	12/15/1996		12/15/1996		12/15/1996		10/13/2000		1/24/2000		1/24/2000		1/24/2000		10/18/2000		10/18/2000		9/15/2009		9/15/2009		9/15/2009		9/15/2009		9/15/2009		9/15/2009		9/16/2009	
Depth (feet)			0 - 1		0 - 1		0 - 1		0.5 - 0.5		-0.87 - 2.13		1.52 - 4.52		1.52 - 4.52		3 - 3		2 - 2		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1	
Volatile Organics (mg/kg)																																		
1,1,1-Trichloroethane	810	3,600			0.01		0.018																											
1,1-Dichloroethene	23	100																																
1,2,3-Trichlorobenzene	6.3	93																																
1,2,4-Trichlorobenzene	5.8	26																																
1,2,4-Trimethylbenzene	30	180																																
1,3,5-Trimethylbenzene	27	150																																
2-Butanone	2,700	19,000																																
2-Hexanone	20	130																																
Acetone	6,100	67,000	0.01	B	0.013	B	0.019																											
Benzene	1.2	5.1																																
Chloroform	0.32	1.4																																
Ethyl benzene	5.8	25																																
Isopropylbenzene	190	990																																
Methylene chloride	35	320																																
Naphthalene	3.8	17																																
Propylbenzene	380	2,400																																
sec-Butylbenzene	780	12,000																																
Styrene	600	3,500																																
Tetrachloroethene	8.1	39																																
Toluene	490	4700					0.0009	J																										
Trichloroethene	0.41	1.9																																
Xylene, o	65	280																																
Xylenes, Total	58	250																																
Semivolatile Organics (mg/kg)																																		
1,2,4-Trichlorobenzene	5.8	26																																
2-Methylnaphthalene	24	300																																
2-Methylphenol	320	4,100																																
4-Methylphenol	630	8,200																																
Anthracene	1,800	23,000																																
Benzaldehyde	170	820																			0.015	J					0.017	J						
Benzo(a)anthracene	1.1	21																																
Benzo(a)pyrene	0.11	2.1																			0.011	J												
Benzo(b)fluoranthene	1.1	21																																
Benzo(k)fluoranthene	11	210																																
Benzoic Acid	25,000	330,000																																
Bis(2-Ethylhexyl)phthalate	*39*	160													9.5		*753*	*C*	*243.5*	*C*	0.52	EB	2	EB	0.41	EB	0.45	EB	0.38	EB	0.66	EB	0.62	EB
Butylbenzylphthalate	290	1,200																																
Chrysene	110	2,100																							0.012	J								
Dibenz(a,h)anthracene	0.11	2.1																																
Diethylphthalate	5,100	66,000																																
Di-n-butylphthalate	630	8,200																																
Di-n-octylphthalate	63	820																																
Diphenyl ether	3.4	14																					0.015	J							0.015	J		
Diphenylamine	630	8,200																			0.014	J												
Fluoranthene	240	3,000																			0.012	J	0.02	J	0.016	J							0.012	J
Fluorene	240	3,000																															0.02	J
Indeno(1,2,3-cd)pyrene	1.1	21																																
Naphthalene	3.8	17																																

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			GB2-DRMA		GB3-DRMA		GB4-DRMA		OSFILL-450		RSO-14		RSO-15		RSO-15		SD-C24		SD-C24B		SS-420		SS-421		SS-422		SS-423		SS-424		SS-425		SS-426	
Sample ID			GB2-DRMA		GB3-DRMA		GB4-DRMA		1130-OSFILL-450		RSO-14-S1 (0-3 FT)		RSO-15-S1 (0-3 FT)		RSO-15-S1 (0-3)		1140-SD-C24		1140-SD-C24B-RISK		OC-SS-420-0.0/1.0-XXX		OC-SS-421-0.0/1.0-XXX		OC-SS-422-0.0/1.0-XXX		OC-SS-423-0.0/1.0-XXX		OC-SS-424-0.0/1.0-XXX		OC-SS-425-0.0/1.0-XXX		OC-SS-426-0.0/1.0-XXX	
Date	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	12/15/1996		12/15/1996		12/15/1996		10/13/2000		1/24/2000		1/24/2000		1/24/2000		10/18/2000		10/18/2000		9/15/2009		9/15/2009		9/15/2009		9/15/2009		9/15/2009		9/15/2009		9/16/2009	
Depth (feet)			0 - 1		0 - 1		0 - 1		0.5 - 0.5		-0.87 - 2.13		1.52 - 4.52		1.52 - 4.52		3 - 3		2 - 2		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1	
N-Nitrosodiphenylamine	*110*	470																			0.013	JEB	0.033	JEB			0.021	JEB			0.036	JEB	0.014	JEB
Phenol	1900	25000																																
Pyrene	180	2300																			0.013	J	0.016	J	0.014	J								
Pesticides/PCBs (mg/kg)																																		
4,4'-DDD	0.19	2.5																																
4,4'-DDE	2	9.3																																
4,4'-DDT	1.9	8.5																																
Aldrin	*0.039*	0.18																																
Alpha-BHC	*0.086*	0.36																																
Beta-BHC	0.3	1.3																																
Dieldrin	0.034	0.14																																
Endrin	1.9	25																																
Gamma-BHC/Lindane	*0.57*	2.5																																
Heptachlor	0.13	0.63																																
Heptachlor epoxide	0.07	0.33																																
Inorganics (mg/kg)																																		
Aluminum	*7,700*	110,000									*13,000*		5,500								6,600		6,800		7,400		*7,800*		6,200		7,500		7,100	
Arsenic	*0.68*	3							*10*												*9.5*		*8.4*		*5.6*		*12*		*7.5*		*8.4*		*3.8*	
Barium	1500	22000							9.8		83		13								43		52		81		42		34		51		29	
Beryllium	16	230											0.21								0.24		0.25	J	0.27	J	0.29	J	0.33		0.29		0.29	
Cadmium	*7.1*	98																			0.33		0.34		0.26	J	0.51		0.26		0.42		0.41	
Chromium	12,000	180,000							9.4		65		28				1600		390		48		52		36		60		55		75		28	
Cobalt	*2.3*	35									*15*		*2.8*								*3.5*		*3.5*		*3.5*		*4.6*		*3.8*		*4.1*		*5.3*	
Copper	310	4700																			7.7		7.7		7.8		8.2		7.9		8.3		7.4	
Iron	*5,500*	82,000									*17,000*		*8,200*								*9,300*		*9,000*		*8,800*		*13,000*		*9,100*		*10,000*		*13,000*	
Lead	400	800							3.3		11		10								5.8		5.3		6		5.7		6.3		6.3		4.5	
Manganese	*180*	2,600									*200*		88								110		110		120		160		100		140		*250*	
Mercury	1.1	4.6									0.051																							
Nickel	150	2200									35		6								7.9		8		7.9		9.6		10		8.7		7.5	
Silver	39	580																			0.42	J	0.61	J	0.35	J	0.63	J	0.76		1		0.13	J
Thallium	*0.078*	1.2																																
Tin	4,700	70,000																			18	J	20	J	14	J	24	J	22	J	30	J	10	J
Vanadium	39	580									36		14								12		13		12		15		12		15		18	
Zinc	2,300	35,000									36		19								18		18		17		19		20		20		23	
Other Analyses (mg/kg)																																		
Formaldehyde	17	73																							0.096	J								
Hydrazine	230	1100																							0.0041				0.002	J				

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			SS-429		SS-430		SS-431		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE	
Sample ID	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	OC-SS-429-0.0/1.0-XXX		OC-SS-430-0.0/1.0-XXX		OC-SS-431-0.0/1.0-XXX		1120-DA-SP-3A		1120-DA-SP-3B		1120-DA-SP-3C		1120-DA-SP-3D		1120-DA-SP-3E		1120-DA-SP-4		1120-DA-SP-5A		1120-DA-SP-5B		1120-DA-SP-5C		1120-DA-SP-6A		1120-DA-SP-6B		1120-DA-SP-6C		1120-DA-SP-8A	
Date			9/16/2009		9/16/2009		9/16/2009		8/26/2000		8/26/2000		8/26/2000		9/14/2000		9/5/2000		9/5/2000		9/14/2000		9/14/2000		9/14/2000		9/22/2000		9/22/2000		9/22/2000		9/26/2000	
Depth (feet)			0 - 1		0 - 1		0 - 1																											
Volatile Organics (mg/kg)																																		
1,1,1-Trichloroethane	810	3,600																																
1,1-Dichloroethene	23	100																																
1,2,3-Trichlorobenzene	6.3	93																																
1,2,4-Trichlorobenzene	5.8	26																																
1,2,4-Trimethylbenzene	30	180																			0.16													
1,3,5-Trimethylbenzene	27	150																			0.16													
2-Butanone	2,700	19,000																																
2-Hexanone	20	130																																
Acetone	6,100	67,000																																
Benzene	1.2	5.1																																
Chloroform	0.32	1.4																																
Ethyl benzene	5.8	25																																
Isopropylbenzene	190	990																																
Methylene chloride	35	320																									0.15	B			0.15	B		
Naphthalene	3.8	17																																
Propylbenzene	380	2,400																																
sec-Butylbenzene	780	12,000																																
Styrene	600	3,500																																
Tetrachloroethene	8.1	39																																
Toluene	490	4700									0.11										0.14	J	1.1	C	14									
Trichloroethene	0.41	1.9																																
Xylene, o	65	280																																
Xylenes, Total	58	250																																
Semivolatile Organics (mg/kg)																																		
1,2,4-Trichlorobenzene	5.8	26																																
2-Methylnaphthalene	24	300																																
2-Methylphenol	320	4,100																																
4-Methylphenol	630	8,200																																
Anthracene	1,800	23,000																																
Benzaldehyde	170	820			0.06																													
Benzo(a)anthracene	1.1	21	0.019	JEB	0.017	J																												
Benzo(a)pyrene	0.11	2.1	0.014	JEB	0.017	J																												
Benzo(b)fluoranthene	1.1	21	0.023	JEB	0.027	J	0.014	J																										
Benzo(k)fluoranthene	11	210																																
Benzoic Acid	25,000	330,000																																
Bis(2-Ethylhexyl)phthalate	*39*	160	0.33	EB	0.4	EB	2	EB	1.8		3.9		2		17		23		5.8		31		*287*		*856*	*C*	*622*	*C*	*511*	*C*	1.3		*244*	
Butylbenzylphthalate	290	1,200																																
Chrysene	110	2,100	0.021	JEB	0.021	J																												
Dibenz(a,h)anthracene	0.11	2.1																																
Diethylphthalate	5,100	66,000																																
Di-n-butylphthalate	630	8,200																											32	JC				
Di-n-octylphthalate	63	820																																
Diphenyl ether	3.4	14																																
Diphenylamine	630	8,200					0.02	J																										
Fluoranthene	240	3,000	0.042		0.041	J	0.012	J																										
Fluorene	240	3,000					0.022	J																										
Indeno(1,2,3-cd)pyrene	1.1	21																																
Naphthalene	3.8	17																																

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	Res. Soil RSL May 2018	Ind. Soil RSL May 2018	SS-429		SS-430		SS-431		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE	
Sample ID			OC-SS-429-0.0/1.0-XXX		OC-SS-430-0.0/1.0-XXX		OC-SS-431-0.0/1.0-XXX		1120-DA-SP-3A		1120-DA-SP-3B		1120-DA-SP-3C		1120-DA-SP-3D		1120-DA-SP-3E		1120-DA-SP-4		1120-DA-SP-5A		1120-DA-SP-5B		1120-DA-SP-5C		1120-DA-SP-6A		1120-DA-SP-6B		1120-DA-SP-6C		1120-DA-SP-8A	
Date			9/16/2009		9/16/2009		9/16/2009		8/26/2000		8/26/2000		8/26/2000		9/14/2000		9/5/2000		9/5/2000		9/14/2000		9/14/2000		9/14/2000		9/22/2000		9/22/2000		9/22/2000		9/26/2000	
Depth (feet)			0 - 1		0 - 1		0 - 1																											
N-Nitrosodiphenylamine	110	470	0.012	JEB	0.055	EB	0.036	JEB											1.1		3.2		19	J			37	C	61	C				
Phenol	1900	25000																																
Pyrene	180	2300	0.047		0.032	J																												
Pesticides/PCBs (mg/kg)																																		
4,4'-DDD	0.19	2.5																																
4,4'-DDE	2	9.3																																
4,4'-DDT	1.9	8.5																																
Aldrin	0.039	0.18																															0.014	
Alpha-BHC	0.086	0.36							0.24		0.43		0.015						0.014	C			0.024										0.025	
Beta-BHC	0.3	1.3							0.13		0.15		0.0083																					
Dieldrin	0.034	0.14																																
Endrin	1.9	25																																
Gamma-BHC/Lindane	0.57	2.5									0.011										0.024		0.021											
Heptachlor	0.13	0.63																																
Heptachlor epoxide	0.07	0.33																																
Inorganics (mg/kg)																																		
Aluminum	7,700	110,000	8,000		8,000		7,800																											
Arsenic	0.68	3	8.5		23		8.4																											
Barium	1500	22000	80		56		42																											
Beryllium	16	230	0.28	J	0.31	J	0.29																											
Cadmium	7.1	98	0.41		0.92		0.79								0.35						0.74		3		3.2		0.79		0.46				1	
Chromium	12,000	180,000	87		66		59		37		21		11		39		24		11		38		37		25		68		20		10		36	
Cobalt	2.3	35	4.1		5.6		4.2																											
Copper	310	4700	8.4		8.4		9.3																											
Iron	5,500	82,000	10,000		20,000		10,000																											
Lead	400	800	5.4		8.2		7.1		14		7.1		5.8		6.3		6		3.6		6.2		5.4		3.7		5.6		4.2		6.6		4.7	
Manganese	180	2,600	130		370		140																											
Mercury	1.1	4.6					0.031	J																										
Nickel	150	2200	8.8		9.8		10																											
Silver	39	580	1.2		0.67	J	0.7																											
Thallium	0.078	1.2																																
Tin	4,700	70,000	36	J	26	J	24	J																										
Vanadium	39	580	14		17		14																											
Zinc	2,300	35,000	18		19		21																											
Other Analyses (mg/kg)																																		
Formaldehyde	17	73	0.17				0.1																											
Hydrazine	230	1100	0.00062	J			0.0016																											

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		TP-21		WD-C1		WD-C10		WD-C10B	
Sample ID	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	1120-DA-SP-8B		1120-DA-SP-8C		1120-DA-SP-8D		1120-DA-SP-8E		1120-DA-SP-8F		1120-DA-SP-8G		1120-DA-SP-8H		97598-BAY1-8/7		97598-BAY4-8/7		97598-DB-SP-1		97598-DB-SP-2E		97598-DB-SP-2W		TP-21-SN8		1140-WD-C1		1140-WD-C10		1140-WD-C10B	
Date			9/26/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000		8/8/2000		8/8/2000		8/11/2000		8/11/2000		8/11/2000		10/8/1991		9/19/2000		9/19/2000		9/19/2000	
Depth (feet)																													8.3 - 8.3		6.6 - 6.6		5.6 - 5.6	
Volatile Organics (mg/kg)																																		
1,1,1-Trichloroethane	810	3,600																																
1,1-Dichloroethene	23	100																																
1,2,3-Trichlorobenzene	6.3	93																			0.13		0.09											
1,2,4-Trichlorobenzene	5.8	26															0.13		0.045		0.72		0.49		0.079									
1,2,4-Trimethylbenzene	30	180															0.17		0.061		1.3		0.85		0.11									
1,3,5-Trimethylbenzene	27	150															0.13		0.051		0.91		0.61		0.069									
2-Butanone	2,700	19,000																																
2-Hexanone	20	130																																
Acetone	6,100	67,000																																
Benzene	1.2	5.1																																
Chloroform	0.32	1.4																																
Ethyl benzene	5.8	25					0.39		0.11	J																								
Isopropylbenzene	190	990																			0.17		0.1											
Methylene chloride	35	320																																
Naphthalene	3.8	17																																
Propylbenzene	380	2,400																			0.15		0.099											
sec-Butylbenzene	780	12,000																																
Styrene	600	3,500							0.81												0.13		0.096											
Tetrachloroethene	8.1	39																																
Toluene	490	4700			0.29		7.1		5.3						0.68						0.083		0.028	J			0.0003	J						
Trichloroethene	0.41	1.9																																
Xylene, o	65	280					0.4														0.14		0.1											
Xylenes, Total	58	250																																
Semivolatile Organics (mg/kg)																																		
1,2,4-Trichlorobenzene	5.8	26															0.063	J	0.099	J	0.61	F	0.45		0.39									
2-Methylnaphthalene	24	300																																
2-Methylphenol	320	4,100																																
4-Methylphenol	630	8,200																																
Anthracene	1,800	23,000																																
Benzaldehyde	170	820																																
Benzo(a)anthracene	1.1	21																																
Benzo(a)pyrene	0.11	2.1																																
Benzo(b)fluoranthene	1.1	21																																
Benzo(k)fluoranthene	11	210																																
Benzoic Acid	25,000	330,000																	0.63		1.4	F	0.94		1.1									
Bis(2-Ethylhexyl)phthalate	*39*	160	*1087*		*2356*		26		*365*		*501*		*679*		*676*		6.7		6.9		9.1	BF	*43*	*F*	29	F	*1100*	*J*	29		1.1		*366*	*C*
Butylbenzylphthalate	290	1,200																																
Chrysene	110	2,100																																
Dibenz(a,h)anthracene	0.11	2.1																					0.096	J										
Diethylphthalate	5,100	66,000																																
Di-n-butylphthalate	630	8,200	87																		1.8	F	0.91		0.58									
Di-n-octylphthalate	63	820																									0.88	J						
Diphenyl ether	3.4	14																																
Diphenylamine	630	8,200																																
Fluoranthene	240	3,000																																
Fluorene	240	3,000																																
Indeno(1,2,3-cd)pyrene	1.1	21																																
Naphthalene	3.8	17																																

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	Res. Soil RSL May 2018	Ind. Soil RSL May 2018	STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		TP-21		WD-C1		WD-C10		WD-C10B	
Sample ID			1120-DA-SP-8B		1120-DA-SP-8C		1120-DA-SP-8D		1120-DA-SP-8E		1120-DA-SP-8F		1120-DA-SP-8G		1120-DA-SP-8H		97598-BAY1-8/7		97598-BAY4-8/7		97598-DB-SP-1		97598-DB-SP-2E		97598-DB-SP-2W		TP-21-SN8		1140-WD-C1		1140-WD-C10		1140-WD-C10B	
Date			9/26/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000		8/8/2000		8/8/2000		8/11/2000		8/11/2000		8/11/2000		10/8/1991		9/19/2000		9/19/2000		9/19/2000	
Depth (feet)																													8.3 - 8.3		6.6 - 6.6		5.6 - 5.6	
N-Nitrosodiphenylamine	110	470	86						24	J			473				3.5	#	1.7	#	0.99	#F	4.5	#	3.4	#			1.4	J			19	C
Phenol	1900	25000																					0.098	J	0.36									
Pyrene	180	2300																																
Pesticides/PCBs (mg/kg)																																		
4,4'-DDD	0.19	2.5																																
4,4'-DDE	2	9.3															0.0069		0.0049															
4,4'-DDT	1.9	8.5																																
Aldrin	0.039	0.18													0.059																			
Alpha-BHC	0.086	0.36			0.048										0.1																			
Beta-BHC	0.3	1.3													0.033																			
Dieldrin	0.034	0.14																	0.0031		0.0033		0.0053		0.0045									
Endrin	1.9	25																																
Gamma-BHC/Lindane	0.57	2.5	0.18		0.02						0.18		0.063		0.031		0.18		0.25		1.2	F	0.37		0.42									
Heptachlor	0.13	0.63																																
Heptachlor epoxide	0.07	0.33																																
Inorganics (mg/kg)																																		
Aluminum	7,700	110,000																									3,100	J						
Arsenic	0.68	3																									4	J						
Barium	1500	22000																									11							
Beryllium	16	230																																
Cadmium	7.1	98	0.85		54		0.34		3.3		1.8		14		7.3																			
Chromium	12,000	180,000	20		27		24		84		650		200		41		47		70		54		75		46		110		520		50		77	
Cobalt	2.3	35																																
Copper	310	4700																									5							
Iron	5,500	82,000																									2,600							
Lead	400	800	4.3		4.6		6.3		3.5		4.1		3		4		7.2		8.2		6.8		7.9		5.6									
Manganese	180	2,600																									49							
Mercury	1.1	4.6																									0.91							
Nickel	150	2200																																
Silver	39	580																																
Thallium	0.078	1.2																																
Tin	4,700	70,000																																
Vanadium	39	580																									12							
Zinc	2,300	35,000																									38							
Other Analyses (mg/kg)																																		
Formaldehyde	17	73																																
Hydrazine	230	1100																																

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			WD-C11		WD-C11		WD-C11B		WD-C12		WD-C12B		WD-C13		WD-C13B		WD-C14		WD-C14B		WD-C15		WD-C15B		WD-C16		WD-C1B		WD-C2		WD-C2B		WD-C3	
Sample ID			1140-WD-C11		1140-WD-C11 (156878)		1140-WD-C11B		1140-WD-C12		1140-WD-C12B		1140-WD-C13		1140-WD-C13B		1140-WD-C14		1140-WD-C14B		1140-WD-C15		1140-WD-C15B		1140-WD-C16		1140-WD-C1B		1140-WD-C2		1140-WD-C2B		1140-WD-C3	
Date	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	9/19/2000		9/19/2000		9/19/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/13/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000	
Depth (feet)			5.6 - 5.6		5.6 - 5.6		5.6 - 5.6		6.1 - 6.1		5.2 - 5.2		6.1 - 6.1		5.2 - 5.2		7.6 - 7.6		6.9 - 6.9		10 - 10		9.3 - 9.3		10.1 - 10.1		7.3 - 7.3		8 - 8		7 - 7		7.7 - 7.7	
Volatile Organics (mg/kg)																																		
1,1,1-Trichloroethane	810	3,600																																
1,1-Dichloroethene	23	100																																
1,2,3-Trichlorobenzene	6.3	93																																
1,2,4-Trichlorobenzene	5.8	26																																
1,2,4-Trimethylbenzene	30	180																																
1,3,5-Trimethylbenzene	27	150																																
2-Butanone	2,700	19,000																																
2-Hexanone	20	130																																
Acetone	6,100	67,000																																
Benzene	1.2	5.1																																
Chloroform	0.32	1.4																																
Ethyl benzene	5.8	25																																
Isopropylbenzene	190	990																																
Methylene chloride	35	320	0.18	B																			0.59	B										
Naphthalene	3.8	17																																
Propylbenzene	380	2,400																																
sec-Butylbenzene	780	12,000																																
Styrene	600	3,500																																
Tetrachloroethene	8.1	39																																
Toluene	490	4700																																
Trichloroethene	0.41	1.9																																
Xylene, o	65	280																																
Xylenes, Total	58	250																																
Semivolatile Organics (mg/kg)																																		
1,2,4-Trichlorobenzene	5.8	26																																
2-Methylnaphthalene	24	300																																
2-Methylphenol	320	4,100																																
4-Methylphenol	630	8,200																																
Anthracene	1,800	23,000																																
Benzaldehyde	170	820																																
Benzo(a)anthracene	1.1	21																																
Benzo(a)pyrene	0.11	2.1																																
Benzo(b)fluoranthene	1.1	21																																
Benzo(k)fluoranthene	11	210																																
Benzoic Acid	25,000	330,000																																
Bis(2-Ethylhexyl)phthalate	*39*	160					1.2		12						0.73		1.6		3.3				0.79		0.64		1.4		15		5		5.6	
Butylbenzylphthalate	290	1,200																																
Chrysene	110	2,100																																
Dibenz(a,h)anthracene	0.11	2.1																																
Diethylphthalate	5,100	66,000																																
Di-n-butylphthalate	630	8,200																																
Di-n-octylphthalate	63	820																																
Diphenyl ether	3.4	14																																
Diphenylamine	630	8,200																																
Fluoranthene	240	3,000																																
Fluorene	240	3,000																																
Indeno(1,2,3-cd)pyrene	1.1	21																																
Naphthalene	3.8	17																																

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	Res. Soil RSL May 2018	Ind. Soil RSL May 2018	WD-C11		WD-C11		WD-C11B		WD-C12		WD-C12B		WD-C13		WD-C13B		WD-C14		WD-C14B		WD-C15		WD-C15B		WD-C16		WD-C1B		WD-C2		WD-C2B		WD-C3	
Sample ID			1140-WD-C11		1140-WD-C11 (156878)		1140-WD-C11B		1140-WD-C12		1140-WD-C12B		1140-WD-C13		1140-WD-C13B		1140-WD-C14		1140-WD-C14B		1140-WD-C15		1140-WD-C15B		1140-WD-C16		1140-WD-C1B		1140-WD-C2		1140-WD-C2B		1140-WD-C3	
Date			9/19/2000		9/19/2000		9/19/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/13/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000	
Depth (feet)			5.6 - 5.6		5.6 - 5.6		5.6 - 5.6		6.1 - 6.1		5.2 - 5.2		6.1 - 6.1		5.2 - 5.2		7.6 - 7.6		6.9 - 6.9		10 - 10		9.3 - 9.3		10.1 - 10.1		7.3 - 7.3		8 - 8		7 - 7		7.7 - 7.7	
N-Nitrosodiphenylamine	*110*	470					0.52		0.76	J			0.97				1.9								0.6				1.3				0.31	J
Phenol	1900	25000																																
Pyrene	180	2300																																
Pesticides/PCBs (mg/kg)																																		
4,4'-DDD	0.19	2.5																																
4,4'-DDE	2	9.3																																
4,4'-DDT	1.9	8.5																																
Aldrin	*0.039*	0.18																																
Alpha-BHC	*0.086*	0.36																																
Beta-BHC	0.3	1.3																																
Dieldrin	0.034	0.14																																
Endrin	1.9	25																																
Gamma-BHC/Lindane	*0.57*	2.5																																
Heptachlor	0.13	0.63																																
Heptachlor epoxide	0.07	0.33																																
Inorganics (mg/kg)																																		
Aluminum	*7,700*	110,000	2,700	F			4,200														3,300		3,300											
Arsenic	*0.68*	3					*1.9*																											
Barium	1500	22000																																
Beryllium	16	230																																
Cadmium	*7.1*	98																																
Chromium	12,000	180,000	660				170		10		6.3		11		6.7		18		6.4		19		15		6		68		350		36		110	
Cobalt	*2.3*	35																																
Copper	310	4700																																
Iron	*5,500*	82,000	3,100	F			3,000																1,100		2,900									
Lead	400	800					2.9																1.7		2.1									
Manganese	*180*	2,600																																
Mercury	1.1	4.6																																
Nickel	150	2200																																
Silver	39	580																																
Thallium	*0.078*	1.2																																
Tin	4,700	70,000																																
Vanadium	39	580																																
Zinc	2,300	35,000																																
Other Analyses (mg/kg)																																		
Formaldehyde	17	73																																
Hydrazine	230	1100																																

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location			WD-C3B		WD-C4		WD-C4B		WD-C5		WD-C5B		WD-C6		WD-C6B		WD-C7		WD-C7B		WD-C8		WD-C8B		WD-C9		WD-C9B	
Sample ID			1140-WD-C3B		1140-WD-C4		1140-WD-C4B		1140-WD-C5		1140-WD-C5B		1140-WD-C6		1140-WD-C6B		1140-WD-C7		1140-WD-C7B		1140-WD-C8		1140-WD-C8B		1140-WD-C9		1140-WD-C9B	
Date	*Res. Soil RSL May 2018*	Ind. Soil RSL May 2018	9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000	
Depth (feet)			6.7 - 6.7		7.6 - 7.6		6.6 - 6.6		7.4 - 7.4		6.5 - 6.5		7.1 - 7.1		6.2 - 6.2		6.6 - 6.6		5.6 - 5.6		6.8 - 6.8		5.8 - 5.8		7 - 7		6 - 6	
Volatile Organics (mg/kg)																												
1,1,1-Trichloroethane	810	3,600																										
1,1-Dichloroethene	23	100																										
1,2,3-Trichlorobenzene	6.3	93																										
1,2,4-Trichlorobenzene	5.8	26																										
1,2,4-Trimethylbenzene	30	180																										
1,3,5-Trimethylbenzene	27	150																										
2-Butanone	2,700	19,000																										
2-Hexanone	20	130																										
Acetone	6,100	67,000																										
Benzene	1.2	5.1																										
Chloroform	0.32	1.4																										
Ethyl benzene	5.8	25																										
Isopropylbenzene	190	990																										
Methylene chloride	35	320			0.22	B															0.22	B						
Naphthalene	3.8	17																										
Propylbenzene	380	2,400																										
sec-Butylbenzene	780	12,000																										
Styrene	600	3,500																										
Tetrachloroethene	8.1	39																										
Toluene	490	4700																										
Trichloroethene	0.41	1.9																										
Xylene, o	65	280																										
Xylenes, Total	58	250																										
Semivolatile Organics (mg/kg)																												
1,2,4-Trichlorobenzene	5.8	26																										
2-Methylnaphthalene	24	300																										
2-Methylphenol	320	4,100																										
4-Methylphenol	630	8,200																										
Anthracene	1,800	23,000																										
Benzaldehyde	170	820																										
Benzo(a)anthracene	1.1	21																										
Benzo(a)pyrene	0.11	2.1																										
Benzo(b)fluoranthene	1.1	21																										
Benzo(k)fluoranthene	11	210																										
Benzoic Acid	25,000	330,000																										
Bis(2-Ethylhexyl)phthalate	*39*	160	1.2		2.9		*166*	*C*	3.9		0.6		33		*210*	*C*	*71*		*79*	*C*	*54*		*426*	*C*	16		0.58	
Butylbenzylphthalate	290	1,200																										
Chrysene	110	2,100																										
Dibenz(a,h)anthracene	0.11	2.1																										
Diethylphthalate	5,100	66,000																										
Di-n-butylphthalate	630	8,200																										
Di-n-octylphthalate	63	820																										
Diphenyl ether	3.4	14																										
Diphenylamine	630	8,200																										
Fluoranthene	240	3,000																										
Fluorene	240	3,000																										
Indeno(1,2,3-cd)pyrene	1.1	21																										
Naphthalene	3.8	17																										

Table 3
Detected Containment Area Soil Results - Direct Contact Comparison
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	Res. Soil RSL May 2018	Ind. Soil RSL May 2018	WD-C3B		WD-C4		WD-C4B		WD-C5		WD-C5B		WD-C6		WD-C6B		WD-C7		WD-C7B		WD-C8		WD-C8B		WD-C9		WD-C9B	
Sample ID			1140-WD-C3B		1140-WD-C4		1140-WD-C4B		1140-WD-C5		1140-WD-C5B		1140-WD-C6		1140-WD-C6B		1140-WD-C7		1140-WD-C7B		1140-WD-C8		1140-WD-C8B		1140-WD-C9		1140-WD-C9B	
Date			9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000	
Depth (feet)			6.7 - 6.7		7.6 - 7.6		6.6 - 6.6		7.4 - 7.4		6.5 - 6.5		7.1 - 7.1		6.2 - 6.2		6.6 - 6.6		5.6 - 5.6		6.8 - 6.8		5.8 - 5.8		7 - 7		6 - 6	
N-Nitrosodiphenylamine	*110*	470			0.24	J			0.21	J							4.9								1.2		0.81	
Phenol	1900	25000																										
Pyrene	180	2300																										
Pesticides/PCBs (mg/kg)																												
4,4'-DDD	0.19	2.5																										
4,4'-DDE	2	9.3																										
4,4'-DDT	1.9	8.5																										
Aldrin	*0.039*	0.18																										
Alpha-BHC	*0.086*	0.36																										
Beta-BHC	0.3	1.3																										
Dieldrin	0.034	0.14																										
Endrin	1.9	25																										
Gamma-BHC/Lindane	*0.57*	2.5																										
Heptachlor	0.13	0.63																										
Heptachlor epoxide	0.07	0.33																										
Inorganics (mg/kg)																												
Aluminum	*7,700*	110,000	3,600		7,400		4,600														3,400		2,300					
Arsenic	*0.68*	3			*6.8*																*2.2*							
Barium	1500	22000																										
Beryllium	16	230																										
Cadmium	*7.1*	98																										
Chromium	12,000	180,000	210		160		51		160		240		58		500		810		580		160		340		110		20	
Cobalt	*2.3*	35																										
Copper	310	4700																										
Iron	*5,500*	82,000			*11,000*		3,300														3,400		2,600					
Lead	400	800			4.7		5.4														2.2		2					
Manganese	*180*	2,600																										
Mercury	1.1	4.6																										
Nickel	150	2200																										
Silver	39	580																										
Thallium	*0.078*	1.2																										
Tin	4,700	70,000																										
Vanadium	39	580																										
Zinc	2,300	35,000																										
Other Analyses (mg/kg)																												
Formaldehyde	17	73																										
Hydrazine	230	1100																										

Table 4
Detected Containment Area Soil Results - MassDEP Background
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	Mass DEP Nat. Bkgd	Mass DEP Fill Bkgd	OU1-OU2 Site Specific	AREA-1		AREA-1		AREA-2		BD-C1		BD-C10		BD-C13		BD-C4		BD-C7		BH1		BH2		BH3		BH4		BH6		BH7		BH8		BH9	
Sample ID				AREA 01		AREA 1 (COMP)		AREA 02		1120-BD-C1		1120-BD-C10		1120-BD-C13		1120-BD-C4		1120-BD-C7		BH-01		BH-02		BH-03		BH-04		BH-06		BH-07		BH-08		BH-09	
Date				7/8/1991		12/15/1996		7/9/1991		10/10/2000		10/12/2000		10/12/2000		10/10/2000		10/12/2000		6/5/1991		6/5/1991		6/5/1991		6/5/1991		6/6/1991		6/6/1991		6/7/1991		6/7/1991	
Depth (feet)				0 - 1		0 - 1		0 - 1		4.6 - 4.6		10.3-10.3		10.1 - 10.1		7.5 - 7.5		7.96 - 7.9		4.3 - 6.3		3.5 - 5.5		4.2 - 6.2		6.3 - 8.3		4.4 - 6.4		3 - 5		3 - 5		2.6 - 4.6	
Volatile Organics (mg/kg)																																			
Naphthalene	*0.5*	1	--																																
Semivolatile Organics (mg/kg)																																			
2-Methylnaphthalene	0.5	1	--					0.067	J																										
Acenaphthylene	0.5	1	--																																
Anthracene	1	4	--																															0.028	J
Benzo(a)anthracene	2	9	0.19	0.099	J			0.075	J																									0.08	J
Benzo(a)pyrene	2	7	0.23	0.059	J			0.057	J																									0.055	J
Benzo(b)fluoranthene	2	8	0.53	0.18	J			0.13	J																									0.084	J
Benzo(ghi)perylene	1	3	0.24																																
Benzo(k)fluoranthene	1	4	--	0.065	J			0.042	J																										
Bis(2-Ethylhexyl)phthalate	--	--	**0.031**	**2.9**		**0.13**	**JB**	**0.13**	**J**							**3.9**						**3.5**		**1.7**		**27**	**J**			**2.5**		**3.9**			
Chrysene	2	7	**0.027**	**0.17**	**J**			**0.15**	**J**																									**0.086**	**J**
Dibenz(a,h)anthracene	0.5	1	--																																
Fluoranthene	4	10	**0.044**	**0.25**	**J**			**0.19**	**J**																									**0.16**	**J**
Fluorene	1	2	--																																
Indeno(1,2,3-cd)pyrene	1	3	**0.033**	**0.064**	**J**			**0.051**	**J**																										
Naphthalene	*0.5*	1	--					0.049	J																										
Phenanthrene	3	20	0.036	0.16	J			0.17	J																									0.12	J
Pyrene	4	20	0.05	0.16	J			0.14	J																									0.13	J
Inorganics (mg/kg)																																			
Aluminum	*10,000*	10,000	16,279	8,000		2,250	E	5,900		3,400		2,600		2,600		3,700		4,200		7,600		8,300		9,000		9,200		10,000		7,900		4,100		9,800	
Arsenic	*20*	20	**11.7**	***24***		1.2	B	7										2		8		**12**		***21***		**13**		**16**		4.3		4.6		**13**	
Barium	*50*	50	**17.7**	**25**		5.8	B	**38**												16		**30**		**29**		**36**		**39**		**28**		14		**23**	
Beryllium	*0.4*	0.9	**0.4**																																
Cadmium	*2*	3	**0.32**																					**1.8**		**1.4**		**1.2**				**1.4**		**1.2**	
Chromium	*30*	40	**12.8**	***320***		9.1	E	8.8		5.3		4.8		5		4.9		6.2		***100***		**21**		***36***		***41***		**25**		***160***		**22**		**27**	
Cobalt	*4*	4	**3.41**	***9.9***		1.3	B													2.9		**3.8**		***5***		***6.2***		***7.2***		2.3		1.8		***5.2***	
Copper	*40*	200	**6.7**	**14**		2.9	B	**12**												**8.2**		**9.8**		**10**		***47***		**14**		**12**		4		**10**	
Iron	*20,000*	20,000	**15,564**	**16,000**		2,090	E	6,900		2,700		2,300		2,500		2,100		2,900		7,800		9,500		11,000		14,000		13,000		9,400		5,100		15,000	
Lead	100	600	**28**	**58**		2		**36**		1.8		2		1.8		2.1		1.9				11				**52**									
Magnesium	*5,000*	5,000	**1,215**	1,200		706	BE	610												**1,900**		**2,600**		**4,000**		**3,800**		**4,000**		**2,300**		**1,800**		**4,700**	
Manganese	*300*	300	**75.3**	***530***		27.7	E	40												72		**140**		**130**		**230**		**250**		**140**		**76**		***320***	
Mercury	*0.3*	1	**0.12**			0.11	N	**0.15**																											
Nickel	*20*	30	**8.4**	5.8		4	B	4.7												6.7		**11**		**18**		**14**		**18**		**8.9**		4.8		**12**	
Silver	*0.6*	5	--																																
Thallium	*0.6*	5	--																																
Tin	--	--	**4.44**																																
Vanadium	*30*	30	--	18		4.3	B	18												12		12		17		21		18		16		5.9		18	
Zinc	100	300	**19.6**	**24**		13.1		**31**												**21**		**24**		**30**		**84**		**31**		17		14		**27**	

Table 4
Detected Containment Area Soil Results - MassDEP Background
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	Mass DEP Nat. Bkgd	Mass DEP Fill Bkgd	OU1-OU2 Site Specific	BH10		BS017PND		CP-C36		CP-C38		CP-C39		CP-C41		CP-C42		CP-C43		CP-C45		CP-C46		CP-C47		CP-C49		CP-C50		CP-C52		CP-C53		CP-C54	
Sample ID				BH-10		BS017PND		1140-CP-C36		1140-CP-C38		1140-CP-C39		1140-CP-C41		1140-CP-C42		1140-CP-C43		1140-CP-C45		1140-CP-C46		1140-CP-C47		1140-CP-C49		1140-CP-C50		1140-CP-C52		1140-CP-C53		1140-CP-C54	
Date				6/7/1991		1/21/1997		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/9/2000		10/9/2000		10/10/2000	
Depth (feet)				3.8 - 5.8		0 - 0		5.4 - 5.4		6.2 - 6.2		6.7 - 6.7		6.5 - 6.5		6.3 - 6.3		5 - 5		6.6 - 6.6		6.1 - 6.1		5.4 - 5.4		6.8 - 6.8		4.8 - 4.8		8.7 - 8.7		8.5 - 8.5		3.3 - 3.3	
Volatile Organics (mg/kg)																																			
Naphthalene	*0.5*	1	--																																
Semivolatile Organics (mg/kg)																																			
2-Methylnaphthalene	0.5	1	--																																
Acenaphthylene	0.5	1	--																																
Anthracene	1	4	--			0.01	J																												
Benzo(a)anthracene	2	9	0.19																																
Benzo(a)pyrene	2	7	0.23																																
Benzo(b)fluoranthene	2	8	0.53																																
Benzo(ghi)perylene	1	3	0.24																																
Benzo(k)fluoranthene	1	4	--																																
Bis(2-Ethylhexyl)phthalate	--	--	**0.031**	**8.2**		**8.6**	**B**	**6.2**		**2**				**0.54**										**0.25**	**J**									**0.46**	
Chrysene	2	7	**0.027**																																
Dibenz(a,h)anthracene	0.5	1	--																																
Fluoranthene	4	10	**0.044**			0.037	J																												
Fluorene	1	2	--																																
Indeno(1,2,3-cd)pyrene	1	3	**0.033**																																
Naphthalene	*0.5*	1	--	*0.63*	*J*																														
Phenanthrene	3	20	0.036			0.044	J																												
Pyrene	4	20	0.05			0.039	J																												
Inorganics (mg/kg)																																			
Aluminum	*10,000*	10,000	16,279	460		4,810						5,000												4,400		3,700									
Arsenic	*20*	20	**11.7**	1.1		***24.5***						4.8												2.8		3.2									
Barium	*50*	50	**17.7**	6.6		9.2	B																												
Beryllium	*0.4*	0.9	**0.4**																																
Cadmium	*2*	3	**0.32**																																
Chromium	*30*	40	**12.8**	7.3		***305***		***500***		***490***		***1600***		***230***		***710***		***490***		***560***		***420***		***260***		***660***		***630***		***970***		**29**		***510***	
Cobalt	*4*	4	**3.41**			1.9	B																												
Copper	*40*	200	**6.7**			4.3	B																												
Iron	*20,000*	20,000	**15,564**	840		**20,000**	*					3,800												5,400		4,000									
Lead	100	600	**28**			14.1						4												2.6		2.2									
Magnesium	*5,000*	5,000	**1,215**	150		325	B																												
Manganese	*300*	300	**75.3**	7.6		**99.9**																													
Mercury	*0.3*	1	**0.12**																																
Nickel	*20*	30	**8.4**			1.8	B																												
Silver	*0.6*	5	--																																
Thallium	*0.6*	5	--																																
Tin	--	--	**4.44**																																
Vanadium	*30*	30	--			18.4																													
Zinc	100	300	**19.6**			7	E																												

Table 4
Detected Containment Area Soil Results - MassDEP Background
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	*Mass DEP Nat. Bkgd*	Mass DEP Fill Bkgd	**OU1-OU2 Site Specific**	CP-C55	CP-C56	CP-C57	CP-C58	CP-C59	CP-C60	CP-C61	CP-C62	CP-C64	CP-C65	CP-C66	CP-C67	CP-C68	CP-C69	CP-C70	CPDA-1-A
Sample ID				1140-CP-C55	1140-CP-C56	1140-CP-C57	1140-CP-C58	1140-CP-C59	1140-CP-C60	1140-CP-C61	1140-CP-C62	1140-CP-C64	1140-CP-C65	1140-CP-C66	1140-CP-C67	1140-CP-C68	1140-CP-C69	1140-CP-C70	CPD-1-A (0-3 FT)
Date				10/10/2000	10/10/2000	10/10/2000	10/10/2000	10/20/2000	10/20/2000	10/20/2000	10/20/2000	10/20/2000	10/20/2000	10/20/2000	10/20/2000	10/20/2000	10/20/2000	10/20/2000	1/24/2000
Depth (feet)				4.1 - 4.1	4.1 - 4.1	4.4 - 4.4	4.5 - 4.5	4.9 - 4.9	5.5 - 5.5	5.4 - 5.4	3.7 - 3.7	5.2 - 5.2	5.3 - 5.3	5.1 - 5.1	4.7 - 4.7	4.1 - 4.1	4.3 - 4.3	4.2 - 4.2	2.90 - 5.09
Volatile Organics (mg/kg)																			
Naphthalene	*0.5*	1	--																
Semivolatile Organics (mg/kg)																			
2-Methylnaphthalene	0.5	1	--																
Acenaphthylene	0.5	1	--																
Anthracene	1	4	--																
Benzo(a)anthracene	2	9	0.19																
Benzo(a)pyrene	2	7	0.23																
Benzo(b)fluoranthene	2	8	0.53																
Benzo(ghi)perylene	1	3	0.24																
Benzo(k)fluoranthene	1	4	--																
Bis(2-Ethylhexyl)phthalate	--	--	**0.031**		**1.1**	**1**	**0.67**	**26 C**	**5 J**	**5.5**	**7.9**	**22 C**	**46 C**	**0.22 J**	**0.54**	**0.54**			
Chrysene	2	7	**0.027**																
Dibenz(a,h)anthracene	0.5	1	--																
Fluoranthene	4	10	**0.044**																
Fluorene	1	2	--																
Indeno(1,2,3-cd)pyrene	1	3	**0.033**																
Naphthalene	*0.5*	1	--																
Phenanthrene	3	20	0.036																
Pyrene	4	20	0.05																
Inorganics (mg/kg)																			
Aluminum	*10,000*	10,000	16,279		5,700				6,600				5,500				5,500		4,800
Arsenic	*20*	20	**11.7**		4.9				8.8				6				***89***		
Barium	*50*	50	**17.7**																9.1
Beryllium	*0.4*	0.9	**0.4**																0.12
Cadmium	*2*	3	**0.32**										**0.36**				**0.37**		
Chromium	*30*	40	**12.8**	***410***	***680***	***240***	***530***	**27**	***100***	***350***	***88***	**20**	***52***	***470***	***250***	***280***	***540***	***37***	**24**
Cobalt	*4*	4	**3.41**																1.7
Copper	*40*	200	**6.7**																
Iron	*20,000*	20,000	**15,564**		5,000				9,000				6,900				***25,000***		3,500
Lead	100	600	**28**		3.1				17				6.6				4.2		3.4
Magnesium	*5,000*	5,000	**1,215**																950
Manganese	*300*	300	**75.3**																34
Mercury	*0.3*	1	**0.12**						0.12										
Nickel	*20*	30	**8.4**																4.4
Silver	*0.6*	5	--																
Thallium	*0.6*	5	--																
Tin	--	--	**4.44**																
Vanadium	*30*	30	--																6.7
Zinc	100	300	**19.6**																11

Table 4
Detected Containment Area Soil Results - MassDEP Background
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	Mass DEP Nat. Bkgd	Mass DEP Fill Bkgd	OU1-OU2 Site Specific	CPDA-1		CPDA-2		CPDA-3		CPDA-4		DA-C10		DA-C11		DA-C12		DA-C13		DA-C14		DA-C15		DA-C16		DA-C17		DA-C18		DA-C19		DA-C2		DA-C20	
Sample ID				CPDA-1		CPDA-2		CPDA-3		CPDA-4		1120-DA-C10		1120-DA-C11		1120-DA-C12		1120-DA-C13		1120-DA-C14		1120-DA-C15		1120-DA-C16		1120-DA-C17		1120-DA-C18		1120-DA-C19		1120-DA-C2		1120-DA-C20	
Date				12/16/1996		12/16/1996		12/16/1996		12/16/1996		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000	
Depth (feet)				0 - 1		0 - 1		0 - 1		0 - 1		-0.2 - 1.8		0 - 3		7 - 7		7 - 7		5.9 - 5.9		1.2 - 4.2		1.2 - 4.2		6.2 - 6.2		6.3 - 6.3		1.3 - 4.3		1.4 - 4.4		0.3 - 3.3	
Volatile Organics (mg/kg)																																			
Naphthalene	*0.5*	1	--																																
Semivolatile Organics (mg/kg)																																			
2-Methylnaphthalene	0.5	1	--																																
Acenaphthylene	0.5	1	--							0.066	J																								
Anthracene	1	4	--							0.057	J																								
Benzo(a)anthracene	2	9	0.19	0.035	J																														
Benzo(a)pyrene	2	7	0.23	0.042	J																														
Benzo(b)fluoranthene	2	8	0.53	0.051	J																														
Benzo(ghi)perylene	1	3	0.24																																
Benzo(k)fluoranthene	1	4	--	0.055	J																														
Bis(2-Ethylhexyl)phthalate	--	--	**0.031**	**0.85**	**B**	**0.54**	**JB**	**5.3**		**1.1**		**3.8**		**5.8**		**8.2**		**448**	**C**	**1582**		**1.2**		**0.42**		**381**		**370**		**1.1**		**8.5**			
Chrysene	2	7	**0.027**	**0.052**	**J**																														
Dibenz(a,h)anthracene	0.5	1	--																																
Fluoranthene	4	10	**0.044**	**0.1**	**J**					**0.098**	**J**																								
Fluorene	1	2	--																																
Indeno(1,2,3-cd)pyrene	1	3	**0.033**																																
Naphthalene	*0.5*	1	--																																
Phenanthrene	3	20	0.036	0.052	J					0.12	J																								
Pyrene	4	20	0.05	0.076	J					0.068	J																								
Inorganics (mg/kg)																																			
Aluminum	*10,000*	10,000	16,279																																
Arsenic	*20*	20	**11.7**																																
Barium	*50*	50	**17.7**																																
Beryllium	*0.4*	0.9	**0.4**																																
Cadmium	*2*	3	**0.32**															**0.56**								**1.4**		**1.4**				**1.4**			
Chromium	*30*	40	**12.8**	***3010***	***N**	3.6	*N	***270***		**17**		**27**		10		**30**		10				7.8		**23**		**20**		**15**		***41***		***94***		**23**	
Cobalt	*4*	4	**3.41**																																
Copper	*40*	200	**6.7**																																
Iron	*20,000*	20,000	**15,564**																																
Lead	100	600	**28**									2		3		4.2		2.4		3		2		6.1		3.4		2.6		2.8		3.9		6.1	
Magnesium	*5,000*	5,000	**1,215**																																
Manganese	*300*	300	**75.3**																																
Mercury	*0.3*	1	**0.12**																																
Nickel	*20*	30	**8.4**																																
Silver	*0.6*	5	--																																
Thallium	*0.6*	5	--																																
Tin	--	--	**4.44**																																
Vanadium	*30*	30	--																																
Zinc	100	300	**19.6**																																

Table 4
Detected Containment Area Soil Results - MassDEP Background
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	Mass DEP Nat. Bkgd	Mass DEP Fill Bkgd	OU1-OU2 Site Specific	DA-C21	DA-C22	DA-C23	DA-C24	DA-C27	DA-C28	DA-C29	DA-C3	DA-C30	DA-C31	DA-C32	DA-C35	DA-C4	DA-C5	DA-C6	DA-C7
Sample ID				1120-DA-C21	1120-DA-C22	1120-DA-C23	1120-DA-C24	1120-DA-C27	1120-DA-C28	1120-DA-C29-RISK	1120-DA-C3	1120-DA-C30	1120-DA-C31	1120-DA-C32	1120-DA-C35	1120-DA-C4	1120-DA-C5	1120-DA-C6	1120-DA-C7
Date				9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000
Depth (feet)				6.4 - 6.4	6 - 6	6.1 - 6.1	5.7 - 5.7	1.6 - 4.6	2.7 - 5.7	6.2 - 6.2	1.6 - 4.6	6.5 - 9.5	4.9 - 7.9	5 - 8	7.9 - 7.9	1.7 - 4.7	0.3 - 2.3	0.5 - 3.5	7.2 - 7.2
Volatile Organics (mg/kg)																			
Naphthalene	*0.5*	1	--																
Semivolatile Organics (mg/kg)																			
2-Methylnaphthalene	0.5	1	--																
Acenaphthylene	0.5	1	--																
Anthracene	1	4	--																
Benzo(a)anthracene	2	9	0.19																
Benzo(a)pyrene	2	7	0.23																
Benzo(b)fluoranthene	2	8	0.53																
Benzo(ghi)perylene	1	3	0.24																
Benzo(k)fluoranthene	1	4	--																
Bis(2-Ethylhexyl)phthalate	--	--	**0.031**	**73**	**94**	**1590**	**16**	**7.2**	**6.2**	**119** C	**9.6**	**3.4**	**12**	**0.86**	**7.9**	**3.9**	**1.7**	**19**	**7.6**
Chrysene	2	7	**0.027**																
Dibenz(a,h)anthracene	0.5	1	--																
Fluoranthene	4	10	**0.044**																
Fluorene	1	2	--																
Indeno(1,2,3-cd)pyrene	1	3	**0.033**																
Naphthalene	*0.5*	1	--																
Phenanthrene	3	20	0.036																
Pyrene	4	20	0.05																
Inorganics (mg/kg)																			
Aluminum	*10,000*	10,000	16,279																
Arsenic	*20*	20	**11.7**																
Barium	*50*	50	**17.7**																
Beryllium	*0.4*	0.9	**0.4**																
Cadmium	*2*	3	**0.32**			***2.3***			**0.82**		***7.3***					0.32			**0.35**
Chromium	*30*	40	**12.8**	6.8	5.7	8.4	5.8	**13**	**22**	***50***	***42***	**27**	***34***	5.8	7.7	***43***	***52***	***60***	***73***
Cobalt	*4*	4	**3.41**																
Copper	*40*	200	**6.7**																
Iron	*20,000*	20,000	**15,564**																
Lead	100	600	**28**	2	2.5	2.8	2	1.7	3.6	2.6	4.3	3	1.8	2.4	2.5	10	7.1	4.4	2.5
Magnesium	*5,000*	5,000	**1,215**																
Manganese	*300*	300	**75.3**																
Mercury	*0.3*	1	**0.12**																
Nickel	*20*	30	**8.4**																
Silver	*0.6*	5	--																
Thallium	*0.6*	5	--																
Tin	--	--	**4.44**																
Vanadium	*30*	30	--																
Zinc	100	300	**19.6**																

Table 4
Detected Containment Area Soil Results - MassDEP Background
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	Mass DEP Nat. Bkgd	Mass DEP Fill Bkgd	OU1-OU2 Site Specific	DA-C8	DA-C9	DB-C10	DB-C11	DB-C12	DB-C13	DB-C14	DB-C15	DB-C16	DB-C3	DB-C4	DB-C5	DB-C6	DB-C7	DB-C8	DB-C9
Sample ID				1120-DA-C8	1120-DA-C9	97598-DB-C10	97598-DB-C11	97598-DB-C12	97598-DB-C13	97598-DB-C14	97598-DB-C15	97598-DB-C16	97598-DB-C3	97598-DB-C4	97598-DB-C5	97598-DB-C6	97598-DB-C7	97598-DB-C8	97598-DB-C9
Date				9/18/2000	9/18/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000
Depth (feet)				6.9 - 6.9	0.3 - 0.3	0.8 - 3.8	6.2 - 6.2	5.9 - 5.9	1.9 - 4.9	-1.3 - 1.7	1.9 - 4.9	5.3 - 5.3	1.2 - 4.2	6.8 - 6.8	1.4 - 4.4	1.4 - 4.4	6 - 6	5.7 - 5.7	1.6 - 4.6
Volatile Organics (mg/kg)																			
Naphthalene	*0.5*	1	--						*0.62*										
Semivolatile Organics (mg/kg)																			
2-Methylnaphthalene	0.5	1	--																
Acenaphthylene	0.5	1	--																
Anthracene	1	4	--																
Benzo(a)anthracene	2	9	0.19																
Benzo(a)pyrene	2	7	0.23																
Benzo(b)fluoranthene	2	8	0.53																
Benzo(ghi)perylene	1	3	0.24																
Benzo(k)fluoranthene	1	4	--																
Bis(2-Ethylhexyl)phthalate	--	--	**0.031**	**0.98**	**2.3**	**1.1** B			**16**	**1.4** B	**3.5** B	**0.09** JB	**0.86** B	**0.81** B	**10** F	**8.6**			
Chrysene	2	7	**0.027**																
Dibenz(a,h)anthracene	0.5	1	--																
Fluoranthene	4	10	**0.044**																
Fluorene	1	2	--																
Indeno(1,2,3-cd)pyrene	1	3	**0.033**																
Naphthalene	*0.5*	1	--						0.26 J										
Phenanthrene	3	20	0.036																
Pyrene	4	20	0.05																
Inorganics (mg/kg)																			
Aluminum	*10,000*	10,000	16,279																
Arsenic	*20*	20	**11.7**																
Barium	*50*	50	**17.7**																
Beryllium	*0.4*	0.9	**0.4**																
Cadmium	*2*	3	**0.32**		**0.71**														
Chromium	*30*	40	**12.8**	5.1	4.5	**25**	8.7	7.1	***39***	**21**	***79***	9.8	4	**27**	***88***	***240***	6.8	5	**15**
Cobalt	*4*	4	**3.41**																
Copper	*40*	200	**6.7**																
Iron	*20,000*	20,000	**15,564**																
Lead	100	600	**28**	2.1	1.5			2.1 J	4.2	4	5.5	3.6	3.9		3.6	4.2		1.8 J	3.5
Magnesium	*5,000*	5,000	**1,215**																
Manganese	*300*	300	**75.3**																
Mercury	*0.3*	1	**0.12**																
Nickel	*20*	30	**8.4**																
Silver	*0.6*	5	--																
Thallium	*0.6*	5	--																
Tin	--	--	**4.44**																
Vanadium	*30*	30	--																
Zinc	100	300	**19.6**																

Table 4
Detected Containment Area Soil Results - MassDEP Background
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	Mass DEP Nat. Bkgd	Mass DEP Fill Bkgd	OU1-OU2 Site Specific	DRMA-COMP-A		DRMA-COMP-B		DRMB-COMP		OSFILL-450		RSO-14		RSO-15		SD-C24		SD-C24B		SS-420		SS-421		SS-422		SS-423		SS-424		SS-425		SS-426	
Sample ID				DRMA (COMP A)		DRMA (COMP B)		DRMB (COMP)		1130-OSFILL-450		RSO-14-S1 (0-3 FT)		RSO-15-S1 (0-3 FT)		1140-SD-C24		1140-SD-C24B-RISK		OC-SS-420-0.0/1.0-XXX		OC-SS-421-0.0/1.0-XXX		OC-SS-422-0.0/1.0-XXX		OC-SS-423-0.0/1.0-XXX		OC-SS-424-0.0/1.0-XXX		OC-SS-425-0.0/1.0-XXX		OC-SS-426-0.0/1.0-XXX	
Date				12/15/1996		12/15/1996		12/15/1996		10/13/2000		1/24/2000		1/24/2000		10/18/2000		10/18/2000		9/15/2009		9/15/2009		9/15/2009		9/15/2009		9/15/2009		9/15/2009		9/16/2009	
Depth (feet)				0 - 1		0 - 1		0 - 1		0.5 - 0.5		-0.87 - 2.13		1.52 - 4.52		3 - 3		2 - 2		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1	
Volatile Organics (mg/kg)																																	
Naphthalene	0.5	1	--																														
Semivolatile Organics (mg/kg)																																	
2-Methylnaphthalene	0.5	1	--																														
Acenaphthylene	0.5	1	--																														
Anthracene	1	4	--					0.02	J																								
Benzo(a)anthracene	2	9	0.19					0.047	J																								
Benzo(a)pyrene	2	7	0.23																	0.011	J												
Benzo(b)fluoranthene	2	8	0.53																														
Benzo(ghi)perylene	1	3	0.24																														
Benzo(k)fluoranthene	1	4	--																														
Bis(2-Ethylhexyl)phthalate	--	--	**0.031**	**1.3**	**JB**	**5.3**	**B**	**2.9**	**B**					**9.5**		**753**	**C**	**243.5**	**C**	**0.52**	**EB**	**2**	**EB**	**0.41**	**EB**	**0.45**	**EB**	**0.38**	**EB**	**0.66**	**EB**	**0.62**	**EB**
Chrysene	2	7	**0.027**					**0.052**	**J**															0.012	J								
Dibenz(a,h)anthracene	0.5	1	--																														
Fluoranthene	4	10	**0.044**			**0.045**	**J**	**0.11**	**J**											0.012	J	0.02	J	0.016	J							0.012	J
Fluorene	1	2	--																													0.02	J
Indeno(1,2,3-cd)pyrene	1	3	**0.033**																														
Naphthalene	0.5	1	--					0.099	J																								
Phenanthrene	3	20	0.036					0.074	J																								
Pyrene	4	20	0.05					0.12	J											0.013	J	0.016	J	0.014	J								
Inorganics (mg/kg)																																	
Aluminum	10,000	10,000	16,279	5,560		12,900		4,070				13,000		5,500						6,600		6,800		7,400		7,800		6,200		7,500		7,100	
Arsenic	20	20	**11.7**	9.7		**30.9**		3.8		10										9.5		8.4		5.6		**12**		7.5		8.4		3.8	
Barium	50	50	**17.7**	**22.3**	**B**	**43.2**		13.9	B	9.8		**83**		13						**43**		**52**		**81**		**42**		**34**		**51**		**29**	
Beryllium	0.4	0.9	**0.4**	0.32	B	**0.61**	**B**							0.21						0.24		0.25	J	0.27	J	0.29	J	0.33		0.29		0.29	
Cadmium	2	3	**0.32**																	**0.33**		**0.34**		0.26	J	**0.51**		0.26		**0.42**		**0.41**	
Chromium	30	40	**12.8**	**24.1**	***N**	**40.2**	***N**	**52.6**	***N**	9.4		**65**		**28**		**1600**		**390**		**48**		**52**		**36**		**60**		**55**		**75**		**28**	
Cobalt	4	4	**3.41**	**3.9**	**B**	**11.3**		1.9	B			**15**		2.8						**3.5**		**3.5**		**3.5**		**4.6**		**3.8**		**4.1**		**5.3**	
Copper	40	200	**6.7**	**9.7**		**21.7**		6.2												**7.7**		**7.7**		**7.8**		**8.2**		**7.9**		**8.3**		**7.4**	
Iron	20,000	20,000	**15,564**	7,580		**17,200**		3,720				**17,000**		8,200						9,300		9,000		8,800		13,000		9,100		10,000		13,000	
Lead	100	600	**28**	9.4		17		19.5		3.3		11		10						5.8		5.3		6		5.7		6.3		6.3		4.5	
Magnesium	5,000	5,000	**1,215**	**1,920**		**4,880**		668	B			**8,100**		**1,400**						**2,200**		**2,400**		**2,600**		**2,700**		**1,900**		**2,500**		**3,900**	
Manganese	300	300	**75.3**	**109**		**351**		44.5				**200**		**88**						**110**		**110**		**120**		**160**		**100**		**140**		**250**	
Mercury	0.3	1	**0.12**	0.11				**0.38**				0.051																					
Nickel	20	30	**8.4**	**10.2**		**30.1**		3.5	B			**35**		6						7.9		8		7.9		**9.6**		**10**		**8.7**		7.5	
Silver	0.6	5	--																	0.42	J	0.61	J	0.35	J	0.63	J	0.76		1		0.13	J
Thallium	0.6	5	--	1.8	B	1.8	B																										
Tin	--	--	**4.44**																	**18**	**J**	**20**	**J**	**14**	**J**	**24**	**J**	**22**	**J**	**30**	**J**	**10**	**J**
Vanadium	30	30	--	11.3		24.9		7.2	B			36		14						12		13		12		15		12		15		18	
Zinc	100	300	**19.6**	**37.2**	**E**	**63**	**E**	**41.4**	**E**			**36**		19						18		18		17		19		**20**		**20**		**23**	

Table 4
Detected Containment Area Soil Results - MassDEP Background
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	Mass DEP Nat. Bkgd	Mass DEP Fill Bkgd	OU1-OU2 Site Specific	SS-429		SS-430		SS-431		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE	
Sample ID				OC-SS-429-0.0/1.0-XXX		OC-SS-430-0.0/1.0-XXX		OC-SS-431-0.0/1.0-XXX		1120-DA-SP-3A		1120-DA-SP-3B		1120-DA-SP-3C		1120-DA-SP-3D		1120-DA-SP-3E		1120-DA-SP-4		1120-DA-SP-5A		1120-DA-SP-5B		1120-DA-SP-5C		1120-DA-SP-6A		1120-DA-SP-6B		1120-DA-SP-6C		1120-DA-SP-8A	
Date				9/16/2009		9/16/2009		9/16/2009		8/26/2000		8/26/2000		8/26/2000		9/14/2000		9/5/2000		9/5/2000		9/14/2000		9/14/2000		9/14/2000		9/22/2000		9/22/2000		9/22/2000		9/26/2000	
Depth (feet)				0 - 1		0 - 1		0 - 1																											
Volatile Organics (mg/kg)																																			
Naphthalene	0.5	1	--																																
Semivolatile Organics (mg/kg)																																			
2-Methylnaphthalene	0.5	1	--																																
Acenaphthylene	0.5	1	--																																
Anthracene	1	4	--																																
Benzo(a)anthracene	2	9	0.19	0.019	JEB	0.017	J																												
Benzo(a)pyrene	2	7	0.23	0.014	JEB	0.017	J																												
Benzo(b)fluoranthene	2	8	0.53	0.023	JEB	0.027	J	0.014	J																										
Benzo(ghi)perylene	1	3	0.24																																
Benzo(k)fluoranthene	1	4	--																																
Bis(2-Ethylhexyl)phthalate	--	--	**0.031**	**0.33**	**EB**	**0.4**	**EB**	**2**	**EB**	**1.8**		**3.9**		**2**		**17**		**23**		**5.8**		**31**		**287**		**856**	**C**	**622**	**C**	**511**	**C**	**1.3**		**244**	
Chrysene	2	7	**0.027**	0.021	JEB	0.021	J																												
Dibenz(a,h)anthracene	0.5	1	--																																
Fluoranthene	4	10	**0.044**	0.042		0.041	J	0.012	J																										
Fluorene	1	2	--					0.022	J																										
Indeno(1,2,3-cd)pyrene	1	3	**0.033**																																
Naphthalene	0.5	1	--																																
Phenanthrene	3	20	0.036			0.015	J																												
Pyrene	4	20	0.05	0.047		0.032	J																												
Inorganics (mg/kg)																																			
Aluminum	10,000	10,000	16,279	8,000		8,000		7,800																											
Arsenic	20	20	**11.7**	8.5		**23**		8.4																											
Barium	50	50	**17.7**	**80**		**56**		**42**																											
Beryllium	0.4	0.9	**0.4**	0.28	J	0.31	J	0.29																											
Cadmium	2	3	**0.32**	**0.41**		**0.92**		**0.79**								**0.35**						**0.74**		**3**		**3.2**		**0.79**		**0.46**				**1**	
Chromium	30	40	**12.8**	**87**		**66**		**59**		**37**		**21**		11		**39**		**24**		11		**38**		**37**		**25**		**68**		**20**		10		**36**	
Cobalt	4	4	**3.41**	**4.1**		**5.6**		**4.2**																											
Copper	40	200	**6.7**	**8.4**		**8.4**		**9.3**																											
Iron	20,000	20,000	**15,564**	10,000		**20,000**		10,000																											
Lead	100	600	**28**	5.4		8.2		7.1		14		7.1		5.8		6.3		6		3.6		6.2		5.4		3.7		5.6		4.2		6.6		4.7	
Magnesium	5,000	5,000	**1,215**	**2,700**		**2,100**		**2,700**																											
Manganese	300	300	**75.3**	**130**		**370**		**140**																											
Mercury	0.3	1	**0.12**					0.031	J																										
Nickel	20	30	**8.4**	**8.8**		**9.8**		**10**																											
Silver	0.6	5	--	1.2		0.67	J	0.7																											
Thallium	0.6	5	--																																
Tin	--	--	**4.44**	**36**	**J**	**26**	**J**	**24**	**J**																										
Vanadium	30	30	--	14		17		14																											
Zinc	100	300	**19.6**	18		19		**21**																											

Table 4
Detected Containment Area Soil Results - MassDEP Background
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	Mass DEP Nat. Bkgd	Mass DEP Fill Bkgd	OU1-OU2 Site Specific	STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		TP-21		WD-C1		WD-C10		WD-C10B	
Sample ID				1120-DA-SP-8B		1120-DA-SP-8C		1120-DA-SP-8D		1120-DA-SP-8E		1120-DA-SP-8F		1120-DA-SP-8G		1120-DA-SP-8H		97598-BAY1-8/7		97598-BAY4-8/7		97598-DB-SP-1		97598-DB-SP-2E		97598-DB-SP-2W		TP-21-SN8		1140-WD-C1		1140-WD-C10		1140-WD-C10B	
Date				9/26/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000		8/8/2000		8/8/2000		8/11/2000		8/11/2000		8/11/2000		10/8/1991		9/19/2000		9/19/2000		9/19/2000	
Depth (feet)																														8.3 - 8.3		6.6 - 6.6		5.6 - 5.6	
Volatile Organics (mg/kg)																																			
Naphthalene	0.5	1	--																																
Semivolatile Organics (mg/kg)																																			
2-Methylnaphthalene	0.5	1	--																																
Acenaphthylene	0.5	1	--																																
Anthracene	1	4	--																																
Benzo(a)anthracene	2	9	0.19																																
Benzo(a)pyrene	2	7	0.23																																
Benzo(b)fluoranthene	2	8	0.53																																
Benzo(ghi)perylene	1	3	0.24																					0.097	J										
Benzo(k)fluoranthene	1	4	--																																
Bis(2-Ethylhexyl)phthalate	--	--	**0.031**	**1087**		**2356**		**26**		**365**		**501**		**679**		**676**		**6.7**		**6.9**		**9.1**	**BF**	**43**	**F**	**29**	**F**	**1100**	**J**	**29**		**1.1**		**366**	**C**
Chrysene	2	7	**0.027**																																
Dibenz(a,h)anthracene	0.5	1	--																					0.096	J										
Fluoranthene	4	10	**0.044**																																
Fluorene	1	2	--																																
Indeno(1,2,3-cd)pyrene	1	3	**0.033**																																
Naphthalene	0.5	1	--																																
Phenanthrene	3	20	0.036																																
Pyrene	4	20	0.05																																
Inorganics (mg/kg)																																			
Aluminum	10,000	10,000	16,279																									3,100	J						
Arsenic	20	20	**11.7**																									4	J						
Barium	50	50	**17.7**																									11							
Beryllium	0.4	0.9	**0.4**																																
Cadmium	2	3	**0.32**	**0.85**		***54***		**0.34**		***3.3***		**1.8**		***14***		***7.3***																			
Chromium	30	40	**12.8**	**20**		**27**		**24**		***84***		***650***		***200***		***41***		***47***		***70***		***54***		***75***		***46***		***110***		***520***		***50***		***77***	
Cobalt	4	4	**3.41**																																
Copper	40	200	**6.7**																									5							
Iron	20,000	20,000	**15,564**																									2,600							
Lead	100	600	**28**	4.3		4.6		6.3		3.5		4.1		3		4		7.2		8.2		6.8		7.9		5.6									
Magnesium	5,000	5,000	**1,215**																									440							
Manganese	300	300	**75.3**																									49							
Mercury	0.3	1	**0.12**																									***0.91***							
Nickel	20	30	**8.4**																																
Silver	0.6	5	--																																
Thallium	0.6	5	--																																
Tin	--	--	**4.44**																																
Vanadium	30	30	--																									12							
Zinc	100	300	**19.6**																									**38**							

Table 4
Detected Containment Area Soil Results - MassDEP Background
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	Mass DEP Nat. Bkgd	Mass DEP Fill Bkgd	OU1-OU2 Site Specific	WD-C11		WD-C11B		WD-C12		WD-C12B		WD-C13		WD-C13B		WD-C14		WD-C14B		WD-C15		WD-C15B		WD-C16		WD-C1B		WD-C2		WD-C2B		WD-C3		WD-C3B	
Sample ID				1140-WD-C11		1140-WD-C11B		1140-WD-C12		1140-WD-C12B		1140-WD-C13		1140-WD-C13B		1140-WD-C14		1140-WD-C14B		1140-WD-C15		1140-WD-C15B		1140-WD-C16		1140-WD-C1B		1140-WD-C2		1140-WD-C2B		1140-WD-C3		1140-WD-C3B	
Date				9/19/2000		9/19/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/13/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000	
Depth (feet)				5.6 - 5.6		5.6 - 5.6		6.1 - 6.1		5.2 - 5.2		6.1 - 6.1		5.2 - 5.2		7.6 - 7.6		6.9 - 6.9		10 - 10		9.3 - 9.3		10.1 - 10.1		7.3 - 7.3		8 - 8		7 - 7		7.7 - 7.7		6.7 - 6.7	
Volatile Organics (mg/kg)																																			
Naphthalene	*0.5*	1	--																																
Semivolatile Organics (mg/kg)																																			
2-Methylnaphthalene	0.5	1	--																																
Acenaphthylene	0.5	1	--																																
Anthracene	1	4	--																																
Benzo(a)anthracene	2	9	0.19																																
Benzo(a)pyrene	2	7	0.23																																
Benzo(b)fluoranthene	2	8	0.53																																
Benzo(ghi)perylene	1	3	0.24																																
Benzo(k)fluoranthene	1	4	--																																
Bis(2-Ethylhexyl)phthalate	--	--	**0.031**			**1.2**		**12**						**0.73**		**1.6**		**3.3**				**0.79**		**0.64**		**1.4**		**15**		**5**		**5.6**		**1.2**	
Chrysene	2	7	**0.027**																																
Dibenz(a,h)anthracene	0.5	1	--																																
Fluoranthene	4	10	**0.044**																																
Fluorene	1	2	--																																
Indeno(1,2,3-cd)pyrene	1	3	**0.033**																																
Naphthalene	*0.5*	1	--																																
Phenanthrene	3	20	0.036																																
Pyrene	4	20	0.05																																
Inorganics (mg/kg)																																			
Aluminum	*10,000*	10,000	16,279	2,700	F	4,200														3,300		3,300												3,600	
Arsenic	*20*	20	**11.7**			1.9																													
Barium	*50*	50	**17.7**																																
Beryllium	*0.4*	0.9	**0.4**																																
Cadmium	*2*	3	**0.32**																																
Chromium	*30*	40	**12.8**	***660***		***170***		10		6.3		11		6.7		**18**		6.4		**19**		**15**		6		***68***		***350***		***36***		***110***		***210***	
Cobalt	*4*	4	**3.41**																																
Copper	*40*	200	**6.7**																																
Iron	*20,000*	20,000	**15,564**	3,100	F	3,000																1,100		2,900											
Lead	100	600	**28**			2.9																1.7		2.1											
Magnesium	*5,000*	5,000	**1,215**																																
Manganese	*300*	300	**75.3**																																
Mercury	*0.3*	1	**0.12**																																
Nickel	*20*	30	**8.4**																																
Silver	*0.6*	5	--																																
Thallium	*0.6*	5	--																																
Tin	--	--	**4.44**																																
Vanadium	*30*	30	--																																
Zinc	100	300	**19.6**																																

Table 4
Detected Containment Area Soil Results - MassDEP Background
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	Mass DEP Nat. Bkgd	Mass DEP Fill Bkgd	OU1-OU2 Site Specific	WD-C4		WD-C4B		WD-C5		WD-C5B		WD-C6		WD-C6B		WD-C7		WD-C7B		WD-C8		WD-C8B		WD-C9		WD-C9B	
Sample ID				1140-WD-C4		1140-WD-C4B		1140-WD-C5		1140-WD-C5B		1140-WD-C6		1140-WD-C6B		1140-WD-C7		1140-WD-C7B		1140-WD-C8		1140-WD-C8B		1140-WD-C9		1140-WD-C9B	
Date				9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000	
Depth (feet)				7.6 - 7.6		6.6 - 6.6		7.4 - 7.4		6.5 - 6.5		7.1 - 7.1		6.2 - 6.2		6.6 - 6.6		5.6 - 5.6		6.8 - 6.8		5.8 - 5.8		7 - 7		6 - 6	
Volatile Organics (mg/kg)																											
Naphthalene	*0.5*	1	--																								
Semivolatile Organics (mg/kg)																											
2-Methylnaphthalene	0.5	1	--																								
Acenaphthylene	0.5	1	--																								
Anthracene	1	4	--																								
Benzo(a)anthracene	2	9	0.19																								
Benzo(a)pyrene	2	7	0.23																								
Benzo(b)fluoranthene	2	8	0.53																								
Benzo(ghi)perylene	1	3	0.24																								
Benzo(k)fluoranthene	1	4	--																								
Bis(2-Ethylhexyl)phthalate	--	--	**0.031**	**2.9**		**166**	**C**	**3.9**		**0.6**		**33**		**210**	**C**	**71**		**79**	**C**	**54**		**426**	**C**	**16**		**0.58**	
Chrysene	2	7	**0.027**																								
Dibenz(a,h)anthracene	0.5	1	--																								
Fluoranthene	4	10	**0.044**																								
Fluorene	1	2	--																								
Indeno(1,2,3-cd)pyrene	1	3	**0.033**																								
Naphthalene	*0.5*	1	--																								
Phenanthrene	3	20	0.036																								
Pyrene	4	20	0.05																								
Inorganics (mg/kg)																											
Aluminum	*10,000*	10,000	16,279	7,400		4,600														3,400		2,300					
Arsenic	*20*	20	**11.7**	6.8																2.2							
Barium	*50*	50	**17.7**																								
Beryllium	*0.4*	0.9	**0.4**																								
Cadmium	*2*	3	**0.32**																								
Chromium	*30*	40	**12.8**	***160***		***51***		***160***		***240***		***58***		***500***		***810***		***580***		***160***		***340***		***110***		**20**	
Cobalt	*4*	4	**3.41**																								
Copper	*40*	200	**6.7**																								
Iron	*20,000*	20,000	**15,564**	11,000		3,300														3,400		2,600					
Lead	100	600	**28**	4.7		5.4														2.2		2					
Magnesium	*5,000*	5,000	**1,215**																								
Manganese	*300*	300	**75.3**																								
Mercury	*0.3*	1	**0.12**																								
Nickel	*20*	30	**8.4**																								
Silver	*0.6*	5	--																								
Thallium	*0.6*	5	--																								
Tin	--	--	**4.44**																								
Vanadium	*30*	30	--																								
Zinc	100	300	**19.6**																								

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				AREA-1		AREA-1		AREA 1-1		AREA 1-2		AREA 1-4		AREA 1-5		AREA-2		BD-C1		BD-C10		BD-C13		BD-C4		BD-C7		BH1		BH2		BH3		BH4	
Sample ID	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	AREA 01		AREA 1 (COMP)		AREA 1-1		AREA 1-2		AREA 1-4		AREA 1-5		AREA 02		1120-BD-C1		1120-BD-C10		1120-BD-C13		1120-BD-C4		1120-BD-C7		BH-01		BH-02		BH-03		BH-04	
Date				7/8/1991		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		7/9/1991		10/10/2000		10/12/2000		10/12/2000		10/10/2000		10/12/2000		6/5/1991		6/5/1991		6/5/1991		6/5/1991	
Depth (feet)				0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		4.6 - 4.6		10.3-10.3		10.1 - 10.1		7.5 - 7.5		7.96 - 7.9		4.3 - 6.3		3.5 - 5.5		4.2 - 6.2		6.3 - 8.3	
Volatile Organics (mg/kg)																																			
1,1,1-Trichloroethane	0.28	0.07	28									0.23																							
1,1-Dichloroethene	*0.01*	0.0025	1									*0.018*																							
1,2,3-Trichlorobenzene	*0.0021*		0.21																																
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																																
1,2,4-Trimethylbenzene	*0.0081*		**0.81**																																
1,3,5-Trimethylbenzene	*0.0087*		**0.87**																																
2-Butanone	*0.12*		12																									*0.49*	*J*			0.001	J	0.003	J
2-Hexanone	*0.00088*		0.088																																
Acetone	*0.29*		29					0.029	B	0.01	J	0.036		0.005	J													*17*		*0.5*		0.13		*0.46*	
Benzene	*0.00023*	0.0026	**0.023**																									*0.1*	*J*						
Chloroform	*0.000061*	0.022	**0.0061**																																
Ethyl benzene	*0.0017*	0.78	**0.17**																																
Isopropylbenzene	*0.074*		7.4																																
Methylene chloride	*0.0027*	0.0013	**0.27**																									***2***							
Naphthalene	*0.00054*		**0.054**																																
Propylbenzene	*0.12*		12																																
sec-Butylbenzene	0.59		59																																
Styrene	*0.13*	0.11	13																																
Tetrachloroethene	0.0018	0.0023	0.18																																
Toluene	*0.076*	0.69	**7.6**									0.003	J															*0.15*	*J*						
Trichloroethene	*0.0001*	0.0018	**0.01**									*0.009*																***0.08***	***J***						
Xylene, o	*0.019*	9.9	1.9																																
Xylenes, Total	*0.019*	9.9	1.9																																
Semivolatile Organics (mg/kg)																																			
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																																
2-Methylnaphthalene	*0.019*		1.9													*0.067*	*J*																		
2-Methylphenol	0.075		7.5																																
4-Methylphenol	*0.15*		15																																
Anthracene	5.8		580																																
Benzaldehyde	*0.0041*		0.41																																
Benzo(a)anthracene	*0.011*		1.1	*0.099*	*J*											*0.075*	*J*																		
Benzo(a)pyrene	*0.029*	0.24	2.9	*0.059*	*J*											*0.057*	*J*																		
Benzo(b)fluoranthene	0.3		30	0.18	J											0.13	J																		
Benzo(k)fluoranthene	2.9		290	0.065	J											0.042	J																		
Benzoic Acid	1.5		150																																
Bis(2-Ethylhexyl)phthalate	*1.3*	1.4	**130**	*2.9*		0.13	JB									0.13	J							*3.9*						*3.5*		*1.7*		*27*	*J*
Butylbenzylphthalate	0.24		24																																
Chrysene	9		900	0.17	J											0.15	J																		
Dibenz(a,h)anthracene	0.096		9.6																																
Diethylphthalate	0.61		61			0.044	JB																												
Di-n-butylphthalate	*0.23*		**23**			0.027	JB									0.014	J																		
Di-n-octylphthalate	5.7		570																															0.073	J
Diphenyl ether	*0.00034*		0.034																																
Diphenylamine	0.23		23																																
Fluoranthene	8.9		890	0.25	J											0.19	J																		
Fluorene	0.54		54																																
Indeno(1,2,3-cd)pyrene	0.98		98	0.064	J											0.051	J																		
Naphthalene	*0.00054*		**0.054**													*0.049*	*J*																		

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				AREA-1		AREA-1		AREA 1-1		AREA 1-2		AREA 1-4		AREA 1-5		AREA-2		BD-C1		BD-C10		BD-C13		BD-C4		BD-C7		BH1		BH2		BH3		BH4	
Sample ID	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	AREA 01		AREA 1 (COMP)		AREA 1-1		AREA 1-2		AREA 1-4		AREA 1-5		AREA 02		1120-BD-C1		1120-BD-C10		1120-BD-C13		1120-BD-C4		1120-BD-C7		BH-01		BH-02		BH-03		BH-04	
Date				7/8/1991		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		7/9/1991		10/10/2000		10/12/2000		10/12/2000		10/10/2000		10/12/2000		6/5/1991		6/5/1991		6/5/1991		6/5/1991	
Depth (feet)				0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		4.6 - 4.6		10.3-10.3		10.1 - 10.1		7.5 - 7.5		7.96 - 7.9		4.3 - 6.3		3.5 - 5.5		4.2 - 6.2		6.3 - 8.3	
N-Nitrosodiphenylamine	*0.067*		**6.7**																															*0.29*	*J*
Phenol	*0.33*		33																																
Pyrene	1.3		130	0.16	J											0.14	J																		
Pesticides/PCBs (mg/kg)																																			
4,4'-DDD	*0.0015*		0.15																																
4,4'-DDE	0.011		1.1																																
4,4'-DDT	0.077		7.7																																
Aldrin	*0.00015*		**0.015**																																
Alpha-BHC	*0.000042*		**0.0042**																																
Beta-BHC	*0.00015*		**0.015**																																
Dieldrin	*0.000071*		0.0071																																
Endrin	*0.0092*		0.92																																
Gamma-BHC/Lindane	*0.00024*		**0.024**																													***0.048***			
Heptachlor	*0.00012*		0.012																																
Heptachlor epoxide	*0.000028*		0.0028																																
Inorganics (mg/kg)																																			
Aluminum	*3,000*		300,000	*8,000*		2,250	E									*5,900*		*3,400*		2,600		2,600		*3,700*		*4,200*		*7,600*		*8,300*		*9,000*		*9,200*	
Arsenic	*0.0015*	0.29	**0.15**	***24***		***1.2***	***B***									***7***										***2***		***8***		***12***		***21***		***13***	
Barium	*16*	82	1600	*25*		5.8	B									*38*												16		*30*		*29*		*36*	
Beryllium	1.9	3.2	190																																
Cadmium	*0.069*	0.38	**6.9**																													*1.8*		*1.4*	
Chromium	4000000	180000	4E+08	320		9.1	E									8.8		5.3		4.8		5		4.9		6.2		100		21		36		41	
Cobalt	*0.027*		**2.7**	***9.9***		*1.3*	*B*																					***2.9***		***3.8***		***5***		***6.2***	
Copper	*2.8*	46	280	*14*		*2.9*	*B*									*12*												*8.2*		*9.8*		*10*		***47***	
Iron	*35*		**3,500**	***16,000***		*2,090*	*E*									***6,900***		*2,700*		*2,300*		*2,500*		*2,100*		*2,900*		***7,800***		***9,500***		***11,000***		***14,000***	
Lead		14		58		2										36		1.8		2		1.8		2.1		1.9				11				52	
Manganese	*2.8*		**280**	***530***		*27.7*	*E*									*40*												*72*		*140*		*130*		*230*	
Mercury	*0.0033*	0.1	**0.33**			*0.11*	*N*									*0.15*																			
Nickel	*2.6*		260	*5.8*		*4*	*B*									*4.7*												*6.7*		*11*		*18*		*14*	
Silver	*0.08*		8																																
Thallium	*0.0014*	0.14	**0.14**																																
Tin	300		30000																																
Vanadium	*8.6*		860	*18*		4.3	B									*18*												*12*		*12*		*17*		*21*	
Zinc	*37*		3700	24		13.1										31												21		24		30		*84*	
Other Analyses (mg/kg)																																			
Formaldehyde	*0.000087*		**0.0087**																																

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				BH6	BH7	BH8	BH9	BH10	BS017PND	CP-C36	CP-C38	CP-C39	CP-C41	CP-C42	CP-C43	CP-C45	CP-C46	CP-C47	CP-C49
Sample ID				BH-06	BH-07	BH-08	BH-09	BH-10	BS017PND	1140-CP-C36	1140-CP-C38	1140-CP-C39	1140-CP-C41	1140-CP-C42	1140-CP-C43	1140-CP-C45	1140-CP-C46	1140-CP-C47	1140-CP-C49
Date	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	6/6/1991	6/6/1991	6/7/1991	6/7/1991	6/7/1991	1/21/1997	10/5/2000	10/5/2000	10/5/2000	10/5/2000	10/5/2000	10/5/2000	10/5/2000	10/5/2000	10/5/2000	10/5/2000
Depth (feet)				4.4 - 6.4	3 - 5	3 - 5	2.6 - 4.6	3.8 - 5.8	0 - 0	5.4 - 5.4	6.2 - 6.2	6.7 - 6.7	6.5 - 6.5	6.3 - 6.3	5 - 5	6.6 - 6.6	6.1 - 6.1	5.4 - 5.4	6.8 - 6.8
Volatile Organics (mg/kg)																			
1,1,1-Trichloroethane	0.28	0.07	28																
1,1-Dichloroethene	*0.01*	0.0025	1																
1,2,3-Trichlorobenzene	*0.0021*		0.21																
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																
1,2,4-Trimethylbenzene	*0.0081*		**0.81**																
1,3,5-Trimethylbenzene	*0.0087*		**0.87**																
2-Butanone	*0.12*		12	0.001 J															
2-Hexanone	*0.00088*		0.088				*0.061*												
Acetone	*0.29*		29																
Benzene	*0.00023*	0.0026	**0.023**																
Chloroform	*0.000061*	0.022	**0.0061**				*0.002 J*												
Ethyl benzene	*0.0017*	0.78	**0.17**																
Isopropylbenzene	*0.074*		7.4																
Methylene chloride	*0.0027*	0.0013	**0.27**									***0.3 B***						*0.21 B*	***0.44 B***
Naphthalene	*0.00054*		**0.054**																
Propylbenzene	*0.12*		12																
sec-Butylbenzene	0.59		59																
Styrene	*0.13*	0.11	13																
Tetrachloroethene	0.0018	0.0023	0.18				0.001 J												
Toluene	*0.076*	0.69	**7.6**			0.001 J	0.001 J	0.001 J											
Trichloroethene	*0.0001*	0.0018	**0.01**																
Xylene, o	*0.019*	9.9	1.9																
Xylenes, Total	*0.019*	9.9	1.9																
Semivolatile Organics (mg/kg)																			
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**			*0.086 J*		*0.075 J*											
2-Methylnaphthalene	*0.019*		1.9																
2-Methylphenol	0.075		7.5																
4-Methylphenol	*0.15*		15																
Anthracene	5.8		580				0.028 J		0.01 J										
Benzaldehyde	*0.0041*		0.41																
Benzo(a)anthracene	*0.011*		1.1				*0.08 J*												
Benzo(a)pyrene	*0.029*	0.24	2.9				*0.055 J*												
Benzo(b)fluoranthene	0.3		30				0.084 J												
Benzo(k)fluoranthene	2.9		290																
Benzoic Acid	1.5		150																
Bis(2-Ethylhexyl)phthalate	*1.3*	1.4	**130**		*2.5*	*3.9*		*8.2*	*8.6 B*	*6.2*	*2*		0.54					0.25 J	
Butylbenzylphthalate	0.24		24					0.035 J											
Chrysene	9		900				0.086 J												
Dibenz(a,h)anthracene	0.096		9.6																
Diethylphthalate	0.61		61						0.053 JB										
Di-n-butylphthalate	*0.23*		**23**						0.046 JB										
Di-n-octylphthalate	5.7		570	0.06 J	0.014 J														
Diphenyl ether	*0.00034*		0.034																
Diphenylamine	0.23		23																
Fluoranthene	8.9		890				0.16 J		0.037 J										
Fluorene	0.54		54																
Indeno(1,2,3-cd)pyrene	0.98		98																
Naphthalene	*0.00054*		**0.054**					***0.63 J***											

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				BH6	BH7	BH8	BH9	BH10	BS017PND	CP-C36	CP-C38	CP-C39	CP-C41	CP-C42	CP-C43	CP-C45	CP-C46	CP-C47	CP-C49
Sample ID				BH-06	BH-07	BH-08	BH-09	BH-10	BS017PND	1140-CP-C36	1140-CP-C38	1140-CP-C39	1140-CP-C41	1140-CP-C42	1140-CP-C43	1140-CP-C45	1140-CP-C46	1140-CP-C47	1140-CP-C49
Date	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	6/6/1991	6/6/1991	6/7/1991	6/7/1991	6/7/1991	1/21/1997	10/5/2000	10/5/2000	10/5/2000	10/5/2000	10/5/2000	10/5/2000	10/5/2000	10/5/2000	10/5/2000	10/5/2000
Depth (feet)				4.4 - 6.4	3 - 5	3 - 5	2.6 - 4.6	3.8 - 5.8	0 - 0	5.4 - 5.4	6.2 - 6.2	6.7 - 6.7	6.5 - 6.5	6.3 - 6.3	5 - 5	6.6 - 6.6	6.1 - 6.1	5.4 - 5.4	6.8 - 6.8
N-Nitrosodiphenylamine	0.067		**6.7**		0.15 J	0.57 J		0.98	0.26 J										
Phenol	0.33		33			0.1 J		0.075 J											
Pyrene	1.3		130				0.13 J		0.039 J										
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	0.0015		0.15						0.00019 J										
4,4'-DDE	0.011		1.1						0.0016 J										
4,4'-DDT	0.077		7.7						0.0032 J										
Aldrin	0.00015		**0.015**																
Alpha-BHC	0.000042		**0.0042**						0.00056 J										
Beta-BHC	0.00015		**0.015**																
Dieldrin	0.000071		0.0071						0.0004 J										
Endrin	0.0092		0.92																
Gamma-BHC/Lindane	0.00024		**0.024**						0.0014 J										
Heptachlor	0.00012		0.012																
Heptachlor epoxide	0.000028		0.0028																
Inorganics (mg/kg)																			
Aluminum	3,000		300,000	10,000	7,900	4,100	9,800	460	4,810			5,000						4,400	3,700
Arsenic	0.0015	0.29	**0.15**	**16**	**4.3**	**4.6**	**13**	**1.1**	**24.5**			**4.8**						**2.8**	**3.2**
Barium	16	82	1600	39	28	14	23	6.6	9.2 B										
Beryllium	1.9	3.2	190																
Cadmium	0.069	0.38	**6.9**	1.2		1.4	1.2												
Chromium	4000000	180000	4E+08	25	160	22	27	7.3	305	500	490	1600	230	710	490	560	420	260	660
Cobalt	0.027		**2.7**	**7.2**	2.3	1.8	**5.2**		1.9 B										
Copper	2.8	46	280	14	12	4	10		4.3 B										
Iron	35		**3,500**	**13,000**	**9,400**	**5,100**	**15,000**	840	**20,000** *			**3,800**						**5,400**	**4,000**
Lead		14							14.1			4						2.6	2.2
Manganese	2.8		**280**	250	140	76	**320**	7.6	99.9										
Mercury	0.0033	0.1	**0.33**																
Nickel	2.6		260	18	8.9	4.8	12		1.8 B										
Silver	0.08		8																
Thallium	0.0014	0.14	**0.14**																
Tin	300		30000																
Vanadium	8.6		860	18	16	5.9	18		18.4										
Zinc	37		3700	31	17	14	27		7 E										
Other Analyses (mg/kg)																			
Formaldehyde	0.000087		**0.0087**																

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				CP-C50		CP-C52		CP-C53		CP-C54		CP-C55		CP-C56		CP-C57		CP-C58		CP-C59		CP-C60		CP-C61		CP-C62		CP-C64		CP-C65		CP-C66		CP-C67	
Sample ID	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	1140-CP-C50		1140-CP-C52		1140-CP-C53		1140-CP-C54		1140-CP-C55		1140-CP-C56		1140-CP-C57		1140-CP-C58		1140-CP-C59		1140-CP-C60		1140-CP-C61		1140-CP-C62		1140-CP-C64		1140-CP-C65		1140-CP-C66		1140-CP-C67	
Date				10/5/2000		10/9/2000		10/9/2000		10/10/2000		10/10/2000		10/10/2000		10/10/2000		10/10/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000	
Depth (feet)				4.8 - 4.8		8.7 - 8.7		8.5 - 8.5		3.3 - 3.3		4.1 - 4.1		4.1 - 4.1		4.4 - 4.4		4.5 - 4.5		4.9 - 4.9		5.5 - 5.5		5.4 - 5.4		3.7 - 3.7		5.2 - 5.2		5.3 - 5.3		5.1 - 5.1		4.7 - 4.7	
Volatile Organics (mg/kg)																																			
1,1,1-Trichloroethane	0.28	0.07	28																																
1,1-Dichloroethene	*0.01*	0.0025	1																																
1,2,3-Trichlorobenzene	*0.0021*		0.21																																
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																																
1,2,4-Trimethylbenzene	*0.0081*		**0.81**																																
1,3,5-Trimethylbenzene	*0.0087*		**0.87**																																
2-Butanone	*0.12*		12																																
2-Hexanone	*0.00088*		0.088																																
Acetone	*0.29*		29																																
Benzene	*0.00023*	0.0026	**0.023**																																
Chloroform	*0.000061*	0.022	**0.0061**																																
Ethyl benzene	*0.0017*	0.78	**0.17**																																
Isopropylbenzene	*0.074*		7.4																																
Methylene chloride	*0.0027*	0.0013	**0.27**																																
Naphthalene	*0.00054*		**0.054**																																
Propylbenzene	*0.12*		12																																
sec-Butylbenzene	0.59		59																																
Styrene	*0.13*	0.11	13																																
Tetrachloroethene	0.0018	0.0023	0.18																																
Toluene	*0.076*	0.69	**7.6**																											*0.23*					
Trichloroethene	*0.0001*	0.0018	**0.01**																																
Xylene, o	*0.019*	9.9	1.9																																
Xylenes, Total	*0.019*	9.9	1.9																																
Semivolatile Organics (mg/kg)																																			
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																																
2-Methylnaphthalene	*0.019*		1.9																																
2-Methylphenol	0.075		7.5																																
4-Methylphenol	*0.15*		15																																
Anthracene	5.8		580																																
Benzaldehyde	*0.0041*		0.41																																
Benzo(a)anthracene	*0.011*		1.1																																
Benzo(a)pyrene	*0.029*	0.24	2.9																																
Benzo(b)fluoranthene	0.3		30																																
Benzo(k)fluoranthene	2.9		290																																
Benzoic Acid	1.5		150																																
Bis(2-Ethylhexyl)phthalate	*1.3*	1.4	**130**							0.46				1.1		1		0.67		*26*	*C*	*5*	*J*	*5.5*		*7.9*		*22*	*C*	*46*	*C*	0.22	J	0.54	
Butylbenzylphthalate	0.24		24																																
Chrysene	9		900																																
Dibenz(a,h)anthracene	0.096		9.6																																
Diethylphthalate	0.61		61																																
Di-n-butylphthalate	*0.23*		**23**																																
Di-n-octylphthalate	5.7		570																																
Diphenyl ether	*0.00034*		0.034																																
Diphenylamine	0.23		23																																
Fluoranthene	8.9		890																																
Fluorene	0.54		54																																
Indeno(1,2,3-cd)pyrene	0.98		98																																
Naphthalene	*0.00054*		**0.054**																																

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				CP-C50		CP-C52		CP-C53		CP-C54		CP-C55		CP-C56		CP-C57		CP-C58		CP-C59		CP-C60		CP-C61		CP-C62		CP-C64		CP-C65		CP-C66		CP-C67	
Sample ID				1140-CP-C50		1140-CP-C52		1140-CP-C53		1140-CP-C54		1140-CP-C55		1140-CP-C56		1140-CP-C57		1140-CP-C58		1140-CP-C59		1140-CP-C60		1140-CP-C61		1140-CP-C62		1140-CP-C64		1140-CP-C65		1140-CP-C66		1140-CP-C67	
Date	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	10/5/2000		10/9/2000		10/9/2000		10/10/2000		10/10/2000		10/10/2000		10/10/2000		10/10/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000	
Depth (feet)				4.8 - 4.8		8.7 - 8.7		8.5 - 8.5		3.3 - 3.3		4.1 - 4.1		4.1 - 4.1		4.4 - 4.4		4.5 - 4.5		4.9 - 4.9		5.5 - 5.5		5.4 - 5.4		3.7 - 3.7		5.2 - 5.2		5.3 - 5.3		5.1 - 5.1		4.7 - 4.7	
N-Nitrosodiphenylamine	*0.067*		**6.7**																	***11***	***C***	*3.1*	*J*			***9.9***		***54***	***C***	***15***	***C***				
Phenol	*0.33*		33																																
Pyrene	1.3		130																																
Pesticides/PCBs (mg/kg)																																			
4,4'-DDD	*0.0015*		0.15																																
4,4'-DDE	0.011		1.1																																
4,4'-DDT	0.077		7.7																																
Aldrin	*0.00015*		**0.015**																																
Alpha-BHC	*0.000042*		**0.0042**																																
Beta-BHC	*0.00015*		**0.015**																																
Dieldrin	*0.000071*		0.0071																																
Endrin	*0.0092*		0.92																																
Gamma-BHC/Lindane	*0.00024*		**0.024**																																
Heptachlor	*0.00012*		0.012																																
Heptachlor epoxide	*0.000028*		0.0028																																
Inorganics (mg/kg)																																			
Aluminum	*3,000*		300,000											*5,700*								*6,600*								*5,500*					
Arsenic	*0.0015*	0.29	**0.15**											***4.9***								***8.8***								***6***					
Barium	*16*	82	1600																																
Beryllium	1.9	3.2	190																																
Cadmium	*0.069*	0.38	**6.9**																											*0.36*					
Chromium	4000000	180000	4E+08	630		970		29		510		410		680		240		530		27		100		350		88		20		52		470		250	
Cobalt	*0.027*		**2.7**																																
Copper	*2.8*	46	280																																
Iron	*35*		**3,500**											***5,000***								***9,000***								***6,900***					
Lead		14												3.1								17								6.6					
Manganese	*2.8*		**280**																																
Mercury	*0.0033*	0.1	**0.33**																			*0.12*													
Nickel	*2.6*		260																																
Silver	*0.08*		8																																
Thallium	*0.0014*	0.14	**0.14**																																
Tin	300		30000																																
Vanadium	*8.6*		860																																
Zinc	*37*		3700																																
Other Analyses (mg/kg)																																			
Formaldehyde	*0.000087*		**0.0087**																																

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				CP-C68		CP-C69		CP-C70		CPDA-1-A		CPDA-1		CPDA-2		CPDA-3		CPDA-4		DA-C10		DA-C11		DA-C12		DA-C13		DA-C14		DA-C15		DA-C16		DA-C17	
Sample ID	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	1140-CP-C68		1140-CP-C69		1140-CP-C70		CPD-1-A (0-3 FT)		CPDA-1		CPDA-2		CPDA-3		CPDA-4		1120-DA-C10		1120-DA-C11		1120-DA-C12		1120-DA-C13		1120-DA-C14		1120-DA-C15		1120-DA-C16		1120-DA-C17	
Date				10/20/2000		10/20/2000		10/20/2000		1/24/2000		12/16/1996		12/16/1996		12/16/1996		12/16/1996		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000	
Depth (feet)				4.1 - 4.1		4.3 - 4.3		4.2 - 4.2		2.90 - 5.09		0 - 1		0 - 1		0 - 1		0 - 1		-0.2 - 1.8		0 - 3		7 - 7		7 - 7		5.9 - 5.9		1.2 - 4.2		1.2 - 4.2		6.2 - 6.2	
Volatile Organics (mg/kg)																																			
1,1,1-Trichloroethane	0.28	0.07	28																																
1,1-Dichloroethene	*0.01*	0.0025	1																																
1,2,3-Trichlorobenzene	*0.0021*		0.21																																
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																																
1,2,4-Trimethylbenzene	*0.0081*		**0.81**																																
1,3,5-Trimethylbenzene	*0.0087*		**0.87**																																
2-Butanone	*0.12*		12																																
2-Hexanone	*0.00088*		0.088																																
Acetone	*0.29*		29									0.013	J	0.056																					
Benzene	*0.00023*	0.0026	**0.023**																																
Chloroform	*0.000061*	0.022	**0.0061**																																
Ethyl benzene	*0.0017*	0.78	**0.17**																																
Isopropylbenzene	*0.074*		7.4																															*0.22*	
Methylene chloride	*0.0027*	0.0013	**0.27**			*0.15*								*0.004*	*J*					*0.21*	*B*	*0.17*	*B*	*0.15*	*JB*					*0.18*	*B*	*0.16*	*B*		
Naphthalene	*0.00054*		**0.054**																																
Propylbenzene	*0.12*		12																																
sec-Butylbenzene	0.59		59																																
Styrene	*0.13*	0.11	13																																
Tetrachloroethene	0.0018	0.0023	0.18																																
Toluene	*0.076*	0.69	**7.6**															0.005	J																
Trichloroethene	*0.0001*	0.0018	**0.01**																																
Xylene, o	*0.019*	9.9	1.9																																
Xylenes, Total	*0.019*	9.9	1.9																																
Semivolatile Organics (mg/kg)																																			
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																																
2-Methylnaphthalene	*0.019*		1.9																																
2-Methylphenol	0.075		7.5																																
4-Methylphenol	*0.15*		15																																
Anthracene	5.8		580															0.057	J																
Benzaldehyde	*0.0041*		0.41																																
Benzo(a)anthracene	*0.011*		1.1									*0.035*	*J*																						
Benzo(a)pyrene	*0.029*	0.24	2.9									*0.042*	*J*																						
Benzo(b)fluoranthene	0.3		30									0.051	J																						
Benzo(k)fluoranthene	2.9		290									0.055	J																						
Benzoic Acid	1.5		150											0.2	J			0.26	J																
Bis(2-Ethylhexyl)phthalate	*1.3*	1.4	**130**	0.54								0.85	B	0.54	JB	*5.3*		1.1		*3.8*		*5.8*		*8.2*		***448***	***C***	***1582***		1.2		0.42		***381***	
Butylbenzylphthalate	0.24		24																																
Chrysene	9		900									0.052	J																						
Dibenz(a,h)anthracene	0.096		9.6																																
Diethylphthalate	0.61		61									0.036	J	0.024	J																				
Di-n-butylphthalate	*0.23*		**23**									0.067	JB	0.023	JB											***98***	***C***	***109***							
Di-n-octylphthalate	5.7		570																																
Diphenyl ether	*0.00034*		0.034																																
Diphenylamine	0.23		23																																
Fluoranthene	8.9		890									0.1	J					0.098	J																
Fluorene	0.54		54																																
Indeno(1,2,3-cd)pyrene	0.98		98																																
Naphthalene	*0.00054*		**0.054**																																

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				CP-C68	CP-C69	CP-C70	CPDA-1-A	CPDA-1	CPDA-2	CPDA-3	CPDA-4	DA-C10	DA-C11	DA-C12	DA-C13	DA-C14	DA-C15	DA-C16	DA-C17
Sample ID		SSL - MCL May 2018		1140-CP-C68	1140-CP-C69	1140-CP-C70	CPD-1-A (0-3 FT)	CPDA-1	CPDA-2	CPDA-3	CPDA-4	1120-DA-C10	1120-DA-C11	1120-DA-C12	1120-DA-C13	1120-DA-C14	1120-DA-C15	1120-DA-C16	1120-DA-C17
Date	*SSL - Tapwater May 2018*		**SSL - Tapwater x100**	10/20/2000	10/20/2000	10/20/2000	1/24/2000	12/16/1996	12/16/1996	12/16/1996	12/16/1996	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000
Depth (feet)				4.1 - 4.1	4.3 - 4.3	4.2 - 4.2	2.90 - 5.09	0 - 1	0 - 1	0 - 1	0 - 1	-0.2 - 1.8	0 - 3	7 - 7	7 - 7	5.9 - 5.9	1.2 - 4.2	1.2 - 4.2	6.2 - 6.2
N-Nitrosodiphenylamine	*0.067*		**6.7**									*0.24 J*	*0.32 J*	*6*		***49***			
Phenol	*0.33*		33																
Pyrene	1.3		130					0.076 J			0.068 J								
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	*0.0015*		0.15					*0.0016 J*		0.0013 J									
4,4'-DDE	0.011		1.1					0.002 J		0.0026 J									
4,4'-DDT	0.077		7.7							0.012 J									
Aldrin	*0.00015*		**0.015**						*0.00096 J*		0.00011 J								
Alpha-BHC	*0.000042*		**0.0042**																
Beta-BHC	*0.00015*		**0.015**																
Dieldrin	*0.000071*		0.0071																
Endrin	*0.0092*		0.92																
Gamma-BHC/Lindane	*0.00024*		**0.024**					*0.00073 J*		*0.0061*									
Heptachlor	*0.00012*		0.012								*0.0004 J*								
Heptachlor epoxide	*0.000028*		0.0028																
Inorganics (mg/kg)																			
Aluminum	*3,000*		300,000		*5,500*		*4,800*												
Arsenic	*0.0015*	0.29	**0.15**		***89***														
Barium	*16*	82	1600				9.1												
Beryllium	1.9	3.2	190				0.12												
Cadmium	*0.069*	0.38	**6.9**		*0.37*										*0.56*				*1.4*
Chromium	4000000	180000	4E+08	280	540	37	24	3010 *N	3.6 *N	270	17	27	10	30	10		7.8	23	20
Cobalt	*0.027*		**2.7**				*1.7*												
Copper	*2.8*	46	280																
Iron	*35*		**3,500**		***25,000***		*3,500*												
Lead		14			4.2		3.4					2	3	4.2	2.4	3	2	6.1	3.4
Manganese	*2.8*		**280**				*34*												
Mercury	*0.0033*	0.1	**0.33**																
Nickel	*2.6*		260				*4.4*												
Silver	*0.08*		8																
Thallium	*0.0014*	0.14	**0.14**																
Tin	300		30000																
Vanadium	*8.6*		860				6.7												
Zinc	*37*		3700				11												
Other Analyses (mg/kg)																			
Formaldehyde	*0.000087*		**0.0087**																

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				DA-C18	DA-C19	DA-C2	DA-C20	DA-C21	DA-C22	DA-C23	DA-C24	DA-C27	DA-C28	DA-C29	DA-C3	DA-C30	DA-C31	DA-C32	DA-C35
Sample ID				1120-DA-C18	1120-DA-C19	1120-DA-C2	1120-DA-C20	1120-DA-C21	1120-DA-C22	1120-DA-C23	1120-DA-C24	1120-DA-C27	1120-DA-C28	1120-DA-C29-RISK	1120-DA-C3	1120-DA-C30	1120-DA-C31	1120-DA-C32	1120-DA-C35
Date	*SSL - Tapwater*	SSL - MCL	**SSL - Tapwater**	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000
Depth (feet)	*May 2018*	May 2018	**x100**	6.3 - 6.3	1.3 - 4.3	1.4 - 4.4	0.3 - 3.3	6.4 - 6.4	6 - 6	6.1 - 6.1	5.7 - 5.7	1.6 - 4.6	2.7 - 5.7	6.2 - 6.2	1.6 - 4.6	6.5 - 9.5	4.9 - 7.9	5 - 8	7.9 - 7.9
Volatile Organics (mg/kg)																			
1,1,1-Trichloroethane	0.28	0.07	28																
1,1-Dichloroethene	*0.01*	0.0025	1																
1,2,3-Trichlorobenzene	*0.0021*		0.21																
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																
1,2,4-Trimethylbenzene	*0.0081*		**0.81**																
1,3,5-Trimethylbenzene	*0.0087*		**0.87**																
2-Butanone	*0.12*		12																
2-Hexanone	*0.00088*		0.088																
Acetone	*0.29*		29																
Benzene	*0.00023*	0.0026	**0.023**																
Chloroform	*0.000061*	0.022	**0.0061**																
Ethyl benzene	*0.0017*	0.78	**0.17**																***0.62***
Isopropylbenzene	*0.074*		7.4																*0.37*
Methylene chloride	*0.0027*	0.0013	**0.27**	*0.19*	*0.18*	*0.16 B*	*0.17*	*0.23*	*0.18*	*0.21*	*0.19*				*0.16 B*				
Naphthalene	*0.00054*		**0.054**																
Propylbenzene	*0.12*		12																
sec-Butylbenzene	0.59		59																
Styrene	*0.13*	0.11	13																
Tetrachloroethene	0.0018	0.0023	0.18																
Toluene	*0.076*	0.69	**7.6**							*0.51*						*0.45*			***13***
Trichloroethene	*0.0001*	0.0018	**0.01**																
Xylene, o	*0.019*	9.9	1.9																
Xylenes, Total	*0.019*	9.9	1.9													*0.096 JB*			
Semivolatile Organics (mg/kg)																			
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																
2-Methylnaphthalene	*0.019*		1.9																
2-Methylphenol	0.075		7.5																
4-Methylphenol	*0.15*		15																
Anthracene	5.8		580																
Benzaldehyde	*0.0041*		0.41																
Benzo(a)anthracene	*0.011*		1.1																
Benzo(a)pyrene	*0.029*	0.24	2.9																
Benzo(b)fluoranthene	0.3		30																
Benzo(k)fluoranthene	2.9		290																
Benzoic Acid	1.5		150																
Bis(2-Ethylhexyl)phthalate	*1.3*	1.4	**130**	***370***	1.1	*8.5*		*73*	*94*	***1590***	*16*	*7.2*	*6.2*	*119 C*	*9.6*	*3.4*	*12*	0.86	*7.9*
Butylbenzylphthalate	0.24		24																
Chrysene	9		900																
Dibenz(a,h)anthracene	0.096		9.6																
Diethylphthalate	0.61		61																
Di-n-butylphthalate	*0.23*		**23**			*0.39 J*													
Di-n-octylphthalate	5.7		570																
Diphenyl ether	*0.00034*		0.034																
Diphenylamine	0.23		23																
Fluoranthene	8.9		890																
Fluorene	0.54		54																
Indeno(1,2,3-cd)pyrene	0.98		98																
Naphthalene	*0.00054*		**0.054**																

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				DA-C18	DA-C19	DA-C2	DA-C20	DA-C21	DA-C22	DA-C23	DA-C24	DA-C27	DA-C28	DA-C29	DA-C3	DA-C30	DA-C31	DA-C32	DA-C35
Sample ID				1120-DA-C18	1120-DA-C19	1120-DA-C2	1120-DA-C20	1120-DA-C21	1120-DA-C22	1120-DA-C23	1120-DA-C24	1120-DA-C27	1120-DA-C28	1120-DA-C29-RISK	1120-DA-C3	1120-DA-C30	1120-DA-C31	1120-DA-C32	1120-DA-C35
Date	*SSL - Tapwater*	SSL - MCL	**SSL - Tapwater**	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000
Depth (feet)	*May 2018*	May 2018	**x100**	6.3 - 6.3	1.3 - 4.3	1.4 - 4.4	0.3 - 3.3	6.4 - 6.4	6 - 6	6.1 - 6.1	5.7 - 5.7	1.6 - 4.6	2.7 - 5.7	6.2 - 6.2	1.6 - 4.6	6.5 - 9.5	4.9 - 7.9	5 - 8	7.9 - 7.9
N-Nitrosodiphenylamine	*0.067*		**6.7**			*1.2*			*2.8* J				*0.8*	*6.5* JC	*0.48* J	*0.48*			
Phenol	*0.33*		33																
Pyrene	1.3		130																
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	*0.0015*		0.15																
4,4'-DDE	0.011		1.1																
4,4'-DDT	0.077		7.7																
Aldrin	*0.00015*		**0.015**											*0.014*		*0.015*			
Alpha-BHC	*0.000042*		**0.0042**																
Beta-BHC	*0.00015*		**0.015**																
Dieldrin	*0.000071*		0.0071																
Endrin	*0.0092*		0.92													*0.022*			
Gamma-BHC/Lindane	*0.00024*		**0.024**			***0.69*** F		***0.2***				***0.17***	***0.047***		***0.027***	***0.028***			
Heptachlor	*0.00012*		0.012																
Heptachlor epoxide	*0.000028*		0.0028																
Inorganics (mg/kg)																			
Aluminum	*3,000*		300,000																
Arsenic	*0.0015*	0.29	**0.15**																
Barium	*16*	82	1600																
Beryllium	1.9	3.2	190																
Cadmium	*0.069*	0.38	**6.9**	*1.4*		*1.4*				*2.3*			*0.82*		***7.3***				
Chromium	4000000	180000	4E+08	15	41	94	23	6.8	5.7	8.4	5.8	13	22	50	42	27	34	5.8	7.7
Cobalt	*0.027*		**2.7**																
Copper	*2.8*	46	280																
Iron	*35*		**3,500**																
Lead		14		2.6	2.8	3.9	6.1	2	2.5	2.8	2	1.7	3.6	2.6	4.3	3	1.8	2.4	2.5
Manganese	*2.8*		**280**																
Mercury	*0.0033*	0.1	**0.33**																
Nickel	*2.6*		260																
Silver	*0.08*		8																
Thallium	*0.0014*	0.14	**0.14**																
Tin	300		30000																
Vanadium	*8.6*		860																
Zinc	*37*		3700																
Other Analyses (mg/kg)																			
Formaldehyde	*0.000087*		**0.0087**																

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				DA-C4		DA-C5		DA-C6		DA-C7		DA-C8		DA-C9		DB-C10		DB-C11		DB-C12		DB-C13		DB-C14		DB-C15		DB-C16		DB-C3		DB-C4		DB-C5	
Sample ID	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	1120-DA-C4		1120-DA-C5		1120-DA-C6		1120-DA-C7		1120-DA-C8		1120-DA-C9		97598-DB-C10		97598-DB-C11		97598-DB-C12		97598-DB-C13		97598-DB-C14		97598-DB-C15		97598-DB-C16		97598-DB-C3		97598-DB-C4		97598-DB-C5	
Date				9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000	
Depth (feet)				1.7 - 4.7		0.3 - 2.3		0.5 - 3.5		7.2 - 7.2		6.9 - 6.9		0.3 - 0.3		0.8 - 3.8		6.2 - 6.2		5.9 - 5.9		1.9 - 4.9		-1.3 - 1.7		1.9 - 4.9		5.3 - 5.3		1.2 - 4.2		6.8 - 6.8		1.4 - 4.4	
Volatile Organics (mg/kg)																																			
1,1,1-Trichloroethane	0.28	0.07	28																			0.087													
1,1-Dichloroethene	*0.01*	0.0025	1																																
1,2,3-Trichlorobenzene	*0.0021*		0.21																			*0.16*													
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																			***0.79***				*0.071*	*J*								
1,2,4-Trimethylbenzene	*0.0081*		**0.81**																			***3.9***		*0.13*		*0.37*								*0.13*	
1,3,5-Trimethylbenzene	*0.0087*		**0.87**																			***2.6***		*0.06*		*0.25*								*0.085*	
2-Butanone	*0.12*		12																																
2-Hexanone	*0.00088*		0.088																																
Acetone	*0.29*		29																																
Benzene	*0.00023*	0.0026	**0.023**																																
Chloroform	*0.000061*	0.022	**0.0061**																																
Ethyl benzene	*0.0017*	0.78	**0.17**																			*0.12*													
Isopropylbenzene	*0.074*		7.4																			*0.47*													
Methylene chloride	*0.0027*	0.0013	**0.27**	*0.17*	*B*	*0.2*	*B*	*0.17*	*B*	*0.18*	*B*	*0.24*	*B*	*0.17*	*B*	***0.58***	***B***	***0.64***	***B***	*0.31*	*B*	***0.88***	***B***	*0.12*	*B*	***0.37***	***B***	*0.2*	*B*	***0.32***	***B***	*0.4*	*B*	*0.5*	*B*
Naphthalene	*0.00054*		**0.054**																			***0.62***													
Propylbenzene	*0.12*		12																			*0.56*													
sec-Butylbenzene	0.59		59																			0.15													
Styrene	*0.13*	0.11	13																			*0.29*													
Tetrachloroethene	0.0018	0.0023	0.18																																
Toluene	*0.076*	0.69	**7.6**									*1.5*																							
Trichloroethene	*0.0001*	0.0018	**0.01**																																
Xylene, o	*0.019*	9.9	1.9																			*0.45*				*0.042*	*J*								
Xylenes, Total	*0.019*	9.9	1.9																			*0.74*				*0.042*	*J*								
Semivolatile Organics (mg/kg)																																			
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																															***0.27***	***JF***
2-Methylnaphthalene	*0.019*		1.9																																
2-Methylphenol	0.075		7.5																																
4-Methylphenol	*0.15*		15																																
Anthracene	5.8		580																																
Benzaldehyde	*0.0041*		0.41																																
Benzo(a)anthracene	*0.011*		1.1																																
Benzo(a)pyrene	*0.029*	0.24	2.9																																
Benzo(b)fluoranthene	0.3		30																																
Benzo(k)fluoranthene	2.9		290																																
Benzoic Acid	1.5		150																							0.38	J							0.77	F
Bis(2-Ethylhexyl)phthalate	*1.3*	1.4	**130**	*3.9*		*1.7*		*19*		*7.6*		0.98		*2.3*		1.1	B					*16*		*1.4*	*B*	*3.5*	*B*	0.09	JB	0.86	B	0.81	B	*10*	*F*
Butylbenzylphthalate	0.24		24																																
Chrysene	9		900																																
Dibenz(a,h)anthracene	0.096		9.6																																
Diethylphthalate	0.61		61																																
Di-n-butylphthalate	*0.23*		**23**	*1.6*																		0.22	J											*0.48*	*F*
Di-n-octylphthalate	5.7		570																																
Diphenyl ether	*0.00034*		0.034																																
Diphenylamine	0.23		23																																
Fluoranthene	8.9		890																																
Fluorene	0.54		54																																
Indeno(1,2,3-cd)pyrene	0.98		98																																
Naphthalene	*0.00054*		**0.054**																			***0.26***	***J***												

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				DA-C4		DA-C5		DA-C6		DA-C7		DA-C8		DA-C9		DB-C10		DB-C11		DB-C12		DB-C13		DB-C14		DB-C15		DB-C16		DB-C3		DB-C4		DB-C5	
Sample ID	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	1120-DA-C4		1120-DA-C5		1120-DA-C6		1120-DA-C7		1120-DA-C8		1120-DA-C9		97598-DB-C10		97598-DB-C11		97598-DB-C12		97598-DB-C13		97598-DB-C14		97598-DB-C15		97598-DB-C16		97598-DB-C3		97598-DB-C4		97598-DB-C5	
Date				9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000	
Depth (feet)				1.7 - 4.7		0.3 - 2.3		0.5 - 3.5		7.2 - 7.2		6.9 - 6.9		0.3 - 0.3		0.8 - 3.8		6.2 - 6.2		5.9 - 5.9		1.9 - 4.9		-1.3 - 1.7		1.9 - 4.9		5.3 - 5.3		1.2 - 4.2		6.8 - 6.8		1.4 - 4.4	
N-Nitrosodiphenylamine	*0.067*		**6.7**																			*1.6*				*0.33*						*0.12*	*J*	*1.4*	*F*
Phenol	*0.33*		33																																
Pyrene	1.3		130																																
Pesticides/PCBs (mg/kg)																																			
4,4'-DDD	*0.0015*		0.15																																
4,4'-DDE	0.011		1.1																																
4,4'-DDT	0.077		7.7																																
Aldrin	*0.00015*		**0.015**																																
Alpha-BHC	*0.000042*		**0.0042**																																
Beta-BHC	*0.00015*		**0.015**													***0.063***																			
Dieldrin	*0.000071*		0.0071																																
Endrin	*0.0092*		0.92																																
Gamma-BHC/Lindane	*0.00024*		**0.024**					***0.074***		*0.02*												***0.12***		*0.02*		***0.13***						***0.028***		***0.23***	
Heptachlor	*0.00012*		0.012																																
Heptachlor epoxide	*0.000028*		0.0028																																
Inorganics (mg/kg)																																			
Aluminum	*3,000*		300,000																																
Arsenic	*0.0015*	0.29	**0.15**																																
Barium	*16*	82	1600																																
Beryllium	1.9	3.2	190																																
Cadmium	*0.069*	0.38	**6.9**	*0.32*						*0.35*				*0.71*																					
Chromium	4000000	180000	4E+08	43		52		60		73		5.1		4.5		25		8.7		7.1		39		21		79		9.8		4		27		88	
Cobalt	*0.027*		**2.7**																																
Copper	*2.8*	46	280																																
Iron	*35*		**3,500**																																
Lead		14		10		7.1		4.4		2.5		2.1		1.5						2.1	J	4.2		4		5.5		3.6		3.9				3.6	
Manganese	*2.8*		**280**																																
Mercury	*0.0033*	0.1	**0.33**																																
Nickel	*2.6*		260																																
Silver	*0.08*		8																																
Thallium	*0.0014*	0.14	**0.14**																																
Tin	300		30000																																
Vanadium	*8.6*		860																																
Zinc	*37*		3700																																
Other Analyses (mg/kg)																																			
Formaldehyde	*0.000087*		**0.0087**																																

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				DB-C6		DB-C7		DB-C8		DB-C9		DRMA-COMP-A		DRMA-COMP-B		DRMB-COMP		G1-DRMB		G2-DRMB		G3-DRMB		G4-DRMB		GA1-DRMA		GA2-DRMA		GA3-DRMA		GA4-DRMA	
Sample ID				97598-DB-C6		97598-DB-C7		97598-DB-C8		97598-DB-C9		DRMA (COMP A)		DRMA (COMP B)		DRMB (COMP)		G1-DRMB		G2-DRMB		G3-DRMB		G4-DRMB		GA1-DRMA		GA2-DRMA		GA3-DRMA		GA4-DRMA	
Date	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	8/10/2000		8/10/2000		8/10/2000		8/10/2000		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996	
Depth (feet)				1.4 - 4.4		6 - 6		5.7 - 5.7		1.6 - 4.6		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1	
Volatile Organics (mg/kg)																																	
1,1,1-Trichloroethane	0.28	0.07	28															0.013		0.016		0.01		0.008		0.002	J					0.008	
1,1-Dichloroethene	*0.01*	0.0025	1																														
1,2,3-Trichlorobenzene	*0.0021*		0.21	*0.15*																													
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**	***0.69***																													
1,2,4-Trimethylbenzene	*0.0081*		**0.81**	***4.6***																													
1,3,5-Trimethylbenzene	*0.0087*		**0.87**	***2.9***																													
2-Butanone	*0.12*		12															0.001	J	0.004	J												
2-Hexanone	*0.00088*		0.088																														
Acetone	*0.29*		29															0.008	JB	0.022	B	0.009	JB	0.01	JB	0.006	JB	0.007	JB	0.01	JB	0.021	B
Benzene	*0.00023*	0.0026	**0.023**																														
Chloroform	*0.000061*	0.022	**0.0061**																														
Ethyl benzene	*0.0017*	0.78	**0.17**	*0.16*																													
Isopropylbenzene	*0.074*		7.4	*0.65*																													
Methylene chloride	*0.0027*	0.0013	**0.27**	*0.3*	*B*	*0.15*	*B*	*0.29*	*B*	*0.42*	*B*																						
Naphthalene	*0.00054*		**0.054**																														
Propylbenzene	*0.12*		12	*0.59*																													
sec-Butylbenzene	0.59		59	0.21																													
Styrene	*0.13*	0.11	13	*0.43*																													
Tetrachloroethene	0.0018	0.0023	0.18																														
Toluene	*0.076*	0.69	**7.6**	*0.094*																		0.0007	J										
Trichloroethene	*0.0001*	0.0018	**0.01**																														
Xylene, o	*0.019*	9.9	1.9	*0.53*																													
Xylenes, Total	*0.019*	9.9	1.9	*0.88*																													
Semivolatile Organics (mg/kg)																																	
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**													*0.1*	*J*																
2-Methylnaphthalene	*0.019*		1.9																														
2-Methylphenol	0.075		7.5													0.049	J																
4-Methylphenol	*0.15*		15													*0.34*	*J*																
Anthracene	5.8		580													0.02	J																
Benzaldehyde	*0.0041*		0.41																														
Benzo(a)anthracene	*0.011*		1.1													*0.047*	*J*																
Benzo(a)pyrene	*0.029*	0.24	2.9																														
Benzo(b)fluoranthene	0.3		30																														
Benzo(k)fluoranthene	2.9		290																														
Benzoic Acid	1.5		150	1.1												0.64	J																
Bis(2-Ethylhexyl)phthalate	*1.3*	1.4	**130**	8.6								1.3	JB	*5.3*	*B*	*2.9*	*B*																
Butylbenzylphthalate	0.24		24																														
Chrysene	9		900													0.052	J																
Dibenz(a,h)anthracene	0.096		9.6																														
Diethylphthalate	0.61		61																														
Di-n-butylphthalate	*0.23*		**23**	*0.99*								0.2	JB	0.13	JB	*0.33*	*JB*																
Di-n-octylphthalate	5.7		570																														
Diphenyl ether	*0.00034*		0.034																														
Diphenylamine	0.23		23																														
Fluoranthene	8.9		890											0.045	J	0.11	J																
Fluorene	0.54		54																														
Indeno(1,2,3-cd)pyrene	0.98		98																														
Naphthalene	*0.00054*		**0.054**													***0.099***	***J***																

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				DB-C6		DB-C7		DB-C8		DB-C9		DRMA-COMP-A		DRMA-COMP-B		DRMB-COMP		G1-DRMB		G2-DRMB		G3-DRMB		G4-DRMB		GA1-DRMA		GA2-DRMA		GA3-DRMA		GA4-DRMA	
Sample ID				97598-DB-C6		97598-DB-C7		97598-DB-C8		97598-DB-C9		DRMA (COMP A)		DRMA (COMP B)		DRMB (COMP)		G1-DRMB		G2-DRMB		G3-DRMB		G4-DRMB		GA1-DRMA		GA2-DRMA		GA3-DRMA		GA4-DRMA	
Date	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	8/10/2000		8/10/2000		8/10/2000		8/10/2000		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996	
Depth (feet)				1.4 - 4.4		6 - 6		5.7 - 5.7		1.6 - 4.6		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1	
N-Nitrosodiphenylamine	*0.067*		**6.7**	*0.7*								*2.8*	*J*	*2.7*		*1*																	
Phenol	*0.33*		33													*2.4*																	
Pyrene	1.3		130													0.12	J																
Pesticides/PCBs (mg/kg)																																	
4,4'-DDD	*0.0015*		0.15									*0.0034*	*J*	*0.0017*	*J*	*0.017*	*J*																
4,4'-DDE	0.011		1.1											0.0019	J																		
4,4'-DDT	0.077		7.7									0.0031	J	0.0064		0.03																	
Aldrin	*0.00015*		**0.015**									*0.00046*	*J*	0.0012	J																		
Alpha-BHC	*0.000042*		**0.0042**									***0.005***		*0.0016*	*J*																		
Beta-BHC	*0.00015*		**0.015**																														
Dieldrin	*0.000071*		0.0071											*0.0069*																			
Endrin	*0.0092*		0.92																														
Gamma-BHC/Lindane	*0.00024*		**0.024**	***0.66***								*0.0047*		*0.0034*		***0.17***																	
Heptachlor	*0.00012*		0.012											*0.00087*	*J*																		
Heptachlor epoxide	*0.000028*		0.0028											*0.0028*																			
Inorganics (mg/kg)																																	
Aluminum	*3,000*		300,000									*5,560*		*12,900*		*4,070*																	
Arsenic	*0.0015*	0.29	**0.15**									***9.7***		***30.9***		***3.8***																	
Barium	*16*	82	1600									*22.3*	*B*	*43.2*		13.9	B																
Beryllium	1.9	3.2	190									0.32	B	0.61	B																		
Cadmium	*0.069*	0.38	**6.9**																														
Chromium	4000000	180000	4E+08	240		6.8		5		15		24.1	*N	40.2	*N	52.6	*N																
Cobalt	*0.027*		**2.7**									***3.9***	***B***	***11.3***		*1.9*	*B*																
Copper	*2.8*	46	280									*9.7*		*21.7*		*6.2*																	
Iron	*35*		**3,500**									***7,580***		***17,200***		***3,720***																	
Lead		14		4.2				1.8	J	3.5		9.4		17		19.5																	
Manganese	*2.8*		**280**									*109*		***351***		*44.5*																	
Mercury	*0.0033*	0.1	**0.33**									*0.11*				***0.38***																	
Nickel	*2.6*		260									*10.2*		*30.1*		*3.5*	*B*																
Silver	*0.08*		8																														
Thallium	*0.0014*	0.14	**0.14**									***1.8***	***B***	***1.8***	***B***																		
Tin	300		30000																														
Vanadium	*8.6*		860									*11.3*		*24.9*		7.2	B																
Zinc	*37*		3700									*37.2*	*E*	*63*	*E*	*41.4*	*E*																
Other Analyses (mg/kg)																																	
Formaldehyde	*0.000087*		**0.0087**																														

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				GB1-DRMA		GB2-DRMA		GB3-DRMA		GB4-DRMA		OSFILL-450		RSO-14		RSO-15		RSO-15		SD-C24		SD-C24B		SS-420		SS-421		SS-422		SS-423		SS-424		SS-425	
Sample ID	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	GB1-DRMA		GB2-DRMA		GB3-DRMA		GB4-DRMA		1130-OSFILL-450		RSO-14-S1 (0-3 FT)		RSO-15-S1 (0-3 FT)		RSO-15-S1 (0-3)		1140-SD-C24		1140-SD-C24B-RISK		OC-SS-420-0.0/1.0-XXX		OC-SS-421-0.0/1.0-XXX		OC-SS-422-0.0/1.0-XXX		OC-SS-423-0.0/1.0-XXX		OC-SS-424-0.0/1.0-XXX		OC-SS-425-0.0/1.0-XXX	
Date				12/15/1996		12/15/1996		12/15/1996		12/15/1996		10/13/2000		1/24/2000		1/24/2000		1/24/2000		10/18/2000		10/18/2000		9/15/2009		9/15/2009		9/15/2009		9/15/2009		9/15/2009		9/15/2009	
Depth (feet)				0 - 1		0 - 1		0 - 1		0 - 1		0.5 - 0.5		-0.87 - 2.13		1.52 - 4.52		1.52 - 4.52		3 - 3		2 - 2		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1	
Volatile Organics (mg/kg)																																			
1,1,1-Trichloroethane	0.28	0.07	28	0.009				0.01		0.018																									
1,1-Dichloroethene	*0.01*	0.0025	1																																
1,2,3-Trichlorobenzene	*0.0021*		0.21																																
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																																
1,2,4-Trimethylbenzene	*0.0081*		**0.81**																																
1,3,5-Trimethylbenzene	*0.0087*		**0.87**																																
2-Butanone	*0.12*		12																																
2-Hexanone	*0.00088*		0.088																																
Acetone	*0.29*		29	0.01	JB	0.01	B	0.013	B	0.019																									
Benzene	*0.00023*	0.0026	**0.023**																																
Chloroform	*0.000061*	0.022	**0.0061**																																
Ethyl benzene	*0.0017*	0.78	**0.17**																																
Isopropylbenzene	*0.074*		7.4																																
Methylene chloride	*0.0027*	0.0013	**0.27**																																
Naphthalene	*0.00054*		**0.054**																																
Propylbenzene	*0.12*		12																																
sec-Butylbenzene	0.59		59																																
Styrene	*0.13*	0.11	13																																
Tetrachloroethene	0.0018	0.0023	0.18																																
Toluene	*0.076*	0.69	**7.6**							0.0009	J																								
Trichloroethene	*0.0001*	0.0018	**0.01**																																
Xylene, o	*0.019*	9.9	1.9																																
Xylenes, Total	*0.019*	9.9	1.9																																
Semivolatile Organics (mg/kg)																																			
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																																
2-Methylnaphthalene	*0.019*		1.9																																
2-Methylphenol	0.075		7.5																																
4-Methylphenol	*0.15*		15																																
Anthracene	5.8		580																																
Benzaldehyde	*0.0041*		0.41																					*0.015*	*J*					*0.017*	*J*				
Benzo(a)anthracene	*0.011*		1.1																																
Benzo(a)pyrene	*0.029*	0.24	2.9																					0.011	J										
Benzo(b)fluoranthene	0.3		30																																
Benzo(k)fluoranthene	2.9		290																																
Benzoic Acid	1.5		150																																
Bis(2-Ethylhexyl)phthalate	*1.3*	1.4	**130**															*9.5*		***753***	***C***	***243.5***	***C***	0.52	EB	*2*	*EB*	0.41	EB	0.45	EB	0.38	EB	0.66	EB
Butylbenzylphthalate	0.24		24																																
Chrysene	9		900																									0.012	J						
Dibenz(a,h)anthracene	0.096		9.6																																
Diethylphthalate	0.61		61																																
Di-n-butylphthalate	*0.23*		**23**																																
Di-n-octylphthalate	5.7		570																																
Diphenyl ether	*0.00034*		0.034																							*0.015*	*J*							*0.015*	*J*
Diphenylamine	0.23		23																					0.014	J										
Fluoranthene	8.9		890																					0.012	J	0.02	J	0.016	J						
Fluorene	0.54		54																																
Indeno(1,2,3-cd)pyrene	0.98		98																																
Naphthalene	*0.00054*		**0.054**																																

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				GB1-DRMA		GB2-DRMA		GB3-DRMA		GB4-DRMA		OSFILL-450		RSO-14		RSO-15		RSO-15		SD-C24		SD-C24B		SS-420		SS-421		SS-422		SS-423		SS-424		SS-425	
Sample ID	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	GB1-DRMA		GB2-DRMA		GB3-DRMA		GB4-DRMA		1130-OSFILL-450		RSO-14-S1 (0-3 FT)		RSO-15-S1 (0-3 FT)		RSO-15-S1 (0-3)		1140-SD-C24		1140-SD-C24B-RISK		OC-SS-420-0.0/1.0-XXX		OC-SS-421-0.0/1.0-XXX		OC-SS-422-0.0/1.0-XXX		OC-SS-423-0.0/1.0-XXX		OC-SS-424-0.0/1.0-XXX		OC-SS-425-0.0/1.0-XXX	
Date				12/15/1996		12/15/1996		12/15/1996		12/15/1996		10/13/2000		1/24/2000		1/24/2000		1/24/2000		10/18/2000		10/18/2000		9/15/2009		9/15/2009		9/15/2009		9/15/2009		9/15/2009		9/15/2009	
Depth (feet)				0 - 1		0 - 1		0 - 1		0 - 1		0.5 - 0.5		-0.87 - 2.13		1.52 - 4.52		1.52 - 4.52		3 - 3		2 - 2		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1	
N-Nitrosodiphenylamine	*0.067*		**6.7**																					0.013	JEB	0.033	JEB			0.021	JEB			0.036	JEB
Phenol	*0.33*		33																																
Pyrene	1.3		130																					0.013	J	0.016	J	0.014	J						
Pesticides/PCBs (mg/kg)																																			
4,4'-DDD	*0.0015*		0.15																																
4,4'-DDE	0.011		1.1																																
4,4'-DDT	0.077		7.7																																
Aldrin	*0.00015*		**0.015**																																
Alpha-BHC	*0.000042*		**0.0042**																																
Beta-BHC	*0.00015*		**0.015**																																
Dieldrin	*0.000071*		0.0071																																
Endrin	*0.0092*		0.92																																
Gamma-BHC/Lindane	*0.00024*		**0.024**																																
Heptachlor	*0.00012*		0.012																																
Heptachlor epoxide	*0.000028*		0.0028																																
Inorganics (mg/kg)																																			
Aluminum	*3,000*		300,000											*13,000*		*5,500*								*6,600*		*6,800*		*7,400*		*7,800*		*6,200*		*7,500*	
Arsenic	*0.0015*	0.29	**0.15**									***10***												***9.5***		***8.4***		***5.6***		***12***		***7.5***		***8.4***	
Barium	*16*	82	1600									9.8		*83*		13								*43*		*52*		*81*		*42*		*34*		*51*	
Beryllium	1.9	3.2	190													0.21								0.24		0.25	J	0.27	J	0.29	J	0.33		0.29	
Cadmium	*0.069*	0.38	**6.9**																					*0.33*		*0.34*		*0.26*	*J*	*0.51*		*0.26*		*0.42*	
Chromium	4000000	180000	4E+08									9.4		65		28				1600		390		48		52		36		60		55		75	
Cobalt	*0.027*		**2.7**											***15***		***2.8***								***3.5***		***3.5***		***3.5***		***4.6***		***3.8***		***4.1***	
Copper	*2.8*	46	280																					*7.7*		*7.7*		*7.8*		*8.2*		*7.9*		*8.3*	
Iron	*35*		**3,500**											***17,000***		***8,200***								***9,300***		***9,000***		***8,800***		***13,000***		***9,100***		***10,000***	
Lead		14										3.3		11		10								5.8		5.3		6		5.7		6.3		6.3	
Manganese	*2.8*		**280**											*200*		*88*								*110*		*110*		*120*		*160*		*100*		*140*	
Mercury	*0.0033*	0.1	**0.33**											*0.051*																					
Nickel	*2.6*		260											*35*		*6*								*7.9*		*8*		*7.9*		*9.6*		*10*		*8.7*	
Silver	*0.08*		8																					*0.42*	*J*	*0.61*	*J*	*0.35*	*J*	*0.63*	*J*	*0.76*		*1*	
Thallium	*0.0014*	0.14	**0.14**																																
Tin	300		30000																					18	J	20	J	14	J	24	J	22	J	30	J
Vanadium	*8.6*		860											*36*		*14*								*12*		*13*		*12*		*15*		*12*		*15*	
Zinc	*37*		3700											36		19								18		18		17		19		20		20	
Other Analyses (mg/kg)																																			
Formaldehyde	*0.000087*		**0.0087**																									***0.096***	***J***						

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				SS-426		SS-429		SS-430		SS-431		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE	
Sample ID	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	OC-SS-426-0.0/1.0-XXX		OC-SS-429-0.0/1.0-XXX		OC-SS-430-0.0/1.0-XXX		OC-SS-431-0.0/1.0-XXX		1120-DA-SP-3A		1120-DA-SP-3B		1120-DA-SP-3C		1120-DA-SP-3D		1120-DA-SP-3E		1120-DA-SP-4		1120-DA-SP-5A		1120-DA-SP-5B		1120-DA-SP-5C		1120-DA-SP-6A		1120-DA-SP-6B		1120-DA-SP-6C	
Date				9/16/2009		9/16/2009		9/16/2009		9/16/2009		8/26/2000		8/26/2000		8/26/2000		9/14/2000		9/5/2000		9/5/2000		9/14/2000		9/14/2000		9/14/2000		9/22/2000		9/22/2000		9/22/2000	
Depth (feet)				0 - 1		0 - 1		0 - 1		0 - 1																							
Volatile Organics (mg/kg)																																	
1,1,1-Trichloroethane	0.28	0.07	28																														
1,1-Dichloroethene	*0.01*	0.0025	1																														
1,2,3-Trichlorobenzene	*0.0021*		0.21																														
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																														
1,2,4-Trimethylbenzene	*0.0081*		**0.81**																					*0.16*									
1,3,5-Trimethylbenzene	*0.0087*		**0.87**																					*0.16*									
2-Butanone	*0.12*		12																														
2-Hexanone	*0.00088*		0.088																														
Acetone	*0.29*		29																														
Benzene	*0.00023*	0.0026	**0.023**																														
Chloroform	*0.000061*	0.022	**0.0061**																														
Ethyl benzene	*0.0017*	0.78	**0.17**																														
Isopropylbenzene	*0.074*		7.4																														
Methylene chloride	*0.0027*	0.0013	**0.27**																											*0.15*	*B*			*0.15*	*B*
Naphthalene	*0.00054*		**0.054**																														
Propylbenzene	*0.12*		12																														
sec-Butylbenzene	0.59		59																														
Styrene	*0.13*	0.11	13																														
Tetrachloroethene	0.0018	0.0023	0.18																														
Toluene	*0.076*	0.69	**7.6**											*0.11*										*0.14*	*J*	*1.1*	*C*	***14***					
Trichloroethene	*0.0001*	0.0018	**0.01**																														
Xylene, o	*0.019*	9.9	1.9																														
Xylenes, Total	*0.019*	9.9	1.9																														
Semivolatile Organics (mg/kg)																																	
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																														
2-Methylnaphthalene	*0.019*		1.9																														
2-Methylphenol	0.075		7.5																														
4-Methylphenol	*0.15*		15																														
Anthracene	5.8		580																														
Benzaldehyde	*0.0041*		0.41					*0.06*																									
Benzo(a)anthracene	*0.011*		1.1			*0.019*	*JEB*	*0.017*	*J*																								
Benzo(a)pyrene	*0.029*	0.24	2.9			0.014	JEB	0.017	J																								
Benzo(b)fluoranthene	0.3		30			0.023	JEB	0.027	J	0.014	J																						
Benzo(k)fluoranthene	2.9		290																														
Benzoic Acid	1.5		150																														
Bis(2-Ethylhexyl)phthalate	*1.3*	1.4	**130**	0.62	EB	0.33	EB	0.4	EB	*2*	*EB*	*1.8*		*3.9*		*2*		*17*		*23*		*5.8*		*31*		***287***		***856***	***C***	***622***	***C***	***511***	***C***	1.3	
Butylbenzylphthalate	0.24		24																														
Chrysene	9		900			0.021	JEB	0.021	J																								
Dibenz(a,h)anthracene	0.096		9.6																														
Diethylphthalate	0.61		61																														
Di-n-butylphthalate	*0.23*		**23**																													***32***	***JC***		
Di-n-octylphthalate	5.7		570																														
Diphenyl ether	*0.00034*		0.034																														
Diphenylamine	0.23		23							0.02	J																						
Fluoranthene	8.9		890	0.012	J	0.042		0.041	J	0.012	J																						
Fluorene	0.54		54	0.02	J					0.022	J																						
Indeno(1,2,3-cd)pyrene	0.98		98																														
Naphthalene	*0.00054*		**0.054**																														

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				SS-426		SS-429		SS-430		SS-431		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE	
Sample ID	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	OC-SS-426-0.0/1.0-XXX		OC-SS-429-0.0/1.0-XXX		OC-SS-430-0.0/1.0-XXX		OC-SS-431-0.0/1.0-XXX		1120-DA-SP-3A		1120-DA-SP-3B		1120-DA-SP-3C		1120-DA-SP-3D		1120-DA-SP-3E		1120-DA-SP-4		1120-DA-SP-5A		1120-DA-SP-5B		1120-DA-SP-5C		1120-DA-SP-6A		1120-DA-SP-6B		1120-DA-SP-6C	
Date				9/16/2009		9/16/2009		9/16/2009		9/16/2009		8/26/2000		8/26/2000		8/26/2000		9/14/2000		9/5/2000		9/5/2000		9/14/2000		9/14/2000		9/14/2000		9/22/2000		9/22/2000		9/22/2000	
Depth (feet)				0 - 1		0 - 1		0 - 1		0 - 1																							
N-Nitrosodiphenylamine	*0.067*		**6.7**	0.014	JEB	0.012	JEB	0.055	EB	0.036	JEB											*1.1*		*3.2*		***19***	***J***			***37***	***C***	***61***	***C***		
Phenol	*0.33*		33																														
Pyrene	1.3		130			0.047		0.032	J																								
Pesticides/PCBs (mg/kg)																																	
4,4'-DDD	*0.0015*		0.15																														
4,4'-DDE	0.011		1.1																														
4,4'-DDT	0.077		7.7																														
Aldrin	*0.00015*		**0.015**																														
Alpha-BHC	*0.000042*		**0.0042**									***0.24***		***0.43***		***0.015***						***0.014***	***C***			***0.024***								
Beta-BHC	*0.00015*		**0.015**									***0.13***		***0.15***		*0.0083*																	
Dieldrin	*0.000071*		0.0071																														
Endrin	*0.0092*		0.92																														
Gamma-BHC/Lindane	*0.00024*		**0.024**											*0.011*										*0.024*		*0.021*							
Heptachlor	*0.00012*		0.012																														
Heptachlor epoxide	*0.000028*		0.0028																														
Inorganics (mg/kg)																																	
Aluminum	*3,000*		300,000	*7,100*		*8,000*		*8,000*		*7,800*																							
Arsenic	*0.0015*	0.29	**0.15**	***3.8***		***8.5***		***23***		***8.4***																							
Barium	*16*	82	1600	*29*		*80*		*56*		*42*																							
Beryllium	1.9	3.2	190	0.29		0.28	J	0.31	J	0.29																							
Cadmium	*0.069*	0.38	**6.9**	*0.41*		*0.41*		*0.92*		*0.79*								*0.35*						*0.74*		*3*		*3.2*		*0.79*		*0.46*			
Chromium	4000000	180000	4E+08	28		87		66		59		37		21		11		39		24		11		38		37		25		68		20		10	
Cobalt	*0.027*		**2.7**	***5.3***		***4.1***		***5.6***		***4.2***																							
Copper	*2.8*	46	280	*7.4*		*8.4*		*8.4*		*9.3*																							
Iron	*35*		**3,500**	***13,000***		***10,000***		***20,000***		***10,000***																							
Lead		14		4.5		5.4		8.2		7.1		14		7.1		5.8		6.3		6		3.6		6.2		5.4		3.7		5.6		4.2		6.6	
Manganese	*2.8*		**280**	*250*		*130*		***370***		*140*																							
Mercury	*0.0033*	0.1	**0.33**							*0.031*	*J*																						
Nickel	*2.6*		260	*7.5*		*8.8*		*9.8*		*10*																							
Silver	*0.08*		8	*0.13*	*J*	*1.2*		*0.67*	*J*	*0.7*																							
Thallium	*0.0014*	0.14	**0.14**																														
Tin	300		30000	10	J	36	J	26	J	24	J																						
Vanadium	*8.6*		860	*18*		*14*		*17*		*14*																							
Zinc	*37*		3700	23		18		19		21																							
Other Analyses (mg/kg)																																	
Formaldehyde	*0.000087*		**0.0087**			***0.17***				***0.1***																							

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		TP-21		WD-1		WD-2	
Sample ID	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	1120-DA-SP-8A		1120-DA-SP-8B		1120-DA-SP-8C		1120-DA-SP-8D		1120-DA-SP-8E		1120-DA-SP-8F		1120-DA-SP-8G		1120-DA-SP-8H		97598-BAY1-8/7		97598-BAY4-8/7		97598-DB-SP-1		97598-DB-SP-2E		97598-DB-SP-2W		TP-21-SN8		WD 1 (West Ditch 1)		WD 2 (West Ditch 2)	
Date				9/26/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000		8/8/2000		8/8/2000		8/11/2000		8/11/2000		8/11/2000		10/8/1991		11/4/1999		11/4/1999	
Depth (feet)																															0 - 0		0 - 0	
Volatile Organics (mg/kg)																																			
1,1,1-Trichloroethane	0.28	0.07	28																																
1,1-Dichloroethene	*0.01*	0.0025	1																																
1,2,3-Trichlorobenzene	*0.0021*		0.21																					*0.13*		*0.09*									
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																	***0.13***		*0.045*		***0.72***		***0.49***		*0.079*							
1,2,4-Trimethylbenzene	*0.0081*		**0.81**																	*0.17*		*0.061*		***1.3***		***0.85***		*0.11*							
1,3,5-Trimethylbenzene	*0.0087*		**0.87**																	*0.13*		*0.051*		***0.91***		*0.61*		*0.069*							
2-Butanone	*0.12*		12																																
2-Hexanone	*0.00088*		0.088																																
Acetone	*0.29*		29																																
Benzene	*0.00023*	0.0026	**0.023**																																
Chloroform	*0.000061*	0.022	**0.0061**																																
Ethyl benzene	*0.0017*	0.78	**0.17**							***0.39***		*0.11*	*J*																						
Isopropylbenzene	*0.074*		7.4																					*0.17*		*0.1*									
Methylene chloride	*0.0027*	0.0013	**0.27**																																
Naphthalene	*0.00054*		**0.054**																																
Propylbenzene	*0.12*		12																					*0.15*		0.099									
sec-Butylbenzene	0.59		59																																
Styrene	*0.13*	0.11	13									*0.81*												0.13		0.096									
Tetrachloroethene	0.0018	0.0023	0.18																																
Toluene	*0.076*	0.69	**7.6**					*0.29*		*7.1*		*5.3*						*0.68*						*0.083*		0.028	J			0.0003	J				
Trichloroethene	*0.0001*	0.0018	**0.01**																																
Xylene, o	*0.019*	9.9	1.9							*0.4*														*0.14*		*0.1*									
Xylenes, Total	*0.019*	9.9	1.9																																
Semivolatile Organics (mg/kg)																																			
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																	*0.063*	*J*	*0.099*	*J*	***0.61***	***F***	***0.45***		***0.39***							
2-Methylnaphthalene	*0.019*		1.9																																
2-Methylphenol	0.075		7.5																																
4-Methylphenol	*0.15*		15																																
Anthracene	5.8		580																																
Benzaldehyde	*0.0041*		0.41																																
Benzo(a)anthracene	*0.011*		1.1																																
Benzo(a)pyrene	*0.029*	0.24	2.9																																
Benzo(b)fluoranthene	0.3		30																																
Benzo(k)fluoranthene	2.9		290																																
Benzoic Acid	1.5		150																			0.63		1.4	F	0.94		1.1							
Bis(2-Ethylhexyl)phthalate	*1.3*	1.4	**130**	***244***		***1087***		***2356***		*26*		***365***		***501***		***679***		***676***		*6.7*		*6.9*		*9.1*	*BF*	*43*	*F*	*29*	*F*	***1100***	***J***				
Butylbenzylphthalate	0.24		24																																
Chrysene	9		900																																
Dibenz(a,h)anthracene	0.096		9.6																							0.096	J								
Diethylphthalate	0.61		61																																
Di-n-butylphthalate	*0.23*		**23**			***87***																		*1.8*	*F*	*0.91*		*0.58*							
Di-n-octylphthalate	5.7		570																											0.88	J				
Diphenyl ether	*0.00034*		0.034																																
Diphenylamine	0.23		23																																
Fluoranthene	8.9		890																																
Fluorene	0.54		54																																
Indeno(1,2,3-cd)pyrene	0.98		98																																
Naphthalene	*0.00054*		**0.054**																																

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		TP-21		WD-1		WD-2	
Sample ID	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	1120-DA-SP-8A		1120-DA-SP-8B		1120-DA-SP-8C		1120-DA-SP-8D		1120-DA-SP-8E		1120-DA-SP-8F		1120-DA-SP-8G		1120-DA-SP-8H		97598-BAY1-8/7		97598-BAY4-8/7		97598-DB-SP-1		97598-DB-SP-2E		97598-DB-SP-2W		TP-21-SN8		WD 1 (West Ditch 1)		WD 2 (West Ditch 2)	
Date				9/26/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000		8/8/2000		8/8/2000		8/11/2000		8/11/2000		8/11/2000		10/8/1991		11/4/1999		11/4/1999	
Depth (feet)																														0 - 0		0 - 0	
N-Nitrosodiphenylamine	*0.067*		**6.7**			***86***						***24***	***J***			***473***				*3.5*	*#*	*1.7*	*#*	*0.99*	*#F*	*4.5*	*#*	*3.4*	*#*						
Phenol	*0.33*		33																							0.098	J	*0.36*							
Pyrene	1.3		130																																
Pesticides/PCBs (mg/kg)																																			
4,4'-DDD	*0.0015*		0.15																																
4,4'-DDE	0.011		1.1																	0.0069		0.0049													
4,4'-DDT	0.077		7.7																																
Aldrin	*0.00015*		**0.015**	*0.014*														***0.059***																	
Alpha-BHC	*0.000042*		**0.0042**	***0.025***				***0.048***										***0.1***																	
Beta-BHC	*0.00015*		**0.015**															***0.033***																	
Dieldrin	*0.000071*		0.0071																			*0.0031*		*0.0033*		*0.0053*		*0.0045*							
Endrin	*0.0092*		0.92																																
Gamma-BHC/Lindane	*0.00024*		**0.024**			***0.18***		*0.02*						***0.18***		***0.063***		***0.031***		***0.18***		***0.25***		***1.2***	***F***	***0.37***		***0.42***							
Heptachlor	*0.00012*		0.012																																
Heptachlor epoxide	*0.000028*		0.0028																																
Inorganics (mg/kg)																																			
Aluminum	*3,000*		300,000																											*3,100*	*J*				
Arsenic	*0.0015*	0.29	**0.15**																											***4***	***J***				
Barium	*16*	82	1600																											11					
Beryllium	1.9	3.2	190																																
Cadmium	*0.069*	0.38	**6.9**	*1*		*0.85*		***54***		*0.34*		*3.3*		*1.8*		***14***		***7.3***																	
Chromium	4000000	180000	4E+08	36		20		27		24		84		650		200		41		47		70		54		75		46		110					
Cobalt	*0.027*		**2.7**																																
Copper	*2.8*	46	280																											*5*					
Iron	*35*		**3,500**																											*2,600*					
Lead		14		4.7		4.3		4.6		6.3		3.5		4.1		3		4		7.2		8.2		6.8		7.9		5.6							
Manganese	*2.8*		**280**																											*49*					
Mercury	*0.0033*	0.1	**0.33**																											***0.91***					
Nickel	*2.6*		260																																
Silver	*0.08*		8																																
Thallium	*0.0014*	0.14	**0.14**																																
Tin	300		30000																																
Vanadium	*8.6*		860																											*12*					
Zinc	*37*		3700																											*38*					
Other Analyses (mg/kg)																																			
Formaldehyde	*0.000087*		**0.0087**																																

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				WD-C1		WD-C10		WD-C10B		WD-C11		WD-C11		WD-C11B		WD-C11B		WD-C12		WD-C12B		WD-C13		WD-C13B		WD-C14		WD-C14B		WD-C15		WD-C15B		WD-C16	
Sample ID	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	1140-WD-C1		1140-WD-C10		1140-WD-C10B		1140-WD-C11		1140-WD-C11 (156878)		1140-WD-C11B		1140-WD-C11B (157182)		1140-WD-C12		1140-WD-C12B		1140-WD-C13		1140-WD-C13B		1140-WD-C14		1140-WD-C14B		1140-WD-C15		1140-WD-C15B		1140-WD-C16	
Date				9/19/2000		9/19/2000		9/19/2000		9/19/2000		9/19/2000		9/19/2000		9/21/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/13/2000	
Depth (feet)				8.3 - 8.3		6.6 - 6.6		5.6 - 5.6		5.6 - 5.6		5.6 - 5.6		5.6 - 5.6		5.6 - 5.6		6.1 - 6.1		5.2 - 5.2		6.1 - 6.1		5.2 - 5.2		7.6 - 7.6		6.9 - 6.9		10 - 10		9.3 - 9.3		10.1 - 10.1	
Volatile Organics (mg/kg)																																			
1,1,1-Trichloroethane	0.28	0.07	28																																
1,1-Dichloroethene	*0.01*	0.0025	1																																
1,2,3-Trichlorobenzene	*0.0021*		0.21																																
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																																
1,2,4-Trimethylbenzene	*0.0081*		**0.81**																																
1,3,5-Trimethylbenzene	*0.0087*		**0.87**																																
2-Butanone	*0.12*		12																																
2-Hexanone	*0.00088*		0.088																																
Acetone	*0.29*		29																																
Benzene	*0.00023*	0.0026	**0.023**																																
Chloroform	*0.000061*	0.022	**0.0061**																																
Ethyl benzene	*0.0017*	0.78	**0.17**																																
Isopropylbenzene	*0.074*		7.4																																
Methylene chloride	*0.0027*	0.0013	**0.27**							*0.18*	*B*																					***0.59***	***B***		
Naphthalene	*0.00054*		**0.054**																																
Propylbenzene	*0.12*		12																																
sec-Butylbenzene	0.59		59																																
Styrene	*0.13*	0.11	13																																
Tetrachloroethene	0.0018	0.0023	0.18																																
Toluene	*0.076*	0.69	**7.6**																																
Trichloroethene	*0.0001*	0.0018	**0.01**																																
Xylene, o	*0.019*	9.9	1.9																																
Xylenes, Total	*0.019*	9.9	1.9																																
Semivolatile Organics (mg/kg)																																			
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																																
2-Methylnaphthalene	*0.019*		1.9																																
2-Methylphenol	0.075		7.5																																
4-Methylphenol	*0.15*		15																																
Anthracene	5.8		580																																
Benzaldehyde	*0.0041*		0.41																																
Benzo(a)anthracene	*0.011*		1.1																																
Benzo(a)pyrene	*0.029*	0.24	2.9																																
Benzo(b)fluoranthene	0.3		30																																
Benzo(k)fluoranthene	2.9		290																																
Benzoic Acid	1.5		150																																
Bis(2-Ethylhexyl)phthalate	*1.3*	1.4	**130**	*29*		1.1		***366***	***C***					1.2				*12*						0.73		*1.6*		*3.3*				0.79		0.64	
Butylbenzylphthalate	0.24		24																																
Chrysene	9		900																																
Dibenz(a,h)anthracene	0.096		9.6																																
Diethylphthalate	0.61		61																																
Di-n-butylphthalate	*0.23*		**23**																																
Di-n-octylphthalate	5.7		570																																
Diphenyl ether	*0.00034*		0.034																																
Diphenylamine	0.23		23																																
Fluoranthene	8.9		890																																
Fluorene	0.54		54																																
Indeno(1,2,3-cd)pyrene	0.98		98																																
Naphthalene	*0.00054*		**0.054**																																

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				WD-C1		WD-C10		WD-C10B		WD-C11		WD-C11		WD-C11B		WD-C11B		WD-C12		WD-C12B		WD-C13		WD-C13B		WD-C14		WD-C14B		WD-C15		WD-C15B		WD-C16	
Sample ID	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	1140-WD-C1		1140-WD-C10		1140-WD-C10B		1140-WD-C11		1140-WD-C11 (156878)		1140-WD-C11B		1140-WD-C11B (157182)		1140-WD-C12		1140-WD-C12B		1140-WD-C13		1140-WD-C13B		1140-WD-C14		1140-WD-C14B		1140-WD-C15		1140-WD-C15B		1140-WD-C16	
Date				9/19/2000		9/19/2000		9/19/2000		9/19/2000		9/19/2000		9/19/2000		9/21/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/13/2000	
Depth (feet)				8.3 - 8.3		6.6 - 6.6		5.6 - 5.6		5.6 - 5.6		5.6 - 5.6		5.6 - 5.6		5.6 - 5.6		6.1 - 6.1		5.2 - 5.2		6.1 - 6.1		5.2 - 5.2		7.6 - 7.6		6.9 - 6.9		10 - 10		9.3 - 9.3		10.1 - 10.1	
N-Nitrosodiphenylamine	*0.067*		**6.7**	*1.4*	*J*			***19***	***C***					*0.52*				*0.76*	*J*			*0.97*				*1.9*								*0.6*	
Phenol	*0.33*		33																																
Pyrene	1.3		130																																
Pesticides/PCBs (mg/kg)																																			
4,4'-DDD	*0.0015*		0.15																																
4,4'-DDE	0.011		1.1																																
4,4'-DDT	0.077		7.7																																
Aldrin	*0.00015*		**0.015**																																
Alpha-BHC	*0.000042*		**0.0042**																																
Beta-BHC	*0.00015*		**0.015**																																
Dieldrin	*0.000071*		0.0071																																
Endrin	*0.0092*		0.92																																
Gamma-BHC/Lindane	*0.00024*		**0.024**																																
Heptachlor	*0.00012*		0.012																																
Heptachlor epoxide	*0.000028*		0.0028																																
Inorganics (mg/kg)																																			
Aluminum	*3,000*		300,000							2,700	F			*4,200*																*3,300*		*3,300*			
Arsenic	*0.0015*	0.29	**0.15**											***1.9***																					
Barium	*16*	82	1600																																
Beryllium	1.9	3.2	190																																
Cadmium	*0.069*	0.38	**6.9**																																
Chromium	4000000	180000	4E+08	520		50		77		660				170				10		6.3		11		6.7		18		6.4		19		15		6	
Cobalt	*0.027*		**2.7**																																
Copper	*2.8*	46	280																																
Iron	*35*		**3,500**							*3,100*	*F*			*3,000*																		*1,100*		*2,900*	
Lead		14												2.9																		1.7		2.1	
Manganese	*2.8*		**280**																																
Mercury	*0.0033*	0.1	**0.33**																																
Nickel	*2.6*		260																																
Silver	*0.08*		8																																
Thallium	*0.0014*	0.14	**0.14**																																
Tin	300		30000																																
Vanadium	*8.6*		860																																
Zinc	*37*		3700																																
Other Analyses (mg/kg)																																			
Formaldehyde	*0.000087*		**0.0087**																																

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				WD-C1B		WD-C2		WD-C2B		WD-C3		WD-C3B		WD-C4		WD-C4B		WD-C5		WD-C5B		WD-C6		WD-C6B		WD-C7		WD-C7B		WD-C8		WD-C8B		WD-C9	
Sample ID	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	1140-WD-C1B		1140-WD-C2		1140-WD-C2B		1140-WD-C3		1140-WD-C3B		1140-WD-C4		1140-WD-C4B		1140-WD-C5		1140-WD-C5B		1140-WD-C6		1140-WD-C6B		1140-WD-C7		1140-WD-C7B		1140-WD-C8		1140-WD-C8B		1140-WD-C9	
Date				9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000	
Depth (feet)				7.3 - 7.3		8 - 8		7 - 7		7.7 - 7.7		6.7 - 6.7		7.6 - 7.6		6.6 - 6.6		7.4 - 7.4		6.5 - 6.5		7.1 - 7.1		6.2 - 6.2		6.6 - 6.6		5.6 - 5.6		6.8 - 6.8		5.8 - 5.8		7 - 7	
Volatile Organics (mg/kg)																																			
1,1,1-Trichloroethane	0.28	0.07	28																																
1,1-Dichloroethene	*0.01*	0.0025	1																																
1,2,3-Trichlorobenzene	*0.0021*		0.21																																
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																																
1,2,4-Trimethylbenzene	*0.0081*		**0.81**																																
1,3,5-Trimethylbenzene	*0.0087*		**0.87**																																
2-Butanone	*0.12*		12																																
2-Hexanone	*0.00088*		0.088																																
Acetone	*0.29*		29																																
Benzene	*0.00023*	0.0026	**0.023**																																
Chloroform	*0.000061*	0.022	**0.0061**																																
Ethyl benzene	*0.0017*	0.78	**0.17**																																
Isopropylbenzene	*0.074*		7.4																																
Methylene chloride	*0.0027*	0.0013	**0.27**											*0.22*	*B*															*0.22*	*B*				
Naphthalene	*0.00054*		**0.054**																																
Propylbenzene	*0.12*		12																																
sec-Butylbenzene	0.59		59																																
Styrene	*0.13*	0.11	13																																
Tetrachloroethene	0.0018	0.0023	0.18																																
Toluene	*0.076*	0.69	**7.6**																																
Trichloroethene	*0.0001*	0.0018	**0.01**																																
Xylene, o	*0.019*	9.9	1.9																																
Xylenes, Total	*0.019*	9.9	1.9																																
Semivolatile Organics (mg/kg)																																			
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**																																
2-Methylnaphthalene	*0.019*		1.9																																
2-Methylphenol	0.075		7.5																																
4-Methylphenol	*0.15*		15																																
Anthracene	5.8		580																																
Benzaldehyde	*0.0041*		0.41																																
Benzo(a)anthracene	*0.011*		1.1																																
Benzo(a)pyrene	*0.029*	0.24	2.9																																
Benzo(b)fluoranthene	0.3		30																																
Benzo(k)fluoranthene	2.9		290																																
Benzoic Acid	1.5		150																																
Bis(2-Ethylhexyl)phthalate	*1.3*	1.4	**130**	*1.4*		*15*		*5*		*5.6*		1.2		*2.9*		***166***	***C***	*3.9*		0.6		*33*		***210***	***C***	*71*		*79*	*C*	*54*		***426***	***C***	*16*	
Butylbenzylphthalate	0.24		24																																
Chrysene	9		900																																
Dibenz(a,h)anthracene	0.096		9.6																																
Diethylphthalate	0.61		61																																
Di-n-butylphthalate	*0.23*		**23**																																
Di-n-octylphthalate	5.7		570																																
Diphenyl ether	*0.00034*		0.034																																
Diphenylamine	0.23		23																																
Fluoranthene	8.9		890																																
Fluorene	0.54		54																																
Indeno(1,2,3-cd)pyrene	0.98		98																																
Naphthalene	*0.00054*		**0.054**																																

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				WD-C1B		WD-C2		WD-C2B		WD-C3		WD-C3B		WD-C4		WD-C4B		WD-C5		WD-C5B		WD-C6		WD-C6B		WD-C7		WD-C7B		WD-C8		WD-C8B		WD-C9	
Sample ID	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	1140-WD-C1B		1140-WD-C2		1140-WD-C2B		1140-WD-C3		1140-WD-C3B		1140-WD-C4		1140-WD-C4B		1140-WD-C5		1140-WD-C5B		1140-WD-C6		1140-WD-C6B		1140-WD-C7		1140-WD-C7B		1140-WD-C8		1140-WD-C8B		1140-WD-C9	
Date				9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000	
Depth (feet)				7.3 - 7.3		8 - 8		7 - 7		7.7 - 7.7		6.7 - 6.7		7.6 - 7.6		6.6 - 6.6		7.4 - 7.4		6.5 - 6.5		7.1 - 7.1		6.2 - 6.2		6.6 - 6.6		5.6 - 5.6		6.8 - 6.8		5.8 - 5.8		7 - 7	
N-Nitrosodiphenylamine	*0.067*		**6.7**			*1.3*				*0.31*	*J*			*0.24*	*J*			*0.21*	*J*							*4.9*								*1.2*	
Phenol	*0.33*		33																																
Pyrene	1.3		130																																
Pesticides/PCBs (mg/kg)																																			
4,4'-DDD	*0.0015*		0.15																																
4,4'-DDE	0.011		1.1																																
4,4'-DDT	0.077		7.7																																
Aldrin	*0.00015*		**0.015**																																
Alpha-BHC	*0.000042*		**0.0042**																																
Beta-BHC	*0.00015*		**0.015**																																
Dieldrin	*0.000071*		0.0071																																
Endrin	*0.0092*		0.92																																
Gamma-BHC/Lindane	*0.00024*		**0.024**																																
Heptachlor	*0.00012*		0.012																																
Heptachlor epoxide	*0.000028*		0.0028																																
Inorganics (mg/kg)																																			
Aluminum	*3,000*		300,000									*3,600*		*7,400*		*4,600*														*3,400*		2,300			
Arsenic	*0.0015*	0.29	**0.15**											***6.8***																***2.2***					
Barium	*16*	82	1600																																
Beryllium	1.9	3.2	190																																
Cadmium	*0.069*	0.38	**6.9**																																
Chromium	4000000	180000	4E+08	68		350		36		110		210		160		51		160		240		58		500		810		580		160		340		110	
Cobalt	*0.027*		**2.7**																																
Copper	*2.8*	46	280																																
Iron	*35*		**3,500**											***11,000***		*3,300*														*3,400*		*2,600*			
Lead		14												4.7		5.4														2.2		2			
Manganese	*2.8*		**280**																																
Mercury	*0.0033*	0.1	**0.33**																																
Nickel	*2.6*		260																																
Silver	*0.08*		8																																
Thallium	*0.0014*	0.14	**0.14**																																
Tin	300		30000																																
Vanadium	*8.6*		860																																
Zinc	*37*		3700																																
Other Analyses (mg/kg)																																			
Formaldehyde	*0.000087*		**0.0087**																																

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				WD-C9B	
Sample ID				1140-WD-C9B	
Date	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	9/21/2000	
Depth (feet)				6 - 6	
Volatile Organics (mg/kg)					
1,1,1-Trichloroethane	0.28	0.07	28		
1,1-Dichloroethene	*0.01*	0.0025	1		
1,2,3-Trichlorobenzene	*0.0021*		0.21		
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**		
1,2,4-Trimethylbenzene	*0.0081*		**0.81**		
1,3,5-Trimethylbenzene	*0.0087*		**0.87**		
2-Butanone	*0.12*		12		
2-Hexanone	*0.00088*		0.088		
Acetone	*0.29*		29		
Benzene	*0.00023*	0.0026	**0.023**		
Chloroform	*0.000061*	0.022	**0.0061**		
Ethyl benzene	*0.0017*	0.78	**0.17**		
Isopropylbenzene	*0.074*		7.4		
Methylene chloride	*0.0027*	0.0013	**0.27**		
Naphthalene	*0.00054*		**0.054**		
Propylbenzene	*0.12*		12		
sec-Butylbenzene	0.59		59		
Styrene	*0.13*	0.11	13		
Tetrachloroethene	0.0018	0.0023	0.18		
Toluene	*0.076*	0.69	**7.6**		
Trichloroethene	*0.0001*	0.0018	**0.01**		
Xylene, o	*0.019*	9.9	1.9		
Xylenes, Total	*0.019*	9.9	1.9		
Semivolatile Organics (mg/kg)					
1,2,4-Trichlorobenzene	*0.0012*	0.2	**0.12**		
2-Methylnaphthalene	*0.019*		1.9		
2-Methylphenol	0.075		7.5		
4-Methylphenol	*0.15*		15		
Anthracene	5.8		580		
Benzaldehyde	*0.0041*		0.41		
Benzo(a)anthracene	*0.011*		1.1		
Benzo(a)pyrene	*0.029*	0.24	2.9		
Benzo(b)fluoranthene	0.3		30		
Benzo(k)fluoranthene	2.9		290		
Benzoic Acid	1.5		150		
Bis(2-Ethylhexyl)phthalate	*1.3*	1.4	**130**	0.58	
Butylbenzylphthalate	0.24		24		
Chrysene	9		900		
Dibenz(a,h)anthracene	0.096		9.6		
Diethylphthalate	0.61		61		
Di-n-butylphthalate	*0.23*		**23**		
Di-n-octylphthalate	5.7		570		
Diphenyl ether	*0.00034*		0.034		
Diphenylamine	0.23		23		
Fluoranthene	8.9		890		
Fluorene	0.54		54		
Indeno(1,2,3-cd)pyrene	0.98		98		
Naphthalene	*0.00054*		**0.054**		

Table 5
Containment Area Soil Detections - Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location				WD-C9B	
Sample ID				1140-WD-C9B	
Date	*SSL - Tapwater May 2018*	SSL - MCL May 2018	**SSL - Tapwater x100**	9/21/2000	
Depth (feet)				6 - 6	
N-Nitrosodiphenylamine	*0.067*		**6.7**	*0.81*	
Phenol	*0.33*		33		
Pyrene	1.3		130		
Pesticides/PCBs (mg/kg)					
4,4'-DDD	*0.0015*		0.15		
4,4'-DDE	0.011		1.1		
4,4'-DDT	0.077		7.7		
Aldrin	*0.00015*		**0.015**		
Alpha-BHC	*0.000042*		**0.0042**		
Beta-BHC	*0.00015*		**0.015**		
Dieldrin	*0.000071*		0.0071		
Endrin	*0.0092*		0.92		
Gamma-BHC/Lindane	*0.00024*		**0.024**		
Heptachlor	*0.00012*		0.012		
Heptachlor epoxide	*0.000028*		0.0028		
Inorganics (mg/kg)					
Aluminum	*3,000*		300,000		
Arsenic	*0.0015*	0.29	**0.15**		
Barium	*16*	82	1600		
Beryllium	1.9	3.2	190		
Cadmium	*0.069*	0.38	**6.9**		
Chromium	4000000	180000	4E+08	20	
Cobalt	*0.027*		**2.7**		
Copper	*2.8*	46	280		
Iron	*35*		**3,500**		
Lead		14			
Manganese	*2.8*		**280**		
Mercury	*0.0033*	0.1	**0.33**		
Nickel	*2.6*		260		
Silver	*0.08*		8		
Thallium	*0.0014*	0.14	**0.14**		
Tin	300		30000		
Vanadium	*8.6*		860		
Zinc	*37*		3700		
Other Analyses (mg/kg)					
Formaldehyde	*0.000087*		**0.0087**		

Table 6
Containment Area Groundwater Summary 2000-2012
Olin Chemical, Wilmington, Massachusetts

Analyte	Units	Max Conc.	No. Detect	Tapwater RSL		MCL		SMCL	
				Criterion	No. Exceed	Criterion	No. Exceed	Criterion	No. Exceed
Semi-Volatile Organic Compounds									
N-Nitrosodimethylamine (NDMA)	ng/L	60	2	0.11	2	--	NA	--	NA
Total Metals and Cyanide									
Iron	µg/L	412	1	1,400	0	--	NA	300	1
Manganese	µg/L	454	1	43	1	--	NA	50	1
Dissolved Metals and Cyanide									
Arsenic	µg/L	130	1	0.052	1	10	1	--	NA
Manganese	µg/L	870	2	43	2	--	NA	50	2
Nickel	µg/L	60	2	39	1	--	NA	--	NA
General Chemistry									
Nitrate	mg/L	13	7	3.2	3	10	2	--	NA
Nitrite	mg/L	0.54	3	0.2	2	1	0	--	NA
Sulfate	mg/L	2,600	7	--	NA	--	NA	250	5
Total Dissolved Solids	mg/L	2,300	3	--	NA	--	NA	500	3

Notes:
J = estimated value
µg/L = micrograms per liter
mg/L = milligrams per liter
NTU = nephelometric turbidity units
ng = nanograms per liter

Table 7
Detected Shallow Groundwater Analytical Results - Containment Area
Olin Chemical, Wilmington, Massachusetts

Sample Location					MP-1 #14				MP-1 #16				MP-1 #17						MP-1 #18			
Sample Date					04/18/96	05/22/96	07/20/10	02/09/12	04/17/96	05/22/96	08/10/98	01/28/00	04/17/96	05/22/96	05/13/01	03/25/03	04/09/03	05/03/05	04/17/96	05/22/96	08/10/98	03/24/04
Sample ID	**Units**	*RSL - Tap water May 2018*	MCL May 2018	**SMCL**	MP-1 #14-19960418	MP-1 #14-19960522	MLP-1-14	OC-MP-1 #14	MP-1 #16-19960417	MP-1 #16-19960522	MP-1 #16-19980810	MP-1-16	MP-1 #17-19960417	MP-1 #17-19960522	MP-1-17	MP1-#17	MP-1 PORT 17-20030409	MP-1 PORT 17-20050503	MP-1 #18-19960417	MP-1 #18-19960522	MP-1 #18-19980810	MP1-OVR
Semi-Volatile Organic Compounds																						
N-Nitrosodimethylamine (NDMA)	ng/L	*0.11*	--	--													*45*					*60*
Total Metals and Cyanide																						
Aluminum	µg/L	2,000	--	200				69 J														
Barium	µg/L	380	2,000	--												51			21	22		
Calcium	mg/L	--	--	--				130								489			600	600	536	
Iron	µg/L	1400	--	**300**												**412**						
Magnesium	mg/L	--	--	--				4.1								5.29			5.4	4		
Manganese	µg/L	43	--	**50**												***454***			***220***	***220***	***551***	
Nickel	µg/L	39	--	--												31						
Potassium	µg/L	--	--	--												72,800			6,900	6,900	13,200	
Sodium	mg/L	--	--	250				50								63.4			84	72	64.4	173
Zinc	µg/L	600	--	5,000																	20.1	
Dissolved Metals and Cyanide																						
Aluminum	µg/L	2,000	--	**200**									**520**		120							
Arsenic	µg/L	0.052	10	--											*130*							
Barium	µg/L	380	2,000	--	11	7			11	13		15.7	14	20	59							
Boron	µg/L	400	--	--								13 J										
Calcium	mg/L	--	--	--	240	130	93		550	560	489	568	2	590	400			610				
Chromium	µg/L	2,200	100	--			3.1 J					2.8 J										
Iron	µg/L	1,400	--	**300**	***1,800***	**600**	210 J						**730**		95							
Lead	µg/L	15	15	--									6									
Magnesium	mg/L	--	--	--	16	13	3		22	15	6	5.54	1.2	4.1	1			11				
Manganese	µg/L	*43*	--	**50**	***810***	***510***			***2100***	***1300***	***428***	***467***	***180***	***160***	***870***							
Molybdenum	µg/L	10	--	--								2.4 J										
Nickel	µg/L	*39*	--	--								1.9 J			*60*							
Potassium	µg/L	--	--	--	4,600	3,700			3,100	3,300	8,370	6,580	1,800	7,400	160,000							
Selenium	µg/L	10	50	--								4.8 J										
Sodium	mg/L	--	--	250	200	190	49		220	180	78.2	30.6	4.9	66	130			100				
Strontium	µg/L	1200	--	--								532										
Zinc	µg/L	600	--	5,000							20.2	10.9 J										

Table 7
Detected Shallow Groundwater Analytical Results - Containment Area
Olin Chemical, Wilmington, Massachusetts

Sample Location					MP-1 #14				MP-1 #16				MP-1 #17						MP-1 #18			
Sample Date					04/18/96	05/22/96	07/20/10	02/09/12	04/17/96	05/22/96	08/10/98	01/28/00	04/17/96	05/22/96	05/13/01	03/25/03	04/09/03	05/03/05	04/17/96	05/22/96	08/10/98	03/24/04
Sample ID	**Units**	*RSL - Tap water May 2018*	MCL May 2018	**SMCL**	MP-1 #14-19960418	MP-1 #14-19960522	MLP-1-14	OC-MP-1 #14	MP-1 #16-19960417	MP-1 #16-19960522	MP-1 #16-19980810	MP-1-16	MP-1 #17-19960417	MP-1 #17-19960522	MP-1-17	MP1-#17	MP-1 PORT 17-20030409	MP-1 PORT 17-20050503	MP-1 #18-19960417	MP-1 #18-19960522	MP-1 #18-19980810	MP1-OVR
General Chemistry																						
Alkalinity, Bicarbonate (as CaCO3)	mg/L	--	--	--		210				340	224	300		290	370	104				290	280	
Alkalinity, Carbonate (as CaCO3)	mg/L	--	--	--											1.5	1 U						
Alkalinity, Total (as CaCO3)	mg/L	--	--	--												104						
Chemical Oxygen Demand	ug/L	--	--	--								44000										
Chloride	mg/L	--	--	250			14	12			2.08	4.8			34	15.7		29			2.08	30
Nitrate	mg/L	*3.2*	10	--			1	0.64				0.58			0.076	*12.6*		*4.8*				*13*
Nitrate+Nitrite as N	µg/L	--	--	--		7100				3400				2000						2300		
Nitrite	mg/L	*0.2*	1	--											0.012	*0.387*						*0.54*
Nitrogen, As Ammonia	mg/L	--	--	--		32	14	13		6.7	1.52	1.4		0.98	32 J	8.61		0.76		1.5	0.54	0.76 J
Nitrogen, Total Kjeldahl	µg/L	--	--	--								1200										
pH	S.U.	--	--	--								6.89			7.88	7.59 J						
Phosphorus, Total Orthophosphate (As P)	µg/L	--	--	--								400 J										
Specific Conductance	umhos /cm	--	--	--								2250			2490	2960						
Specific Gravity	g/mL	--	--	--			0.999	1.001						0.962	1	1.01		1				
Sulfate	mg/L	--	--	**250**			210	240			**1410**	**1200**			**920**	**1210**		**2600**			**1510**	**1500**
Total Dissolved Solids	mg/L	--	--	**500**								**2,200**			**2,300**	**2,260**						
Total Organic Carbon	µg/L	--	--	--								12,000				46,000						
Turbidity	NTU	--	--	--								0.17										
Other Analyses																						
Picloram	µg/L	140	500	--								0.72										

Notes:
J = estimated value
µg/L = micrograms per liter
mg/L = milligrams per liter
NTU = nephelometric turbidity units
ng = nanograms per liter

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	AREA-1		AREA-1		AREA 1-1		AREA 1-2		AREA 1-4		AREA 1-5		AREA-2		BD-C1		BD-C10		BD-C13		BD-C4		BD-C7		BH1		BH2		BH3		BH4		BH6		BH7	
Sample ID	AREA 01		AREA 1 (COMP)		AREA 1-1		AREA 1-2		AREA 1-4		AREA 1-5		AREA 02		1120-BD-C1		1120-BD-C10		1120-BD-C13		1120-BD-C4		1120-BD-C7		BH-01		BH-02		BH-03		BH-04		BH-06		BH-07	
Sample Date	7/8/1991		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		7/9/1991		10/10/2000		10/12/2000		10/12/2000		10/10/2000		10/12/2000		6/5/1991		6/5/1991		6/5/1991		6/5/1991		6/6/1991		6/6/1991	
Depth (feet)	0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		4.6 - 4.6		10.3-10.3		10.1 - 10.1		7.5 - 7.5		7.96 - 7.9		4.3 - 6.3		3.5 - 5.5		4.2 - 6.2		6.3 - 8.3		4.4 - 6.4		3 - 5	
Volatile Organics (mg/kg)																																				
1,1,1-Trichloroethane	0.008	UJ			0.011		0.005	U	**0.23**		0.006	U	0.0055	UJ	0.12	U	0.15	U	0.15	U	0.15	U	0.16	U	0.7	U	0.028	U	0.0055	U	0.028	U	0.0055	U	0.0055	U
1,1-Dichloroethene	0.008	UJ			0.006	U	0.005	U	**0.018**		0.006	U	0.0055	UJ	0.12	U	0.15	U	0.15	U	0.15	U	0.16	U	0.7	U	0.028	U	0.0055	U	0.028	U	0.0055	U	0.0055	U
1,2,3-Trichlorobenzene															0.12	U	0.15	U	0.15	U	0.15	U	0.16	U												
1,2,4-Trichlorobenzene															0.12	U	0.15	U	0.15	U	0.15	U	0.16	U												
1,2,4-Trimethylbenzene															0.12	U	0.15	U	0.15	U	0.15	U	0.16	U												
1,3,5-Trimethylbenzene															0.12	U	0.15	U	0.15	U	0.15	U	0.16	U												
2,4,4-Trimethyl-1-pentene	0.016	U			0.006	U	0.005	U	0.008	U	0.006	U	0.011	U	0.12	U	0.15	U	0.15	U	0.15	U	0.16	U	1.3E-06	U	0.011	U	**0.002**	**J**	0.011	U	0.011	U	0.011	U
2,4,4-Trimethyl-2-pentene	0.016	U			0.006	U	0.005	U	0.008	U	0.006	U	0.011	U	0.12	U	0.15	U	0.15	U	0.15	U	0.16	U	1.3E-06	U	0.011	U	**0.001**	**J**	0.011	U	0.011	U	0.011	U
2-Butanone	0.024	UJ			0.012	U	0.011	U	0.016	U	0.012	U	0.016	UJ	2.5	U	3.1	U	3.1	U	3	U	3.2	U	**0.49**	**J**	0.082	U	**0.001**	**J**	**0.003**	**J**	**0.001**	**J**	0.016	U
2-Hexanone	0.024	UJ			0.012	U	0.011	U	0.016	U	0.012	U	0.016	UJ	0.5	U	0.61	U	0.62	U	0.59	U	0.63	U	2	U	0.082	U	0.016	U	0.082	U	0.016	U	0.016	U
4-iso-Propyltoluene															0.12	U	0.15	U	0.15	U	0.15	U	0.16	U												
Acetone	0.024	UJ			**0.029**	**B**	**0.01**	**J**	**0.036**		**0.005**	**J**	0.016	U	2.5	U	3.1	U	3.1	U	3	U	3.2	U	**17**		**0.5**		**0.13**		**0.46**		0.016	U	0.016	U
Benzene	0.008	UJ			0.006	U	0.005	U	0.008	U	0.006	U	0.0055	UJ	0.12	U	0.15	U	0.15	U	0.15	U	0.16	U	**0.1**	**J**	0.028	U	0.0055	U	0.028	U	0.0055	U	0.0055	U
Chloroform	0.008	UJ			0.006	U	0.005	U	0.008	U	0.006	U	0.0055	UJ	0.12	U	0.15	U	0.15	U	0.15	U	0.16	U	0.7	U	0.028	U	0.0055	U	0.028	U	0.0055	U	0.0055	U
Ethyl benzene	0.008	UJ			0.006	U	0.005	U	0.008	U	0.006	U	0.0055	UJ	0.12	U	0.15	U	0.15	U	0.15	U	0.16	U	0.7	U	0.028	U	0.0055	U	0.028	U	0.0055	U	0.0055	U
Isopropylbenzene															0.12	U	0.15	U	0.15	U	0.15	U	0.16	U												
Methylene chloride	0.016	U			0.007		0.005	U	0.008	U	0.006	U	0.018	UJ	0.12	U	0.15	U	0.15	U	0.15	U	0.16	U	**2**		0.055	U	0.011	U	0.055	U	0.011	U	0.011	U
Naphthalene															1.2	U	1.5	U	1.5	U	1.5	U	1.6	U												
Propylbenzene															0.12	U	0.15	U	0.15	U	0.15	U	0.16	U												
sec-Butylbenzene															0.12	U	0.15	U	0.15	U	0.15	U	0.16	U												
Styrene	0.008	UJ			0.006	U	0.005	U	0.008	U	0.006	U	0.0055	UJ	0.12	U	0.15	U	0.15	U	0.15	U	0.16	U	0.7	U	0.028	U	0.0055	U	0.028	U	0.0055	U	0.0055	U
Tetrachloroethene	0.008	UJ			0.006	U	0.005	U	0.008	U	0.006	U	0.0055	UJ	0.12	U	0.15	U	0.15	U	0.15	U	0.16	U	0.7	U	0.028	U	0.0055	U	0.028	U	0.0055	U	0.0055	U
Toluene	0.008	UJ			0.006	U	0.005	U	**0.003**	**J**	0.006	U	0.0055	UJ	0.12	U	0.15	U	0.15	U	0.15	U	0.16	U	**0.15**	**J**	0.028	U	0.0055	U	0.028	U	0.0055	U	0.0055	U
Trichloroethene	0.008	UJ			0.006	U	0.005	U	**0.009**		0.006	U	0.0055	UJ	0.12	U	0.15	U	0.15	U	0.15	U	0.16	U	**0.08**	**J**	0.028	U	0.0055	U	0.028	U	0.0055	U	0.0055	U
Xylene, o															0.12	U	0.15	U	0.15	U	0.15	U	0.16	U												
Xylenes (m&p)															0.12	U	0.15	U	0.15	U	0.15	U	0.16	U												
Xylenes, Total	0.008	UJ			0.006	U	0.005	U	0.008	U	0.006	U	0.0055	UJ	0.12	U	0.15	U	0.15	U	0.15	U	0.16	U	0.7	U	0.028	U	0.0055	U	0.028	U	0.0055	U	0.0055	U
Semivolatile Organics (mg/kg)																																				
1,2,4-Trichlorobenzene	1.1	U	0.39	U									0.76	U	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
2-Methylnaphthalene	1.1	U	0.39	U									**0.067**	**J**	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
2-Methylphenol	1.1	U	0.39	U									0.76	U	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
4-Methylphenol	1.1	U	0.39	U									0.76	U											0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Acenaphthylene	1.1	U	0.39	U									0.76	U	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Anthracene	1.1	U	0.39	U									0.76	U	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Benzaldehyde																																				
Benzo(a)anthracene	**0.099**	**J**	0.39	U									**0.075**	**J**	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Benzo(a)pyrene	**0.059**	**J**	0.39	U									**0.057**	**J**	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Benzo(b)fluoranthene	**0.18**	**J**	0.39	U									**0.13**	**J**	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Benzo(ghi)perylene	1.1	U	0.39	U									0.76	U	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Benzo(k)fluoranthene	**0.065**	**J**	0.39	U									**0.042**	**J**	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Benzoic Acid	5.3	U	1.9	U									3.7	U	2	U	2	U	2.1	U	2	U	2	U	3.5	U	3.5	U	3.7	U	3.7	U	3.5	U	3.5	U
Bis(2-Ethylhexyl)phthalate	**2.9**		**0.13**	**JB**									**0.13**	**J**	0.4	U	0.41	U	0.42	U	**3.9**		0.4	U	1.4	U	**3.5**		**1.7**		**27**	**J**	0.82	U	**2.5**	
Butylbenzylphthalate	1.1	U	0.39	U									0.76	U	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Chrysene	**0.17**	**J**	0.39	U									**0.15**	**J**	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Dibenz(a,h)anthracene	1.1	U	0.39	U									0.76	U	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Diethylphthalate	1.1	U	**0.044**	**JB**									0.76	U	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Di-n-butylphthalate	1.1	U	**0.027**	**JB**									**0.014**	**J**	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Di-n-octylphthalate	1.1	U	0.39	U									0.76	U	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	**0.073**	**J**	**0.06**	**J**	**0.014**	**J**

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	AREA 01		AREA 1 (COMP)		AREA 1-1		AREA 1-2		AREA 1-4		AREA 1-5		AREA 02		1120-BD-C1		1120-BD-C10		1120-BD-C13		1120-BD-C4		1120-BD-C7		BH-01		BH-02		BH-03		BH-04		BH-06		BH-07	
Sample Date	7/8/1991		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		7/9/1991		10/10/2000		10/12/2000		10/12/2000		10/10/2000		10/12/2000		6/5/1991		6/5/1991		6/5/1991		6/5/1991		6/6/1991		6/6/1991	
Depth (feet)	0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		4.6 - 4.6		10.3-10.3		10.1 - 10.1		7.5 - 7.5		7.96 - 7.9		4.3 - 6.3		3.5 - 5.5		4.2 - 6.2		6.3 - 8.3		4.4 - 6.4		3 - 5	
Diphenyl ether																																				
Diphenylamine																																				
Fluoranthene	**0.25**	**J**	0.39	U									**0.19**	**J**	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Fluorene																																				
Indeno(1,2,3-cd)pyrene	**0.064**	**J**	0.39	U									**0.051**	**J**	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Naphthalene	1.1	U	0.39	U									**0.049**	**J**	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
N-Nitrosodiphenylamine	1.1	U	0.39	U									0.76	U	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.16	J	0.76	U	**0.29**	**J**	0.73	U	**0.15**	**J**
Phenanthrene	**0.16**	**J**	0.39	U									**0.17**	**J**	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Phenol	1.1	U	0.39	U									0.76	U	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Pyrene	**0.16**	**J**	0.39	U									**0.14**	**J**	0.4	U	0.41	U	0.42	U	0.41	U	0.4	U	0.73	U	0.73	U	0.76	U	0.76	U	0.73	U	0.73	U
Pesticides/PCBs (mg/kg)																																				
4,4'-DDD	0.053	UJ	0.0038	U									0.037	UJ	0.012	U	0.012	U	0.012	U	0.012	U	0.012	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
4,4'-DDE	0.053	UJ	0.0038	U									0.037	UJ	0.012	U	0.012	U	0.012	U	0.012	U	0.012	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
4,4'-DDT	0.053	UJ	0.0038	U									0.037	UJ	0.012	U	0.012	U	0.012	U	0.012	U	0.012	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Aldrin	0.026	UJ	0.002	U									0.018	UJ	0.012	U	0.012	U	0.012	U	0.012	U	0.012	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U
Alpha-BHC	0.026	UJ	0.002	U									0.018	UJ	0.012	U	0.012	U	0.012	U	0.012	U	0.012	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U
Alpha-Chlordane	0.26	UJ	0.002	U									0.18	UJ											0.18	U	0.18	U	0.18	U	0.18	U	0.18	U	0.18	UJ
Beta-BHC	0.026	UJ	0.002	U									0.018	UJ	0.012	U	0.012	U	0.012	U	0.012	U	0.012	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U
Chlordane (technical)	0.26	UJ	0.002	U									0.18	UJ											0.18	U	0.18	U	0.18	U	0.18	U	0.18	U	0.18	UJ
Dieldrin	0.053	UJ	0.0038	U									0.037	UJ	0.012	U	0.012	U	0.012	U	0.012	U	0.012	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Endosulfan I	0.026	UJ	0.002	U									0.018	UJ	0.012	U	0.012	U	0.012	U	0.012	U	0.012	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U
Endrin	0.053	UJ	0.0038	U									0.037	UJ	0.012	U	0.012	U	0.012	U	0.012	U	0.012	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U	0.035	U
Endrin aldehyde	0.026	UJ	0.0038	U									0.018	UJ	0.012	U	0.012	U	0.012	U	0.012	U	0.012	U												
Endrin ketone	0.053	UJ	0.0038	U									0.037	UJ											0.035	U	0.035	U	**0.045**		0.035	U	0.035	U	0.035	UJ
Gamma-BHC/Lindane	0.026	UJ	0.002	U									0.018	UJ	0.012	U	0.012	U	0.012	U	0.012	U	0.012	U	0.018	U	0.018	U	**0.048**		0.018	U	0.018	U	0.018	U
Heptachlor	0.026	UJ	0.002	U									0.018	UJ	0.012	U	0.012	U	0.012	U	0.012	U	0.012	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U
Heptachlor epoxide	0.026	UJ	0.002	U									0.018	UJ	0.012	U	0.012	U	0.012	U	0.012	U	0.012	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U	0.018	U
Inorganics (mg/kg)																																				
Aluminum	**8000**		**2250**	**E**									**5900**		**3400**		**2600**		**2600**		**3700**		**4200**		**7600**		**8300**		**9000**		**9200**		**10000**		**7900**	
Arsenic	**24**		**1.2**	**B**									**7**		2	U	2	U	1	U	1	U	**2**		**8**		**12**		**21**		**13**		**16**		**4.3**	
Barium	**25**		**5.8**	**B**									**38**												**16**		**30**		**29**		**36**		**39**		**28**	
Beryllium	1.5	U	0.18	U									1.5	U											1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U
Cadmium	1.1	U	0.18	U									1	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	1	U	1	U	**1.8**		**1.4**		**1.2**		1	U
Calcium	**1200**		**1000**										**720**												**16000**		**3700**		**8700**		**4900**		**2500**		**4300**	
Chromium	**320**		**9.1**	**E**									**8.8**		**5.3**		**4.8**		**5**		**4.9**		**6.2**		**100**		**21**		**36**		**41**		**25**		**160**	
Cobalt	**9.9**		**1.3**	**B**									1.5	U											**2.9**		**3.8**		**5**		**6.2**		**7.2**		**2.3**	
Copper	**14**		**2.9**	**B**									**12**												**8.2**		**9.8**		**10**		**47**		**14**		**12**	
Iron	**16000**		**2090**	**E**									**6900**		**2700**		**2300**		**2500**		**2100**		**2900**		**7800**		**9500**		**11000**		**14000**		**13000**		**9400**	
Lead	**58**		**2**										**36**		**1.8**		**2**		**1.8**		**2.1**		**1.9**		10	U	**11**		10	U	**52**		10	U	10	U
Magnesium	**1200**		**706**	**BE**									**610**												**1900**		**2600**		**4000**		**3800**		**4000**		**2300**	
Manganese	**530**		**27.7**	**E**									**40**												**72**		**140**		**130**		**230**		**250**		**140**	
Mercury	0.14	U	**0.11**	**N**									**0.15**		0.05	U	0.05	U	0.05	U	0.05	U	0.06	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Nickel	**5.8**		**4**	**B**									**4.7**												**6.7**		**11**		**18**		**14**		**18**		**8.9**	
Potassium	**520**		**222**	**B**									**240**												**670**		**1100**		**1800**		**1400**		**2100**		**1100**	
Silver																																				
Sodium	**44**		**50.8**	**B**									**42**												**67**		**79**		**100**		**240**		**160**		**140**	
Thallium	0.52	U	1.4	UN									0.5	U											0.5	U	0.5	U	0.5	U	0.5	U	0.64	U	0.5	U
Tin																																				
Vanadium	**18**		**4.3**	**B**									**18**												**12**		**12**		**17**		**21**		**18**		**16**	
Zinc	**24**		**13.1**										**31**												**21**		**24**		**30**		**84**		**31**		**17**	

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	AREA 01	AREA 1 (COMP)	AREA 1-1	AREA 1-2	AREA 1-4	AREA 1-5	AREA 02	1120-BD-C1	1120-BD-C10	1120-BD-C13	1120-BD-C4	1120-BD-C7	BH-01	BH-02	BH-03	BH-04	BH-06	BH-07
Sample Date	7/8/1991	12/15/1996	12/15/1996	12/15/1996	12/15/1996	12/15/1996	7/9/1991	10/10/2000	10/12/2000	10/12/2000	10/10/2000	10/12/2000	6/5/1991	6/5/1991	6/5/1991	6/5/1991	6/6/1991	6/6/1991
Depth (feet)	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	4.6 - 4.6	10.3-10.3	10.1 - 10.1	7.5 - 7.5	7.96 - 7.9	4.3 - 6.3	3.5 - 5.5	4.2 - 6.2	6.3 - 8.3	4.4 - 6.4	3 - 5
Chloride	**49** J						**68** J						**100** J	**57** J	40 UJ	40 UJ	**88** J	**71** J
Nitrogen, as Ammonia	**43**	**143**					**25**						**210** J	**91** J	**28** J	**100** J	**30** J	**48** J
Percent Moisture (%)		**63**			56	88							**90**	**93**	**88**			
Percent Solids (%)	**61** J	**270**					**87** J	**82.4**	**80.3**	**78.6**	**80.1**	**81.3**	**1400** J	**13000** J	**2700** J	**88**	**93**	**90**
pH (pH units)	**190** J						**4.2** J						**16000** J	**7700** J	**6600** J			
Sulfate																**33000** J	**1300** J	**680** J
Total Organic Carbon																**28000** J		**8700**
EPH (mg/Kg)																		
C11-C22 Aromatics																		
C11-C22 Aromatics (unadj.)																		
C19-C36 Aliphatics																		
Total EPH																		
Other Analyses (mg/kg)																		
Formaldehyde																		
Hydrazine																		

Notes:
1. **Bold** results detected.
2. U = not detected
3. J = estimated value
4. R = value rejected

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	BH8		BH9		BH10		BS017PND		CP-C36		CP-C38		CP-C39		CP-C41		CP-C42		CP-C43		CP-C45		CP-C46		CP-C47		CP-C49		CP-C50		CP-C52		CP-C53		CP-C54	
Sample ID	BH-08		BH-09		BH-10		BS017PND		1140-CP-C36		1140-CP-C38		1140-CP-C39		1140-CP-C41		1140-CP-C42		1140-CP-C43		1140-CP-C45		1140-CP-C46		1140-CP-C47		1140-CP-C49		1140-CP-C50		1140-CP-C52		1140-CP-C53		1140-CP-C54	
Sample Date	6/7/1991		6/7/1991		6/7/1991		1/21/1997		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/9/2000		10/9/2000		10/10/2000	
Depth (feet)	3 - 5		2.6 - 4.6		3.8 - 5.8		0 - 0		5.4 - 5.4		6.2 - 6.2		6.7 - 6.7		6.5 - 6.5		6.3 - 6.3		5 - 5		6.6 - 6.6		6.1 - 6.1		5.4 - 5.4		6.8 - 6.8		4.8 - 4.8		8.7 - 8.7		8.5 - 8.5		3.3 - 3.3	
Volatile Organics (mg/kg)																																				
1,1,1-Trichloroethane	0.0055	U	0.0055	U	0.006	U							0.12	U											0.15	U	0.14	U								
1,1-Dichloroethene	0.0055	U	0.0055	U	0.006	U							0.12	U											0.15	U	0.14	U								
1,2,3-Trichlorobenzene													0.12	U											0.15	U	0.14	U								
1,2,4-Trichlorobenzene													0.12	U											0.15	U	0.14	U								
1,2,4-Trimethylbenzene													0.12	U											0.15	U	0.14	U								
1,3,5-Trimethylbenzene													0.12	U											0.15	U	0.14	U								
2,4,4-Trimethyl-1-pentene	**0.035**		**3.3**	**J**	**0.018**								0.12	U											0.15	U	0.14	U								
2,4,4-Trimethyl-2-pentene	**0.016**		**0.91**	**J**	**0.01**	**J**							0.12	U											0.15	U	0.14	U								
2-Butanone	0.016	U	0.016	U	0.018	U							2.5	U											3	U	2.9	U								
2-Hexanone	0.016	U	**0.061**		0.018	U							0.49	U											0.6	U	0.58	U								
4-iso-Propyltoluene													0.12	U											0.15	U	0.14	U								
Acetone	0.016	U	0.019	U	0.018	U							2.5	U											3	U	2.9	U								
Benzene	0.0055	U	0.0055	U	0.006	U							0.12	U											0.15	U	0.14	U								
Chloroform	0.0055	U	**0.002**	**J**	0.006	U							0.12	U											0.15	U	0.14	U								
Ethyl benzene	0.0055	U	0.0055	U	0.006	U							0.12	U											0.15	U	0.14	U								
Isopropylbenzene													0.12	U											0.15	U	0.14	U								
Methylene chloride	0.011	U	0.011	U	0.012	U							**0.3**	**B**											**0.21**	**B**	**0.44**	**B**								
Naphthalene													1.2	U											1.5	U	1.4	U								
Propylbenzene													0.12	U											0.15	U	0.14	U								
sec-Butylbenzene													0.12	U											0.15	U	0.14	U								
Styrene	0.0055	U	0.0055	U	0.006	U							0.12	U											0.15	U	0.14	U								
Tetrachloroethene	0.0055	U	**0.001**	**J**	0.006	U							0.12	U											0.15	U	0.14	U								
Toluene	**0.001**	**J**	**0.001**	**J**	**0.001**	**J**							0.12	U											0.15	U	0.14	U								
Trichloroethene	0.0055	U	0.0055	U	0.006	U							0.12	U											0.15	U	0.14	U								
Xylene, o													0.12	U											0.15	U	0.14	U								
Xylenes (m&p)													0.12	U											0.15	U	0.14	U								
Xylenes, Total	0.0055	U	0.0055	U	0.006	U							0.12	U											0.15	U	0.14	U								
Semivolatile Organics (mg/kg)																																				
1,2,4-Trichlorobenzene	**0.086**	**J**	0.69	U	**0.075**	**J**	1.8	U	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
2-Methylnaphthalene	0.73	U	0.69	U	0.79	U	1.8	U	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
2-Methylphenol	0.73	U	0.69	U	0.79	U	1.8	U	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
4-Methylphenol	0.73	U	0.69	U	0.79	U	1.8	U																												
Acenaphthylene	0.73	U	0.69	U	0.79	U	1.8	U	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Anthracene	0.73	U	**0.028**	**J**	0.79	U	**0.01**	**J**	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Benzaldehyde																																				
Benzo(a)anthracene	0.73	U	**0.08**	**J**	0.79	U	1.8	U	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Benzo(a)pyrene	0.73	U	**0.055**	**J**	0.79	U	1.8	U	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Benzo(b)fluoranthene	0.73	U	**0.084**	**J**	0.79	U	1.8	U	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Benzo(ghi)perylene	0.73	U	0.69	U	0.79	U	1.8	U	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Benzo(k)fluoranthene	0.73	U	0.69	U	0.79	U	1.8	U	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Benzoic Acid	3.5	U	3.4	U	3.8	U	8.8	U	4.1	U	2	U	2	U	2	U	2	U	2	U	2.1	U	1.9	U	2	U	2.1	U	1.8	U	1.9	U	2	U	2.1	U
Bis(2-Ethylhexyl)phthalate	**3.9**		0.69	U	**8.2**		**8.6**	**B**	**6.2**		**2**		0.4	U	**0.54**		0.39	U	0.39	U	0.41	U	0.38	U	**0.25**	**J**	0.42	U	0.37	U	0.39	U	0.4	U	**0.46**	
Butylbenzylphthalate	0.73	U	0.69	U	**0.035**	**J**	1.8	U	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Chrysene	0.73	U	**0.086**	**J**	0.79	U	1.8	U	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Dibenz(a,h)anthracene	0.73	U	0.69	U	0.79	U	1.8	U	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Diethylphthalate	0.73	U	0.69	U	0.79	U	**0.053**	**JB**	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Di-n-butylphthalate	0.73	U	0.69	U	0.79	U	**0.046**	**JB**	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Di-n-octylphthalate	0.73	U	0.69	U	0.79	U	1.8	U	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	BH-08		BH-09		BH-10		BS017PND		1140-CP-C36		1140-CP-C38		1140-CP-C39		1140-CP-C41		1140-CP-C42		1140-CP-C43		1140-CP-C45		1140-CP-C46		1140-CP-C47		1140-CP-C49		1140-CP-C50		1140-CP-C52		1140-CP-C53		1140-CP-C54	
Sample Date	6/7/1991		6/7/1991		6/7/1991		1/21/1997		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/9/2000		10/9/2000		10/10/2000	
Depth (feet)	3 - 5		2.6 - 4.6		3.8 - 5.8		0 - 0		5.4 - 5.4		6.2 - 6.2		6.7 - 6.7		6.5 - 6.5		6.3 - 6.3		5 - 5		6.6 - 6.6		6.1 - 6.1		5.4 - 5.4		6.8 - 6.8		4.8 - 4.8		8.7 - 8.7		8.5 - 8.5		3.3 - 3.3	
Diphenyl ether																																				
Diphenylamine																																				
Fluoranthene	0.73	U	**0.16**	**J**	0.79	U	**0.037**	**J**	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Fluorene																																				
Indeno(1,2,3-cd)pyrene	0.73	U	0.69	U	0.79	U	1.8	U	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Naphthalene	0.73	U	0.69	U	**0.63**	**J**	1.8	U	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
N-Nitrosodiphenylamine	**0.57**	**J**	0.69	U	**0.98**		**0.26**	**J**	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Phenanthrene	0.73	U	**0.12**	**J**	0.79	U	**0.044**	**J**	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Phenol	**0.1**	**J**	0.69	U	**0.075**	**J**	1.8	U	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Pyrene	0.73	U	**0.13**	**J**	0.79	U	**0.039**	**J**	0.82	U	0.4	U	0.4	U	0.39	U	0.39	U	0.39	U	0.41	U	0.38	U	0.4	U	0.42	U	0.37	U	0.39	U	0.4	U	0.42	U
Pesticides/PCBs (mg/kg)																																				
4,4'-DDD	0.035	U	0.034	U	0.038	U	**0.00019**	**J**					0.011	U											0.012	U	0.013	U								
4,4'-DDE	0.035	U	0.034	U	0.038	U	**0.0016**	**J**					0.011	U											0.012	U	0.013	U								
4,4'-DDT	0.035	U	0.034	U	0.038	U	**0.0032**	**J**					0.011	U											0.012	U	0.013	U								
Aldrin	0.018	U	0.017	U	0.019	U	0.0023	U					0.011	U											0.012	U	0.013	U								
Alpha-BHC	0.018	U	0.017	U	0.019	U	**0.00056**	**J**					0.011	U											0.012	U	0.013	U								
Alpha-Chlordane	0.18	U	0.17	U	0.19	U	0.0023	U																												
Beta-BHC	0.018	U	0.017	U	0.019	U	0.0023	U					0.011	U											0.012	U	0.013	U								
Chlordane (technical)	0.18	U	0.17	U	0.19	U	0.0023	U																												
Dieldrin	0.035	U	0.034	U	0.038	U	**0.0004**	**J**					0.011	U											0.012	U	0.013	U								
Endosulfan I	0.018	U	0.017	U	0.019	U	0.0023	U					0.011	U											0.012	U	0.013	U								
Endrin	0.035	U	0.034	U	0.038	U	0.0045	U					0.011	U											0.012	U	0.013	U								
Endrin aldehyde							0.0045	U					0.011	U											0.012	U	0.013	U								
Endrin ketone	0.035	U	0.034	U	0.038	U	0.0045	U																												
Gamma-BHC/Lindane	0.018	U	0.017	U	0.019	U	**0.0014**	**J**					0.011	U											0.012	U	0.013	U								
Heptachlor	0.018	U	0.017	U	0.019	U	0.0023	U					0.011	U											0.012	U	0.013	U								
Heptachlor epoxide	0.018	U	0.017	U	0.019	U	0.0023	U					0.011	U											0.012	U	0.013	U								
Inorganics (mg/kg)																																				
Aluminum	**4100**		**9800**		**460**		**4810**						**5000**												**4400**		**3700**									
Arsenic	**4.6**		**13**		**1.1**		**24.5**						**4.8**												**2.8**		**3.2**									
Barium	**14**		**23**		**6.6**		**9.2**	**B**																												
Beryllium	1.5	U	1.5	U	1.5	U	0.24	U																												
Cadmium	**1.4**		**1.2**		1	U	0.24	U					0.3	U											0.3	U	0.3	U								
Calcium	**4500**		**1600**		**2600**		**371**	**B**																												
Chromium	**22**		**27**		**7.3**		**305**		**500**		**490**		**1600**		**230**		**710**		**490**		**560**		**420**		**260**		**660**		**630**		**970**		**29**		**510**	
Cobalt	**1.8**		**5.2**		1.5	U	**1.9**	**B**																												
Copper	**4**		**10**		2.5	U	**4.3**	**B**																												
Iron	**5100**		**15000**		**840**		**20000**	*					**3800**												**5400**		**4000**									
Lead	10	U	10	U	10	U	**14.1**						**4**												**2.6**		**2.2**									
Magnesium	**1800**		**4700**		**150**		**325**	**B**																												
Manganese	**76**		**320**		**7.6**		**99.9**																													
Mercury	0.1	U	0.1	U	0.1	U	0.12	U					0.05	U											0.05	U	0.05	U								
Nickel	**4.8**		**12**		4	U	**1.8**	**B**																												
Potassium	**1000**		**1300**		**160**		**119**	**BE**																												
Silver																																				
Sodium	**95**		**140**		**70**		**85.4**	**BE**																												
Thallium	0.5	U	0.5	U	0.5	U	1.7	U																												
Tin																																				
Vanadium	**5.9**		**18**		1.5	U	**18.4**																													
Zinc	**14**		**27**		2.5	U	**7**	**E**																												

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	BH-08		BH-09		BH-10		BS017PND		1140-CP-C36		1140-CP-C38		1140-CP-C39		1140-CP-C41		1140-CP-C42		1140-CP-C43		1140-CP-C45		1140-CP-C46		1140-CP-C47		1140-CP-C49		1140-CP-C50		1140-CP-C52		1140-CP-C53		1140-CP-C54	
Sample Date	6/7/1991		6/7/1991		6/7/1991		1/21/1997		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/5/2000		10/9/2000		10/9/2000		10/10/2000	
Depth (feet)	3 - 5		2.6 - 4.6		3.8 - 5.8		0 - 0		5.4 - 5.4		6.2 - 6.2		6.7 - 6.7		6.5 - 6.5		6.3 - 6.3		5 - 5		6.6 - 6.6		6.1 - 6.1		5.4 - 5.4		6.8 - 6.8		4.8 - 4.8		8.7 - 8.7		8.5 - 8.5		3.3 - 3.3	
Chloride	40	UJ	40	UJ	**62**	**J**																														
Nitrogen, as Ammonia	**33**	**J**	**8.4**	**J**	**72**	**J**																														
Percent Moisture (%)																																				
Percent Solids (%)	**92**		**95**		**84**				**79.9**		**82.1**		**81.4**		**84.5**		**84.2**		**84.6**		**80.7**		**87.1**		**81.3**		**78.5**		**90.4**		**83.8**		**83.1**		**78.7**	
pH (pH units)																																				
Sulfate	**2000**	**J**	**210**	**J**	**6100**	**J**																														
Total Organic Carbon																																				
EPH (mg/Kg)																																				
C11-C22 Aromatics																																				
C11-C22 Aromatics (unadj.)																																				
C19-C36 Aliphatics																																				
Total EPH																																				
Other Analyses (mg/kg)																																				
Formaldehyde																																				
Hydrazine																																				

Notes:
1. **Bold** results detected.
2. U = not detected
3. J = estimated value
4. R = value rejected

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	CP-C55		CP-C56		CP-C57		CP-C58		CP-C59		CP-C60		CP-C61		CP-C62		CP-C64		CP-C65		CP-C66		CP-C67		CP-C68		CP-C69		CP-C70		CPDA-1-A		CPDA-1		CPDA-2	
Sample ID	1140-CP-C55		1140-CP-C56		1140-CP-C57		1140-CP-C58		1140-CP-C59		1140-CP-C60		1140-CP-C61		1140-CP-C62		1140-CP-C64		1140-CP-C65		1140-CP-C66		1140-CP-C67		1140-CP-C68		1140-CP-C69		1140-CP-C70		CPD-1-A (0-3 FT)		CPDA-1		CPDA-2	
Sample Date	10/10/2000		10/10/2000		10/10/2000		10/10/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		1/24/2000		12/16/1996		12/16/1996	
Depth (feet)	4.1 - 4.1		4.1 - 4.1		4.4 - 4.4		4.5 - 4.5		4.9 - 4.9		5.5 - 5.5		5.4 - 5.4		3.7 - 3.7		5.2 - 5.2		5.3 - 5.3		5.1 - 5.1		4.7 - 4.7		4.1 - 4.1		4.3 - 4.3		4.2 - 4.2		2.90 - 5.09		0 - 1		0 - 1	
Volatile Organics (mg/kg)																																				
1,1,1-Trichloroethane			0.15	U							0.2	U							0.14	U							0.14	U					0.007	U	0.011	U
1,1-Dichloroethene			0.15	U							0.2	U							0.14	U							0.14	U					0.007	U	0.011	U
1,2,3-Trichlorobenzene			0.15	U							0.2	U							0.14	U							0.14	U								
1,2,4-Trichlorobenzene			0.15	U							0.2	U							0.14	U							0.14	U								
1,2,4-Trimethylbenzene			0.15	U							0.2	U							0.14	U							0.14	U								
1,3,5-Trimethylbenzene			0.15	U							0.2	U							0.14	U							0.14	U								
2,4,4-Trimethyl-1-pentene			0.15	U							0.2	U							**0.41**								0.14	U					0.007	U	0.011	U
2,4,4-Trimethyl-2-pentene			0.15	U							0.2	U							0.14	U							0.14	U					0.007	U	0.011	U
2-Butanone			3	U							3.9	U							2.9	U							2.7	U					0.014	U	0.022	U
2-Hexanone			0.59	U							0.79	U							0.57	U							0.54	U					0.014	U	0.022	U
4-iso-Propyltoluene			0.15	U							0.2	U							0.14	U							0.14	U								
Acetone			3	U							3.9	U							2.9	U							2.7	U					**0.013**	**J**	**0.056**	
Benzene			0.15	U							0.2	U							0.14	U							0.14	U					0.007	U	0.011	U
Chloroform			0.15	U							0.2	U							0.14	U							0.14	U					0.007	U	0.011	U
Ethyl benzene			0.15	U							0.2	U							0.14	U							0.14	U					0.007	U	0.011	U
Isopropylbenzene			0.15	U							0.2	U							0.14	U							0.14	U								
Methylene chloride			0.15	U							0.2	U							0.14	U							**0.15**						0.007	U	**0.004**	**J**
Naphthalene			1.5	U							2	U							1.4	U							1.4	U								
Propylbenzene			0.15	U							0.2	U							0.14	U							0.14	U								
sec-Butylbenzene			0.15	U							0.2	U							0.14	U							0.14	U								
Styrene			0.15	U							0.2	U							0.14	U							0.14	U					0.007	U	0.011	U
Tetrachloroethene			0.15	U							0.2	U							0.14	U							0.14	U					0.007	U	0.011	U
Toluene			0.15	U							0.2	U							**0.23**								0.14	U					0.007	U	0.011	U
Trichloroethene			0.15	U							0.2	U							0.14	U							0.14	U					0.007	U	0.011	U
Xylene, o			0.15	U							0.2	U							0.14	U							0.14	U								
Xylenes (m&p)			0.15	U							0.2	U							0.14	U							0.14	U								
Xylenes, Total			0.15	U							0.2	U							0.14	U							0.14	U					0.007	U	0.011	U
Semivolatile Organics (mg/kg)																																				
1,2,4-Trichlorobenzene	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			0.66	U	0.63	U
2-Methylnaphthalene	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			0.66	U	0.63	U
2-Methylphenol	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			0.66	U	0.63	U
4-Methylphenol																																	0.66	U	0.63	U
Acenaphthylene	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			0.66	U	0.63	U
Anthracene	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			0.66	U	0.63	U
Benzaldehyde																																				
Benzo(a)anthracene	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			**0.035**	**J**	0.63	U
Benzo(a)pyrene	0.37	U	0.4	U	0.37	U	0.39	U					1.6	U							0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			**0.042**	**J**	0.63	U
Benzo(b)fluoranthene	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			**0.051**	**J**	0.63	U
Benzo(ghi)perylene	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			0.66	U	0.63	U
Benzo(k)fluoranthene	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			**0.055**	**J**	0.63	U
Benzoic Acid	1.9	U	2	U	1.9	U	1.9	U	18	UC	27	U	8	U	11	U	19	UC	38	UC	2	U	2	U	2	U	2	U	2	U			3.2	U	**0.2**	**J**
Bis(2-Ethylhexyl)phthalate	0.37	U	**1.1**		**1**		**0.67**		**26**	**C**	**5**	**J**	**5.5**		**7.9**		**22**	**C**	**46**	**C**	**0.22**	**J**	**0.54**		**0.54**		0.4	U	0.4	U			**0.85**	**B**	**0.54**	**JB**
Butylbenzylphthalate	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	U	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			0.66	U	0.63	U
Chrysene	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			**0.052**	**J**	0.63	U
Dibenz(a,h)anthracene	0.37	U	0.4	U	0.37	U	0.39	U					1.6	U							0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			0.66	U	0.63	U
Diethylphthalate	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			**0.036**	**J**	**0.024**	**J**
Di-n-butylphthalate	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			**0.067**	**JB**	**0.023**	**JB**
Di-n-octylphthalate	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			0.66	U	0.63	U

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	1140-CP-C55		1140-CP-C56		1140-CP-C57		1140-CP-C58		1140-CP-C59		1140-CP-C60		1140-CP-C61		1140-CP-C62		1140-CP-C64		1140-CP-C65		1140-CP-C66		1140-CP-C67		1140-CP-C68		1140-CP-C69		1140-CP-C70		CPD-1-A (0-3 FT)		CPDA-1		CPDA-2	
Sample Date	10/10/2000		10/10/2000		10/10/2000		10/10/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		10/20/2000		1/24/2000		12/16/1996		12/16/1996	
Depth (feet)	4.1 - 4.1		4.1 - 4.1		4.4 - 4.4		4.5 - 4.5		4.9 - 4.9		5.5 - 5.5		5.4 - 5.4		3.7 - 3.7		5.2 - 5.2		5.3 - 5.3		5.1 - 5.1		4.7 - 4.7		4.1 - 4.1		4.3 - 4.3		4.2 - 4.2		2.90 - 5.09		0 - 1		0 - 1	
Diphenyl ether																																				
Diphenylamine																																				
Fluoranthene	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			**0.1**	**J**	0.63	U
Fluorene																																				
Indeno(1,2,3-cd)pyrene	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			0.66	U	0.63	U
Naphthalene	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			0.66	U	0.63	U
N-Nitrosodiphenylamine	0.37	U	0.4	U	0.37	U	0.39	U	**11**	**C**	**3.1**	**J**	1.6	U	**9.9**		**54**	**C**	**15**	**C**	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			0.66	U	0.63	U
Phenanthrene	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			**0.052**	**J**	0.63	U
Phenol	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UC	5.5	U	1.6	U	2.3	U	3.8	UC	7.6	UC	0.4	U	0.4	U	0.39	U	0.4	U	0.4	U			0.66	U	0.63	U
Pyrene	0.37	U	0.4	U	0.37	U	0.39	U	3.7	UCK	5.5	UK	1.6	UK	2.3	UK	3.8	UC	7.6	UCK	0.4	UK	0.4	UK	0.39	U	0.4	U	0.4	UK			**0.076**	**J**	0.63	U
Pesticides/PCBs (mg/kg)																																				
4,4'-DDD			0.012	U							0.16	U							0.11	U							0.012	U					**0.0016**	**J**	0.0063	U
4,4'-DDE			0.012	U							0.16	U							0.11	U							0.012	U					**0.002**	**J**	0.0063	U
4,4'-DDT			0.012	U							0.16	U							0.11	U							0.012	U					0.006	U	0.0063	U
Aldrin			0.012	U							0.16	U							0.11	U							0.012	U					0.0031	U	**0.00096**	**J**
Alpha-BHC			0.012	U							0.16	U							0.11	U							0.012	U					0.0031	U	0.0033	U
Alpha-Chlordane																																	**0.0049**		0.0033	U
Beta-BHC			0.012	U							0.16	U							0.11	U							0.012	U					0.0031	U	0.0033	U
Chlordane (technical)																																	0.0031	U	0.0033	U
Dieldrin			0.012	U							0.16	U							0.11	U							0.012	U					0.006	U	0.0063	U
Endosulfan I			0.012	U							0.16	U							0.11	U							0.012	U					**0.0019**	**J**	0.0033	U
Endrin			0.012	U							0.16	U							0.11	U							0.012	U					0.006	U	0.0063	U
Endrin aldehyde			0.012	U							0.16	U							0.11	U							0.012	U					0.006	U	0.0063	U
Endrin ketone																																	0.006	U	0.0063	U
Gamma-BHC/Lindane			0.012	U							0.16	U							0.11	U							0.012	U					**0.00073**	**J**	0.0033	U
Heptachlor			0.012	U							0.16	U							0.11	U							0.012	U					0.0031	U	0.0033	U
Heptachlor epoxide			0.012	U							0.16	U							0.11	U							0.012	U					0.0031	U	0.0033	U
Inorganics (mg/kg)																																				
Aluminum			**5700**								**6600**								**5500**								**5500**				**4800**					
Arsenic			**4.9**								**8.8**								**6**								**89**									
Barium																															**9.1**					
Beryllium																															**0.12**					
Cadmium			0.3	U							0.4	U							**0.36**								**0.37**				0.2	U				
Calcium																															**560**					
Chromium	**410**		**680**		**240**		**530**		**27**		**100**		**350**		**88**		**20**		**52**		**470**		**250**		**280**		**540**		**37**		**24**		**3010**	***N**	**3.6**	***N**
Cobalt																															**1.7**					
Copper																															23	U				
Iron			**5000**								**9000**								**6900**								**25000**				**3500**					
Lead			**3.1**								**17**								**6.6**								**4.2**				**3.4**					
Magnesium																															**950**					
Manganese																															**34**					
Mercury			0.05	U							**0.12**								0.05	U							0.05	U			0.05	U				
Nickel																															**4.4**					
Potassium																															**230**					
Silver																																				
Sodium																															**80**					
Thallium																															0.8	U				
Tin																																				
Vanadium																															**6.7**					
Zinc																															**11**					

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	1140-CP-C55	1140-CP-C56	1140-CP-C57	1140-CP-C58	1140-CP-C59	1140-CP-C60	1140-CP-C61	1140-CP-C62	1140-CP-C64	1140-CP-C65	1140-CP-C66	1140-CP-C67	1140-CP-C68	1140-CP-C69	1140-CP-C70	CPD-1-A (0-3 FT)	CPDA-1	CPDA-2
Sample Date	10/10/2000	10/10/2000	10/10/2000	10/10/2000	10/20/2000	10/20/2000	10/20/2000	10/20/2000	10/20/2000	10/20/2000	10/20/2000	10/20/2000	10/20/2000	10/20/2000	10/20/2000	1/24/2000	12/16/1996	12/16/1996
Depth (feet)	4.1 - 4.1	4.1 - 4.1	4.4 - 4.4	4.5 - 4.5	4.9 - 4.9	5.5 - 5.5	5.4 - 5.4	3.7 - 3.7	5.2 - 5.2	5.3 - 5.3	5.1 - 5.1	4.7 - 4.7	4.1 - 4.1	4.3 - 4.3	4.2 - 4.2	2.90 - 5.09	0 - 1	0 - 1
Chloride																		
Nitrogen, as Ammonia																	**363**	**126**
Percent Moisture (%)																		
Percent Solids (%)	**87**	**82.4**	**87.9**	**85.2**	**89**	**60.2**	**82.7**	**72.7**	**87.5**	**87.6**	**81.9**	**82.8**	**84.4**	**81.9**	**83.4**	**81.9**		
pH (pH units)																		
Sulfate																	**590**	**26800**
Total Organic Carbon																		
EPH (mg/Kg)																		
C11-C22 Aromatics																		
C11-C22 Aromatics (unadj.)																		
C19-C36 Aliphatics																		
Total EPH																		
Other Analyses (mg/kg)																		
Formaldehyde																		
Hydrazine																		

Notes:
1. **Bold** results detected.
2. U = not detected
3. J = estimated value
4. R = value rejected

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	CPDA-3		CPDA-4		DA-C10		DA-C11		DA-C12		DA-C13		DA-C14		DA-C15		DA-C16		DA-C17		DA-C18		DA-C19		DA-C2		DA-C20		DA-C21		DA-C22		DA-C23		DA-C24	
Sample ID	CPDA-3		CPDA-4		1120-DA-C10		1120-DA-C11		1120-DA-C12		1120-DA-C13		1120-DA-C14		1120-DA-C15		1120-DA-C16		1120-DA-C17		1120-DA-C18		1120-DA-C19		1120-DA-C2		1120-DA-C20		1120-DA-C21		1120-DA-C22		1120-DA-C23		1120-DA-C24	
Sample Date	12/16/1996		12/16/1996		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000	
Depth (feet)	0 - 1		0 - 1		-0.2 - 1.8		0 - 3		7 - 7		7 - 7		5.9 - 5.9		1.2 - 4.2		1.2 - 4.2		6.2 - 6.2		6.3 - 6.3		1.3 - 4.3		1.4 - 4.4		0.3 - 3.3		6.4 - 6.4		6 - 6		6.1 - 6.1		5.7 - 5.7	
Volatile Organics (mg/kg)																																				
1,1,1-Trichloroethane	0.007	U	0.014	U	0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
1,1-Dichloroethene	0.007	U	0.014	U	0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
1,2,3-Trichlorobenzene					0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
1,2,4-Trichlorobenzene					0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
1,2,4-Trimethylbenzene					0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
1,3,5-Trimethylbenzene					0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
2,4,4-Trimethyl-1-pentene	0.007	UJ	**0.014**	**J**	0.13	U	0.12	U	0.15	U	**68**		**7.1**		0.13	U	0.12	U	**0.44**		0.14	U	0.13	U	0.13	U	0.13	U	**0.42**		**1**		0.16	U	0.15	U
2,4,4-Trimethyl-2-pentene	0.007	U	0.014	U	0.13	U	0.12	U	0.15	U	**27**		**2.6**		0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	**0.35**		0.16	U	0.15	U
2-Butanone	0.013	U	0.028	U	2.6	U	2.4	U	3	U	15	U	2.5	U	2.6	U	2.3	U	2.7	U	2.9	U	2.6	U	2.7	U	2.6	U	3	U	2.7	U	3.1	U	3	U
2-Hexanone	0.013	UJ	0.028	UJ	0.53	U	0.49	U	0.59	U	3	U	0.51	U	0.52	U	0.46	U	0.55	U	0.58	U	0.52	U	0.54	U	0.52	U	0.59	U	0.53	U	0.62	U	0.59	U
4-iso-Propyltoluene					0.13	U	0.12	U	0.15	U	**3.2**		**1.7**		0.13	U	0.12	U	**9.2**		0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
Acetone	0.031	U	0.06	U	2.6	U	2.4	U	3	U	15	U	2.5	U	2.6	U	2.3	U	2.7	U	2.9	U	2.6	U	2.7	U	2.6	U	3	U	2.7	U	3.1	U	3	U
Benzene	0.007	U	0.014	U	0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
Chloroform	0.007	U	0.014	U	0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
Ethyl benzene	0.007	U	0.014	U	0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
Isopropylbenzene					0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	**0.22**		0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
Methylene chloride	0.007	U	0.014	U	**0.21**	**B**	**0.17**	**B**	**0.15**	**JB**	0.74	U	0.13	U	**0.18**	**B**	**0.16**	**B**	0.14	U	**0.19**		**0.18**		**0.16**	**B**	**0.17**		**0.23**		**0.18**		**0.21**		**0.19**	
Naphthalene					1.3	U	1.2	U	1.5	U	7.4	U	1.3	U	1.3	U	1.2	U	1.4	U	1.4	U	1.3	U	1.3	U	1.3	U	1.5	U	1.3	U	1.6	U	1.5	U
Propylbenzene					0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
sec-Butylbenzene					0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
Styrene	0.007	U	0.014	U	0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
Tetrachloroethene	0.007	U	0.014	U	0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
Toluene	0.007	U	**0.005**	**J**	0.13	U	0.12	U	0.14	J	**7.5**		0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	**0.51**		0.15	U
Trichloroethene	0.007	U	0.014	U	0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
Xylene, o					0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
Xylenes (m&p)					0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
Xylenes, Total	0.007	U	0.014	U	0.13	U	0.12	U	0.15	U	0.74	U	0.13	U	0.13	U	0.12	U	0.14	U	0.14	U	0.13	U	0.13	U	0.13	U	0.15	U	0.13	U	0.16	U	0.15	U
Semivolatile Organics (mg/kg)																																				
1,2,4-Trichlorobenzene	0.96	U	0.66	U	0.35	U	0.35	U	0.42	U	40	UC	38	U	0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U	400	U	1.9	U
2-Methylnaphthalene	0.96	U	0.66	U	0.35	U	0.35	U	0.42	U	40	UC	38	U	0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U	400	U	1.9	U
2-Methylphenol	0.96	U	0.66	U	0.35	U	0.35	U	0.42	U	40	UC	38	U	0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U	400	U	1.9	U
4-Methylphenol	0.96	U	0.66	U																																
Acenaphthylene	0.96	U	**0.066**	**J**	0.35	U	0.35	U	0.42	U	40	UC	38	U	0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U	400	U	1.9	U
Anthracene	0.96	U	**0.057**	**J**	0.35	U	0.35	U	0.42	U	40	UC	38	U	0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U	400	U	1.9	U
Benzaldehyde																																				
Benzo(a)anthracene	0.96	U	0.66	U	0.35	U	0.35	U	0.42	U					0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U			1.9	U
Benzo(a)pyrene	0.96	U	0.66	U	0.35	U	0.35	U	0.42	U					0.35	U	0.34	U					0.34	U	0.73	U	0.34	U							1.9	U
Benzo(b)fluoranthene	0.96	U	0.66	U	0.35	U	0.35	U	0.42	U					0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U			1.9	U
Benzo(ghi)perylene	0.96	U	0.66	U	0.35	U	0.35	U	0.42	U	40	UC	38	U	0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U	400	U	1.9	U
Benzo(k)fluoranthene	0.96	U	0.66	U	0.35	U	0.35	U	0.42	U	40	UC	38	U	0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U			1.9	U
Benzoic Acid	4.6	U	**0.26**	**J**	1.8	U	1.8	U	2.1	U	200	UC	190	U	1.7	U	1.7	U	97	U	98	U	1.7	U	3.6	U	1.7	U	21	U	19	U	2000	U	9.7	U
Bis(2-Ethylhexyl)phthalate	**5.3**		**1.1**		**3.8**		**5.8**		**8.2**		**448**	**C**	**1582**		**1.2**		**0.42**		**381**		**370**		**1.1**		**8.5**		0.34	U	**73**		**94**		**1590**		**16**	
Butylbenzylphthalate	0.96	U	0.66	U	0.35	U	0.35	U	0.42	U	40	UC	38	U	0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U	400	U	1.9	U
Chrysene	0.96	U	0.66	U	0.35	U	0.35	U	0.42	U	40	UC	38	U	0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U	400	U	1.9	U
Dibenz(a,h)anthracene	0.96	U	0.66	U	0.35	U	0.35	U	0.42	U					0.35	U	0.34	U					0.34	U	0.73	U	0.34	U							1.9	U
Diethylphthalate	0.96	U	0.66	U	0.35	U	0.35	U	0.42	U	40	UC	38	U	0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U	400	U	1.9	U
Di-n-butylphthalate	0.96	U	0.66	U	0.35	U	0.35	U	0.42	U	**98**	**C**	**109**		0.35	U	0.34	U	19	U	20	U	0.34	U	**0.39**	**J**	0.34	U	4.1	U	3.8	U	400	U	1.9	U
Di-n-octylphthalate	0.96	U	0.66	U	0.35	U	0.35	U	0.42	U	40	UC	38	U	0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U	400	U	1.9	U

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	CPDA-3		CPDA-4		1120-DA-C10		1120-DA-C11		1120-DA-C12		1120-DA-C13		1120-DA-C14		1120-DA-C15		1120-DA-C16		1120-DA-C17		1120-DA-C18		1120-DA-C19		1120-DA-C2		1120-DA-C20		1120-DA-C21		1120-DA-C22		1120-DA-C23		1120-DA-C24	
Sample Date	12/16/1996		12/16/1996		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000	
Depth (feet)	0 - 1		0 - 1		-0.2 - 1.8		0 - 3		7 - 7		7 - 7		5.9 - 5.9		1.2 - 4.2		1.2 - 4.2		6.2 - 6.2		6.3 - 6.3		1.3 - 4.3		1.4 - 4.4		0.3 - 3.3		6.4 - 6.4		6 - 6		6.1 - 6.1		5.7 - 5.7	
Diphenyl ether																																				
Diphenylamine																																				
Fluoranthene	0.96	U	**0.098**	**J**	0.35	U	0.35	U	0.42	U	40	UC	38	U	0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U	400	U	1.9	U
Fluorene																																				
Indeno(1,2,3-cd)pyrene	0.96	U	0.66	U	0.35	U	0.35	U	0.42	U					0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U			1.9	U
Naphthalene	0.96	U	0.66	U	0.35	U	0.35	U	0.42	U	40	UC	38	U	0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U			1.9	U
N-Nitrosodiphenylamine	0.96	U	0.66	U	**0.24**	**J**	**0.32**	**J**	**6**		40	UC	**49**		0.35	U	0.34	U	19	U	20	U	0.34	U	**1.2**		0.34	U	4.1	U	**2.8**	**J**	400	U	1.9	U
Phenanthrene	0.96	U	**0.12**	**J**	0.35	U	0.35	U	0.42	U	40	UC	38	U	0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U	400	U	1.9	U
Phenol	0.96	U	0.66	U	0.35	U	0.35	U	0.42	U	40	UC	38	U	0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U	400	U	1.9	U
Pyrene	0.96	U	**0.068**	**J**	0.35	U	0.35	U	0.42	U	40	UC	38	U	0.35	U	0.34	U	19	U	20	U	0.34	U	0.73	U	0.34	U	4.1	U	3.8	U	400	U	1.9	U
Pesticides/PCBs (mg/kg)																																				
4,4'-DDD	**0.0013**	**J**	0.0066	U	0.011	U	0.011	U	0.012	U	0.012	U	0.011	U	0.01	U	0.01	UC	0.012	U	0.012	U	0.01	U	0.11	U	0.01	U	0.012	U	0.012	U	0.012	U	0.012	U
4,4'-DDE	**0.0026**	**J**	0.0066	U	0.011	U	0.011	U	0.012	U	0.012	U	0.011	U	0.01	U	0.01	UC	0.012	U	0.012	U	0.01	U	0.11	U	0.01	U	0.012	U	0.012	U	0.012	U	0.012	U
4,4'-DDT	**0.012**	**J**	0.0066	UJ	0.011	U	0.011	U	0.012	U	0.012	U	0.011	U	0.01	U	0.01	UC	0.012	U	0.012	U	0.01	U	0.11	U	0.01	U	0.012	U	0.012	U	0.012	U	0.012	U
Aldrin	0.0035	U	**0.00011**	**J**	0.011	U	0.011	U	0.012	U	0.012	U	0.011	U	0.01	U	0.01	UC	0.012	U	0.012	U	0.01	U	0.11	U	0.01	U	0.012	U	0.012	U	0.012	U	0.012	U
Alpha-BHC	0.0035	U	0.0034	U	0.011	U	0.011	U	0.012	U	0.012	U	0.011	U	0.01	U	0.01	UC	0.012	U	0.012	U	0.01	U	0.11	U	0.01	U	0.012	U	0.012	U	0.012	U	0.012	U
Alpha-Chlordane	0.0035	U	0.0034	U																																
Beta-BHC	0.0035	U	0.0034	U	0.011	U	0.011	U	0.012	U	0.012	U	0.011	U	0.01	U	0.01	UC	0.012	U	0.012	U	0.01	U	0.11	U	0.01	U	0.012	U	0.012	U	0.012	U	0.012	U
Chlordane (technical)	0.0035	UJ	0.0034	UJ																																
Dieldrin	0.0069	U	0.0066	U	0.011	U	0.011	U	0.012	U	0.012	U	0.011	U	0.01	U	0.01	UC	0.012	U	0.012	U	0.01	U	0.11	U	0.01	U	0.012	U	0.012	U	0.012	U	0.012	U
Endosulfan I	0.0035	U	0.0034	U	0.011	U	0.011	U	0.012	U	0.012	U	0.011	U	0.01	U	0.01	UC	0.012	U	0.012	U	0.01	U	0.11	U	0.01	U	0.012	U	0.012	U	0.012	U	0.012	U
Endrin	0.0069	U	0.0066	U	0.011	U	0.011	U	0.012	U	0.012	U	0.011	U	0.01	U	0.01	U	0.012	U	0.012	U	0.01	U	0.11	U	0.01	U	0.012	U	0.012	U	0.012	U	0.012	U
Endrin aldehyde	0.0069	U	0.0066	U	0.011	U	0.011	U	0.012	U	0.012	U	0.011	U	0.01	U	0.01	UC	0.012	U	0.012	U	0.01	U	0.11	U	0.01	U	0.012	U	0.012	U	0.012	U	0.012	U
Endrin ketone	**0.0031**	**J**	0.0066	UJ																																
Gamma-BHC/Lindane	**0.0061**		0.0034	U	0.011	U	0.011	U	0.012	U	0.012	U	0.011	U	0.01	U	0.01	UC	0.012	U	0.012	U	0.01	U	**0.69**	**F**	0.01	U	**0.2**		0.012	U	0.012	U	0.012	U
Heptachlor	0.0035	U	**0.0004**	**J**	0.011	U	0.011	U	0.012	U	0.012	U	0.011	U	0.01	U	0.01	U	0.012	U	0.012	U	0.01	U	0.11	U	0.01	U	0.012	U	0.012	U	0.012	U	0.012	U
Heptachlor epoxide	0.0035	U	0.0034	U	0.011	U	0.011	U	0.012	U	0.012	U	0.011	U	0.01	U	0.01	UC	0.012	U	0.012	U	0.01	U	0.11	U	0.01	U	0.012	U	0.012	U	0.012	U	0.012	U
Inorganics (mg/kg)																																				
Aluminum																																				
Arsenic																																				
Barium																																				
Beryllium																																				
Cadmium					0.3	U	0.3	U	0.3	U	**0.56**		0.3	U	0.3	U	0.3	U	**1.4**		**1.4**		0.3	U	**1.4**		0.3	U	0.3	U	0.3	U	**2.3**		0.3	U
Calcium																																				
Chromium	**270**		**17**		**27**		**10**		**30**		**10**		**18**		**7.8**		**23**		**20**		**15**		**41**		**94**		**23**		**6.8**		**5.7**		**8.4**		**5.8**	
Cobalt																																				
Copper																																				
Iron																																				
Lead					**2**		**3**		**4.2**		**2.4**		**3**		**2**		**6.1**		**3.4**		**2.6**		**2.8**		**3.9**		**6.1**		**2**		**2.5**		**2.8**		**2**	
Magnesium																																				
Manganese																																				
Mercury																																				
Nickel																																				
Potassium																																				
Silver																																				
Sodium																																				
Thallium																																				
Tin																																				
Vanadium																																				
Zinc																																				

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	CPDA-3	CPDA-4	1120-DA-C10	1120-DA-C11	1120-DA-C12	1120-DA-C13	1120-DA-C14	1120-DA-C15	1120-DA-C16	1120-DA-C17	1120-DA-C18	1120-DA-C19	1120-DA-C2	1120-DA-C20	1120-DA-C21	1120-DA-C22	1120-DA-C23	1120-DA-C24
Sample Date	12/16/1996	12/16/1996	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000
Depth (feet)	0 - 1	0 - 1	-0.2 - 1.8	0 - 3	7 - 7	7 - 7	5.9 - 5.9	1.2 - 4.2	1.2 - 4.2	6.2 - 6.2	6.3 - 6.3	1.3 - 4.3	1.4 - 4.4	0.3 - 3.3	6.4 - 6.4	6 - 6	6.1 - 6.1	5.7 - 5.7
Chloride																		
Nitrogen, as Ammonia	**153**	**161**																
Percent Moisture (%)																		
Percent Solids (%)			**94.1**	**94.1**	**80.1**	**84**	**88.3**	**95.3**	**97.5**	**85.5**	**84.7**	**97**	**91.6**	**97.2**	**80.7**	**86.3**	**83.4**	**85.8**
pH (pH units)																		
Sulfate	**650**	**24900**																
Total Organic Carbon																		
EPH (mg/Kg)																		
C11-C22 Aromatics																		
C11-C22 Aromatics (unadj.)																		
C19-C36 Aliphatics																		
Total EPH																		
Other Analyses (mg/kg)																		
Formaldehyde																		
Hydrazine																		

Notes:
1. **Bold** results detected.
2. U = not detected
3. J = estimated value
4. R = value rejected

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	DA-C27	DA-C28	DA-C29	DA-C3	DA-C30	DA-C31	DA-C32	DA-C35	DA-C4	DA-C5	DA-C6	DA-C7	DA-C8	DA-C9	DB-C10	DB-C11	DB-C12	DB-C13
Sample ID	1120-DA-C27	1120-DA-C28	1120-DA-C29-RISK	1120-DA-C3	1120-DA-C30	1120-DA-C31	1120-DA-C32	1120-DA-C35	1120-DA-C4	1120-DA-C5	1120-DA-C6	1120-DA-C7	1120-DA-C8	1120-DA-C9	97598-DB-C10	97598-DB-C11	97598-DB-C12	97598-DB-C13
Sample Date	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000
Depth (feet)	1.6 - 4.6	2.7 - 5.7	6.2 - 6.2	1.6 - 4.6	6.5 - 9.5	4.9 - 7.9	5 - 8	7.9 - 7.9	1.7 - 4.7	0.3 - 2.3	0.5 - 3.5	7.2 - 7.2	6.9 - 6.9	0.3 - 0.3	0.8 - 3.8	6.2 - 6.2	5.9 - 5.9	1.9 - 4.9
Volatile Organics (mg/kg)																		
1,1,1-Trichloroethane	0.13 U	0.14 U	0.15 U	0.13 U	0.13 U	0.12 U	0.13 U	0.15 U	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	**0.087**
1,1-Dichloroethene	0.13 U	0.14 U	0.15 U	0.13 U	0.13 U	0.12 U	0.13 U	0.15 U	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	0.062 U
1,2,3-Trichlorobenzene	0.13 U	0.14 U	0.15 U	0.13 U	0.13 U	0.12 U	0.13 U	0.15 U	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	**0.16**
1,2,4-Trichlorobenzene	0.13 U	0.14 U	0.15 U	0.13 U	0.13 U	0.12 U	0.13 U	0.15 U	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	**0.79**
1,2,4-Trimethylbenzene	0.13 U	0.14 U	0.15 U	0.13 U	0.13 U	0.12 U	0.13 U	0.15 U	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	**3.9**
1,3,5-Trimethylbenzene	0.13 U	0.14 U	0.15 U	0.13 U	0.13 U	0.12 U	0.13 U	0.15 U	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	**2.6**
2,4,4-Trimethyl-1-pentene	0.13 U	0.14 U	**4.65**	0.13 U	**0.37**	0.12 U	0.13 U	**2.6**	0.14 U	0.12 U	0.12 U	0.14 U	**0.67**	0.12 U	U	U	U	0.55 U
2,4,4-Trimethyl-2-pentene	0.13 U	0.14 U	**1.8**	0.13 U	0.13 U	0.12 U	0.13 U	**7.3**	0.14 U	0.12 U	0.12 U	0.14 U	**0.18**	0.12 U	U	U	U	U
2-Butanone	2.6 U	2.8 U	3 U	2.6 U	2.6 U	2.5 U	2.6 U	3 U	2.8 U	2.5 U	2.3 U	2.8 U	2.8 U	2.4 U	0.87 U	0.58 U	0.52 U	0.62 U
2-Hexanone	0.51 U	0.56 U	0.61 U	0.52 U	0.52 U	0.5 U	0.51 U	0.6 U	0.56 U	0.5 U	0.46 U	0.56 U	0.57 U	0.47 U	0.87 U	0.58 U	0.52 U	0.62 U
4-iso-Propyltoluene	0.13 U	0.14 U	**0.75**	0.13 U	0.13 U	0.12 U	0.13 U	**18**	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	**0.16**
Acetone	2.6 U	2.8 U	3 U	2.6 U	2.6 U	2.5 U	2.6 U	3 U	2.8 U	2.5 U	2.3 U	2.8 U	2.8 U	2.4 U	0.87 U	0.58 U	0.52 U	0.62 U
Benzene	0.13 U	0.14 U	0.15 U	0.13 U	0.13 U	0.12 U	0.13 U	0.15 U	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	0.062 U
Chloroform	0.13 U	0.14 U	0.15 U	0.13 U	0.13 U	0.12 U	0.13 U	0.15 U	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	0.062 U
Ethyl benzene	0.13 U	0.14 U	0.15 U	0.13 U	0.13 U	0.12 U	0.13 U	**0.62**	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	**0.12**
Isopropylbenzene	0.13 U	0.14 U	0.15 U	0.13 U	0.13 U	0.12 U	0.13 U	**0.37**	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	**0.47**
Methylene chloride	0.13 U	0.14 U	0.15 U	**0.16 B**	0.13 U	0.12 U	0.13 U	0.15 U	**0.17 B**	**0.2 B**	**0.17 B**	**0.18 B**	**0.24 B**	**0.17 B**	**0.58 B**	**0.64 B**	**0.31 B**	**0.88 B**
Naphthalene	1.3 U	1.4 U	1.5 U	1.3 U	1.3 U	1.2 U	1.3 U	1.5 U	1.4 U	1.2 U	1.2 U	1.4 U	1.4 U	1.2 U	0.17 U	0.12 U	0.1 U	**0.62**
Propylbenzene	0.13 U	0.14 U	0.15 U	0.13 U	0.13 U	0.12 U	0.13 U	0.15 U	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	**0.56**
sec-Butylbenzene	0.13 U	0.14 U	0.15 U	0.13 U	0.13 U	0.12 U	0.13 U	0.15 U	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	**0.15**
Styrene	0.13 U	0.14 U	0.15 U	0.13 U	0.13 U	0.12 U	0.13 U	0.15 U	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	**0.29**
Tetrachloroethene	0.13 U	0.14 U	0.15 U	0.13 U	0.13 U	0.12 U	0.13 U	0.15 U	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	0.062 U
Toluene	0.13 U	0.14 U	0.15 U	0.13 U	**0.45**	0.12 U	0.13 U	**13**	0.14 U	0.12 U	0.12 U	0.14 U	**1.5**	0.12 U	0.087 U	0.058 U	0.052 U	0.062 U
Trichloroethene	0.13 U	0.14 U	0.15 U	0.13 U	0.13 U	0.12 U	0.13 U	0.15 U	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	0.062 U
Xylene, o	0.13 U	0.14 U	0.15 U	0.13 U	0.13 U	0.12 U	0.13 U	0.15 U	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	**0.45**
Xylenes (m&p)	0.13 U	0.14 U	0.15 U	0.13 U	**0.096 JB**	0.12 U	0.13 U	0.15 U	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	**0.29**
Xylenes, Total	0.13 U	0.14 U	0.15 U	0.13 U	**0.096 JB**	0.12 U	0.13 U	0.15 U	0.14 U	0.12 U	0.12 U	0.14 U	0.14 U	0.12 U	0.087 U	0.058 U	0.052 U	**0.74**
Semivolatile Organics (mg/kg)																		
1,2,4-Trichlorobenzene	0.71 U	0.37 U	8.3 UC	0.77 U	0.37 U	1.8 U	0.37 U	0.41 U	0.38 U	0.36 U	3.5 U	0.43 U	0.84 U	0.35 U	0.4 U	0.3 U	0.29 U	0.27 U
2-Methylnaphthalene	0.71 U	0.37 U	8.3 UC	0.77 U	0.37 U	1.8 U	0.37 U	0.41 U	0.38 U	0.36 U	3.5 U	0.43 U	0.84 U	0.35 U	0.4 U	0.3 U	0.29 U	0.27 U
2-Methylphenol	0.71 U	0.37 U	8.3 UC	0.77 U	0.37 U	1.8 U	0.37 U	0.41 U	0.38 U	0.36 U	3.5 U	0.43 U	0.84 U	0.35 U	0.4 U	0.3 U	0.29 U	0.27 U
4-Methylphenol															0.4 U	0.3 U	0.29 U	0.27 U
Acenaphthylene	0.71 U	0.37 U	8.3 UC	0.77 U	0.37 U	1.8 U	0.37 U	0.41 U	0.38 U	0.36 U	3.5 U	0.43 U	0.84 U	0.35 U	0.4 U	0.3 U	0.29 U	0.27 U
Anthracene	0.71 U	0.37 U	8.3 UC	0.77 U	0.37 U	1.8 U	0.37 U	0.41 U	0.38 U	0.36 U	3.5 U	0.43 U	0.84 U	0.35 U	0.4 U	0.3 U	0.29 U	0.27 U
Benzaldehyde																		
Benzo(a)anthracene	0.71 U	0.37 U	8.3 UC	0.77 U	0.37 U	1.8 U	0.37 U	0.41 U	0.38 U	0.36 U	3.5 U	0.43 U	0.84 U	0.35 U	0.4 U	0.3 U	0.29 U	0.27 U
Benzo(a)pyrene	0.71 U	0.37 U		0.77 U	0.37 U	1.8 U	0.37 U	0.41 U	0.38 U	0.36 U		0.43 U	0.84 U	0.35 U	0.4 U	0.3 U	0.29 U	0.27 U
Benzo(b)fluoranthene	0.71 U	0.37 U	8.3 UC	0.77 U	0.37 U	1.8 U	0.37 U	0.41 U	0.38 U	0.36 U	3.5 U	0.43 U	0.84 U	0.35 U	0.4 U	0.3 U	0.29 U	0.27 U
Benzo(ghi)perylene	0.71 U	0.37 U	8.3 UC	0.77 U	0.37 U	1.8 U	0.37 U	0.41 U	0.38 U	0.36 U	3.5 U	0.43 U	0.84 U	0.35 U	0.4 U	0.3 U	0.29 U	0.27 U
Benzo(k)fluoranthene	0.71 U	0.37 U	8.3 UC	0.77 U	0.37 U	1.8 U	0.37 U	0.41 U	0.38 U	0.36 U	3.5 U	0.43 U	0.84 U	0.35 U	0.4 U	0.3 U	0.29 U	0.27 U
Benzoic Acid	3.5 U	1.8 U	42 UC	3.8 U	1.8 U	9 U	1.8 U	2 U	1.9 U	1.8 U	18 U	2.2 U	4.2 U	1.8 U	0.81 U	0.59 U	0.57 U	0.55 U
Bis(2-Ethylhexyl)phthalate	**7.2**	**6.2**	**119 C**	**9.6**	**3.4**	**12**	**0.86**	**7.9**	**3.9**	**1.7**	**19**	**7.6**	**0.98**	**2.3**	**1.1 B**	0.3 UB	0.29 UB	**16**
Butylbenzylphthalate	0.71 U	0.37 U	8.3 UC	0.77 U	0.37 U	1.8 U	0.37 U	0.41 U	0.38 U	0.36 U	3.5 U	0.43 U	0.84 U	0.35 U	0.4 U	0.3 U	0.29 U	0.27 U
Chrysene	0.71 U	0.37 U	8.3 UC	0.77 U	0.37 U	1.8 U	0.37 U	0.41 U	0.38 U	0.36 U	3.5 U	0.43 U	0.84 U	0.35 U	0.4 U	0.3 U	0.29 U	0.27 U
Dibenz(a,h)anthracene	0.71 U	0.37 U		0.77 U	0.37 U	1.8 U	0.37 U	0.41 U	0.38 U	0.36 U		0.43 U	0.84 U	0.35 U	0.4 U	0.3 U	0.29 U	0.27 U
Diethylphthalate	0.71 U	0.37 U	8.3 UC	0.77 U	0.37 U	1.8 U	0.37 U	0.41 U	0.38 U	0.36 U	3.5 U	0.43 U	0.84 U	0.35 U	0.4 U	0.3 U	0.29 U	0.27 U
Di-n-butylphthalate	0.71 U	0.37 U	8.3 UC	0.77 U	0.37 U	1.8 U	0.37 U	0.41 U	**1.6**	0.36 U	3.5 U	0.43 U	0.84 U	0.35 U	0.4 U	0.3 U	0.29 U	**0.22 J**
Di-n-octylphthalate	0.71 U	0.37 U	8.3 UC	0.77 U	0.37 U	1.8 U	0.37 U	0.41 U	0.38 U	0.36 U	3.5 U	0.43 U	0.84 U	0.35 U	0.4 U	0.3 U	0.29 U	0.27 U

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	1120-DA-C27		1120-DA-C28		1120-DA-C29-RISK		1120-DA-C3		1120-DA-C30		1120-DA-C31		1120-DA-C32		1120-DA-C35		1120-DA-C4		1120-DA-C5		1120-DA-C6		1120-DA-C7		1120-DA-C8		1120-DA-C9		97598-DB-C10		97598-DB-C11		97598-DB-C12		97598-DB-C13	
Sample Date	9/29/2000		9/29/2000		9/29/2000		9/29/2000		9/29/2000		9/29/2000		9/29/2000		9/29/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		9/18/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000	
Depth (feet)	1.6 - 4.6		2.7 - 5.7		6.2 - 6.2		1.6 - 4.6		6.5 - 9.5		4.9 - 7.9		5 - 8		7.9 - 7.9		1.7 - 4.7		0.3 - 2.3		0.5 - 3.5		7.2 - 7.2		6.9 - 6.9		0.3 - 0.3		0.8 - 3.8		6.2 - 6.2		5.9 - 5.9		1.9 - 4.9	
Diphenyl ether																																				
Diphenylamine																																				
Fluoranthene	0.71	U	0.37	U	8.3	UC	0.77	U	0.37	U	1.8	U	0.37	U	0.41	U	0.38	U	0.36	U	3.5	U	0.43	U	0.84	U	0.35	U	0.4	U	0.3	U	0.29	U	0.27	U
Fluorene																																				
Indeno(1,2,3-cd)pyrene	0.71	U	0.37	U	8.3	UC	0.77	U	0.37	U	1.8	U	0.37	U	0.41	U	0.38	U	0.36	U	3.5	U	0.43	U	0.84	U	0.35	U	0.4	U	0.3	U	0.29	U	0.27	U
Naphthalene	0.71	U	0.37	U	8.3	UC	0.77	U	0.37	U	1.8	U	0.37	U	0.41	U	0.38	U	0.36	U	3.5	U	0.43	U	0.84	U	0.35	U	0.4	U	0.3	U	0.29	U	**0.26**	**J**
N-Nitrosodiphenylamine	0.71	U	**0.8**		**6.5**	**JC**	**0.48**	**J**	**0.48**		1.8	U	0.37	U	0.41	U	0.38	U	0.36	U	3.5	U	0.43	U	0.84	U	0.35	U	0.4	U	0.3	U	0.29	U	**1.6**	
Phenanthrene	0.71	U	0.37	U	8.3	UC	0.77	U	0.37	U	1.8	U	0.37	U	0.41	U	0.38	U	0.36	U	3.5	U	0.43	U	0.84	U	0.35	U	0.4	U	0.3	U	0.29	U	0.27	U
Phenol	0.71	U	0.37	U	8.3	UC	0.77	U	0.37	U	1.8	U	0.37	U	0.41	U	0.38	U	0.36	U	3.5	U	0.43	U	0.84	U	0.35	U	0.4	U	0.3	U	0.29	U	0.27	U
Pyrene	0.71	U	0.37	U	8.3	UC	0.77	U	0.37	U	1.8	U	0.37	U	0.41	U	0.38	U	0.36	U	3.5	U	0.43	U	0.84	U	0.35	U	0.4	U	0.3	U	0.29	U	0.27	U
Pesticides/PCBs (mg/kg)																																				
4,4'-DDD	0.01	U	0.011	U	0.012	U	0.011	U	0.011	U	0.01	U	0.01	U	0.012	U	0.011	U	0.011	U	0.01	U	0.013	U	0.013	U	0.011	U	0.026	U	0.018	U	0.019	U	0.017	U
4,4'-DDE	0.01	U	0.011	U	0.012	U	0.011	U	0.011	U	0.01	U	0.01	U	0.012	U	0.011	U	0.011	U	0.01	U	0.013	U	0.013	U	0.011	U	0.026	U	0.018	U	0.019	U	0.017	U
4,4'-DDT	0.01	U	0.011	U	0.012	U	0.011	U	0.011	U	0.01	U	0.01	U	0.012	U	0.011	U	0.011	U	0.01	U	0.013	U	0.013	U	0.011	U	0.026	U	0.018	U	0.019	U	0.017	U
Aldrin	0.01	U	0.011	U	**0.014**		0.011	U	**0.015**		0.01	U	0.01	U	0.012	U	0.011	U	0.011	U	0.01	U	0.013	U	0.013	U	0.011	U	0.013	U	0.0091	U	0.0093	U	0.0086	U
Alpha-BHC	0.01	U	0.011	U	0.012	U	0.011	U	0.011	U	0.01	U	0.01	U	0.012	U	0.011	U	0.011	U	0.01	U	0.013	U	0.013	U	0.011	U	0.013	U	0.0091	U	0.0093	U	0.0086	U
Alpha-Chlordane																													0.013	U	0.0091	U	0.0093	U	0.0086	U
Beta-BHC	0.01	U	0.011	U	0.012	U	0.011	U	0.011	U	0.01	U	0.01	U	0.012	U	0.011	U	0.011	U	0.01	U	0.013	U	0.013	U	0.011	U	**0.063**		0.0091	U	0.0093	U	0.0086	U
Chlordane (technical)																													**0.02**		0.0091	U	0.0093	U	0.0086	U
Dieldrin	0.01	U	0.011	U	0.012	U	0.011	U	0.011	U	0.01	U	0.01	U	0.012	U	0.011	U	0.011	U	0.01	U	0.013	U	0.013	U	0.011	U	0.026	U	0.018	U	0.019	U	0.017	U
Endosulfan I	0.01	U	0.011	U	0.012	U	0.011	U	0.011	U	0.01	U	0.01	U	0.012	U	0.011	U	0.011	U	0.01	U	0.013	U	0.013	U	0.011	U	0.013	U	0.0091	U	0.0093	U	0.0086	U
Endrin	0.01	U	0.011	U	0.012	U	0.011	U	**0.022**		0.01	U	0.01	U	0.012	U	0.011	U	0.011	U	0.01	U	0.013	U	0.013	U	0.011	U	0.026	U	0.018	U	0.019	U	0.017	U
Endrin aldehyde	0.01	U	0.011	U	0.012	U	0.011	U	0.011	U	0.01	U	0.01	U	0.012	U	0.011	U	0.011	U	0.01	U	0.013	U	0.013	U	0.011	U	0.026	U	0.018	U	0.019	U	0.017	U
Endrin ketone																													0.026	U	0.018	U	0.019	U	0.017	U
Gamma-BHC/Lindane	**0.17**		**0.047**		0.012	U	**0.027**		**0.028**		0.01	U	0.01	U	0.012	U	0.011	U	0.011	U	**0.074**		**0.02**		0.013	U	0.011	U	0.013	U	0.0091	U	0.0093	U	**0.12**	
Heptachlor	0.01	U	0.011	U	0.012	U	0.011	U	0.011	U	0.01	U	0.01	U	0.012	U	0.011	U	0.011	U	0.01	U	0.013	U	0.013	U	0.011	U	0.013	U	0.0091	U	0.0093	U	0.0086	U
Heptachlor epoxide	0.01	U	0.011	U	0.012	U	0.011	U	0.011	U	0.01	U	0.01	U	0.012	U	0.011	U	0.011	U	0.01	U	0.013	U	0.013	U	0.011	U	0.013	U	0.0091	U	0.0093	U	0.0086	U
Inorganics (mg/kg)																																				
Aluminum																																				
Arsenic																																				
Barium																																				
Beryllium																																				
Cadmium	0.3	U	**0.82**		0.3	U	**7.3**		0.3	U	0.3	U	0.3	U	0.4	U	**0.32**		0.3	U	0.3	U	**0.35**		0.3	U	**0.71**		4.8	U	0.73	U	0.71	U	0.63	U
Calcium																																				
Chromium	**13**		**22**		**50**		**42**		**27**		**34**		**5.8**		**7.7**		**43**		**52**		**60**		**73**		**5.1**		**4.5**		**25**		**8.7**		**7.1**		**39**	
Cobalt																																				
Copper																																				
Iron																																				
Lead	**1.7**		**3.6**		**2.6**		**4.3**		**3**		**1.8**		**2.4**		**2.5**		**10**		**7.1**		**4.4**		**2.5**		**2.1**		**1.5**		24	U	3.6	U	**2.1**	**J**	**4.2**	
Magnesium																																				
Manganese																																				
Mercury																																				
Nickel																																				
Potassium																																				
Silver																																				
Sodium																																				
Thallium																																				
Tin																																				
Vanadium																																				
Zinc																																				

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	1120-DA-C27	1120-DA-C28	1120-DA-C29-RISK	1120-DA-C3	1120-DA-C30	1120-DA-C31	1120-DA-C32	1120-DA-C35	1120-DA-C4	1120-DA-C5	1120-DA-C6	1120-DA-C7	1120-DA-C8	1120-DA-C9	97598-DB-C10	97598-DB-C11	97598-DB-C12	97598-DB-C13
Sample Date	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/29/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	9/18/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000
Depth (feet)	1.6 - 4.6	2.7 - 5.7	6.2 - 6.2	1.6 - 4.6	6.5 - 9.5	4.9 - 7.9	5 - 8	7.9 - 7.9	1.7 - 4.7	0.3 - 2.3	0.5 - 3.5	7.2 - 7.2	6.9 - 6.9	0.3 - 0.3	0.8 - 3.8	6.2 - 6.2	5.9 - 5.9	1.9 - 4.9
Chloride																		
Nitrogen, as Ammonia																		
Percent Moisture (%)															**39**	**16.2**	**14.8**	**9.7**
Percent Solids (%)	**93.3**	**89**	**80.35**	**86.9**	**90.8**	**92.1**	**90.4**	**79.5**	**88.1**	**91.5**	**94.5**	**77.4**	**79.3**	**93.8**				
pH (pH units)	**6.36**	**6.7**	**7.34**		**6.85**	**7.06**	**4.75**	**7.66**										
Sulfate																		
Total Organic Carbon																		
EPH (mg/Kg)																		
C11-C22 Aromatics																		
C11-C22 Aromatics (unadj.)																		
C19-C36 Aliphatics																		
Total EPH																		
Other Analyses (mg/kg)																		
Formaldehyde																		
Hydrazine																		

Notes:
1. **Bold** results detected.
2. U = not detected
3. J = estimated value
4. R = value rejected

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	DB-C14		DB-C15		DB-C16		DB-C3		DB-C4		DB-C5		DB-C6		DB-C7		DB-C8		DB-C9		DRMA-COMP-A		DRMA-COMP-B		DRMB-COMP		G1-DRMB		G2-DRMB		G3-DRMB		G4-DRMB		GA1-DRMA	
Sample ID	97598-DB-C14		97598-DB-C15		97598-DB-C16		97598-DB-C3		97598-DB-C4		97598-DB-C5		97598-DB-C6		97598-DB-C7		97598-DB-C8		97598-DB-C9		DRMA (COMP A)		DRMA (COMP B)		DRMB (COMP)		G1-DRMB		G2-DRMB		G3-DRMB		G4-DRMB		GA1-DRMA	
Sample Date	8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996	
Depth (feet)	-1.3 - 1.7		1.9 - 4.9		5.3 - 5.3		1.2 - 4.2		6.8 - 6.8		1.4 - 4.4		1.4 - 4.4		6 - 6		5.7 - 5.7		1.6 - 4.6		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1	
Volatile Organics (mg/kg)																																				
1,1,1-Trichloroethane	0.055	U	0.073	U	0.039	U	0.074	U	0.042	U	0.049	U	0.068	U	0.059	U	0.05	U	0.059	U							**0.013**		**0.016**		**0.01**		**0.008**		**0.002**	**J**
1,1-Dichloroethene	0.055	U	0.073	U	0.039	U	0.074	U	0.042	U	0.049	U	0.068	U	0.059	U	0.05	U	0.059	U							0.006	U	0.007	U	0.005	U	0.005	U	0.005	U
1,2,3-Trichlorobenzene	0.055	U	0.073	U	0.039	U	0.074	U	0.042	U	0.049	U	**0.15**		0.059	U	0.05	U	0.059	U																
1,2,4-Trichlorobenzene	0.055	U	**0.071**	**J**	0.039	U	0.074	U	0.042	U	0.049	U	**0.69**		0.059	U	0.05	U	0.059	U																
1,2,4-Trimethylbenzene	**0.13**		**0.37**		0.039	U	0.074	U	0.042	U	**0.13**		**4.6**		0.059	U	0.05	U	0.059	U																
1,3,5-Trimethylbenzene	**0.06**		**0.25**		0.039	U	0.074	U	0.042	U	**0.085**		**2.9**		0.059	U	0.05	U	0.059	U																
2,4,4-Trimethyl-1-pentene		U		U		U		U		U			**0.37**			U		U		U							0.006	U	**0.0008**	**J**	0.005	U	**0.004**	**J**	0.005	U
2,4,4-Trimethyl-2-pentene		U		U		U		U		U		U		U		U		U		U							0.006	U	0.007	U	0.005	U	**0.001**	**J**	0.005	U
2-Butanone	0.55	U	0.73	U	0.39	U	0.74	U	0.42	U	0.49	U	0.68	U	0.59	U	0.5	U	0.59	U							**0.001**	**J**	**0.004**	**J**	0.011	U	0.011	U	0.011	U
2-Hexanone	0.55	U	0.73	U	0.39	U	0.74	U	0.42	U	0.49	U	0.68	U	0.59	U	0.5	U	0.59	U							0.011	U	0.014	U	0.011	U	0.011	U	0.011	U
4-iso-Propyltoluene	0.055	U	0.073	U	0.039	U	0.074	U	0.042	U	0.049	U	**0.37**		0.059	U	0.05	U	0.059	U																
Acetone	0.55	U	0.73	U	0.39	U	0.74	U	0.42	U	0.49	U	0.68	U	0.59	U	0.5	U	0.59	U							**0.008**	**JB**	**0.022**	**B**	**0.009**	**JB**	**0.01**	**JB**	**0.006**	**JB**
Benzene	0.055	U	0.073	U	0.039	U	0.074	U	0.042	U	0.049	U	0.068	U	0.059	U	0.05	U	0.059	U							0.006	U	0.007	U	0.005	U	0.005	U	0.005	U
Chloroform	0.055	U	0.073	U	0.039	U	0.074	U	0.042	U	0.049	U	0.068	U	0.059	U	0.05	U	0.059	U							0.006	U	0.007	U	0.005	U	0.005	U	0.005	U
Ethyl benzene	0.055	U	0.073	U	0.039	U	0.074	U	0.042	U	0.049	U	**0.16**		0.059	U	0.05	U	0.059	U							0.006	U	0.007	U	0.005	U	0.005	U	0.005	U
Isopropylbenzene	0.055	U	0.073	U	0.039	U	0.074	U	0.042	U	0.049	U	**0.65**		0.059	U	0.05	U	0.059	U																
Methylene chloride	**0.12**	**B**	**0.37**	**B**	**0.2**	**B**	**0.32**	**B**	**0.4**	**B**	**0.5**	**B**	**0.3**	**B**	**0.15**	**B**	**0.29**	**B**	**0.42**	**B**							0.006	U	0.007	U	0.005	U	0.005	U	0.005	U
Naphthalene	0.11	U	0.15	U	0.077	U	0.15	U	0.085	U	0.099	U	0.14	U	0.12	U	0.1	U	0.12	U																
Propylbenzene	0.055	U	0.073	U	0.039	U	0.074	U	0.042	U	0.049	U	**0.59**		0.059	U	0.05	U	0.059	U																
sec-Butylbenzene	0.055	U	0.073	U	0.039	U	0.074	U	0.042	U	0.049	U	**0.21**		0.059	U	0.05	U	0.059	U																
Styrene	0.055	U	0.073	U	0.039	U	0.074	U	0.042	U	0.049	U	**0.43**		0.059	U	0.05	U	0.059	U							0.006	U	0.007	U	0.005	U	0.005	U	0.005	U
Tetrachloroethene	0.055	U	0.073	U	0.039	U	0.074	U	0.042	U	0.049	U	0.068	U	0.059	U	0.05	U	0.059	U							0.006	U	0.007	U	0.005	U	0.005	U	0.005	U
Toluene	0.055	U	0.073	U	0.039	U	0.074	U	0.042	U	0.049	U	**0.094**		0.059	U	0.05	U	0.059	U							0.006	U	0.007	U	**0.0007**	**J**	0.005	U	0.005	U
Trichloroethene	0.055	U	0.073	U	0.039	U	0.074	U	0.042	U	0.049	U	0.068	U	0.059	U	0.05	U	0.059	U							0.006	U	0.007	U	0.005	U	0.005	U	0.005	U
Xylene, o	0.055	U	**0.042**	**J**	0.039	U	0.074	U	0.042	U	0.049	U	**0.53**		0.059	U	0.05	U	0.059	U																
Xylenes (m&p)	0.055	U	0.073	U	0.039	U	0.074	U	0.042	U	0.049	U	**0.35**		0.059	U	0.05	U	0.059	U																
Xylenes, Total			**0.042**	**J**	0.039	U	0.074	U	0.042	U	0.049	U	**0.88**		0.059	U	0.05	U	0.059	U							0.006	U	0.007	U	0.005	U	0.005	U	0.005	U
Semivolatile Organics (mg/kg)																																				
1,2,4-Trichlorobenzene	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	**0.27**	**JF**	0.28	U	0.29	U	0.29	U	0.2651	U	9.1	U	1.6	U	**0.1**	**J**										
2-Methylnaphthalene	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.2651	U	9.1	U	1.6	U	0.38	U										
2-Methylphenol	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.2651	U	9.1	U	1.6	U	**0.049**	**J**										
4-Methylphenol	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.2651	U	9.1	U	1.6	U	**0.34**	**J**										
Acenaphthylene	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.27	U	9.1	U	1.6	U	0.38	U										
Anthracene	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.27	U	9.1	U	1.6	U	**0.02**	**J**										
Benzaldehyde																																				
Benzo(a)anthracene	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.27	U	9.1	U	1.6	U	**0.047**	**J**										
Benzo(a)pyrene	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.27	U			1.6	U	0.38	U										
Benzo(b)fluoranthene	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.27	U	9.1	U	1.6	U	0.38	U										
Benzo(ghi)perylene	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.27	U	9.1	U	1.6	U	0.38	U										
Benzo(k)fluoranthene	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.27	U	9.1	U	1.6	U	0.38	U										
Benzoic Acid	0.53	U	**0.38**	**J**	0.59	U	0.62	U	0.6	U	**0.77**	**F**	**1.1**		0.57	U	0.58	U	0.53	U	44	U	7.8	U	**0.64**	**J**										
Bis(2-Ethylhexyl)phthalate	**1.4**	**B**	**3.5**	**B**	**0.09**	**JB**	**0.86**	**B**	**0.81**	**B**	**10**	**F**	**8.6**		0.29	UB	0.29	UB	0.27	UB	**1.3**	**JB**	**5.3**	**B**	**2.9**	**B**										
Butylbenzylphthalate	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.27	U	9.1	U	1.6	U	0.38	U										
Chrysene	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.27	U	9.1	U	1.6	U	**0.052**	**J**										
Dibenz(a,h)anthracene	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.27	U			1.6	U	0.38	U										
Diethylphthalate	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.2651	U	9.1	U	1.6	U	0.38	U										
Di-n-butylphthalate	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	**0.48**	**F**	**0.99**		0.29	U	0.29	U	0.2651	U	**0.2**	**JB**	**0.13**	**JB**	**0.33**	**JB**										
Di-n-octylphthalate	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.2651	U	9.1	U	1.6	U	0.38	U										

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	97598-DB-C14		97598-DB-C15		97598-DB-C16		97598-DB-C3		97598-DB-C4		97598-DB-C5		97598-DB-C6		97598-DB-C7		97598-DB-C8		97598-DB-C9		DRMA (COMP A)		DRMA (COMP B)		DRMB (COMP)		G1-DRMB		G2-DRMB		G3-DRMB		G4-DRMB		GA1-DRMA	
Sample Date	8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		8/10/2000		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996	
Depth (feet)	-1.3 - 1.7		1.9 - 4.9		5.3 - 5.3		1.2 - 4.2		6.8 - 6.8		1.4 - 4.4		1.4 - 4.4		6 - 6		5.7 - 5.7		1.6 - 4.6		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1	
Diphenyl ether																																				
Diphenylamine																																				
Fluoranthene	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.2651	U	9.1	U	**0.045**	**J**	**0.11**	**J**										
Fluorene																																				
Indeno(1,2,3-cd)pyrene	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.2651	U	9.1	U	1.6	U	0.38	U										
Naphthalene	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	UF	0.28	U	0.29	U	0.29	U	0.2651	U	9.1	U	1.6	U	**0.099**	**J**										
N-Nitrosodiphenylamine	0.27	U	**0.33**		0.29	U	0.31	U	**0.12**	**J**	**1.4**	**F**	**0.7**		0.29	U	0.29	U	0.2651	U	**2.8**	**J**	**2.7**		**1**											
Phenanthrene	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.2651	U	9.1	U	1.6	U	**0.074**	**J**										
Phenol	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	UF	0.28	U	0.29	U	0.29	U	0.2651	U	9.1	U	1.6	U	**2.4**											
Pyrene	0.27	U	0.3	U	0.29	U	0.31	U	0.3	U	0.27	U	0.28	U	0.29	U	0.29	U	0.2651	U	9.1	U	1.6	U	**0.12**	**J**										
Pesticides/PCBs (mg/kg)																																				
4,4'-DDD	0.017	U	0.019	U	0.019	U	0.02	U	0.019	U	0.017	U	0.018	U	0.018	U	0.018	U	0.017	U	**0.0034**	**J**	**0.0017**	**J**	**0.017**	**J**										
4,4'-DDE	0.017	U	0.019	U	0.019	U	0.02	U	0.019	U	0.017	U	0.018	U	0.018	U	0.018	U	0.017	U	0.0037	U	**0.0019**	**J**	0.019	U										
4,4'-DDT	0.017	U	0.019	U	0.019	U	0.02	U	0.019	U	0.017	U	0.018	U	0.018	U	0.018	U	0.017	U	**0.0031**	**J**	**0.0064**		**0.03**											
Aldrin	0.0084	U	0.0095	U	0.0093	U	0.0099	U	0.0094	U	0.0086	U	0.0089	U	0.0092	U	0.0091	U	0.0083	U	**0.00046**	**J**	**0.0012**	**J**	0.0098	U										
Alpha-BHC	0.0084	U	0.0095	U	0.0093	U	0.0099	U	0.0094	U	0.0086	U	0.0089	U	0.0092	U	0.0091	U	0.0083	U	**0.005**		**0.0016**	**J**	0.0098	U										
Alpha-Chlordane	0.0084	U	0.0095	U	0.0093	U	0.0099	U	0.0094	U	0.0086	U	0.0089	U	0.0092	U	0.0091	U	0.0083	U	**0.0036**		**0.0045**		**0.052**											
Beta-BHC	0.0084	U	0.0095	U	0.0093	U	0.0099	U	0.0094	U	0.0086	U	0.0089	U	0.0092	U	0.0091	U	0.0083	U	0.0019	U	0.002	U	0.0098	U										
Chlordane (technical)	0.0084	U	0.0095	U	0.0093	U	0.0099	U	0.0094	U	0.0086	U	**0.042**		0.0092	U	0.0091	U	0.0083	U	0.0019	U	**0.0088**		0.0098	U										
Dieldrin	0.017	U	0.019	U	0.019	U	0.02	U	0.019	U	0.017	U	0.018	U	0.018	U	0.018	U	0.017	U	0.0037	U	**0.0069**		0.019	U										
Endosulfan I	0.0084	U	0.0095	U	0.0093	U	0.0099	U	0.0094	U	0.0086	U	0.0089	U	0.0092	U	0.0091	U	0.0083	U	**0.0056**		**0.0047**		**0.099**											
Endrin	0.017	U	0.019	U	0.019	U	0.02	U	0.019	U	0.017	U	0.018	U	0.018	U	0.018	U	0.017	U	0.0037	U	0.0038	U	0.019	U										
Endrin aldehyde	0.017	U	0.019	U	0.019	U	0.02	U	0.019	U	0.017	U	0.018	U	0.018	U	0.018	U	0.017	U	0.0037	U	0.0038	U	0.019	U										
Endrin ketone	0.017	U	0.019	U	0.019	U	0.02	U	0.019	U	0.017	U	0.018	U	0.018	U	0.018	U	0.017	U	**0.0048**		0.0038	U	0.019	U										
Gamma-BHC/Lindane	**0.02**		**0.13**		0.0093	U	0.0099	U	**0.028**		**0.23**		**0.66**		0.0092	U	0.0091	U	0.0083	U	**0.0047**		**0.0034**		**0.17**											
Heptachlor	0.0084	U	0.0095	U	0.0093	U	0.0099	U	0.0094	U	0.0086	U	0.0089	U	0.0092	U	0.0091	U	0.0083	U	0.0019	U	**0.00087**	**J**	0.0098	U										
Heptachlor epoxide	0.0084	U	0.0095	U	0.0093	U	0.0099	U	0.0094	U	0.0086	U	0.0089	U	0.0092	U	0.0091	U	0.0083	U	0.0019	U	**0.0028**		0.0098	U										
Inorganics (mg/kg)																																				
Aluminum																					**5560**		**12900**		**4070**											
Arsenic																					**9.7**		**30.9**		**3.8**											
Barium																					**22.3**	**B**	**43.2**		**13.9**	**B**										
Beryllium																					**0.32**	**B**	**0.61**	**B**	0.21	U										
Cadmium	0.68	U	0.71	U	0.71	U	0.73	U	0.76	U	0.67	U	0.7	U	0.69	U	0.67	U	0.62	U	0.21	U	0.19	U	0.21	U										
Calcium																					**2060**		**1850**		**2580**											
Chromium	**21**		**79**		**9.8**		**4**		**27**		**88**		**240**		**6.8**		**5**		**15**		**24.1**	***N**	**40.2**	***N**	**52.6**	***N**										
Cobalt																					**3.9**	**B**	**11.3**		**1.9**	**B**										
Copper																					**9.7**		**21.7**		**6.2**											
Iron																					**7580**		**17200**		**3720**											
Lead	**4**		**5.5**		**3.6**		**3.9**		3.8	U	**3.6**		**4.2**		3.5	U	**1.8**	**J**	**3.5**		**9.4**		**17**		**19.5**											
Magnesium																					**1920**		**4880**		**668**	**B**										
Manganese																					**109**		**351**		**44.5**											
Mercury																					**0.11**		0.09	U	**0.38**											
Nickel																					**10.2**		**30.1**		**3.5**	**B**										
Potassium																					**652**	**B**	**1840**		**190**	**B**										
Silver																																				
Sodium																					**131**	**B**	**174**	**B**	**79**	**B**										
Thallium																					**1.8**	**B**	**1.8**	**B**	1.7	U										
Tin																																				
Vanadium																					**11.3**		**24.9**		**7.2**	**B**										
Zinc																					**37.2**	**E**	**63**	**E**	**41.4**	**E**										

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	97598-DB-C14	97598-DB-C15	97598-DB-C16	97598-DB-C3	97598-DB-C4	97598-DB-C5	97598-DB-C6	97598-DB-C7	97598-DB-C8	97598-DB-C9	DRMA (COMP A)	DRMA (COMP B)	DRMB (COMP)	G1-DRMB	G2-DRMB	G3-DRMB	G4-DRMB	GA1-DRMA
Sample Date	8/10/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000	8/10/2000	12/15/1996	12/15/1996	12/15/1996	12/15/1996	12/15/1996	12/15/1996	12/15/1996	12/15/1996
Depth (feet)	-1.3 - 1.7	1.9 - 4.9	5.3 - 5.3	1.2 - 4.2	6.8 - 6.8	1.4 - 4.4	1.4 - 4.4	6 - 6	5.7 - 5.7	1.6 - 4.6	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
Chloride																		
Nitrogen, as Ammonia											**47.4**	**93**	**263**					
Percent Moisture (%)	**7.8**	**16.4**	**15.7**	**19.2**	**18.1**	**8.1**	**13.6**	**15**	**14.8**	**6.4**								
Percent Solids (%)																		
pH (pH units)																		
Sulfate											**2310**	**260**	**5110**					
Total Organic Carbon																		
EPH (mg/Kg)																		
C11-C22 Aromatics																		
C11-C22 Aromatics (unadj.)																		
C19-C36 Aliphatics																		
Total EPH																		
Other Analyses (mg/kg)																		
Formaldehyde																		
Hydrazine																		

Notes:
1. **Bold** results detected.
2. U = not detected
3. J = estimated value
4. R = value rejected

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	GA2-DRMA		GA3-DRMA		GA4-DRMA		GB1-DRMA		GB2-DRMA		GB3-DRMA		GB4-DRMA		OSFILL-450		SD-C24		SD-C24B		SS-420		SS-421		SS-422		SS-423		SS-424		SS-425		SS-426		SS-429	
Sample ID	GA2-DRMA		GA3-DRMA		GA4-DRMA		GB1-DRMA		GB2-DRMA		GB3-DRMA		GB4-DRMA		1130-OSFILL-450		1140-SD-C24		1140-SD-C24B-RISK		OC-SS-420-0.0/1.0-XXX		OC-SS-421-0.0/1.0-XXX		OC-SS-422-0.0/1.0-XXX		OC-SS-423-0.0/1.0-XXX		OC-SS-424-0.0/1.0-XXX		OC-SS-425-0.0/1.0-XXX		OC-SS-426-0.0/1.0-XXX		OC-SS-429-0.0/1.0-XXX	
Sample Date	12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		12/15/1996		10/13/2000		10/18/2000		10/18/2000		9/15/2009		9/15/2009		9/15/2009		9/15/2009		9/15/2009		9/15/2009		9/16/2009		9/16/2009	
Depth (feet)	0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0.5 - 0.5		3 - 3		2 - 2		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1		0 - 1	
Volatile Organics (mg/kg)																																				
1,1,1-Trichloroethane	0.005	U	0.005	U	**0.008**		**0.009**		0.005	U	**0.01**		**0.018**		0.13	U					0.0023	U	0.003	U	0.0029	U	0.0024	U	0.0025	U	0.0024	U	0.0024	U	0.0033	U
1,1-Dichloroethene	0.005	U	0.005	U	0.006	U	0.005	U	0.005	U	0.006	U	0.006	U	0.13	U					0.0023	U	0.003	U	0.0029	U	0.0024	U	0.0025	U	0.0024	U	0.0024	U	0.0033	U
1,2,3-Trichlorobenzene															0.13	U					0.0023	U	0.003	U	0.0029	U	0.0024	U	0.0025	U	0.0024	U	0.0024	U	0.0033	U
1,2,4-Trichlorobenzene															0.13	U					0.0023	U	0.003	U	0.0029	U	0.0024	U	0.0025	U	0.0024	U	0.0024	U	0.0033	U
1,2,4-Trimethylbenzene															0.13	U					0.0023	U	0.003	U	0.0029	U	0.0024	U	0.0025	U	0.0024	U	0.0024	U	0.0033	U
1,3,5-Trimethylbenzene															0.13	U					0.0023	U	0.003	U	0.0029	U	0.0024	U	0.0025	U	0.0024	U	0.0024	U	0.0033	U
2,4,4-Trimethyl-1-pentene	0.005	U	0.005	U	0.006	U	0.005	U	0.005	U	0.006	U	0.006	U	0.13	U					0.0046	U	0.006	U	0.0058	U	0.0048	U	0.0049	U	0.0048	U	0.0048	U	0.0065	U
2,4,4-Trimethyl-2-pentene	0.005	U	0.005	U	0.006	U	0.005	U	0.005	U	0.006	U	0.006	U	0.13	U					0.0046	U	0.006	U	0.0058	U	0.0048	U	0.0049	U	0.0048	U	0.0048	U	0.0065	U
2-Butanone	0.011	U	0.011	U	0.011	U	0.011	U	0.01	U	0.012	U	0.012	U	2.6	U					0.023	U	0.03	U	0.029	U	0.024	U	0.025	U	0.024	U	0.024	U	0.033	U
2-Hexanone	0.011	U	0.011	U	0.011	U	0.011	U	0.01	U	0.012	U	0.012	U	0.51	U					0.023	U	0.03	U	0.029	U	0.024	U	0.025	U	0.024	U	0.024	U	0.033	U
4-iso-Propyltoluene															0.13	U					0.0023	U	0.003	U	0.0029	U	0.0024	U	0.0025	U	0.0024	U	0.0024	U	0.0033	U
Acetone	**0.007**	**JB**	**0.01**	**JB**	**0.021**	**B**	**0.01**	**JB**	**0.01**	**B**	**0.013**	**B**	**0.019**		2.6	U					0.23	UJ	0.3	UJ	0.29	UJ	0.24	UJ	0.25	UJ	0.24	UJ	0.24	UJ	0.33	UJ
Benzene	0.005	U	0.005	U	0.006	U	0.005	U	0.005	U	0.006	U	0.006	U	0.13	U					0.0023	U	0.003	U	0.0029	U	0.0024	U	0.0025	U	0.0024	U	0.0024	U	0.0033	U
Chloroform	0.005	U	0.005	U	0.006	U	0.005	U	0.005	U	0.006	U	0.006	U	0.13	U					0.0023	U	0.003	U	0.0029	U	0.0024	U	0.0025	U	0.0024	U	0.0024	U	0.0033	U
Ethyl benzene	0.005	U	0.005	U	0.006	U	0.005	U	0.005	U	0.006	U	0.006	U	0.13	U					0.0023	U	0.003	U	0.0029	U	0.0024	U	0.0025	U	0.0024	U	0.0024	U	0.0033	U
Isopropylbenzene															0.13	U					0.0023	U	0.003	U	0.0029	U	0.0024	U	0.0025	U	0.0024	U	0.0024	U	0.0033	U
Methylene chloride	0.005	U	0.005	U	0.006	U	0.005	U	0.005	U	0.006	U	0.006	U	0.13	U					0.0091	U	0.012	U	0.012	U	0.0096	U	0.0099	U	0.0095	U	0.0095	U	0.013	U
Naphthalene															1.3	U					0.023	U	0.03	U	0.029	U	0.024	U	0.025	U	0.024	U	0.024	U	0.033	U
Propylbenzene															0.13	U																				
sec-Butylbenzene															0.13	U					0.0023	U	0.003	U	0.0029	U	0.0024	U	0.0025	U	0.0024	U	0.0024	U	0.0033	U
Styrene	0.005	U	0.005	U	0.006	U	0.005	U	0.005	U	0.006	U	0.006	U	0.13	U					0.0023	U	0.003	U	0.0029	U	0.0024	U	0.0025	U	0.0024	U	0.0024	U	0.0033	U
Tetrachloroethene	0.005	U	0.005	U	0.006	U	0.005	U	0.005	U	0.006	U	0.006	U	0.13	U					0.0023	U	0.003	U	0.0029	U	0.0024	U	0.0025	U	0.0024	U	0.0024	U	0.0033	U
Toluene	0.005	U	0.005	U	0.006	U	0.005	U	0.005	U	0.006	U	**0.0009**	**J**	0.13	U					0.0023	U	0.003	U	0.0029	U	0.0024	U	0.0025	U	0.0024	U	0.0024	U	0.0033	U
Trichloroethene	0.005	U	0.005	U	0.006	U	0.005	U	0.005	U	0.006	U	0.006	U	0.13	U					0.0023	U	0.003	U	0.0029	U	0.0024	U	0.0025	U	0.0024	U	0.0024	U	0.0033	U
Xylene, o															0.13	U																				
Xylenes (m&p)															0.13	U																				
Xylenes, Total	0.005	U	0.005	U	0.006	U	0.005	U	0.005	U	0.006	U	0.006	U	0.13	U					0.0046	U	0.006	U	0.0058	U	0.0048	U	0.0049	U	0.0048	U	0.0048	U	0.0065	U
Semivolatile Organics (mg/kg)																																				
1,2,4-Trichlorobenzene															0.35	U	90	UC	110	UC	0.037	U	0.042	U	0.039	U	0.039	U	0.038	U	0.04	U	0.036	U	0.039	U
2-Methylnaphthalene															0.35	U	90	UC	110	UC	0.037	U	0.042	U	0.039	U	0.039	U	0.038	U	0.04	U	0.036	U	0.039	U
2-Methylphenol															0.35	U	90	UC	110	UC	0.037	U	0.042	U	0.039	U	0.039	U	0.038	U	0.04	U	0.036	U	0.039	U
4-Methylphenol																																				
Acenaphthylene															0.35	U	90	UC	110	UC	0.037	U	0.042	U	0.039	U	0.039	U	0.038	U	0.04	U	0.036	U	0.039	U
Anthracene															0.35	U	90	UC	110	UC	0.037	U	0.042	U	0.039	U	0.039	U	0.038	U	0.04	U	0.036	U	0.039	U
Benzaldehyde																					**0.015**	J	0.042	U	0.039	U	**0.017**	J	0.038	U	0.04	U	0.036	U	0.039	U
Benzo(a)anthracene															0.35	U					0.037	U	0.042	U	0.039	U	0.039	U	0.038	U	0.04	U	0.036	U	**0.019**	JEB
Benzo(a)pyrene															0.35	U					**0.011**	J	0.042	U	0.039	U	0.039	U	0.038	U	0.04	U	0.036	U	**0.014**	JEB
Benzo(b)fluoranthene															0.35	U					0.037	U	0.042	U	0.039	U	0.039	U	0.038	U	0.04	U	0.036	U	**0.023**	JEB
Benzo(ghi)perylene															0.35	U	90	UC	110	UC	0.037	U	0.042	U	0.039	U	0.039	U	0.038	U	0.04	U	0.036	U	0.039	U
Benzo(k)fluoranthene															0.35	U	90	UC	110	UC	0.037	U	0.042	U	0.039	U	0.039	U	0.038	U	0.04	U	0.036	U	0.039	U
Benzoic Acid															1.7	U	450	UC	530	UC	0.18	U	0.21	U	0.19	U	0.2	U	0.19	U	0.2	U	0.18	U	0.2	U
Bis(2-Ethylhexyl)phthalate															0.35	U	**753**	**C**	**243.5**	**C**	**0.52**	EB	**2**	EB	**0.41**	EB	**0.45**	EB	**0.38**	EB	**0.66**	EB	**0.62**	EB	**0.33**	EB
Butylbenzylphthalate															0.35	U	90	UC	110	UC	0.037	U	0.042	U	0.039	U	0.039	U	0.038	U	0.04	U	0.036	U	0.039	U
Chrysene															0.35	U	90	UC	110	UC	0.037	U	0.042	U	**0.012**	J	0.039	U	0.038	U	0.04	U	0.036	U	**0.021**	JEB
Dibenz(a,h)anthracene															0.35	U					0.037	U	0.042	U	0.039	U	0.039	U	0.038	U	0.04	U	0.036	U	0.039	U
Diethylphthalate															0.35	U	90	UC	110	UC	0.037	U	0.042	U	0.039	U	0.039	U	0.038	U	0.04	U	0.036	U	0.039	U
Di-n-butylphthalate															0.35	U	90	UC	70	JC	0.037	U	0.042	U	0.039	U	0.039	U	0.038	U	0.04	U	0.036	U	0.039	U
Di-n-octylphthalate															0.35	U	90	UC	110	UC	0.037	U	0.042	U	0.039	U	0.039	U	0.038	U	0.04	U	0.036	U	0.039	U

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	GA2-DRMA	GA3-DRMA	GA4-DRMA	GB1-DRMA	GB2-DRMA	GB3-DRMA	GB4-DRMA	1130-OSFILL-450	1140-SD-C24	1140-SD-C24B-RISK	OC-SS-420-0.0/1.0-XXX	OC-SS-421-0.0/1.0-XXX	OC-SS-422-0.0/1.0-XXX	OC-SS-423-0.0/1.0-XXX	OC-SS-424-0.0/1.0-XXX	OC-SS-425-0.0/1.0-XXX	OC-SS-426-0.0/1.0-XXX	OC-SS-429-0.0/1.0-XXX
Sample Date	12/15/1996	12/15/1996	12/15/1996	12/15/1996	12/15/1996	12/15/1996	12/15/1996	10/13/2000	10/18/2000	10/18/2000	9/15/2009	9/15/2009	9/15/2009	9/15/2009	9/15/2009	9/15/2009	9/16/2009	9/16/2009
Depth (feet)	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0.5 - 0.5	3 - 3	2 - 2	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
Diphenyl ether											0.037 U	**0.015** J	0.039 U	0.039 U	0.038 U	**0.015** J	0.036 U	0.039 U
Diphenylamine											**0.014** J	NA	0.039 U	NA	0.038 U	NA	NA	0.039 U
Fluoranthene								0.35 U	90 UC	110 UC	**0.012** J	**0.02** J	**0.016** J	0.039 U	0.038 U	0.04 U	**0.012** J	**0.042**
Fluorene											0.037 U	0.042 U	0.039 U	0.039 U	0.038 U	0.04 U	**0.02** J	0.039 U
Indeno(1,2,3-cd)pyrene								0.35 U			0.037 U	0.042 U	0.039 U	0.039 U	0.038 U	0.04 U	0.036 U	0.039 U
Naphthalene								0.35 U	90 UC	110 UC	0.089 U	0.1 U	0.093 U	0.094 U	0.091 U	0.095 U	0.086 U	0.095 U
N-Nitrosodiphenylamine								0.35 U	90 UC	110 UC	**0.013** JEB	**0.033** JEB	0.039 U	**0.021** JEB	0.038 U	**0.036** JEB	**0.014** JEB	**0.012** JEB
Phenanthrene								0.35 U	90 UC	110 UC	0.044 U	0.05 U	0.047 U	0.047 U	0.046 U	0.048 U	0.043 U	0.047 U
Phenol								0.35 U	90 UC	110 UC	0.037 U	0.042 U	0.039 U	0.039 U	0.038 U	0.04 U	0.036 U	0.039 U
Pyrene								0.35 U	90 UC	110 UC	**0.013** J	**0.016** J	**0.014** J	0.039 U	0.038 U	0.04 U	0.036 U	**0.047**
Pesticides/PCBs (mg/kg)																		
4,4'-DDD																		
4,4'-DDE																		
4,4'-DDT																		
Aldrin																		
Alpha-BHC																		
Alpha-Chlordane																		
Beta-BHC																		
Chlordane (technical)																		
Dieldrin																		
Endosulfan I																		
Endrin																		
Endrin aldehyde																		
Endrin ketone																		
Gamma-BHC/Lindane																		
Heptachlor																		
Heptachlor epoxide																		
Inorganics (mg/kg)																		
Aluminum											**6,600**	**6,800**	**7,400**	**7,800**	**6,200**	**7,500**	**7,100**	**8,000**
Arsenic								**10**			**9.5**	**8.4**	**5.6**	**12**	**7.5**	**8.4**	**3.8**	**8.5**
Barium								**9.8**			**43**	**52**	**81**	**42**	**34**	**51**	**29**	**80**
Beryllium											**0.24**	**0.25** J	**0.27** J	**0.29** J	**0.33**	**0.29**	**0.29**	**0.28** J
Cadmium								0.2 U			**0.33**	**0.34**	**0.26** J	**0.51**	**0.26**	**0.42**	**0.41**	**0.41**
Calcium											**12,000**	**29,000**	**33,000**	**12,000**	**14,000**	**35,000**	**12,000**	**33,000**
Chromium								**9.4**	**1600**	**390**	**48**	**52**	**36**	**60**	**55**	**75**	**28**	**87**
Cobalt											**3.5**	**3.5**	**3.5**	**4.6**	**3.8**	**4.1**	**5.3**	**4.1**
Copper											**7.7**	**7.7**	**7.8**	**8.2**	**7.9**	**8.3**	**7.4**	**8.4**
Iron											**9,300**	**9,000**	**8,800**	**13,000**	**9,100**	**10,000**	**13,000**	**10,000**
Lead								**3.3**			**5.8**	**5.3**	**6**	**5.7**	**6.3**	**6.3**	**4.5**	**5.4**
Magnesium											**2,200**	**2,400**	**2,600**	**2,700**	**1,900**	**2,500**	**3,900**	**2,700**
Manganese											**110**	**110**	**120**	**160**	**100**	**140**	**250**	**130**
Mercury								0.04 U			0.14 U	0.2 U	0.16 U	0.21 U	0.21 U	0.15 U	0.18 U	0.21 U
Nickel											**7.9**	**8**	**7.9**	**9.6**	**10**	**8.7**	**7.5**	**8.8**
Potassium											**1,900**	**1,400**	**1,500**	**1,100**	**1,100**	**1,400**	**1,600**	**1,500**
Silver											**0.42** J	**0.61** J	**0.35** J	**0.63** J	**0.76**	**1**	**0.13** J	**1.2**
Sodium											**79** J	**200**	**440**	**46** J	**62** J	**96** J	**74** J	**250**
Thallium											1.1 U	1.4 U	1.5 U	1.5 U	1.3 U	1.4 U	1.2 U	1.5 U
Tin											**18** J	**20** J	**14** J	**24** J	**22** J	**30** J	**10** J	**36** J
Vanadium											**12**	**13**	**12**	**15**	**12**	**15**	**18**	**14**
Zinc											**18**	**18**	**17**	**19**	**20**	**20**	**23**	**18**

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	GA2-DRMA	GA3-DRMA	GA4-DRMA	GB1-DRMA	GB2-DRMA	GB3-DRMA	GB4-DRMA	1130-OSFILL-450	1140-SD-C24	1140-SD-C24B-RISK	OC-SS-420-0.0/1.0-XXX	OC-SS-421-0.0/1.0-XXX	OC-SS-422-0.0/1.0-XXX	OC-SS-423-0.0/1.0-XXX	OC-SS-424-0.0/1.0-XXX	OC-SS-425-0.0/1.0-XXX	OC-SS-426-0.0/1.0-XXX	OC-SS-429-0.0/1.0-XXX
Sample Date	12/15/1996	12/15/1996	12/15/1996	12/15/1996	12/15/1996	12/15/1996	12/15/1996	10/13/2000	10/18/2000	10/18/2000	9/15/2009	9/15/2009	9/15/2009	9/15/2009	9/15/2009	9/15/2009	9/16/2009	9/16/2009
Depth (feet)	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0.5 - 0.5	3 - 3	2 - 2	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
Chloride											22 U	25 U	**44**	18 U	22 U	21 U	17 U	19 U
Nitrogen, as Ammonia											7.5 U	7.4 U	7.3 U	8.4 U	**24**	**18**	6.5 U	8.2 U
Percent Moisture (%)											**14.2**	**22**	**16**	**16**	**13.5**	**17**	**8.5**	**17**
Percent Solids (%)								**95.7**	**73.6**	**61.3**	**88**	**78**	**84**	**84**	**87**	**83**	**92**	**83**
pH (pH units)																		
Sulfate											**1,100**	**2,300**	**620**	**57**	**8,100**	**13,000**	**1,000**	**920**
Total Organic Carbon															**9,400**			
EPH (mg/Kg)																		
C11-C22 Aromatics								**29**										
C11-C22 Aromatics (unadj.)								**29**										
C19-C36 Aliphatics								**9.9**										
Total EPH								**39**										
Other Analyses (mg/kg)																		
Formaldehyde											0.11 U		**0.096 J**		0.11 U			**0.17**
Hydrazine											0.0023 U		**0.0041**		**0.002 J**			**0.00062 J**

Notes:
1. **Bold** results detected.
2. U = not detected
3. J = estimated value
4. R = value rejected

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	SS-430		SS-431		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE	
Sample ID	OC-SS-430-0.0/1.0-XXX		OC-SS-431-0.0/1.0-XXX		1120-DA-SP-3A		1120-DA-SP-3B		1120-DA-SP-3C		1120-DA-SP-3D		1120-DA-SP-3E		1120-DA-SP-4		1120-DA-SP-5A		1120-DA-SP-5B		1120-DA-SP-5C		1120-DA-SP-6A		1120-DA-SP-6B		1120-DA-SP-6C		1120-DA-SP-8A		1120-DA-SP-8B		1120-DA-SP-8C		1120-DA-SP-8D	
Sample Date	9/16/2009		9/16/2009		8/26/2000		8/26/2000		8/26/2000		9/14/2000		9/5/2000		9/5/2000		9/14/2000		9/14/2000		9/14/2000		9/22/2000		9/22/2000		9/22/2000		9/26/2000		9/26/2000		9/26/2000	
Depth (feet)	0 - 1		0 - 1																															
Volatile Organics (mg/kg)																																		
1,1,1-Trichloroethane	0.003	U	0.0023	U	0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	0.14	U	0.15	UC	1.3	U	0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	0.13	U	0.13	U
1,1-Dichloroethene	0.003	U	0.0023	U	0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	0.14	U	0.15	U	1.3	U	0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	0.13	U	0.13	U
1,2,3-Trichlorobenzene	0.003	U	0.0023	U	0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	0.14	U	0.15	UC	1.3	U	0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	0.13	U	0.13	U
1,2,4-Trichlorobenzene	0.003	U	0.0023	U	0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	0.14	U	0.15	UC	1.3	U	0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	0.13	U	0.13	U
1,2,4-Trimethylbenzene	0.003	U	0.0023	U	0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	**0.16**		0.15	UC	1.3	U	0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	0.13	U	0.13	U
1,3,5-Trimethylbenzene	0.003	U	0.0023	U	0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	**0.16**		0.15	UC	1.3	U	0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	0.13	U	0.13	U
2,4,4-Trimethyl-1-pentene	0.006	U	0.0045	U		U		U		U	0.14	U	**14**		**0.64**		0.14	U	**1.2**	**C**	**43**		0.13	U	0.13	U	**0.57**		0.13	U	**140**		**1.8**		**14**	
2,4,4-Trimethyl-2-pentene	0.006	U	0.0045	U		U		U		U	0.14	U	**5.7**		0.12	U	0.14	U	**0.52**	**C**	**16**		0.13	U	0.13	U	0.13	U	0.13	U	**106**		**0.67**		**5.1**	
2-Butanone	0.03	U	0.023	U	0.45	U	0.34	U	0.31	U	2.9	U	2.5	U	2.5	U	2.8	U	3	UC	26	U	2.7	U	2.7	U	2.7	U	2.5	U	24	U	2.7	U	2.7	U
2-Hexanone	0.03	U	0.023	U	0.45	U	0.34	U	0.31	U	0.58	U	0.5	U	0.49	U	0.56	U	0.6	UC	5.2	U	0.53	U	0.54	U	0.53	U	0.51	U	4.9	U	0.54	U	0.54	U
4-iso-Propyltoluene	0.003	U	0.0023	U	0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	0.14	U	0.15	UC	**3.3**		0.13	U	0.13	U	0.13	U	0.13	U	**27**		**1.5**		0.13	U
Acetone	0.3	UJ	0.23	UJ	0.45	U	0.34	U	0.31	U	2.9	U	2.5	U	2.5	U	2.8	U	3	UC	26	U	2.7	U	2.7	U	2.7	U	2.5	U	24	U	2.7	U	2.7	U
Benzene	0.003	U	0.0023	U	0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	0.14	U	0.15	U	1.3	U	0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	0.13	U	0.13	U
Chloroform	0.003	U	0.0023	U	0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	0.14	U	0.15	U	1.3	U	0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	0.13	U	0.13	U
Ethyl benzene	0.003	U	0.0023	U	0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	0.14	U	0.15	UC	1.3	U	0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	0.13	U	**0.39**	
Isopropylbenzene	0.003	U	0.0023	U	0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	0.14	U	0.15	UC	1.3	U	0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	0.13	U	0.13	U
Methylene chloride	0.012	U	0.0091	U	0.089	UB	0.068	UB	0.063	UB	0.14	U	0.13	U	0.12	U	0.14	U	0.15	UC	1.3	U	**0.15**	**B**	0.13	UB	**0.15**	**B**	0.13	U	1.2	U	0.13	U	0.13	U
Naphthalene	0.03	U	0.023	U	0.089	U	0.068	U	0.063	U	1.4	U	1.3	U	1.2	U	1.4	U	1.5	UC	13	U	1.3	U	1.3	U	1.3	U	1.3	U	12	U	1.3	U	1.3	U
Propylbenzene					0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	0.14	U	0.15	UC	1.3	U	0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	0.13	U	0.13	U
sec-Butylbenzene	0.003	U	0.0023	U	0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	0.14	U	0.15	UC	1.3	U	0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	0.13	U	0.13	U
Styrene	0.003	U	0.0023	U	0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	0.14	U	0.15	UC	1.3	U	0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	0.13	U	0.13	U
Tetrachloroethene	0.003	U	0.0023	U	0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	0.14	U	0.15	U	1.3	U	0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	0.13	U	0.13	U
Toluene	0.003	U	0.0023	U	0.045	U	**0.11**		0.031	U	0.14	U	0.13	U	0.12	U	**0.14**	**J**	**1.1**	**C**	**14**		0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	**0.29**		**7.1**	
Trichloroethene	0.003	U	0.0023	U	0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	0.14	U	0.15	UC	1.3	U	0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	0.13	U	0.13	U
Xylene, o					0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	0.14	U	0.15	UC	1.3	U	0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	0.13	U	**0.4**	
Xylenes (m&p)					0.045	U	0.034	U	0.031	U	0.14	U	0.13	U	0.12	U	0.14	U	0.15	UC	1.3	U	0.13	U	0.13	U	0.13	U	0.13	U	1.2	U	0.13	U	**1.4**	
Xylenes, Total	0.006	U	0.0045	U																														
Semivolatile Organics (mg/kg)																																		
1,2,4-Trichlorobenzene	0.044	U	0.038	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U	44	UC	36	UC	36	UC	0.37	U	36	U	72	U	180	U	3.6	U
2-Methylnaphthalene	0.044	U	0.038	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U	44	UC	36	UC	36	UC	0.37	U	36	U	72	U	180	U	3.6	U
2-Methylphenol	0.044	U	0.038	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U	44	UC	36	UC	36	UC	0.37	U	36	U	72	U	180	U	3.6	U
4-Methylphenol					0.32	U	0.27	U	0.25	U																								
Acenaphthylene	0.044	U	0.038	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U	44	UC	36	UC	36	UC	0.37	U	36	U	72	U	180	U	3.6	U
Anthracene	0.044	U	0.038	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U	44	UC	36	UC	36	UC	0.37	U	36	U	72	U	180	U	3.6	U
Benzaldehyde	**0.06**		0.038	U																														
Benzo(a)anthracene	**0.017**	J	0.038	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U							0.37	U							3.6	U
Benzo(a)pyrene	**0.017**	J	0.038	U	0.32	U	0.27	U	0.25	U			1.8	U	0.74	U	2.1	U									0.37	U								
Benzo(b)fluoranthene	**0.027**	J	**0.014**	J	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U							0.37	U							3.6	U
Benzo(ghi)perylene	0.044	U	0.038	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U	44	UC	36	UC	36	UC	0.37	U	36	U	72	U	180	U	3.6	U
Benzo(k)fluoranthene	0.044	U	0.038	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U	44	UC	36	UC	36	UC	0.37	U	36	U	72	U	180	U	3.6	U
Benzoic Acid	0.22	U	0.19	U	0.64	U	0.54	U	0.5	U	11	U	8.8	U	3.7	U	11	U	100	U	220	UC	180	UC	180	UC	1.8	U	180	U	360	U	910	U	18	U
Bis(2-Ethylhexyl)phthalate	**0.4**	EB	**2**	EB	**1.8**		**3.9**		**2**		**17**		**23**		**5.8**		**31**		**287**		**856**	**C**	**622**	**C**	**511**	**C**	**1.3**		**244**		**1087**		**2356**		**26**	
Butylbenzylphthalate	0.044	U	0.038	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U	44	UC	36	UC	36	UC	0.37	U	36	U	72	U	180	U	3.6	U
Chrysene	**0.021**	J	0.038	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U	44	UC	36	UC	36	UC	0.37	U	36	U	72	U	180	U	3.6	U
Dibenz(a,h)anthracene	0.044	U	0.038	U	0.32	U	0.27	U	0.25	U			1.8	U	0.74	U	2.1	U									0.37	U								
Diethylphthalate	0.044	U	0.038	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U	44	UC	36	UC	36	UC	0.37	U	36	U	72	U	180	U	3.6	U
Di-n-butylphthalate	0.044	U	0.038	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U	**103**	**C**	36	UC	**32**	**JC**	0.37	U	36	U	**87**		180	U	3.6	U
Di-n-octylphthalate	0.044	U	0.038	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U	44	UC	36	UC	36	UC	0.37	U	36	U	72	U	180	U	3.6	U

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	OC-SS-430-0.0/1.0-XXX		OC-SS-431-0.0/1.0-XXX		1120-DA-SP-3A		1120-DA-SP-3B		1120-DA-SP-3C		1120-DA-SP-3D		1120-DA-SP-3E		1120-DA-SP-4		1120-DA-SP-5A		1120-DA-SP-5B		1120-DA-SP-5C		1120-DA-SP-6A		1120-DA-SP-6B		1120-DA-SP-6C		1120-DA-SP-8A		1120-DA-SP-8B		1120-DA-SP-8C		1120-DA-SP-8D	
Sample Date	9/16/2009		9/16/2009		8/26/2000		8/26/2000		8/26/2000		9/14/2000		9/5/2000		9/5/2000		9/14/2000		9/14/2000		9/14/2000		9/22/2000		9/22/2000		9/22/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000	
Depth (feet)	0 - 1		0 - 1																																	
Diphenyl ether	0.044	U	0.038	U																																
Diphenylamine	NA		**0.02**	J																																
Fluoranthene	**0.041**	J	**0.012**	J	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U	44	UC	36	UC	36	UC	0.37	U	36	U	72	U	180	U	3.6	U
Fluorene	0.044	U	**0.022**	J																																
Indeno(1,2,3-cd)pyrene	0.044	U	0.038	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U							0.37	U							3.6	U
Naphthalene	0.11	U	0.091	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U	44	UC	36	UC	36	UC	0.37	U	36	U	72	U	180	U	3.6	U
N-Nitrosodiphenylamine	**0.055**	EB	**0.036**	JEB	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	**1.1**		**3.2**		**19**	**J**	44	UC	**37**	**C**	**61**	**C**	0.37	U	36	U	**86**		180	U	3.6	U
Phenanthrene	**0.015**	J	0.046	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U	44	UC	36	UC	36	UC	0.28	J	36	U	72	U	180	U	3.6	U
Phenol	0.044	U	0.038	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U	44	UC	36	UC	36	UC	0.37	U	36	U	72	U	180	U	3.6	U
Pyrene	**0.032**	J	0.038	U	0.32	U	0.27	U	0.25	U	2.2	U	1.8	U	0.74	U	2.1	U	21	U	44	UC	36	UC	36	UC	0.37	U	36	U	72	U	180	U	3.6	U
Pesticides/PCBs (mg/kg)																																				
4,4'-DDD					0.02	U	0.017	U	0.017	U	0.013	U	0.0099	U	0.011	UC	0.013	U	0.012	U	0.013	U	0.01	U	0.011	U	0.011	U	0.011	U	0.011	U	0.01	U	0.011	U
4,4'-DDE					0.02	U	0.017	U	0.017	U	0.013	U	0.0099	U	0.011	UC	0.013	U	0.012	U	0.013	U	0.01	U	0.011	U	0.011	U	0.011	U	0.011	U	0.01	U	0.011	U
4,4'-DDT					0.02	U	0.017	U	0.017	U	0.013	U	0.0099	U	0.011	UC	0.013	U	0.012	U	0.013	U	0.01	U	0.011	U	0.011	U	0.011	U	0.011	U	0.01	U	0.011	U
Aldrin					0.01	U	0.0085	U	0.0083	U	0.013	U	0.0099	U	0.0099	UC	0.013	U	0.012	U	0.013	U	0.01	U	0.011	U	0.011	U	**0.014**		0.011	U	0.01	U	0.011	U
Alpha-BHC					**0.24**		**0.43**		**0.015**		0.013	U	0.0099	U	**0.014**	**C**	0.013	U	**0.024**		0.013	U	0.01	U	0.011	U	0.011	U	**0.025**		0.011	U	**0.048**		0.011	U
Alpha-Chlordane					0.01	U	0.0085	U	0.0083	U																										
Beta-BHC					**0.13**		**0.15**		**0.0083**		0.013	U	0.0099	U	0.011	UC	0.013	U	0.012	U	0.013	U	0.01	U	0.011	U	0.011	U	0.011	U	0.011	U	0.01	U	0.011	U
Chlordane (technical)					0.01	U	0.0085	U	0.0083	U																										
Dieldrin					0.02	U	0.017	U	0.017	U	0.013	U	0.0099	U	0.011	UC	0.013	U	0.012	U	0.013	U	0.01	U	0.011	U	0.011	U	0.011	U	0.011	U	0.01	U	0.011	U
Endosulfan I					0.01	U	0.0085	U	0.0083	U	0.013	U	0.0099	U	0.011	UC	0.013	U	0.012	U	0.013	U	0.01	U	0.011	U	0.011	U	0.011	U	0.011	U	0.01	U	0.011	U
Endrin					0.02	U	0.017	U	0.017	U	0.013	U	0.0099	U	0.011	U	0.013	U	0.012	U	0.013	U	0.01	U	0.011	U	0.011	U	0.011	U	0.011	U	0.01	U	0.011	U
Endrin aldehyde					0.02	U	0.017	U	0.017	U	0.013	U	0.0099	U	0.011	UC	0.013	U	0.012	U	0.013	U	0.01	U	0.011	U	0.011	U	0.011	U	0.011	U	0.01	U	0.011	U
Endrin ketone					0.02	U	0.017	U	0.017	U																										
Gamma-BHC/Lindane					0.01	U	**0.011**		0.0083	U	0.013	U	0.0099	U	0.011	UC	**0.024**		**0.021**		0.013	U	0.01	U	0.011	U	0.011	U	0.011	U	**0.18**		**0.02**		0.011	U
Heptachlor					0.01	U	0.0085	U	0.0083	U	0.013	U	0.0099	U	0.011	U	0.013	U	0.012	U	0.013	U	0.01	U	0.011	U	0.011	U	0.011	U	0.011	U	0.01	U	0.011	U
Heptachlor epoxide					0.01	U	0.0085	U	0.0083	U	0.013	U	0.0099	U	0.011	UC	0.013	U	0.012	U	0.013	U	0.01	U	0.011	U	0.011	U	0.011	U	0.011	U	0.01	U	0.011	U
Inorganics (mg/kg)																																				
Aluminum	**8,000**		**7,800**																																	
Arsenic	**23**		**8.4**																																	
Barium	**56**		**42**																																	
Beryllium	**0.31**	J	**0.29**																																	
Cadmium	**0.92**		**0.79**		0.77	U	0.67	U	0.65	U	**0.35**		0.3	U	0.3	U	**0.74**		**3**		**3.2**		**0.79**		**0.46**		0.3	U	**1**		**0.85**		**54**		**0.34**	
Calcium	**15,000**		**13,000**																																	
Chromium	**66**		**59**		**37**		**21**		**11**		**39**		**24**		**11**		**38**		**37**		**25**		**68**		**20**		**10**		**36**		**20**		**27**		**24**	
Cobalt	**5.6**		**4.2**																																	
Copper	**8.4**		**9.3**																																	
Iron	**20,000**		**10,000**																																	
Lead	**8.2**		**7.1**		**14**		**7.1**		**5.8**		**6.3**		**6**		**3.6**		**6.2**		**5.4**		**3.7**		**5.6**		**4.2**		**6.6**		**4.7**		**4.3**		**4.6**		**6.3**	
Magnesium	**2,100**		**2,700**																																	
Manganese	**370**		**140**																																	
Mercury	0.21	U	**0.031**	J																																
Nickel	**9.8**		**10**																																	
Potassium	**1,000**		**1,100**																																	
Silver	**0.67**	J	**0.7**																																	
Sodium	**77**	J	**63**	J																																
Thallium	1.7	U	1.3	U																																
Tin	**26**	J	**24**	J																																
Vanadium	**17**		**14**																																	
Zinc	**19**		**21**																																	

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	OC-SS-430-0.0/1.0-XXX		OC-SS-431-0.0/1.0-XXX		1120-DA-SP-3A		1120-DA-SP-3B		1120-DA-SP-3C		1120-DA-SP-3D		1120-DA-SP-3E		1120-DA-SP-4		1120-DA-SP-5A		1120-DA-SP-5B		1120-DA-SP-5C		1120-DA-SP-6A		1120-DA-SP-6B		1120-DA-SP-6C		1120-DA-SP-8A		1120-DA-SP-8B		1120-DA-SP-8C		1120-DA-SP-8D	
Sample Date	9/16/2009		9/16/2009		8/26/2000		8/26/2000		8/26/2000		9/14/2000		9/5/2000		9/5/2000		9/14/2000		9/14/2000		9/14/2000		9/22/2000		9/22/2000		9/22/2000		9/26/2000		9/26/2000		9/26/2000		9/26/2000	
Depth (feet)	0 - 1		0 - 1																																	
Chloride	20	U	15	U																																
Nitrogen, as Ammonia	**39**		**20**																																	
Percent Moisture (%)	**24**		**13**		**23.8**		**8.6**		**4.5**																											
Percent Solids (%)	**76**		**87**								**77.3**		**94.1**		**89.2**		**78.4**		**79.3**		**75.4**		**92.1**		**91.7**		**90.7**		**91.8**		**91.8**		**90.5**		**89.7**	
pH (pH units)																																				
Sulfate	**2,400**		**5,100**																																	
Total Organic Carbon																																				
EPH (mg/Kg)																																				
C11-C22 Aromatics																																				
C11-C22 Aromatics (unadj.)																																				
C19-C36 Aliphatics																																				
Total EPH																																				
Other Analyses (mg/kg)																																				
Formaldehyde			**0.1**	**J**																																
Hydrazine			**0.0016**	**J**																																

Notes:
1. **Bold** results detected.
2. U = not detected
3. J = estimated value
4. R = value rejected

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		STOCKPILE		WD-C1		WD-C10		WD-C10B		WD-C11		WD-C11		WD-C11B		WD-C11B		WD-C12		WD-C12B	
Sample ID	1120-DA-SP-8E		1120-DA-SP-8F		1120-DA-SP-8G		1120-DA-SP-8H		97598-BAY1-8/7		97598-BAY4-8/7		97598-DB-SP-1		97598-DB-SP-2E		97598-DB-SP-2W		1140-WD-C1		1140-WD-C10		1140-WD-C10B		1140-WD-C11		1140-WD-C11 (156878)		1140-WD-C11B		1140-WD-C11B		1140-WD-C12		1140-WD-C12B	
Sample Date	9/26/2000		9/26/2000		9/26/2000		9/26/2000		8/8/2000		8/8/2000		8/11/2000		8/11/2000		8/11/2000		9/19/2000		9/19/2000		9/19/2000		9/19/2000		9/19/2000		9/19/2000		9/21/2000		10/4/2000		10/4/2000	
Depth (feet)																			8.3 - 8.3		6.6 - 6.6		5.6 - 5.6		5.6 - 5.6		5.6 - 5.6		5.6 - 5.6		5.6 - 5.6		6.1 - 6.1		5.2 - 5.2	
Volatile Organics (mg/kg)																																				
1,1,1-Trichloroethane	0.13	U	0.65	U	0.12	U	0.13	U	0.045	U	0.034	U	0.069	U	0.043	U	0.042	U							0.14	U			0.14	U						
1,1-Dichloroethene	0.13	U	0.65	U	0.12	U	0.13	U	0.045	U	0.034	U	0.069	U	0.043	U	0.042	U							0.14	U			0.14	U						
1,2,3-Trichlorobenzene	0.13	U	0.65	U	0.12	U	0.13	U	0.045	U	0.034	U	**0.13**		**0.09**		0.042	U							0.14	U			0.14	U						
1,2,4-Trichlorobenzene	0.13	U	0.65	U	0.12	U	0.13	U	**0.13**		**0.045**		**0.72**		**0.49**		**0.079**								0.14	U			0.14	U						
1,2,4-Trimethylbenzene	0.13	U	0.65	U	0.12	U	0.13	U	**0.17**		**0.061**		**1.3**		**0.85**		**0.11**								0.14	U			0.14	U						
1,3,5-Trimethylbenzene	0.13	U	0.65	U	0.12	U	0.13	U	**0.13**		**0.051**		**0.91**		**0.61**		**0.069**								0.14	U			0.14	U						
2,4,4-Trimethyl-1-pentene	**21**		**27**		0.12	U	**0.65**			U		U		U	1	U		U							0.14	U			0.14	U						
2,4,4-Trimethyl-2-pentene	**8.3**		**12**		0.12	U	**0.19**			U		U		U	0.45	U		U							0.14	U			0.14	U						
2-Butanone	2.6	U	13	U	2.4	U	2.5	U	0.45	U	0.34	U	0.69	U	0.43	U	0.42	U							2.8	U			2.9	U						
2-Hexanone	0.52	U	2.6	U	0.47	U	0.5	U	0.45	U	0.34	U	0.69	U	0.43	U	0.42	U							0.57	U			0.58	U						
4-iso-Propyltoluene	**0.22**		**2.3**		0.12	U	0.13	U	0.045	U	0.034	U	**0.051**	**J**	0.043	U	0.042	U							0.14	U			0.14	U						
Acetone	2.6	U	13	U	2.4	U	2.5	U	0.45	U	0.34	U	0.69	U	0.43	U	0.42	U							2.8	U			2.9	U						
Benzene	0.13	U	0.65	U	0.12	U	0.13	U	0.045	U	0.034	U	0.069	U	0.043	U	0.042	U							0.14	U			0.14	U						
Chloroform	0.13	U	0.65	U	0.12	U	0.13	U	0.045	U	0.034	U	0.069	U	0.043	U	0.042	U							0.14	U			0.14	U						
Ethyl benzene	**0.11**	J	0.65	U	0.12	U	0.13	U	0.045	U	0.034	U	0.069	U	0.043	U	0.042	U							0.14	U			0.14	U						
Isopropylbenzene	0.13	U	0.65	U	0.12	U	0.13	U	0.045	U	0.034	U	**0.17**		**0.1**		0.042	U							0.14	U			0.14	U						
Methylene chloride	0.13	U	0.65	U	0.12	U	0.13	U	0.089	U	0.067	U	0.14	U	0.085	U	0.084	U							**0.18**	**B**			0.14	UB						
Naphthalene	1.3	U	6.5	U	1.2	U	1.3	U	0.22	U	0.17	U	0.14	U	0.085	U	0.084	U							1.4	U			1.4	U						
Propylbenzene	0.13	U	0.65	U	0.12	U	0.13	U	0.045	U	0.034	U	**0.15**		**0.099**		0.042	U							0.14	U			0.14	U						
sec-Butylbenzene	0.13	U	0.65	U	0.12	U	0.13	U	0.045	U	0.034	U	0.069	U	0.043	U	0.042	U							0.14	U			0.14	U						
Styrene	**0.81**		0.65	U	0.12	U	0.13	U	0.045	U	0.034	U	**0.13**		**0.096**		0.042	U							0.14	U			0.14	U						
Tetrachloroethene	0.13	U	0.65	U	0.12	U	0.13	U	0.045	U	0.034	U	0.069	U	0.043	U	0.042	U							0.14	U			0.14	U						
Toluene	**5.3**		0.65	U	0.12	U	**0.68**		0.045	U	0.034	U	**0.083**		**0.028**	**J**	0.042	U							0.14	U			0.14	U						
Trichloroethene	0.13	U	0.65	U	0.12	U	0.13	U	0.045	U	0.034	U	0.069	U	0.043	U	0.042	U							0.14	U			0.14	U						
Xylene, o	0.13	U	0.65	U	0.12	U	0.13	U	0.045	U	0.034	U	**0.14**		**0.1**		0.042	U							0.14	U			0.14	U						
Xylenes (m&p)	**0.12**	**J**	0.65	U	0.12	U	0.13	U	0.045	U	0.034	U	**0.1**		**0.069**		0.042	U							0.14	U			0.14	U						
Xylenes, Total																									0.14	U			0.14	U						
Semivolatile Organics (mg/kg)																																				
1,2,4-Trichlorobenzene	35	U	36	U	36	U	36	U	**0.063**	**J**	**0.099**	**J**	**0.61**	**F**	**0.45**		**0.39**		1.9	U	0.41	U	18	UC	0.43	U			0.39	U			0.82	U	0.37	U
2-Methylnaphthalene	35	U	36	U	36	U	36	U	0.28	U	0.28	U	0.29	U	0.29	U	0.29	U	1.9	U	0.41	U	18	UC	0.43	U			0.39	U			0.82	U	0.37	U
2-Methylphenol	35	U	36	U	36	U	36	U	0.28	U	0.28	U	0.29	U	0.29	U	0.29	U	1.9	U	0.41	U	18	UC	0.43	U			0.39	U			0.82	U	0.37	U
4-Methylphenol									0.28	U	0.28	U	0.29	U	0.29	U	0.29	U																		
Acenaphthylene	35	U	36	U	36	U	36	U	0.28	U	0.28	U	0.29	U	0.29	U	0.29	U	1.9	U	0.41	U	18	UC	0.43	U			0.39	U			0.82	U	0.37	U
Anthracene	35	U	36	U	36	U	36	U	0.28	U	0.28	U	0.29	U	0.29	U	0.29	U	1.9	U	0.41	U	18	UC	0.43	U			0.39	U			0.82	U	0.37	U
Benzaldehyde																																				
Benzo(a)anthracene									0.28	U	0.28	U	0.29	U	0.29	U	0.29	U	1.9	U	0.41	U	18	UC	0.43	U			0.39	U			0.82	U	0.37	U
Benzo(a)pyrene									0.28	U	0.28	U	0.29	U	0.29	U	0.29	U	1.9	U	0.41	U			0.43	U			0.39	U			0.82	U	0.37	U
Benzo(b)fluoranthene									0.28	U	0.28	U	0.29	U	0.29	U	0.29	U	1.9	U	0.41	U	18	UC	0.43	U			0.39	U			0.82	U	0.37	U
Benzo(ghi)perylene	35	U	36	U	36	U	36	U	0.28	U	0.28	U	0.29	UF	**0.097**	**J**	0.29	U	1.9	U	0.41	U	18	UC	0.43	U			0.39	U			0.82	U	0.37	U
Benzo(k)fluoranthene	35	U	36	U	36	U	36	U	0.28	U	0.28	U	0.29	U	0.29	U	0.29	U	1.9	U	0.41	U	18	UC	0.43	U			0.39	U			0.82	U	0.37	U
Benzoic Acid	170	U	180	U	180	U	180	U	0.57	U	**0.63**		**1.4**	**F**	**0.94**		**1.1**		9.5	U	2.1	U	92	UC	2.1	U			2	U			4.1	U	1.8	U
Bis(2-Ethylhexyl)phthalate	**365**		**501**		**679**		**676**		**6.7**		**6.9**		**9.1**	**BF**	**43**	**F**	**29**	**F**	**29**		**1.1**		**366**	**C**	0.43	U			**1.2**				**12**		0.37	U
Butylbenzylphthalate	35	U	36	U	36	U	36	U	0.28	U	0.28	U	0.29	U	0.29	U	0.29	U	1.9	U	0.41	U	18	UC	0.43	U			0.39	U			0.82	U	0.37	U
Chrysene	35	U	36	U	36	U	36	U	0.28	U	0.28	U	0.29	U	0.29	U	0.29	U	1.9	U	0.41	U	18	UC	0.43	U			0.39	U			0.82	U	0.37	U
Dibenz(a,h)anthracene									0.28	U	0.28	U	0.29	UF	**0.096**	**J**	0.29	U	1.9	U	0.41	U			0.43	U			0.39	U			0.82	U	0.37	U
Diethylphthalate	35	U	36	U	36	U	36	U	0.28	U	0.28	U	0.29	U	0.29	U	0.29	U	1.9	U	0.41	U	18	UC	0.43	U			0.39	U			0.82	U	0.37	U
Di-n-butylphthalate	35	U	36	U	36	U	36	U	0.28	U	0.28	U	**1.8**	**F**	**0.91**		**0.58**		1.9	U	0.41	U	18	UC	0.43	U			0.39	U			0.82	U	0.37	U
Di-n-octylphthalate	35	U	36	U	36	U	36	U	0.28	U	0.28	U	0.29	U	0.29	U	0.29	U	1.9	U	0.41	U	18	UC	0.43	U			0.39	U			0.82	U	0.37	U

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	1120-DA-SP-8E	1120-DA-SP-8F	1120-DA-SP-8G	1120-DA-SP-8H	97598-BAY1-8/7	97598-BAY4-8/7	97598-DB-SP-1	97598-DB-SP-2E	97598-DB-SP-2W	1140-WD-C1	1140-WD-C10	1140-WD-C10B	1140-WD-C11	1140-WD-C11 (156878)	1140-WD-C11B	1140-WD-C11B	1140-WD-C12	1140-WD-C12B
Sample Date	9/26/2000	9/26/2000	9/26/2000	9/26/2000	8/8/2000	8/8/2000	8/11/2000	8/11/2000	8/11/2000	9/19/2000	9/19/2000	9/19/2000	9/19/2000	9/19/2000	9/19/2000	9/21/2000	10/4/2000	10/4/2000
Depth (feet)										8.3 - 8.3	6.6 - 6.6	5.6 - 5.6	5.6 - 5.6	5.6 - 5.6	5.6 - 5.6	5.6 - 5.6	6.1 - 6.1	5.2 - 5.2
Diphenyl ether																		
Diphenylamine																		
Fluoranthene	35 U	36 U	36 U	36 U	0.28 U	0.28 U	0.29 U	0.29 U	0.29 U	1.9 U	0.41 U	18 UC	0.43 U		0.39 U		0.82 U	0.37 U
Fluorene																		
Indeno(1,2,3-cd)pyrene					0.28 U	0.28 U	0.29 U	0.29 U	0.29 U	1.9 U	0.41 U	18 UC	0.43 U		0.39 U		0.82 U	0.37 U
Naphthalene	35 U	36 U	36 U	36 U	0.28 U	0.28 U	0.29 U	0.29 U	0.29 U	1.9 U	0.41 U	18 UC	0.43 U		0.39 U		0.82 U	0.37 U
N-Nitrosodiphenylamine	**24 J**	36 U	**473**	36 U	**3.5 #**	**1.7 #**	**0.99 #F**	**4.5 #**	**3.4 #**	**1.4 J**	0.41 U	**19 C**	0.43 U		**0.52**		**0.76 J**	0.37 U
Phenanthrene	35 U	36 U	36 U	36 U	0.28 U	0.28 U	0.29 U	0.29 U	0.29 U	1.9 U	0.41 U	18 UC	0.43 U		0.39 U		0.82 U	0.37 U
Phenol	35 U	36 U	36 U	36 U	0.28 U	0.28 U	0.29 UF	**0.098 J**	**0.36**	1.9 U	0.41 U	18 UC	0.43 U		0.39 U		0.82 U	0.37 U
Pyrene	35 U	36 U	36 U	36 U	0.28 U	0.28 U	0.29 U	0.29 U	0.29 U	1.9 U	0.41 U	18 UC	0.43 U		0.39 U		0.82 U	0.37 U
Pesticides/PCBs (mg/kg)																		
4,4'-DDD	0.011 U	0.054 U	0.011 U	0.011 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0019 U					0.013 U		0.012 U		
4,4'-DDE	0.011 U	0.054 U	0.011 U	0.011 U	**0.0069**	**0.0049**	0.0018 U	0.0018 U	0.0019 U					0.013 U		0.012 U		
4,4'-DDT	0.011 U	0.054 U	0.011 U	0.011 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0019 U					0.013 U		0.012 U		
Aldrin	0.011 U	0.054 U	0.011 U	**0.059**	0.00089 U	0.00089 U	0.0009 U	0.00091 U	0.00096 U					0.013 U		0.012 U		
Alpha-BHC	0.011 U	0.054 U	0.011 U	**0.1**	0.00089 U	0.00089 U	0.0009 U	0.00091 U	0.00096 U					0.013 U		0.012 U		
Alpha-Chlordane					0.00089 U	**0.003**	0.0009 U	0.00091 U	0.00096 U									
Beta-BHC	0.011 U	0.054 U	0.011 U	**0.033**	0.00089 U	0.00089 U	0.0009 U	0.00091 U	0.00096 U					0.013 U		0.012 U		
Chlordane (technical)					0.00089 U	0.00089 U	0.0009 U	0.00091 U	0.00096 U									
Dieldrin	0.011 U	0.054 U	0.011 U	0.011 U	0.0018 U	**0.0031**	**0.0033**	**0.0053**	**0.0045**					0.013 U		0.012 U		
Endosulfan I	0.011 U	0.054 U	0.011 U	0.011 U	0.00089 U	0.00089 U	0.0009 U	0.00091 U	0.00096 U					0.013 U		0.012 U		
Endrin	0.011 U	0.054 U	0.011 U	0.011 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0019 U					0.013 U		0.012 U		
Endrin aldehyde	0.011 U	0.054 U	0.011 U	0.011 U	**0.013**	**0.0066**	0.0018 U	0.0018 U	0.0019 U					0.013 U		0.012 U		
Endrin ketone					0.0018 U	0.0018 U	0.0018 U	**0.014**	0.0019 U									
Gamma-BHC/Lindane	0.011 U	**0.18**	**0.063**	**0.031**	**0.18**	**0.25**	**1.2 F**	**0.37**	**0.42**					0.013 U		0.012 U		
Heptachlor	0.011 U	0.054 U	0.011 U	0.011 U	0.00089 U	0.00089 U	0.0009 U	0.00091 U	0.00096 U					0.013 U		0.012 U		
Heptachlor epoxide	0.011 U	0.054 U	0.011 U	0.011 U	0.00089 U	0.00089 U	0.0009 U	0.00091 U	0.00096 U					0.013 U		0.012 U		
Inorganics (mg/kg)																		
Aluminum													**2700 F**		**4200**			
Arsenic													2 U		**1.9**			
Barium																		
Beryllium																		
Cadmium	**3.3**	**1.8**	**14**	**7.3**	0.68 U	0.64 U	0.7 U	0.68 U	0.69 U				0.4 U		0.3 U			
Calcium																		
Chromium	**84**	**650**	**200**	**41**	**47**	**70**	**54**	**75**	**46**	**520**	**50**	**77**	**660**		**170**		**10**	**6.3**
Cobalt																		
Copper																		
Iron													**3100 F**		**3000**			
Lead	**3.5**	**4.1**	**3**	**4**	**7.2**	**8.2**	**6.8**	**7.9**	**5.6**				2 U		**2.9**			
Magnesium													0.05 U		0.05 U			
Manganese																		
Mercury																		
Nickel																		
Potassium																		
Silver																		
Sodium																		
Thallium																		
Tin																		
Vanadium																		
Zinc																		

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	1120-DA-SP-8E	1120-DA-SP-8F	1120-DA-SP-8G	1120-DA-SP-8H	97598-BAY1-8/7	97598-BAY4-8/7	97598-DB-SP-1	97598-DB-SP-2E	97598-DB-SP-2W	1140-WD-C1	1140-WD-C10	1140-WD-C10B	1140-WD-C11	1140-WD-C11 (156878)	1140-WD-C11B	1140-WD-C11B	1140-WD-C12	1140-WD-C12B
Sample Date	9/26/2000	9/26/2000	9/26/2000	9/26/2000	8/8/2000	8/8/2000	8/11/2000	8/11/2000	8/11/2000	9/19/2000	9/19/2000	9/19/2000	9/19/2000	9/19/2000	9/19/2000	9/21/2000	10/4/2000	10/4/2000
Depth (feet)										8.3 - 8.3	6.6 - 6.6	5.6 - 5.6	5.6 - 5.6	5.6 - 5.6	5.6 - 5.6	5.6 - 5.6	6.1 - 6.1	5.2 - 5.2
Chloride																		
Nitrogen, as Ammonia																		
Percent Moisture (%)					**13.5**	**11.5**	**13.7**	**15.8**	**17.2**									
Percent Solids (%)	**92.9**	**91.5**	**92.2**	**90.5**						**87**	**80.4**	**89**	**78.1**		**84.7**			
pH (pH units)																		
Sulfate																		
Total Organic Carbon																		
EPH (mg/Kg)																		
C11-C22 Aromatics																		
C11-C22 Aromatics (unadj.)																		
C19-C36 Aliphatics																		
Total EPH																		
Other Analyses (mg/kg)																		
Formaldehyde																		
Hydrazine																		

Notes:
1. **Bold** results detected.
2. U = not detected
3. J = estimated value
4. R = value rejected

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	WD-C13		WD-C13B		WD-C14		WD-C14B		WD-C15		WD-C15B		WD-C16		WD-C1B		WD-C2		WD-C2B		WD-C3		WD-C3B		WD-C4		WD-C4B		WD-C5		WD-C5B		WD-C6		WD-C6B	
Sample ID	1140-WD-C13		1140-WD-C13B		1140-WD-C14		1140-WD-C14B		1140-WD-C15		1140-WD-C15B		1140-WD-C16		1140-WD-C1B		1140-WD-C2		1140-WD-C2B		1140-WD-C3		1140-WD-C3B		1140-WD-C4		1140-WD-C4B		1140-WD-C5		1140-WD-C5B		1140-WD-C6		1140-WD-C6B	
Sample Date	10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/13/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000	
Depth (feet)	6.1 - 6.1		5.2 - 5.2		7.6 - 7.6		6.9 - 6.9		10 - 10		9.3 - 9.3		10.1 - 10.1		7.3 - 7.3		8 - 8		7 - 7		7.7 - 7.7		6.7 - 6.7		7.6 - 7.6		6.6 - 6.6		7.4 - 7.4		6.5 - 6.5		7.1 - 7.1		6.2 - 6.2	
Volatile Organics (mg/kg)																																				
1,1,1-Trichloroethane											0.16	U	0.15	U											0.15	U	0.15	U								
1,1-Dichloroethene											0.16	U	0.15	U											0.15	U	0.15	U								
1,2,3-Trichlorobenzene											0.16	U	0.15	U											0.15	U	0.15	U								
1,2,4-Trichlorobenzene											0.16	U	0.15	U											0.15	U	0.15	U								
1,2,4-Trimethylbenzene											0.16	U	0.15	U											0.15	U	0.15	U								
1,3,5-Trimethylbenzene											0.16	U	0.15	U											0.15	U	0.15	U								
2,4,4-Trimethyl-1-pentene											0.16	U	0.15	U											0.15	U	0.15	U								
2,4,4-Trimethyl-2-pentene											0.16	U	0.15	U											0.15	U	0.15	U								
2-Butanone											3.1	U	3.1	U											3	U	3	U								
2-Hexanone											0.63	U	0.61	U											0.61	U	0.6	U								
4-iso-Propyltoluene											0.16	U	0.15	U											0.15	U	0.15	U								
Acetone											3.1	U	3.1	U											3	U	3	U								
Benzene											0.16	U	0.15	U											0.15	U	0.15	U								
Chloroform											0.16	U	0.15	U											0.15	U	0.15	U								
Ethyl benzene											0.16	U	0.15	U											0.15	U	0.15	U								
Isopropylbenzene											0.16	U	0.15	U											0.15	U	0.15	U								
Methylene chloride											**0.59**	**B**	0.15	U											**0.22**	**B**	0.15	UB								
Naphthalene											1.6	U	1.5	U											1.5	U	1.5	U								
Propylbenzene											0.16	U	0.15	U											0.15	U	0.15	U								
sec-Butylbenzene											0.16	U	0.15	U											0.15	U	0.15	U								
Styrene											0.16	U	0.15	U											0.15	U	0.15	U								
Tetrachloroethene											0.16	U	0.15	U											0.15	U	0.15	U								
Toluene											0.16	U	0.15	U											0.15	U	0.15	U								
Trichloroethene											0.16	U	0.15	U											0.15	U	0.15	U								
Xylene, o											0.16	U	0.15	U											0.15	U	0.15	U								
Xylenes (m&p)											0.16	U	0.15	U											0.15	U	0.15	U								
Xylenes, Total											0.16	U	0.15	U											0.15	U	0.15	U								
Semivolatile Organics (mg/kg)																																				
1,2,4-Trichlorobenzene	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U	22	UC	0.39	U	0.37	U	2	U	19	UC
2-Methylnaphthalene	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U	22	UC	0.39	U	0.37	U	2	U	19	UC
2-Methylphenol	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U	22	UC	0.39	U	0.37	U	2	U	19	UC
4-Methylphenol																																				
Acenaphthylene	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U	22	UC	0.39	U	0.37	U	2	U	19	UC
Anthracene	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U	22	UC	0.39	U	0.37	U	2	U	19	UC
Benzaldehyde																																				
Benzo(a)anthracene	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U			0.39	U	0.37	U	2	U	19	UC
Benzo(a)pyrene	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U			0.39	U	0.37	U	2	U		
Benzo(b)fluoranthene	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U			0.39	U	0.37	U	2	U	19	UC
Benzo(ghi)perylene	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U	22	UC	0.39	U	0.37	U	2	U	19	UC
Benzo(k)fluoranthene	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U	22	UC	0.39	U	0.37	U	2	U	19	UC
Benzoic Acid	2	U	1.9	U	2.1	U	2	U	2.1	U	2.2	U	2.1	U	2	U	4.1	U	2	U	2	U	2	U	2	U	110	UC	2	U	1.8	U	10	U	96	UC
Bis(2-Ethylhexyl)phthalate	0.41	U	**0.73**		**1.6**		**3.3**		0.42	U	**0.79**		**0.64**		**1.4**		**15**		**5**		**5.6**		**1.2**		**2.9**		**166**	**C**	**3.9**		**0.6**		**33**		**210**	**C**
Butylbenzylphthalate	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U	22	UC	0.39	U	0.37	U	2	U	19	UC
Chrysene	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U	22	UC	0.39	U	0.37	U	2	U	19	UC
Dibenz(a,h)anthracene	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U			0.39	U	0.37	U	2	U		
Diethylphthalate	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U	22	UC	0.39	U	0.37	U	2	U	19	UC
Di-n-butylphthalate	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U	22	UC	0.39	U	0.37	U	2	U	19	UC
Di-n-octylphthalate	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U	22	UC	0.39	U	0.37	U	2	U	19	UC

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	1140-WD-C13		1140-WD-C13B		1140-WD-C14		1140-WD-C14B		1140-WD-C15		1140-WD-C15B		1140-WD-C16		1140-WD-C1B		1140-WD-C2		1140-WD-C2B		1140-WD-C3		1140-WD-C3B		1140-WD-C4		1140-WD-C4B		1140-WD-C5		1140-WD-C5B		1140-WD-C6		1140-WD-C6B	
Sample Date	10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/4/2000		10/13/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000	
Depth (feet)	6.1 - 6.1		5.2 - 5.2		7.6 - 7.6		6.9 - 6.9		10 - 10		9.3 - 9.3		10.1 - 10.1		7.3 - 7.3		8 - 8		7 - 7		7.7 - 7.7		6.7 - 6.7		7.6 - 7.6		6.6 - 6.6		7.4 - 7.4		6.5 - 6.5		7.1 - 7.1		6.2 - 6.2	
Diphenyl ether																																				
Diphenylamine																																				
Fluoranthene	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U	22	UC	0.39	U	0.37	U	2	U	19	UC
Fluorene																																				
Indeno(1,2,3-cd)pyrene	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U			0.39	U	0.37	U	2	U	19	UC
Naphthalene	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U	22	UC	0.39	U	0.37	U	2	U	19	UC
N-Nitrosodiphenylamine	**0.97**		0.39	U	**1.9**		0.41	U	0.42	U	0.44	U	**0.6**		0.39	U	**1.3**		0.4	U	**0.31**	**J**	0.39	U	**0.24**	**J**	22	UC	**0.21**	**J**	0.37	U	2	U	19	UC
Phenanthrene	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U	22	UC	0.39	U	0.37	U	2	U	19	UC
Phenol	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U	22	UC	0.39	U	0.37	U	2	U	19	UC
Pyrene	0.41	U	0.39	U	0.42	U	0.41	U	0.42	U	0.44	U	0.42	U	0.39	U	0.81	U	0.4	U	0.39	U	0.39	U	0.4	U	22	UC	0.39	U	0.37	U	2	U	19	UC
Pesticides/PCBs (mg/kg)																																				
4,4'-DDD									0.012	U	0.013	U											0.013	U	0.012	U	0.012	U								
4,4'-DDE									0.012	U	0.013	U											0.013	U	0.012	U	0.012	U								
4,4'-DDT									0.012	U	0.013	U											0.013	U	0.012	U	0.012	U								
Aldrin									0.012	U	0.013	U											0.013	U	0.012	U	0.012	U								
Alpha-BHC									0.012	U	0.013	U											0.013	U	0.012	U	0.012	U								
Alpha-Chlordane																																				
Beta-BHC									0.012	U	0.013	U											0.013	U	0.012	U	0.012	U								
Chlordane (technical)																																				
Dieldrin									0.012	U	0.013	U											0.013	U	0.012	U	0.012	U								
Endosulfan I									0.012	U	0.013	U											0.013	U	0.012	U	0.012	U								
Endrin									0.012	U	0.013	U											0.013	U	0.012	U	0.012	U								
Endrin aldehyde									0.012	U	0.013	U											0.013	U	0.012	U	0.012	U								
Endrin ketone																																				
Gamma-BHC/Lindane									0.012	U	0.013	U											0.013	U	0.012	U	0.012	U								
Heptachlor									0.012	U	0.013	U											0.013	U	0.012	U	0.012	U								
Heptachlor epoxide									0.012	U	0.013	U											0.013	U	0.012	U	0.012	U								
Inorganics (mg/kg)																																				
Aluminum									**3300**		**3300**												**3600**		**7400**		**4600**									
Arsenic									2	U	2	U											2	U	**6.8**		2	U								
Barium																																				
Beryllium																																				
Cadmium									0.3	U	0.3	U											0.4	U	0.3	U	0.4	U								
Calcium																																				
Chromium	**11**		**6.7**		**18**		**6.4**		**19**		**15**		**6**		**68**		**350**		**36**		**110**		**210**		**160**		**51**		**160**		**240**		**58**		**500**	
Cobalt																																				
Copper																																				
Iron											**1100**		**2900**												**11000**		**3300**									
Lead											**1.7**		**2.1**												**4.7**		**5.4**									
Magnesium																																				
Manganese																																				
Mercury											0.05	U	0.05	U											0.05	U	0.06	U								
Nickel																																				
Potassium																																				
Silver																																				
Sodium																																				
Thallium																																				
Tin																																				
Vanadium																																				
Zinc																																				

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	1140-WD-C13	1140-WD-C13B	1140-WD-C14	1140-WD-C14B	1140-WD-C15	1140-WD-C15B	1140-WD-C16	1140-WD-C1B	1140-WD-C2	1140-WD-C2B	1140-WD-C3	1140-WD-C3B	1140-WD-C4	1140-WD-C4B	1140-WD-C5	1140-WD-C5B	1140-WD-C6	1140-WD-C6B
Sample Date	10/4/2000	10/4/2000	10/4/2000	10/4/2000	10/4/2000	10/4/2000	10/13/2000	9/21/2000	9/19/2000	9/21/2000	9/19/2000	9/21/2000	9/19/2000	9/21/2000	9/19/2000	9/21/2000	9/19/2000	9/21/2000
Depth (feet)	6.1 - 6.1	5.2 - 5.2	7.6 - 7.6	6.9 - 6.9	10 - 10	9.3 - 9.3	10.1 - 10.1	7.3 - 7.3	8 - 8	7 - 7	7.7 - 7.7	6.7 - 6.7	7.6 - 7.6	6.6 - 6.6	7.4 - 7.4	6.5 - 6.5	7.1 - 7.1	6.2 - 6.2
Chloride																		
Nitrogen, as Ammonia																		
Percent Moisture (%)																		
Percent Solids (%)						**75.7**	**78.7**	**84.2**	**80.8**	**82**	**84.5**	**84.6**	**82.4**	**75.8**	**84.4**	**89.6**	**83**	**85.2**
pH (pH units)																		
Sulfate																		
Total Organic Carbon																		
EPH (mg/Kg)																		
C11-C22 Aromatics																		
C11-C22 Aromatics (unadj.)																		
C19-C36 Aliphatics																		
Total EPH																		
Other Analyses (mg/kg)																		
Formaldehyde																		
Hydrazine																		

Notes:
1. **Bold** results detected.
2. U = not detected
3. J = estimated value
4. R = value rejected

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Location	WD-C7		WD-C7B		WD-C8		WD-C8B		WD-C9		WD-C9B		RSO-14		RSO-14		RSO-15		RSO-15		TP-21	
Sample ID	1140-WD-C7		1140-WD-C7B		1140-WD-C8		1140-WD-C8B		1140-WD-C9		1140-WD-C9B		RSO-14-S1 (0-3 FT)		RSO-14-S1 (0-3)		RSO-15-S1 (0-3 FT)		RSO-15-S1 (0-3)		TP-21-SN8	
Sample Date	9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		1/24/2000		1/24/2000		1/24/2000		1/24/2000		10/8/1991	
Depth (feet)	6.6 - 6.6		5.6 - 5.6		6.8 - 6.8		5.8 - 5.8		7 - 7		6 - 6		-0.87 - 2.13		-0.87 - 2.13		1.52 - 4.52		1.52 - 4.52			
Volatile Organics (mg/kg)																						
1,1,1-Trichloroethane					0.16	U	0.12	U							0.005	U			0.009	U	0.0009	U
1,1-Dichloroethene					0.16	U	0.12	U							0.005	U			0.009	U	0.0009	U
1,2,3-Trichlorobenzene					0.16	U	0.12	U														
1,2,4-Trichlorobenzene					0.16	U	0.12	U														
1,2,4-Trimethylbenzene					0.16	U	0.12	U														
1,3,5-Trimethylbenzene					0.16	U	0.12	U														
2,4,4-Trimethyl-1-pentene					0.16	U	0.12	U							0.005	U			0.009	U		
2,4,4-Trimethyl-2-pentene					0.16	U	0.12	U							0.005	U			0.009	U		
2-Butanone					3.2	U	2.5	U							0.01	U			0.017	U	0.0027	U
2-Hexanone					0.64	U	0.5	U							0.01	UJ			0.017	UJ	0.0027	U
4-iso-Propyltoluene					0.16	U	0.12	U														
Acetone					3.2	U	2.5	U							0.01	U			0.017	U	0.0046	U
Benzene					0.16	U	0.12	U							0.005	U			0.009	U	0.0009	U
Chloroform					0.16	U	0.12	U							0.005	U			0.009	U	0.0009	U
Ethyl benzene					0.16	U	0.12	U							0.005	U			0.009	U	0.0009	U
Isopropylbenzene					0.16	U	0.12	U														
Methylene chloride					**0.22**	**B**	0.12	UB							0.005	U			0.009	U	0.0018	U
Naphthalene					1.6	U	1.2	U														
Propylbenzene					0.16	U	0.12	U														
sec-Butylbenzene					0.16	U	0.12	U														
Styrene					0.16	U	0.12	U							0.005	U			0.009	U	0.0009	U
Tetrachloroethene					0.16	U	0.12	U							0.005	U			0.009	U	0.0009	U
Toluene					0.16	U	0.12	U							0.005	U			0.009	U	**0.0003**	**J**
Trichloroethene					0.16	U	0.12	U							0.005	U			0.009	U	0.0009	U
Xylene, o					0.16	U	0.12	U														
Xylenes (m&p)					0.16	U	0.12	U														
Xylenes, Total					0.16	U	0.12	U							0.005	U			0.009	U	0.0009	U
Semivolatile Organics (mg/kg)																						
1,2,4-Trichlorobenzene	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
2-Methylnaphthalene	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
2-Methylphenol	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
4-Methylphenol															1.4	U			2	U	0.99	UJ
Acenaphthylene	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
Anthracene	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
Benzaldehyde																						
Benzo(a)anthracene	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
Benzo(a)pyrene									0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
Benzo(b)fluoranthene	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
Benzo(ghi)perylene	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
Benzo(k)fluoranthene	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
Benzoic Acid	22	U	94	UC	22	U	92	UC	4.3	U	1.9	U			6.8	U			9.5	U	4.8	UJ
Bis(2-Ethylhexyl)phthalate	**71**		**79**	**C**	**54**		**426**	**C**	**16**		**0.58**				1.4	U			**9.5**		**1100**	**J**
Butylbenzylphthalate	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
Chrysene	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
Dibenz(a,h)anthracene									0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
Diethylphthalate	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
Di-n-butylphthalate	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	1.3	U
Di-n-octylphthalate	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	**0.88**	**J**

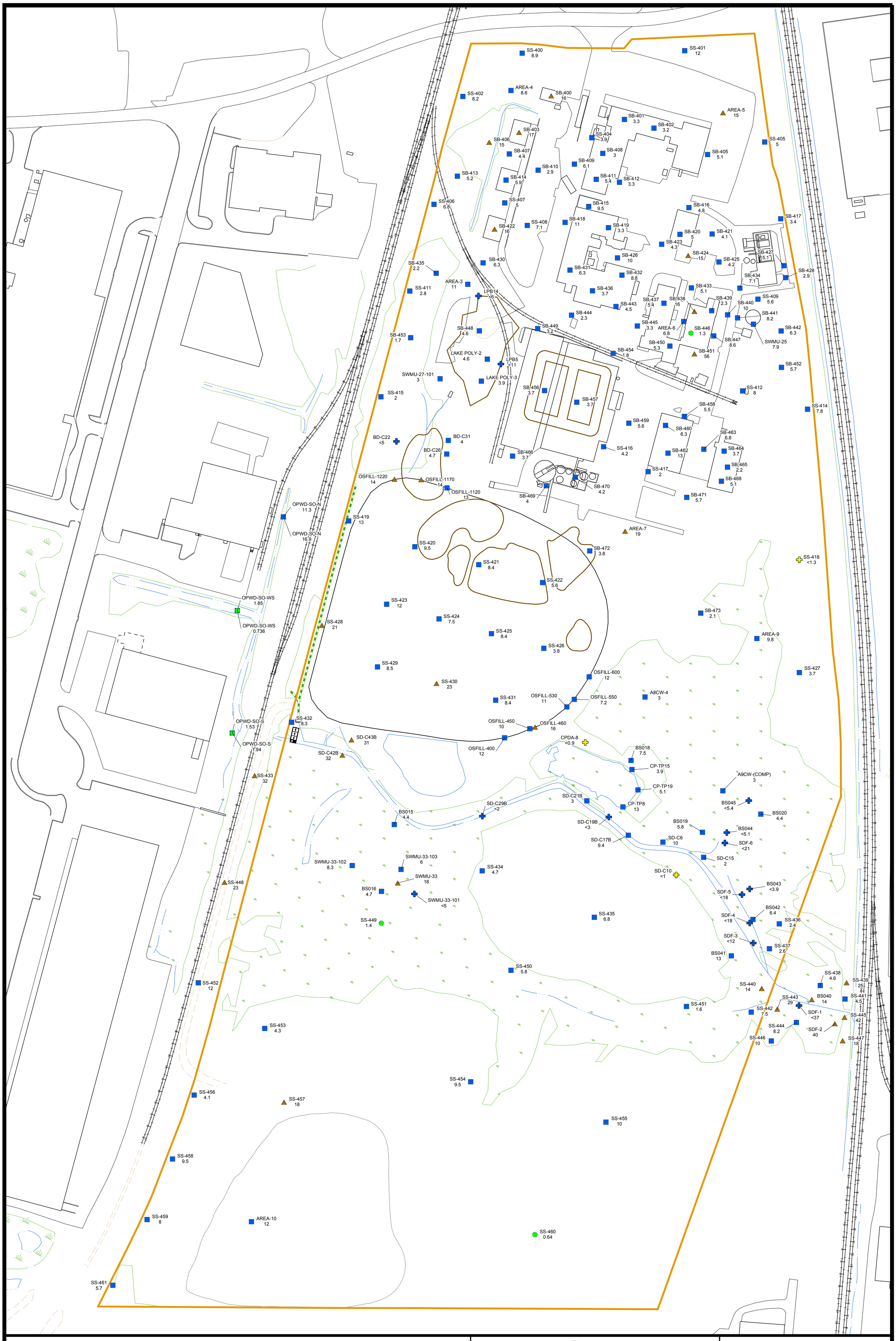
Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	1140-WD-C7		1140-WD-C7B		1140-WD-C8		1140-WD-C8B		1140-WD-C9		1140-WD-C9B		RSO-14-S1 (0-3 FT)		RSO-14-S1 (0-3)		RSO-15-S1 (0-3 FT)		RSO-15-S1 (0-3)		TP-21-SN8	
Sample Date	9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		1/24/2000		1/24/2000		1/24/2000		1/24/2000		10/8/1991	
Depth (feet)	6.6 - 6.6		5.6 - 5.6		6.8 - 6.8		5.8 - 5.8		7 - 7		6 - 6		-0.87 - 2.13		-0.87 - 2.13		1.52 - 4.52		1.52 - 4.52			
Diphenyl ether																						
Diphenylamine																						
Fluoranthene	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
Fluorene																						
Indeno(1,2,3-cd)pyrene	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
Naphthalene	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
N-Nitrosodiphenylamine	**4.9**		19	UC	4.3	U	18	UC	**1.2**		**0.81**				1.4	U			2	U	0.99	UJ
Phenanthrene	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
Phenol	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
Pyrene	4.4	U	19	UC	4.3	U	18	UC	0.85	U	0.39	U			1.4	U			2	U	0.99	UJ
Pesticides/PCBs (mg/kg)																						
4,4'-DDD					0.013	U	0.011	U														R
4,4'-DDE					0.013	U	0.011	U														R
4,4'-DDT					0.013	U	0.011	U														R
Aldrin					0.013	U	0.011	U														R
Alpha-BHC					0.013	U	0.011	U														R
Alpha-Chlordane																						R
Beta-BHC					0.013	U	0.011	U														R
Chlordane (technical)																						R
Dieldrin					0.013	U	0.011	U														R
Endosulfan I					0.013	U	0.011	U													**0.036**	**J**
Endrin					0.013	U	0.011	U														R
Endrin aldehyde					0.013	U	0.011	U														R
Endrin ketone																						R
Gamma-BHC/Lindane					0.013	U	0.011	U														R
Heptachlor					0.013	U	0.011	U														R
Heptachlor epoxide					0.013	U	0.011	U														R
Inorganics (mg/kg)																						
Aluminum					**3400**		**2300**						**13000**				**5500**				**3100**	**J**
Arsenic					**2.2**		2	U													**4**	**J**
Barium													**83**				**13**				**11**	
Beryllium													0.1	U			**0.21**				1.5	U
Cadmium					0.3	U	0.3	U					0.2	U			0.2	U			1	U
Calcium													**7900**				**17000**				**160000**	**J**
Chromium	**810**		**580**		**160**		**340**		**110**		**20**		**65**				**28**				**110**	
Cobalt													**15**				**2.8**				1.5	U
Copper													18	U			18	U			**5**	
Iron					**3400**		**2600**						**17000**				**8200**				**2600**	
Lead					**2.2**		**2**						**11**				**10**				10	U
Magnesium													**8100**				**1400**				**440**	
Manganese													**200**				**88**				**49**	
Mercury					0.06	U	0.05	U					**0.051**				0.05	U			**0.91**	
Nickel													**35**				**6**				4	U
Potassium													**3900**				**360**				**280**	
Silver																						
Sodium													**110**				**80**				**110**	
Thallium													1	U			1	U				R
Tin																						
Vanadium													**36**				**14**				**12**	
Zinc													**36**				**19**				**38**	

Table 1
Comparison to Soil Leaching Criteria
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample ID	1140-WD-C7		1140-WD-C7B		1140-WD-C8		1140-WD-C8B		1140-WD-C9		1140-WD-C9B		RSO-14-S1 (0-3 FT)		RSO-14-S1 (0-3)		RSO-15-S1 (0-3 FT)		RSO-15-S1 (0-3)		TP-21-SN8	
Sample Date	9/19/2000		9/21/2000		9/19/2000		9/21/2000		9/19/2000		9/21/2000		1/24/2000		1/24/2000		1/24/2000		1/24/2000		10/8/1991	
Depth (feet)	6.6 - 6.6		5.6 - 5.6		6.8 - 6.8		5.8 - 5.8		7 - 7		6 - 6		-0.87 - 2.13		-0.87 - 2.13		1.52 - 4.52		1.52 - 4.52			
Chloride																					40	UJ
Nitrogen, as Ammonia																					**47**	
Percent Moisture (%)																						
Percent Solids (%)	**75.2**		**88.4**		**76.8**		**90**		**78.1**		**83.8**		**90.6**				**85.3**					
pH (pH units)																						
Sulfate																					**29000**	
Total Organic Carbon																						
EPH (mg/Kg)																						
C11-C22 Aromatics																						
C11-C22 Aromatics (unadj.)																						
C19-C36 Aliphatics																						
Total EPH																						
Other Analyses (mg/kg)																						
Formaldehyde																						
Hydrazine																						

Notes:
1. **Bold** results detected.
2. U = not detected
3. J = estimated value
4. R = value rejected



Legend

- Detected Concentration Below Industrial RSL
- Detected Concentration Greater Than Industrial RSL and Below Site Specific Background
- Detected Concentration Greater Than Site Specific Background
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (USEPA) for Arsenic = 1.6 mg/kg.
2. < - Not Detected, value shown is reporting limit.
3. Site specific background for arsenic = 11.7 mg/kg as show in Table 2.4-2.
4. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
5. Historic Disposal Features are shown in Figure 1.3-1.

AMEC Environment & Infrastructure
271 Mill Road
Chelmsford, MA 01824

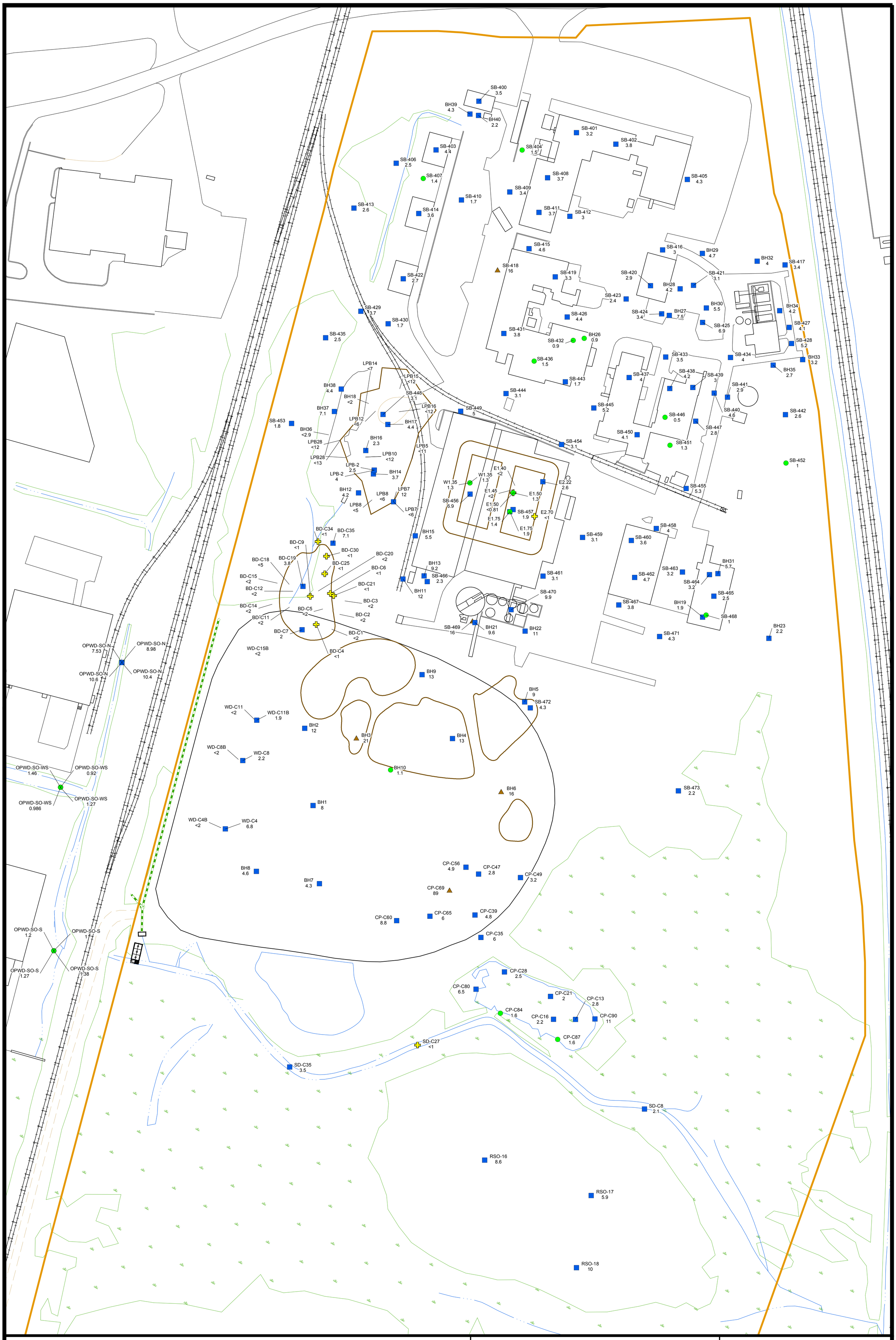
N

0 80 160 Feet

Figure 4.1-2
Distribution of Surface Soil Concentrations for Arsenic
Remedial Investigation Report - OU1 and OU2
Olin Chemical Superfund Site
Wilmington, Massachusetts

Prepared/Date: BJR 03/06/14 | Checked/Date: CTM 03/06/14

Document: P:\old_Wakefield_Data\projects\OLIN\Wilmington\GIS\MapDocuments\RI OU1 OU2\PrelimRI_SoilDistributions_22X34_P_rotated.mxd PDF: P:\old_Wakefield_Data\projects\OLIN\Wilmington\2013 Remedial Investigation Report\Revised_OU1_OU2_RI\Figures\Figure 4.1-2 - Distribution of Surface Soil Concentrations for Arsenic.pdf 3/6/2014 2:01 PM brian.roden



Legend

- Detected Concentration Below Industrial RSL
- Detected Concentration Greater Than Industrial RSL and Below Site Specific Background
- Detected Concentration Greater Than Site Specific Background
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (USEPA) for Arsenic = 1.6 mg/kg.
2. < - Not Detected, value shown is reporting limit.
3. Site specific background for arsenic = 11.7 mg/kg as show in Table 2.4-2.
4. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
5. Historic Disposal Features are shown in Figure 1.3-1.

AMEC Environment & Infrastructure
271 Mill Road
Chelmsford, MA 01824

N

0 60 120 Feet

Figure 4.1-3
Distribution of Soil (1 to 10 ft) Concentrations for Arsenic
Remedial Investigation Report - OU1 and OU2
Olin Chemical Superfund Site
Wilmington, Massachusetts

Prepared/Date: BJR 03/06/14 | Checked/Date: CTM 03/06/14

Legend

- Detected Concentration Below Industrial RSL
- Detected Concentration Greater Than Industrial RSL and Below Site Specific Background
- Detected Concentration Greater Than Site Specific Background
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (USEPA) for Arsenic = 1.6 mg/kg.
2. < - Not Detected, value shown is reporting limit.
3. Site specific background for arsenic = 11.7 mg/kg as show in Table 2.4-2.
4. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
5. Historic Disposal Features are shown in Figure 1.3-1.

AMEC Environment & Infrastructure
271 Mill Road
Chelmsford, MA 01824

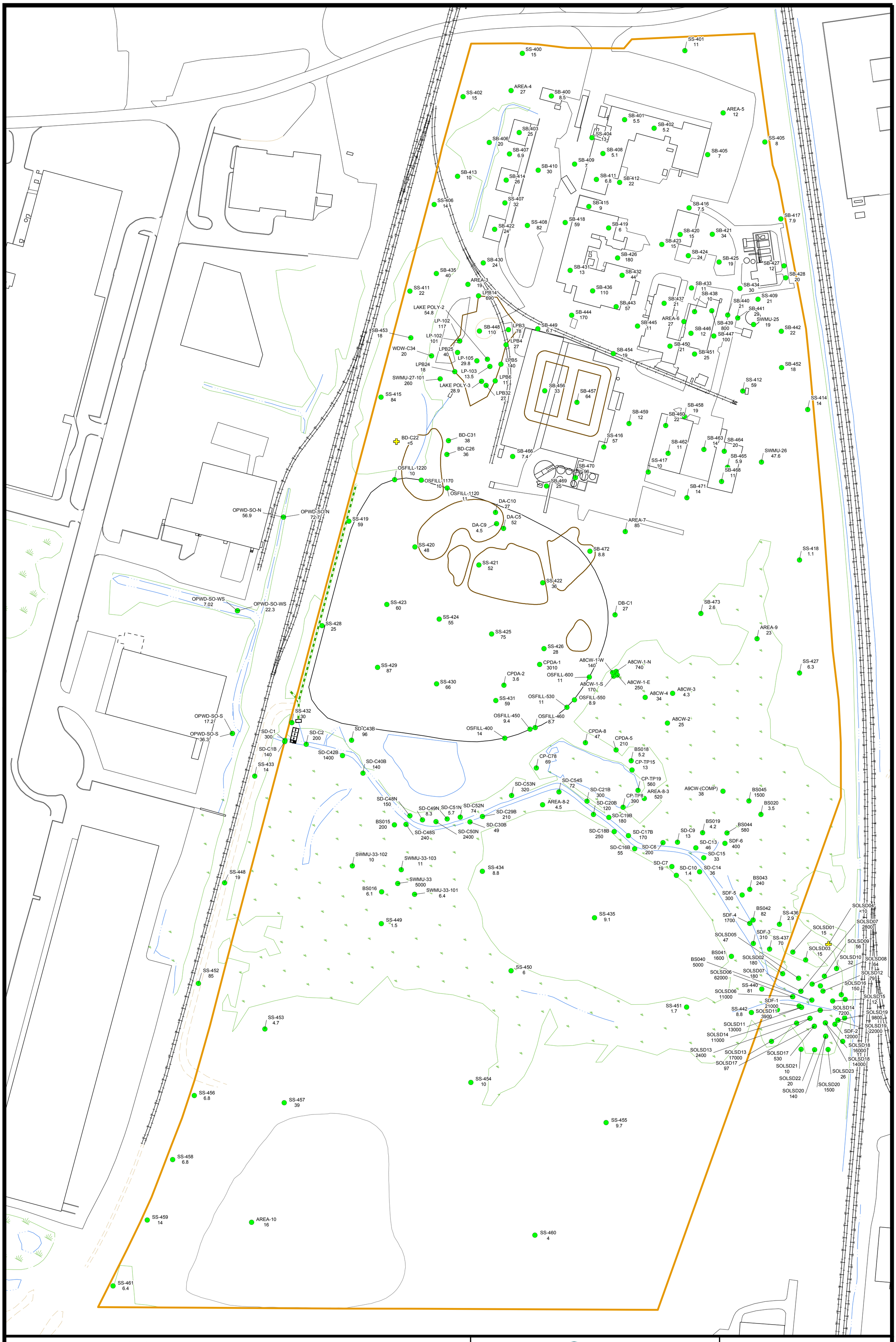
N

0 50 100 Feet

Figure 4.1-4
Distribution of Soil (Greater Than 10 ft) Concentrations for Arsenic
Remedial Investigation Report - OU1 and OU2
Olin Chemical Superfund Site
Wilmington, Massachusetts

Prepared/Date: BJR 03/06/14 | Checked/Date: CTM 03/06/14

Document: P:\old_Wakefield_Data\projects\OLIN\Wilmington\GIS\MapDocuments\RI OU1 OU2\PrelimRI_SoilDistributions_22X34_P_rotated.mxd PDF: P:\old_Wakefield_Data\projects\OLIN\Wilmington\2013 Remedial Investigation Report\Revised_OU1_OU2_RI\Figures\Figure 4.1-4 - Distribution of Soil (Greater Than 10 ft) Concentrations for Arsenic.pdf 3/6/2014 12:14 PM brian.roden



Legend

- Chemical Detected Below Industrial RSL
- Chemical Detected Above Industrial RSL
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 2.5 Detected Analyte Concentration (mg/kg)
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (USEPA) for Chromium = 1,500,000 mg/kg.
2. < - Not Detected, value shown is reporting limit
3. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
4. Historic Disposal Features are shown in Figure 1.3-1.

amec

AMEC Environment & Infrastructure
271 Mill Road
Chelmsford, MA 01824

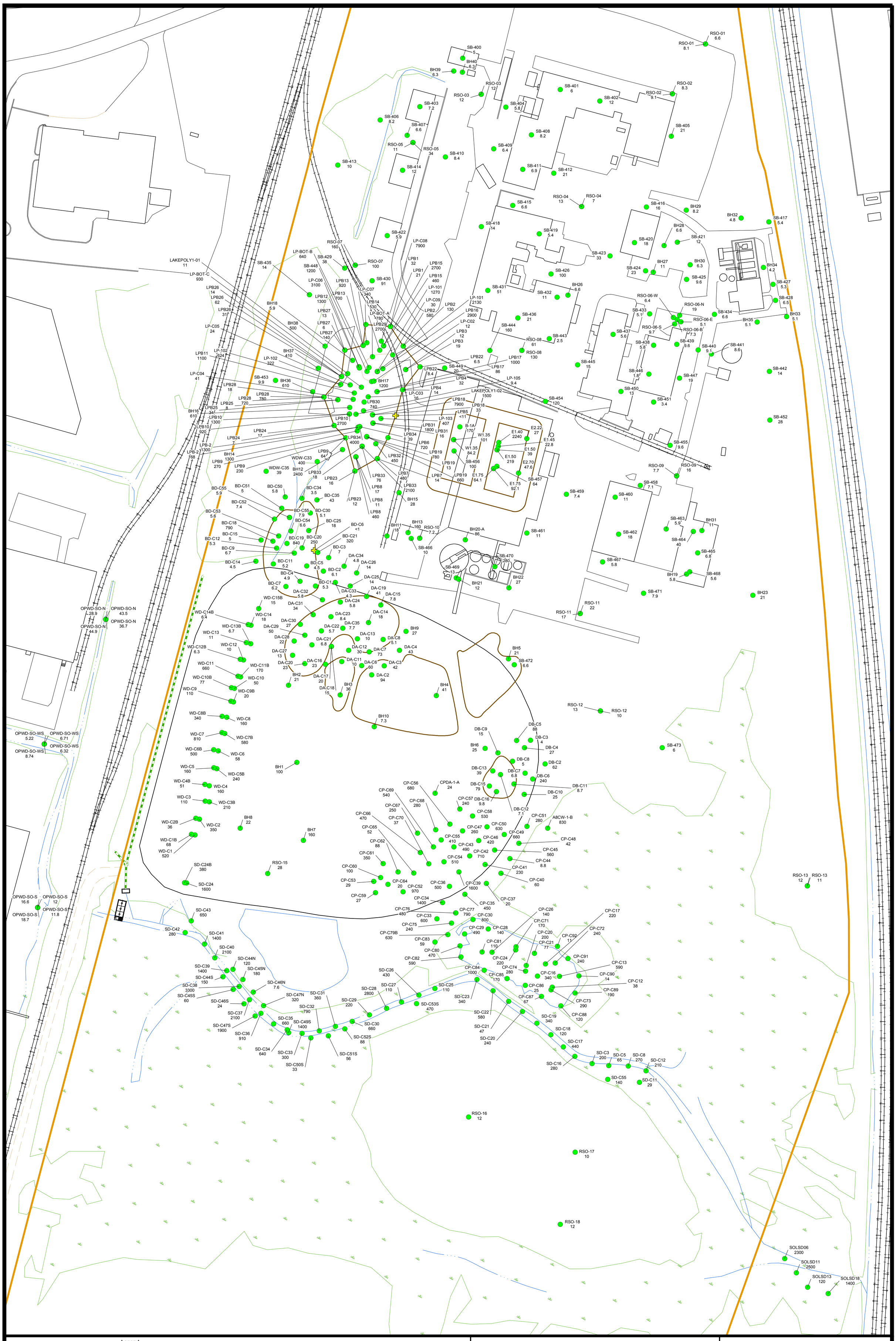
N

0 80 160 Feet

Figure 4.1-5
Distribution of Surface Soil Concentrations for Chromium
Remedial Investigation Report - OU1 and OU2
Olin Chemical Superfund Site
Wilmington, Massachusetts

Prepared/Date: BJR 03/06/14 | Checked/Date: CTM 03/06/14

Document: P:\old_Wakefield_Data\projects\OLIN\Wilmington\GIS\MapDocuments\RI OU1 OU2\PrelimRI_SoilDistributions_22X34_P_rotated.mxd PDF: P:\old_Wakefield_Data\projects\OLIN\Wilmington\2013 Remedial Investigation Report\Revised_OU1_OU2_RI\Figures\Figure 4.1-5 - Distribution of Surface Soil Concentrations for Chromium.pdf 3/6/2014 2:19 PM brian.roden



Legend

- Chemical Detected Below Industrial RSL
- Chemical Detected Above Industrial RSL
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 2.5 Detected Analyte Concentration (mg/kg)
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (USEPA) for Chromium = 1,500,000 mg/kg.
2. < - Not Detected, value shown is reporting limit
3. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
4. Historic Disposal Features are shown in Figure 1.3-1.

AMEC Environment & Infrastructure
2 Robbins Rd
Westford, MA 01886

N

0 60 120 Feet

Figure 4.1-6
Distribution of Soil (1 to 10 ft) Concentrations for Chromium
Remedial Investigation Report - OU1 and OU2
Olin Chemical Superfund Site
Wilmington, Massachusetts

Prepared/Date: BJR 04/16/13 | Checked/Date: CTM 04/16/13

Document: P:\old_Wakefield_Data\projects\OLIN\Wilmington\GIS\MapDocuments\RI OU1 OU2\PrelimRI_SoilDistributions_22X34_P_rotated.mxd PDF: P:\old_Wakefield_Data\projects\OLIN\Wilmington\2013 Remedial Investigation Report\Internal Drafts\Figures\Figure 4.1-6 - Distribution of Soil (1-10 ft) Concentrations for Chromium.pdf 4/16/2013 10:27 AM brian.roden

Legend

- Chemical Detected Below Industrial RSL
- Chemical Detected Above Industrial RSL
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 2.5 Detected Analyte Concentration (mg/kg)
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (USEPA) for Chromium = 1,500,000 mg/kg.
2. < - Not Detected, value shown is reporting limit
3. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
4. Historic Disposal Features are shown in Figure 1.3-1.

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N

0 50 100 Feet

Figure 4.1-7
Distribution of Soil (Greater Than 10 ft) Concentrations for Chromium
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Olin Chemical Superfund Site
Wilmington, Massachusetts

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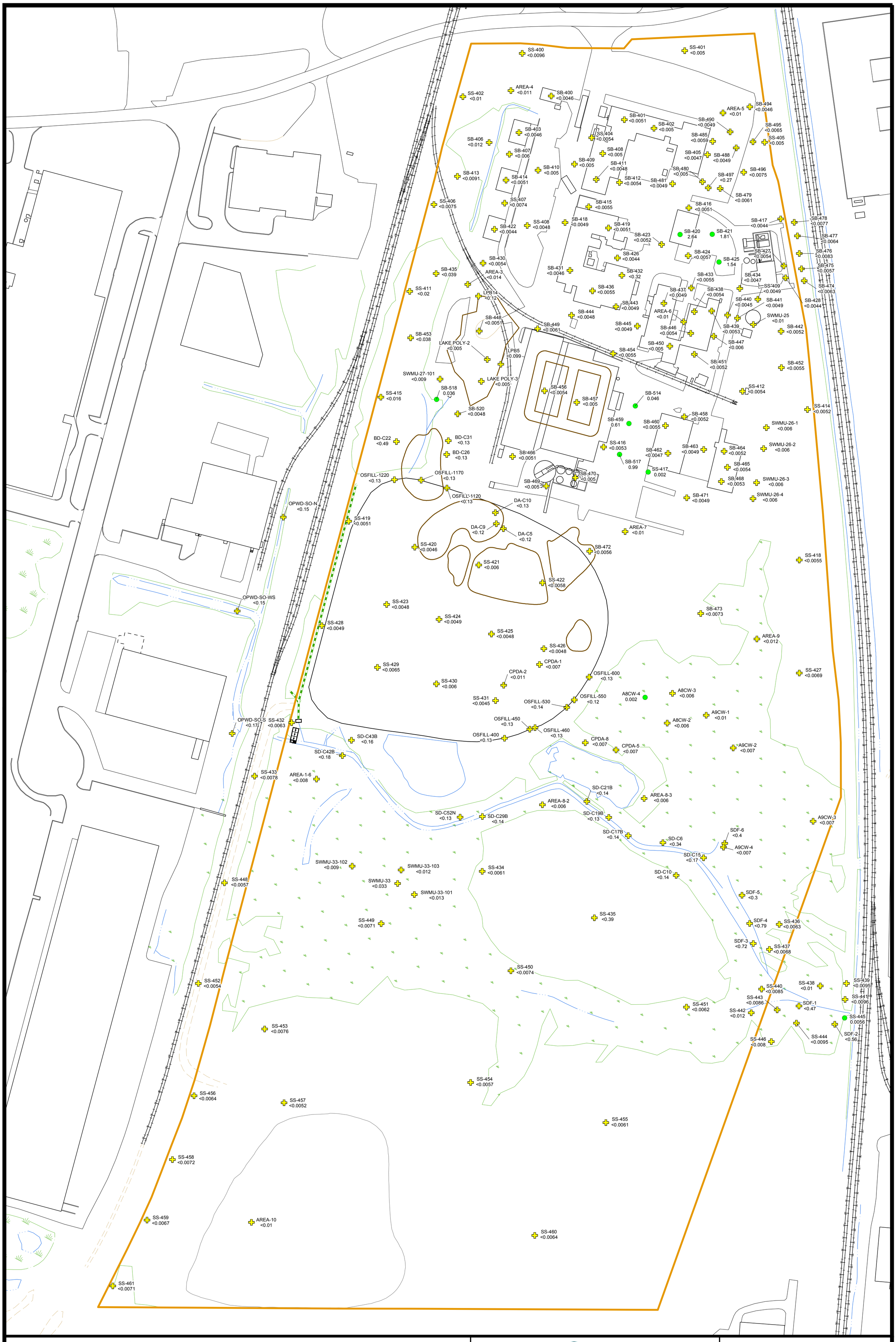

Legend

- Chemical Detected Below Industrial RSL
- Chemical Detected Above Industrial RSL
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 2.5 Detected Analyte Concentration (mg/kg)
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (calculated) for TotalTMPs = 39 mg/kg.
2. < - Not Detected, value shown is reporting limit
3. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
4. Historic Disposal Features are shown in Figure 1.3-1.

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N

0 80 160 Feet

Figure 4.1-11
Distribution of Surface Soil Concentrations for Total Trimethylpentenes
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Olin Chemical Superfund Site
Wilmington, Massachusetts

Prepared/Date: BJR 03/06/14 | Checked/Date: CTM 03/06/14

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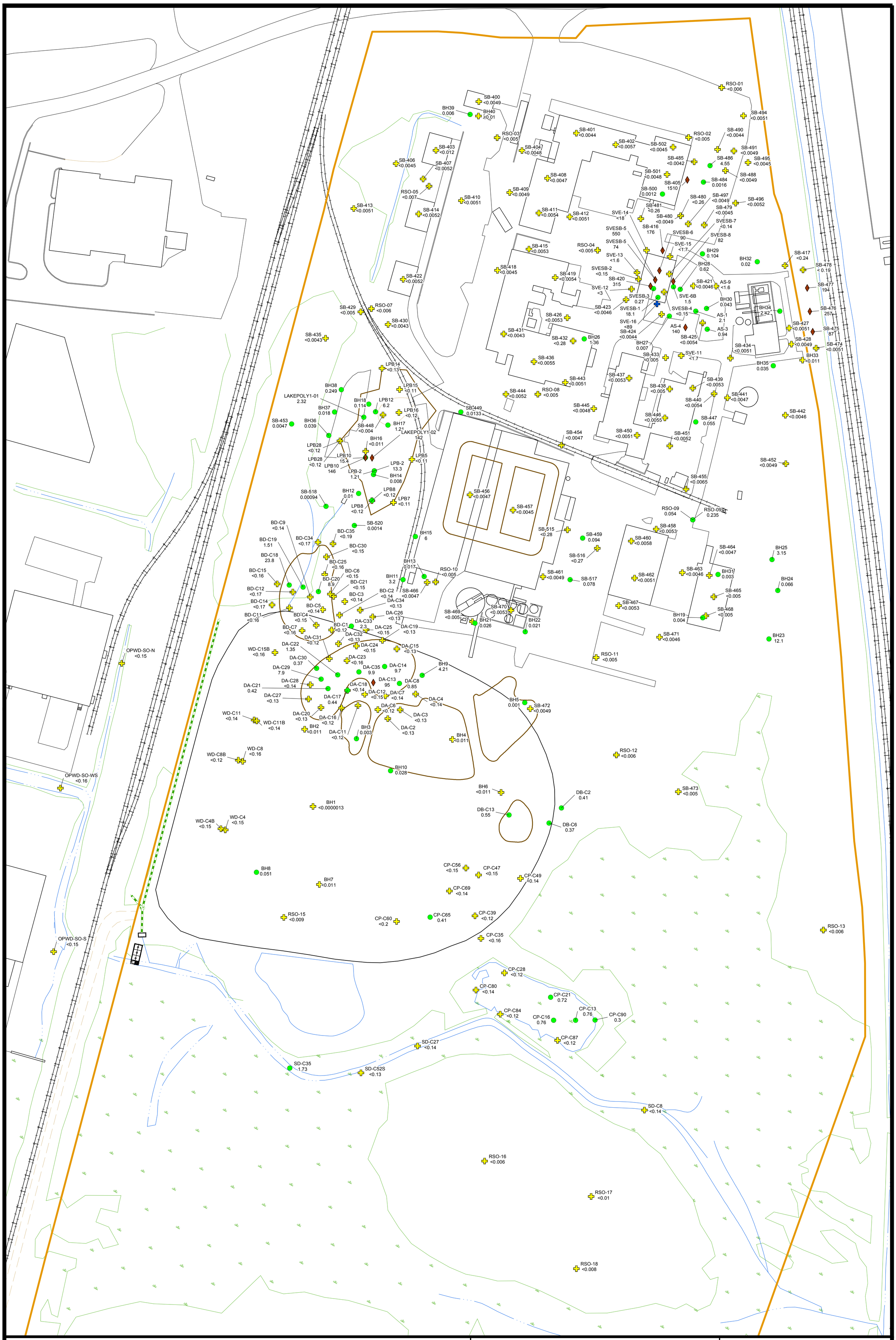

Legend

- Chemical Detected Below Industrial RSL
- Chemical Detected Above Industrial RSL
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 2.5 Detected Analyte Concentration (mg/kg)
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (calculated) for TotalTMPs = 39 mg/kg.
2. < - Not Detected, value shown is reporting limit
3. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
4. Historic Disposal Features are shown in Figure 1.3-1.

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N

0 60 120 Feet

Figure 4.1-12
Distribution of Soil (1 to 10 ft) Concentrations for Total Trimethylpentenes
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Olin Chemical Superfund Site
Wilmington, Massachusetts

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Legend

- Chemical Detected Below Industrial RSL
- Chemical Detected Above Industrial RSL
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- *2.5* Detected Analyte Concentration (mg/kg)
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (calculated) for TotalTMPs = 39 mg/kg.
2. < - Not Detected, value shown is reporting limit
3. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
4. Historic Disposal Features are shown in Figure 1.3-1.

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N

0 50 100 Feet

Figure 4.1-13
Distribution of Soil (Greater Than 10 ft) Concentrations for Total Trimethylpentenes
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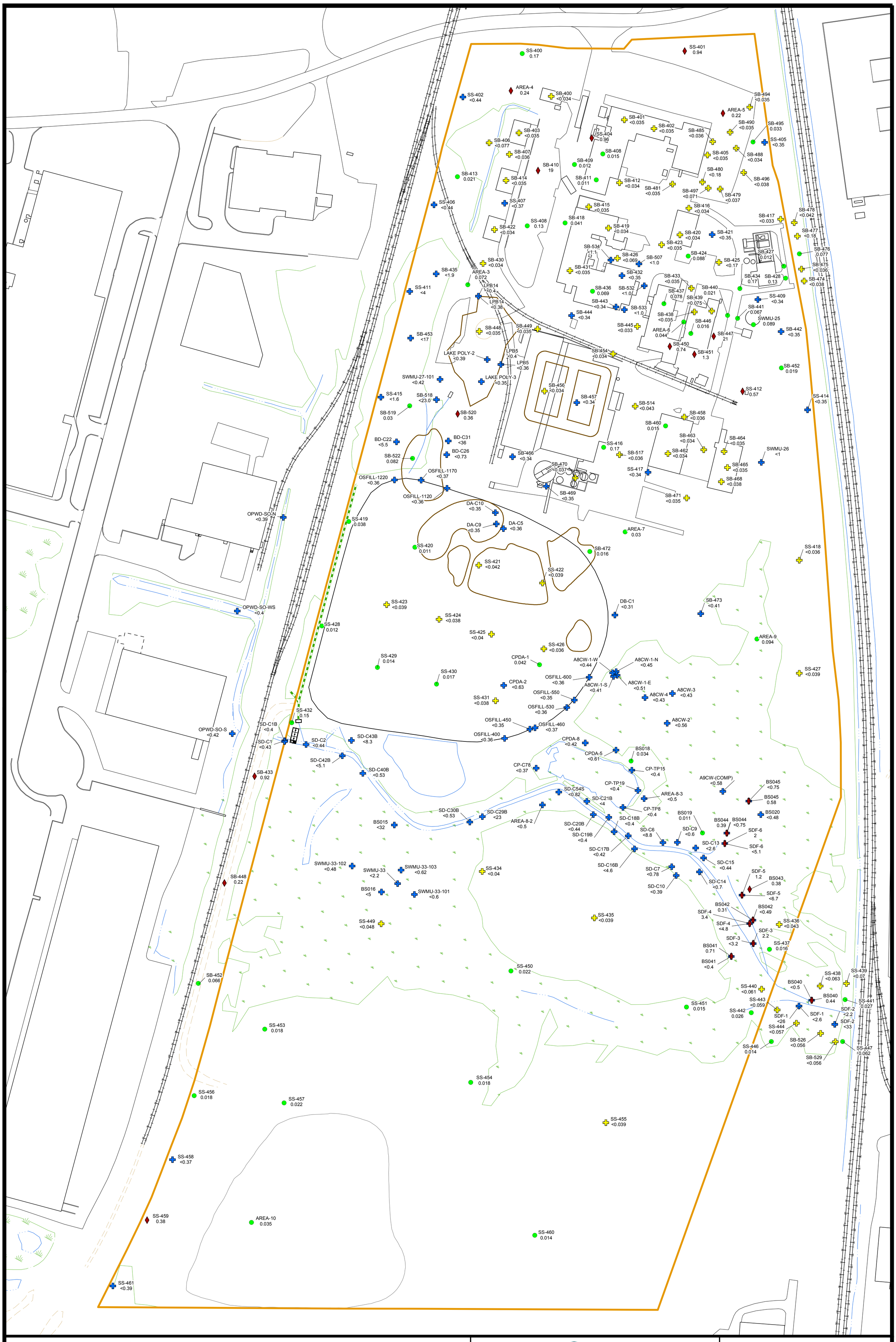

Legend

- Chemical Detected Below Industrial RSL
- Chemical Detected Above Industrial RSL
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 2.5 Detected Analyte Concentration (mg/kg)
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (USEPA) for Bezno(a)Pyrene = 0.21 mg/kg.
2. < - Not Detected, value shown is reporting limit.
3. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
4. Historic Disposal Features are shown in Figure 1.3-1.

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N

0 80 160 Feet

Figure 4.1-14
Distribution of Surface Soil Concentrations for Benzo(a)pyrene
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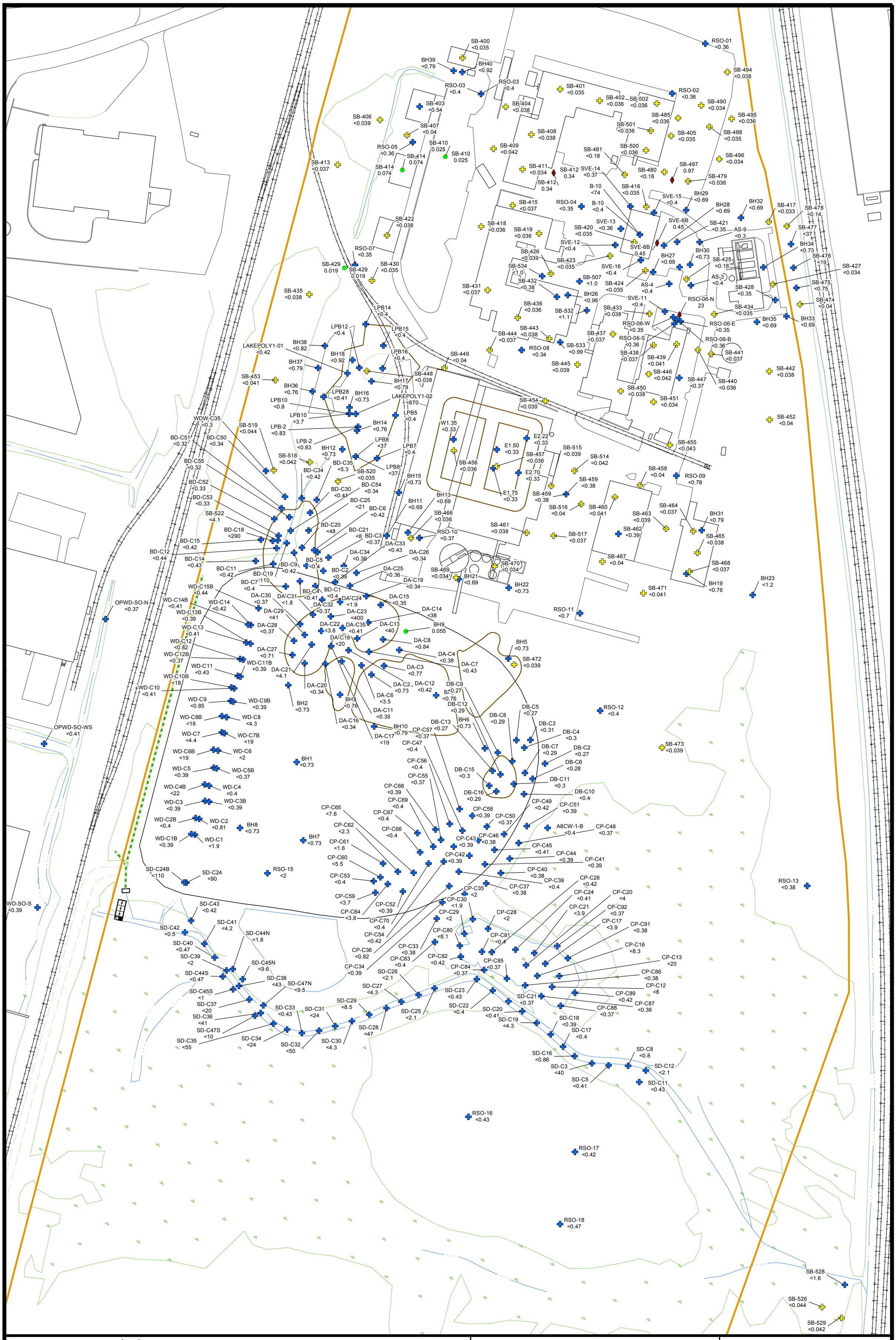

Legend

- Chemical Detected Below Industrial RSL
- Chemical Detected Above Industrial RSL
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 2.5 Detected Analyte Concentration (mg/kg)
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (USEPA) for Bezno(a)Pyrene = 0.21 mg/kg.
2. < - Not Detected, value shown is reporting limit.
3. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
4. Historic Disposal Features are shown in Figure 1.3-1.

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N

0 60 120 Feet

Figure 4.1-15
Distribution of Soil (1 to 10 ft) Concentrations for Benzo(a)pyrene
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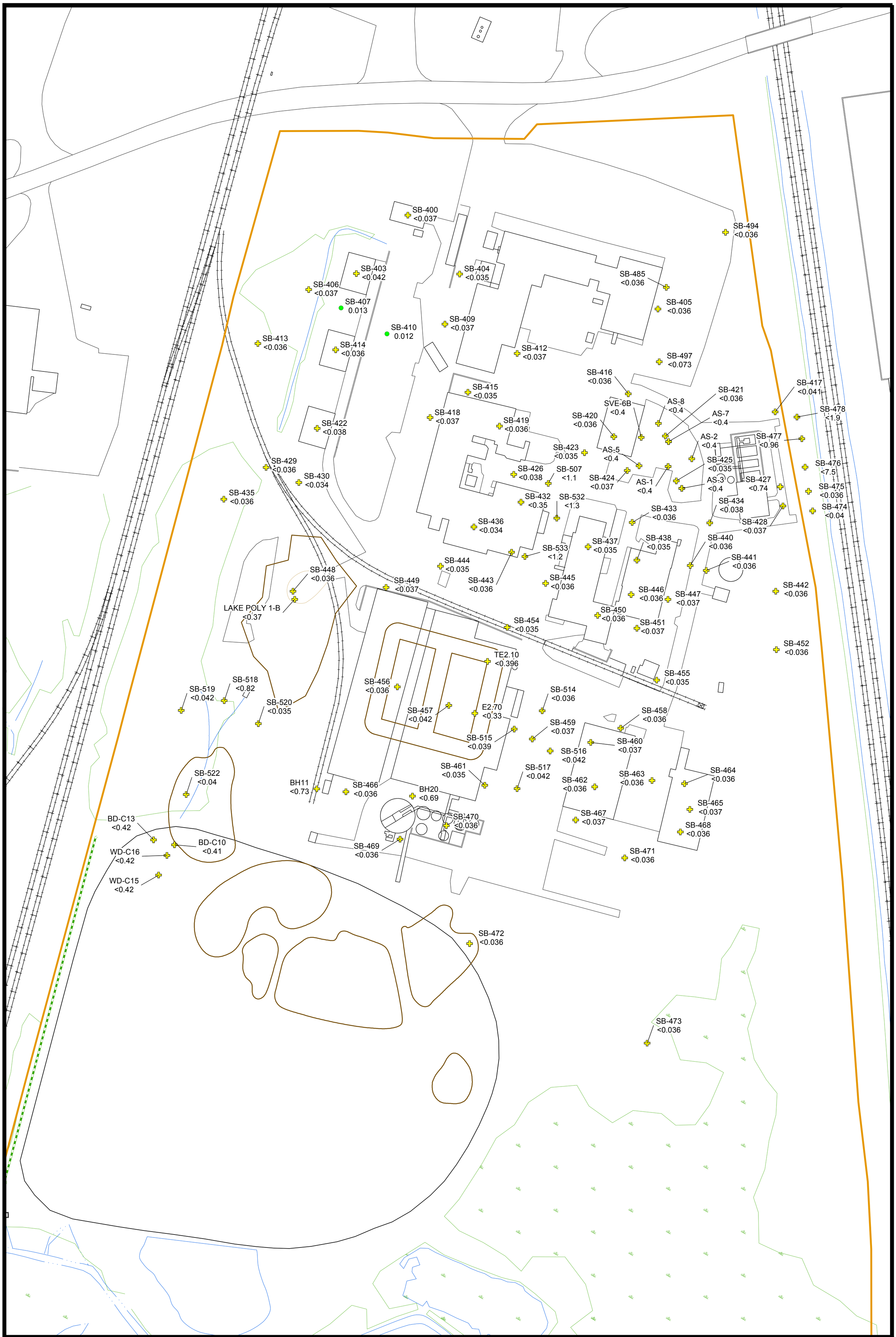

Legend

- Chemical Detected Below Industrial RSL
- Chemical Detected Above Industrial RSL
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 2.5 Detected Analyte Concentration (mg/kg)
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (USEPA) for Bezno(a)Pyrene = 0.21 mg/kg.
2. < - Not Detected, value shown is reporting limit.
3. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
4. Historic Disposal Features are shown in Figure 1.3-1.

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0 50 100 Feet

Figure 4.1-16
Distribution of Soil (Greater Than 10 ft) Concentrations for Benzo(a)pyrene
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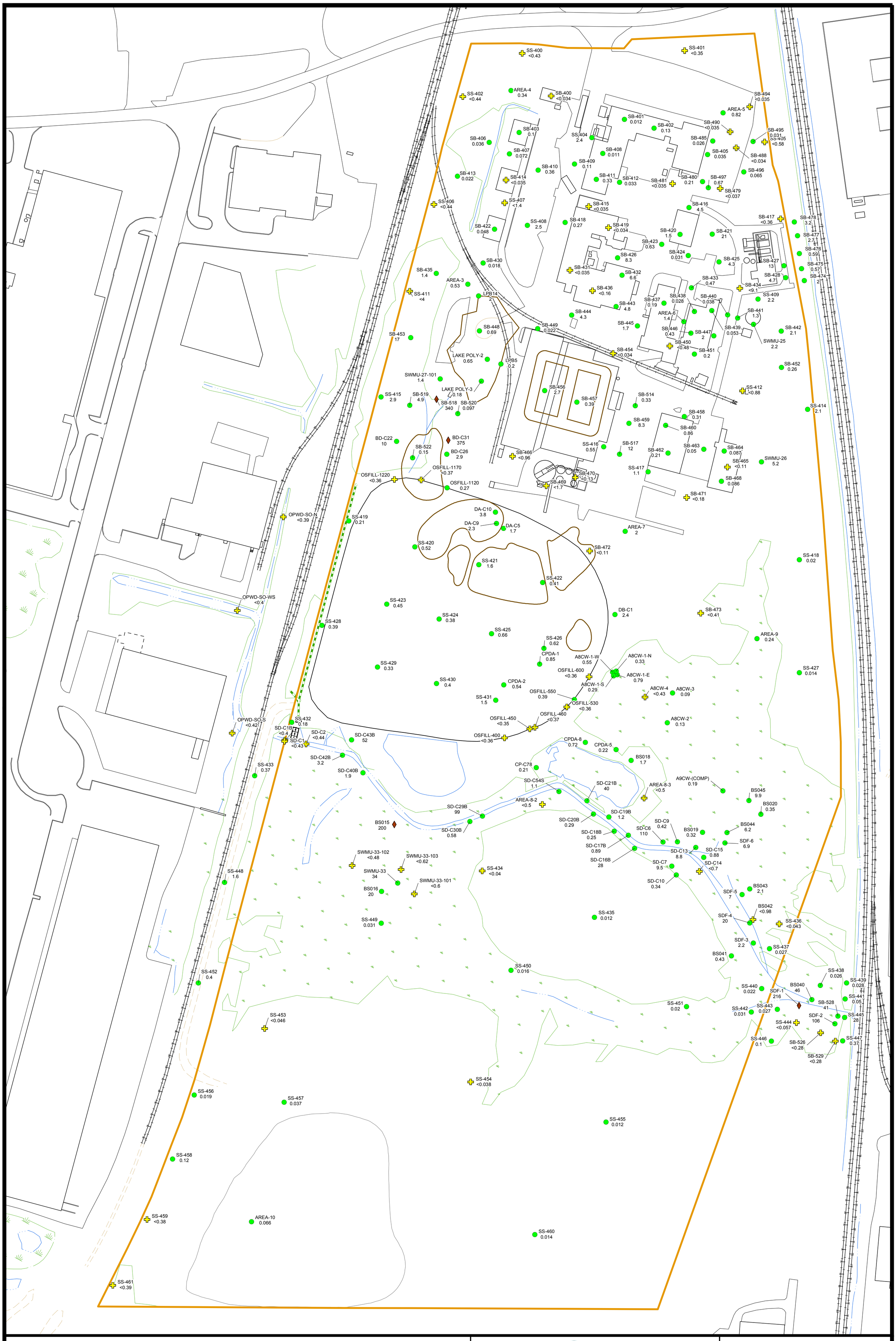

Legend

- Chemical Detected Below Industrial RSL
- Chemical Detected Above Industrial RSL
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 2.5 Detected Analyte Concentration (mg/kg)
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (USEPA) for Bis(2-ethylhexyl)phthalate = 120 mg/kg.
2. < - Not Detected, value shown is reporting limit.
3. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
4. Historic Disposal Features are shown in Figure 1.3-1.

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N

0 80 160 Feet

Figure 4.1-17
Distribution of Surface Soil Concentrations for Bis(2-ethylhexyl)phthalate
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Olin Chemical Superfund Site
Wilmington, Massachusetts

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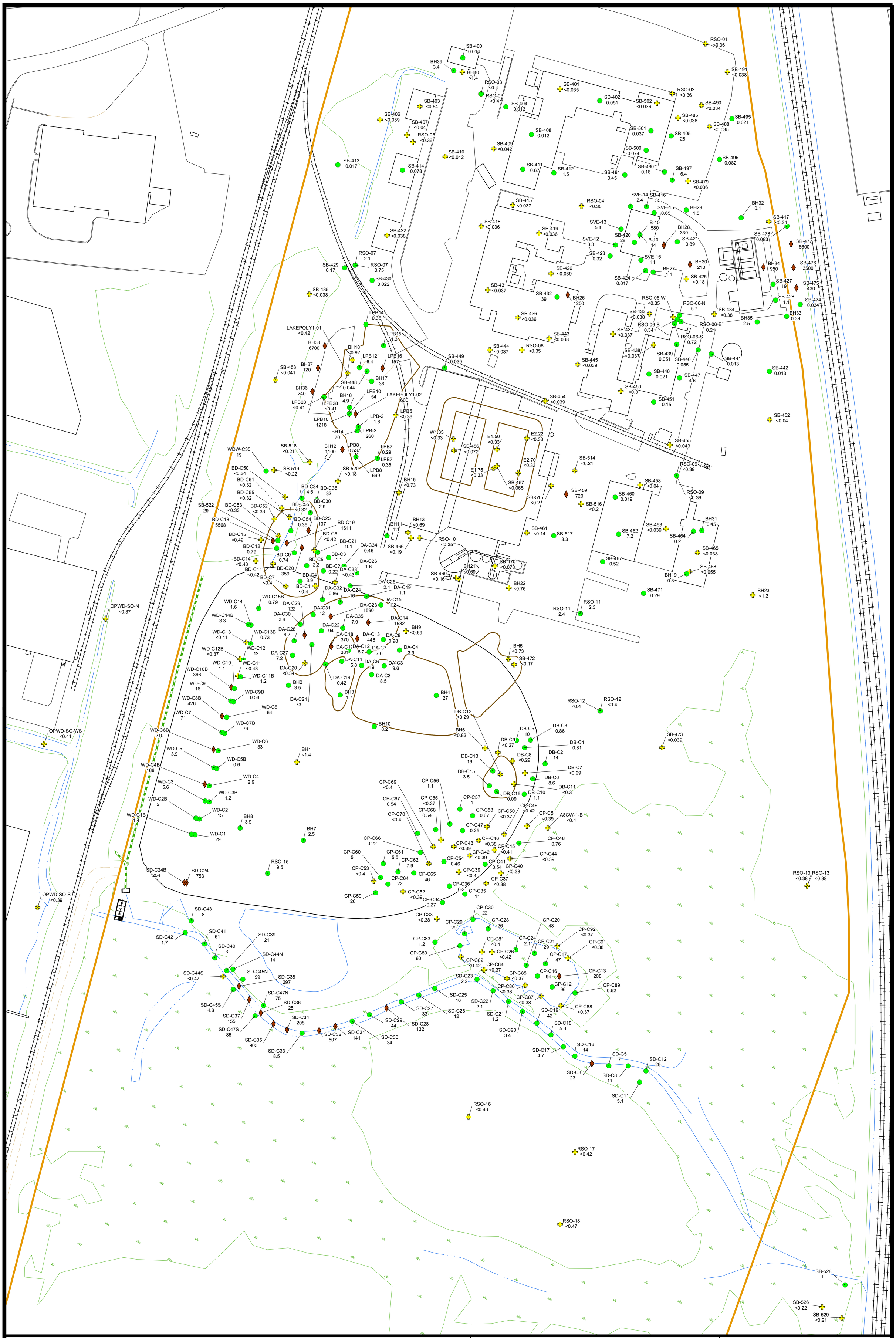

Legend

- Chemical Detected Below Industrial RSL
- Chemical Detected Above Industrial RSL
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 2.5 Detected Analyte Concentration (mg/kg)
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (USEPA) for Bis(2-ethylhexyl)phthalate = 120 mg/kg.
2. < - Not Detected, value shown is reporting limit.
3. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
4. Historic Disposal Features are shown in Figure 1.3-1.

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2 Robbins Rd
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N

0 60 120 Feet

Figure 4.1-18
Distribution of Soil (1 to 10 ft)
Concentrations for Bis(2-ethylhexyl)phthalate
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Olin Chemical Superfund Site
Wilmington, Massachusetts

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Legend

- Chemical Detected Below Industrial RSL
- Chemical Detected Above Industrial RSL
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 2.5 Detected Analyte Concentration (mg/kg)
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (USEPA) for Bis(2-ethylhexyl)phthalate = 120 mg/kg.
2. < - Not Detected, value shown is reporting limit.
3. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
4. Historic Disposal Features are shown in Figure 1.3-1.

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N

0 50 100 Feet

Figure 4.1-19
Distribution of Soil (Greater Than 10 ft) Concentrations for Bis(2-ethylhexyl)phthalate
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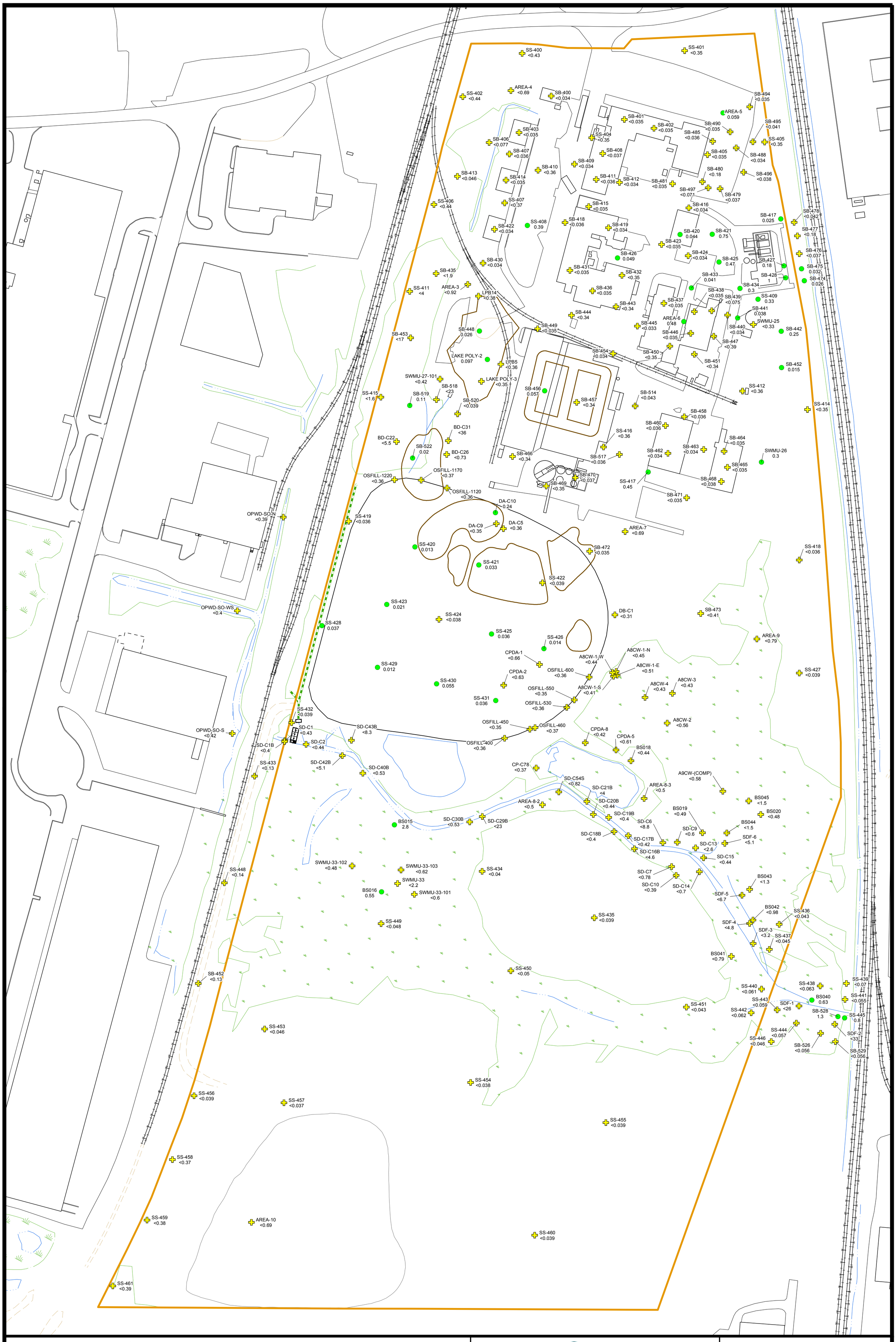

Legend

- Chemical Detected Below Industrial RSL
- Chemical Detected Above Industrial RSL
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 2.5 Detected Analyte Concentration (mg/kg)
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (USEPA) for N-Nitrosodiphenylamine = 350 mg/kg.
2. < - Not Detected, value shown is reporting limit
3. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
4. Historic Disposal Features are shown in Figure 1.3-1.

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N

0 80 160 Feet

Figure 4.1-20
Distribution of Surface Soil Concentrations for N-Nitrosodiphenylamine
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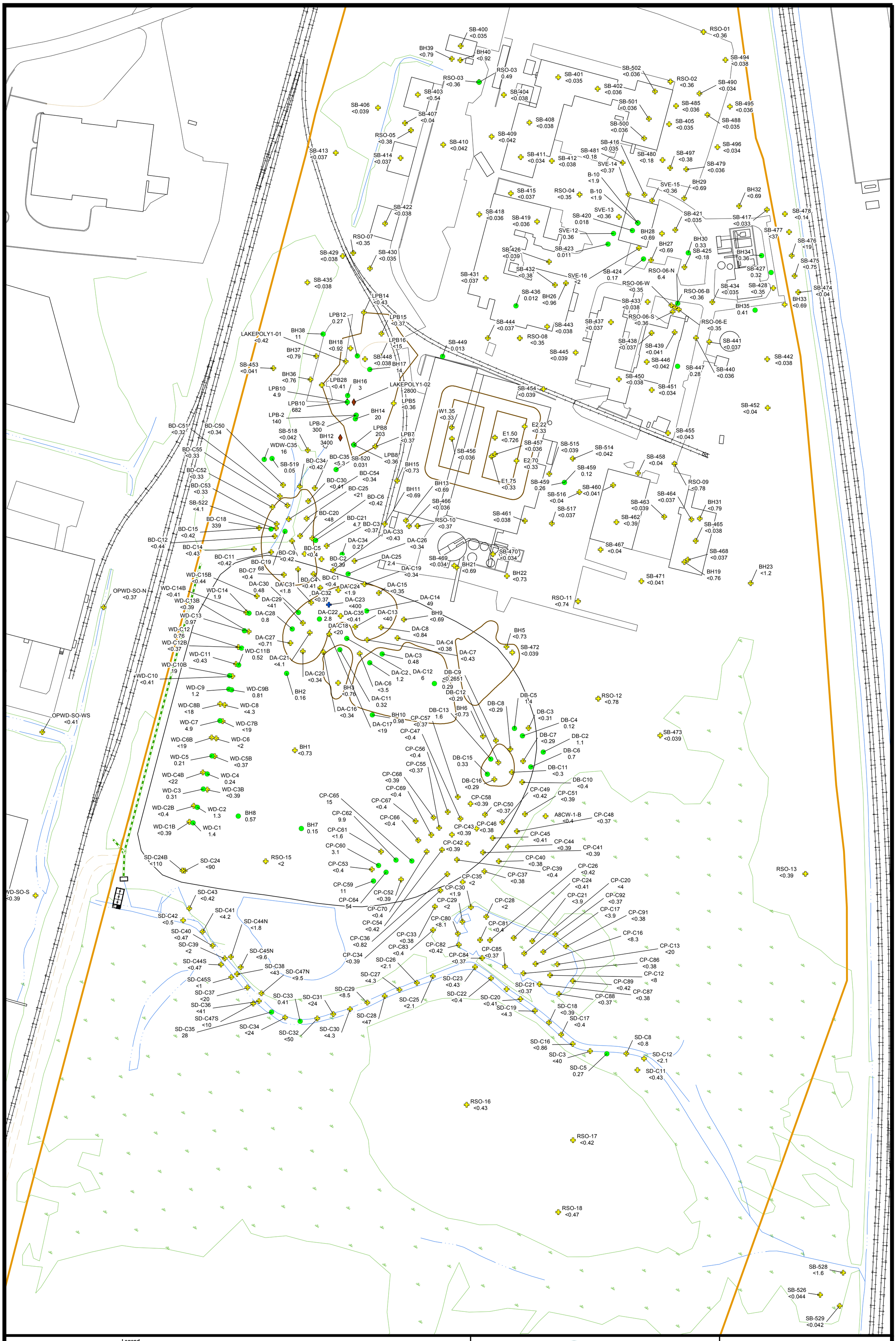

Legend

- Chemical Detected Below Industrial RSL
- Chemical Detected Above Industrial RSL
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 2.5 Detected Analyte Concentration (mg/kg)
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (USEPA) for N-Nitrosodiphenylamine = 350 mg/kg.
2. < - Not Detected, value shown is reporting limit
3. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
4. Historic Disposal Features are shown in Figure 1.3-1.

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Westford, MA 01886

N

0 60 120 Feet

Figure 4.1-21
Distribution of Soil (1 to 10 ft) Concentrations for N-Nitrosodiphenylamine
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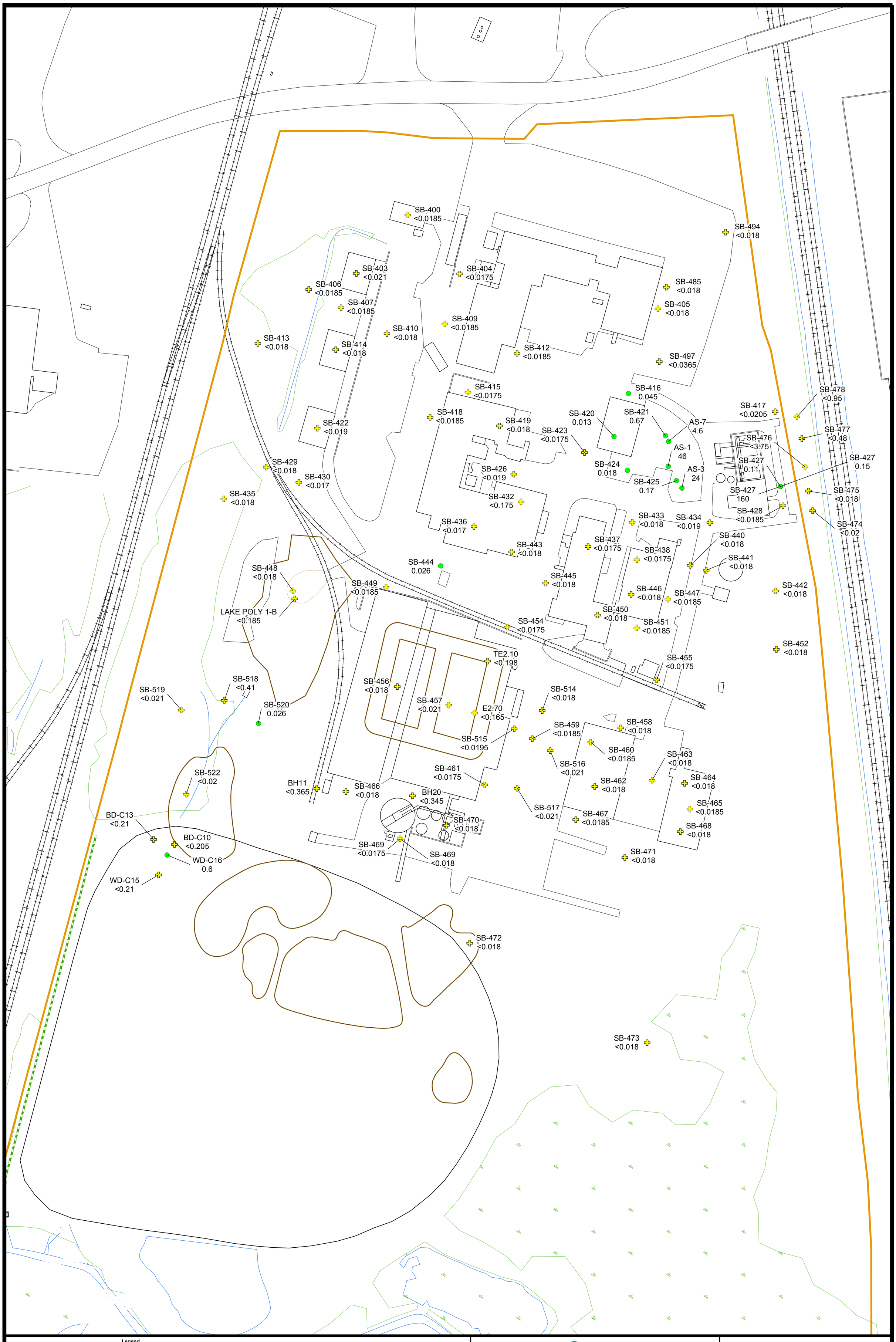

Legend

- Chemical Detected Below Industrial RSL
- Chemical Detected Above Industrial RSL
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 2.5 Detected Analyte Concentration (mg/kg)
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (USEPA) for N-Nitrosodiphenylamine = 350 mg/kg.
2. < - Not Detected, value shown is reporting limit
3. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
4. Historic Disposal Features are shown in Figure 1.3-1.

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2 Robbins Rd
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N

0 50 100 Feet

Figure 4.1-22
Distribution of Soil (Greater Than 10 ft) Concentrations for N-Nitrosodiphenylamine
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Wilmington, Massachusetts

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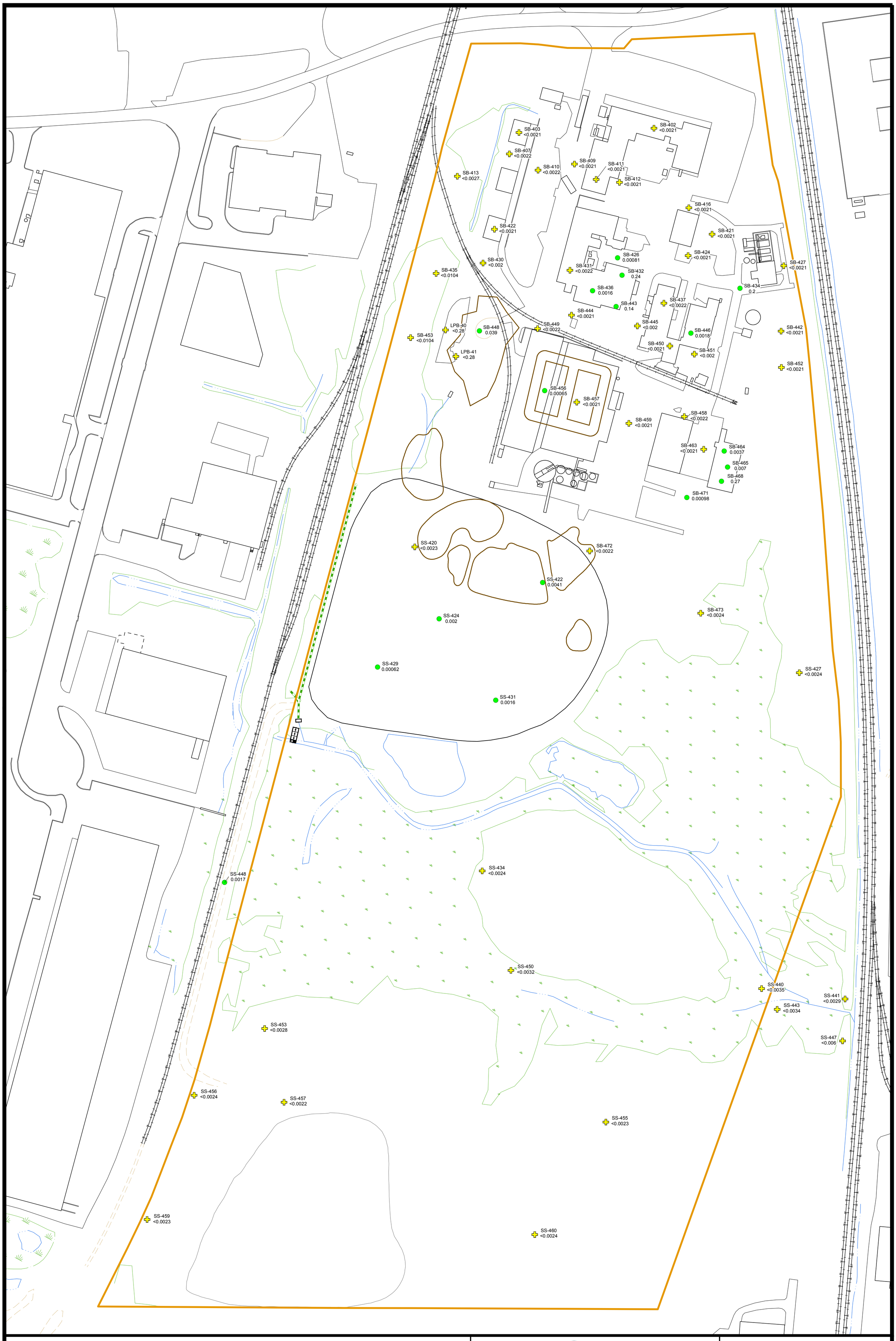

Legend

- Chemical Detected Below Industrial RSL
- Chemical Detected Above Industrial RSL
- Analyte not detected - Reporting Limit Below Industrial RSL
- Analyte not detected - Reporting Limit Above Industrial RSL
- 2.5 Detected Analyte Concentration (mg/kg)
- 51 Eames St. Property Boundary
- Water
- Railroad
- Paved Road
- Unpaved Road
- Wetland Boundary
- Historic Disposal Feature (see Figure 1.3-1)

Notes:
1. Industrial RSL (USEPA) for Hydrazine = 0.95 mg/kg.
2. < - Not Detected, value shown is reporting limit.
3. Samples collected as part of the RI have IDs SS-4XX, SB-4XX, SS-5XX, or SB-5XXX. All other samples were collected previous to the RI.
4. Historic Disposal Features are shown in Figure 1.3-1.

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Chelmsford, MA 01824

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Figure 4.1-26
Distribution of Surface Soil Concentrations for Hydrazine
Remedial Investigation Report - OU1 and OU2
Olin Chemical Superfund Site
Wilmington, Massachusetts

Prepared/Date: BJR 03/12/14 | Checked/Date: CTM 03/12/14

Document: P:\old_Wakefield_Data\projects\OLIN\Wilmington\GIS\MapDocuments\RI OU1 OU2\PrelimRI_SoilDistributions_22X34_P_rotated.mxd PDF: P:\old_Wakefield_Data\projects\OLIN\Wilmington\2013 Remedial Investigation Report\Revised_OU1_OU2_RI\Figures\Figure 4.1-26 - Distribution of Surface Soil Concentrations for Hydrazine.pdf 3/12/2014 7:56 AM brian.roden