DATA VALIDATION REPORT
2011 REMEDIAL INVESTIGATION/FEASIBILITY STUDY

OPERABLE UNITS 1 AND 2
JUNE 2011 - SURFACE WATER SAMPLING EVENT

OLIN CHEMICAL SUPERFUND SITE

51 EAMES STREET
WILMINGTON, MASSACHUSETTS

Prepared for:

Olin Corporation
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October 4, 2011

AMEC Project Number: 6107110016/12

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ACRONYMS AND ABBREVIATION

AMEC	AMEC E&I, Inc.
APHA	American Public Health Association
CCV	Continuing Calibration Verification
CCV%D	Continuing Calibration Verification Percent Difference
chromium+6	Hexavalent Chromium
DMF	N, N-Dimethylformamide
DPA	Diphenylamine
EDD	Electronic Data Deliverable
EPH	Extractable Petroleum Hydrocarbons
-H	high bias
HPLC	High Performance Liquid Chromatography
HT	Holding Time
ICP	Inductively Coupled Plasma
ICSA	interference Check Sample Mix A
ICV	Initial Calibration Verification
J	estimated value
-L	low bias
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MACTEC	MACTEC Engineering and Consulting, Inc.
MassDEP	Massachusetts Department of Environmental Protection
MCP	Massachusetts Contingency Plan
MDL	Method Detection Limit
µg/L	micrograms per liter
MMH	Monomethylhydrazine
MS/MSD	Matrix Spikes/Matrix Spike Duplicate
NDMA	N-nitrosodimethylamine
NDPhA	N-nitrosodiphenylamine
PE	Performance Evaluation
QAPP	Quality Assurance Project Plan
QC	Quality Control

RI/FS	Remedial Investigation/Feasibility Study
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
SVOC	Semivolatile Organic Compound
TAL	Target Analyte List
TIC	Tentatively Identified Compound
TOC	Total Organic Carbon
TSS	Total Suspended Solids
U	non-detect
UDMH	Unsymmetrical Dimethylhydrazine
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
VPH	Volatile Petroleum Hydrocarbon

1.0 INTRODUCTION

Surface water samples were collected at the Olin Chemical Superfund Site in June 2011 as specified in the Remedial Investigation/Feasibility Study (RI/FS) Work Plan (MACTEC Engineering and Consulting, Inc. [MACTEC], 2009). Samples were analyzed by one or more of the following: United States Environmental Protection Agency (USEPA) SW-846 (USEPA, 1996a), USEPA wastewater (USEPA, 1993), Standard Methods American Public Health Association ([APHA], 1995), Massachusetts Department of Environmental Protection ([MassDEP], 2010) or laboratory developed methods:

Laboratory	Parameter	Analytical Method	Validation Level
TestAmerica - Westfield, MA	VOCs	SW-846 8260C	10% Tier III/ 90% Tier II
TestAmerica - Westfield, MA	SVOCs	SW-846 8270D – Low Level	10% Tier III/ 90% Tier II
TestAmerica - Westfield, MA	DPA	SW-846 8270D – Low Level	10% Tier III/ 90% Tier II
TestAmerica – West Sacramento, CA	NDMA & N-nitrosodi-n-propyl-amine	Modified 521	Chemist Review
TestAmerica - Westfield, MA	EPH	MADEP EPH	Olin Level 1
TestAmerica - Westfield, MA	VPH	MADEP VPH	Olin Level 1
TestAmerica - Westfield, MA	TAL Metals	SW-846 6010B/ Hg by 7470A	10% Tier III/ 90% Tier II
TestAmerica – Irvine, CA	TAL Metals	SW-846 6020	10% Tier III/ 90% Tier II
TestAmerica – Edison, NJ	chromium+6	SW-846 7199	Olin Level 1
TestAmerica - Westfield, MA	Ammonia	QuikChem: LACHAT 10-107-06-1-A	Olin Level 1
TestAmerica - Westfield, MA	Anions (chloride, sulfate, nitrate, nitrite, bromide)	EPA 300	Olin Level 1
TestAmerica - Westfield, MA	Hardness	SM A2340B	Olin Level 1
TestAmerica - Westfield, MA	TOC	SM 5310B	Olin Level 1
TestAmerica - Westfield, MA	TSS	SM20 2540D	Olin Level 1
TestAmerica - Tallahassee, FL	Formaldehyde/ Acetaldehyde	SW-846 8315A	Chemist Review
TestAmerica - Tallahassee, FL	Phthalic Anhydride	Modified Method 8000 – LC	Chemist Review
Lancaster Laboratory - Lancaster, PA	Hydrazine/MMH/UDMH	Modified 8315 LC/MS/MS	Chemist Review

Laboratory	Parameter	Analytical Method	Validation Level
Katahdin Analytical Services - Scarborough, ME	DMF	Modified 8033 - GC/NPD	Chemist Review
TestAmerica - West Sacramento, CA	Alkylphenols	Lab Specific Modified 8270 SIM	Chemist Review
Lancaster Laboratory - Lancaster, PA	Opex and Kempore	Lab Specific HPLC Method 8000B	Chemist Review

A summary of samples (by sample delivery group [SDG]) included in this data validation report is presented in Table 1. Analytical data packages were reviewed in accordance with the Olin Chemical Superfund Site Final RI/FS Work Plan Quality Assurance Project Plan (QAPP) [MACTEC, 2009]. Volatile organic compounds (VOCs), semivolatile organic compounds (SVOC), and metals data were validated using the Region I EPA-New England Data Validation Functional Guidelines (USEPA, 1996b) and the Compendium of Quality Assurance and Quality Control Requirements and Performance Standards for Selected Analytical Methods Used in Support of Response Actions for the Massachusetts Contingency Plan (MCP) (MassDEP, 2004). USEPA Region I data validation procedures for SW-846 Methods were modified to include method-specific criteria (i.e., measurement performance criteria detailed in the QAPP) from the MCP Methods. For other methods that were not addressed in USEPA Region I guidelines or the MCP Compendium, method performance criteria were developed for this project. Validation levels for each method reviewed (Tier II/III, Olin Level 1, chemist review) are summarized above.

Final validated sample results are presented in a series of tables (Table 2s) associated with Sections 2 through 15 of this document. Tables 2.2 through 2.15 present the final data for the various analytical methods that are addressed in Sections 2 through 15 (i.e., VOCs presented in Table 2.2, SVOCs presented in Table 2.3). Ammonia, hardness, total organic carbon (TOC), and total suspended solids (TSS) results were combined with the anion results in Table 2.9.

Documentation of data validation actions is presented in a series of tables (Table 3s) associated with Sections 2 through 15 of this document. Tables 3.2 through 3.15 present final results that have been qualified (data validation has resulted in revisions to the laboratory result) for the various analytical methods that are addressed in Sections 2 through 15 as well as the associated validation reason codes. Ammonia, hardness, TOC, and TSS have been included with anions in Table 3.9. An index of the reason codes is presented on the last page of Table 3. There are no Tables 3.5, 3.6, 3.11, and 3.12 because no validation actions were taken for the associated methods.

Tentatively identified compounds (TICs) were reported by the laboratory, if detected, in samples analyzed for VOCs and SVOCs. TICs were evaluated during validation and were removed from the data set if reported in associated method blanks. VOC TICs, discussed in Section 2, are presented by SDG in Table 4.1. SVOC TICs, discussed in Section 3, are presented by SDG in Table 4.2.

Aqueous performance evaluation (PE) samples were obtained from USEPA Region 1 New England for the following analyses: VOCs, SVOC, and target analyte list (TAL) metals. PE samples were submitted with field samples on June 7, 2011 to the TestAmerica – Westfield, MA laboratory. PE results were reported by the laboratory in SDG 360-34288-1. Results (Form 1s) were sent to USEPA Region 1 to be scored. USEPA score sheets are presented in Attachment A. Interpretations of PE sample results are presented in the applicable section for each method.

Equipment rinse blank OC-EBK-019 was reported by the laboratory with the surface water samples in SDGs 360-34315-1, OLN-71, and WIL-23. This equipment rinse blank is associated with soil samples collected in June 2011 and therefore is not presented in this report.

N-nitrosodi-n-propylamine was reported in the Method 8270D – Low-Level target analytes. A subset of samples was sent to TestAmerica – West Sacramento, CA for low detection limit analysis by modified USEPA Method 521. Both sets of data were reported by the laboratory. The Method 521 data had lower reporting limits when compared to the SVOC method. For N-nitrosodi-n-propylamine the Method 521 analyses were used for reporting final results. For these samples the Method 8270D results were removed from the final data set.

2.0 VOLATILE ORGANIC COMPOUNDS

Samples were analyzed for VOCs by Method 8260C. Data were reviewed for the following parameters:

* Data Completeness
* Holding Times (HT) and Preservation
* Blanks
* Instrument Tunes
* Initial Calibration Standards
  Continuing Calibration Standards
  Laboratory Control Sample (LCS)
  Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
* Field Duplicates
* Surrogate Recovery
* Internal Standards
* Detection Limits
* USEPA PE Sample
* Sample Result Verification/Electronic Data Deliverable (EDD)
* TICs
* Raw data verification and calculation checks

* = indicates that criteria were met for this parameter

Except for the validation actions noted below, sample results are interpreted to be usable as reported by the laboratory. A summary of final results is presented on Table 2.2. A summary of data validation actions is presented on Table 3.2.

2.1 Continuing Calibration Standards

The percent differences between the Relative Response Factor (RRF) in the continuing calibration standard and the average RRF in the initial calibration were calculated and reported by the laboratory. If regression (i.e., linear) was used in the initial calibration, the percent difference was calculated between the known standard concentration and the amount recovered in the continuing calibration. In one or more continuing calibration runs the following VOC target compounds had percent differences that were above the control limit of 25 in the USEPA Region I data validation guidelines:

- carbon disulfide
- methylene chloride
- 2,4,4-trimethyl-1-pentene
- carbon tetrachloride
- bromoform
- tert-amyl methyl ether
- methyl tert-butyl ether
- tert-butyl ethyl ether

A summary of continuing calibration qualification actions is presented in Table 3.2 for VOCs with results being assigned a validation qualifier reason code of Continuing Calibration Verification Percent Difference (CCV%D).

SDG 360-34253-1

The continuing calibration associated with a subset of samples had percent differences outside the Region I control limit of 25 for methyl tert-butyl ether (31), tert-butyl ethyl ether (37), carbon tetrachloride (32), tert-amyl methyl ether (41), 2,4,4-trimethyl-1-pentene (29), and bromoform (53). Methyl tert-butyl ether, tert-butyl ethyl ether, carbon tetrachloride, tert-amyl methyl ether, 2,4,4-trimethyl-1-pentene, and bromoform results in the associated samples were qualified estimated (J/UJ).

SDG 360-34288-1

The continuing calibration associated with all samples had percent differences outside the Region I control limit of 25 for carbon disulfide (27), methylene chloride (40), methyl tert-butyl ether (37), tert-butyl ethyl ether (45), carbon tetrachloride (38), tert-amyl methyl ether (48), 2,4,4-trimethyl-1-pentene (37), and bromoform (51). Carbon disulfide, methylene chloride, methyl tert-butyl ether, tert-butyl ethyl ether, carbon tetrachloride, tert-amyl methyl ether, 2,4,4-trimethyl-1-pentene, and bromoform results in the associated samples were qualified estimated (J/UJ).

SDG 360-34315-1

The continuing calibration associated with all samples had percent differences outside the Region I control limit of 25 for methyl tert-butyl ether (41), tert-butyl ethyl ether (52), carbon tetrachloride (33), tert-amyl methyl ether (57), 2,4,4-trimethyl-1-pentene (32), and bromoform (47). Methyl tert-butyl ether, tert-butyl ethyl ether, carbon tetrachloride, tert-amyl methyl ether, 2,4,4-trimethyl-1-pentene, and bromoform results in the associated samples were qualified estimated (J/UJ).

2.2 Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)

In one or more LCS runs percent recoveries for the following target compounds were outside project limits (70-130):

- bromoform
- carbon disulfide
- methyl tert-butyl ether
- 2,4,4-trimethyl-1-pentene

A summary of LCS qualification actions is presented in Table 3.2 with results being assigned a validation qualifier reason code of LCS high bias (-H). Detailed discussions of qualification actions for each SDG are presented in the following sections.

SDGs 360-34253-1

The LCS/laboratory control sample duplicate (LCSD) associated with a subset of samples had percent recoveries greater than the upper Quality Control (QC) limit of 130% for bromoform (144/141) and carbon disulfide (139), which may indicate -H. Detections of bromoform in samples OC-SW-ISCO-2-XXX and OC-SD-1-XXX were qualified as estimated (J). The detection of carbon disulfide in sample OC-SW-ISCO-1-XXX was qualified as estimated (J).

SDGs 360-34288-1

The LCS/LCSD associated with all samples had percent recoveries greater than the upper QC limit of 130% for carbon disulfide (140/132) and methyl tert-butyl ether (131), which may indicate -H. Detections of carbon disulfide in samples OC-SW-LB-1-XXX and OC-SW-OPWD-2-XXX were qualified as estimated (J). Detections of methyl tert-butyl ether in samples OC-SW-LB-1-XXX, OC-SW-LB-2-XXX, and OC-SW-LB-3-XXX were qualified as estimated (J).

SDGs 360-34315-1

The LCS/LCSD associated with all samples had percent recoveries greater than the upper QC limit of 130% for carbon disulfide (137), methyl tert-butyl ether (138/135), and 2,4,4-trimethyl-1-pentene (133), which may indicate -H. Detections of carbon disulfide in samples OC-SW-SDBK-001-XXX, OC-SW-MMB-SW/SD-3-XXX, OC-SW-MMB-SW/SD-6-XXX, and OC-SW-MMB-SW/SD-8A-XXX were qualified as estimated (J). Detections of methyl tert-butyl ether in samples OC-SW-EDSD/SW1(EDBS5)-XXX, OC-SW-MMB-SW/SD-2-XXX, and OC-SW-MMB-SW/SD-3-XXX were qualified as estimated (J). The detection of 2,4,4-trimethyl-1-pentene in sample OC-SW-EDSD/SW2(EDBS6)-XXX, was qualified as estimated (J).

2.3 Matrix Spikes

MS/MSD samples were submitted in SDG 360-34253-1 and the laboratory provided MS/MSDs in SDGs 360-34288-1 and 360-34315-1. Percent recoveries were above the project limits (70-130) in one or more MS or MSD samples in the following compounds:

- methyl tert-butyl ether

A summary of MS/MSD qualification actions is presented in Table 3.2 with results being assigned a validation qualifier reason code of MS-H. Detailed discussions of qualification actions for each SDG are presented in the following sections.

SDG 360-34315-1

The MS/MSD associated with sample OC-SW-MMB-SW/SD-2-XXX had percent recoveries greater than the upper QC limit of 130% for methyl tert-butyl ether (140/137), which may indicate -H. The detection of methyl tert-butyl ether in sample OC-SW-MMB-SW/SD-2-XXX was qualified as estimated (J).

2.4 Performance Evaluation Sample

SDG 360-34288-1

One aqueous VOC PE sample (OC-PE-V80736-VOC) was obtained from USEPA Region 1 New England and submitted for analysis by Method 8260C. Results reported by TestAmerica – Westfield, MA (Sample ID: OC-PE-V80736-VOC) received a "PASS – Within Limits" for all target analytes reported. Score sheets are presented in Attachment A.

3.0 SEMIVOLATILE ORGANIC COMPOUNDS

Samples were analyzed for SVOCs by Method 8270D (low level method). A subset of samples was also analyzed with a cleanup separation step for diphenylamine (DPA) and N-nitrosodiphenylamine (NDPhA). Data validation actions for these methods are also reported in this section.

Data were reviewed for the following parameters:

* Data Completeness
* HTs and Preservation
  Blanks
* Instrument Tunes
  Initial and Continuing Calibration Standards
  LCS
  Matrix Spikes
* Field Duplicates
  Surrogate Recovery
* Internal Standards
* Sample Quantitation
* Detection Limits
  USEPA PE sample
* Sample Result Verification/EDD
* TICs
* NDPA/DPA separation analyses
  Result Reporting

* = indicates that criteria were met for this parameter

Except for the validation actions noted below, the results are interpreted to be usable as reported by the laboratory. A summary of final results is presented on Table 2.3. A summary of data validation actions is presented on Table 3.3.

3.1 Blanks

Target compounds acetophenone, benzaldehyde, benzyl alcohol, caprolactum, di-n-butyl phthalate were routinely detected at low concentrations in method blanks reported throughout the data sets. Sample results were qualified in accordance with the USEPA Region I guidelines. A summary of method blank qualification actions is presented in Table 3.3 for SVOCs with results being assigned a validation qualifier reason code of BL1. Detailed discussions of qualification actions for each SDG are presented in the following sections.

SDG 360-34253-1

Acetophenone (1.64 micrograms per liter [µg/L]), benzaldehyde (0.742 µg/L), benzyl alcohol (1.33 µg/L), caprolactum (0.799 µg/L), di-n-butyl phthalate (0.822 µg/L) and various TICs were reported in the method blank associated with all samples. Action levels were established at five

times the reported acetophenone, benzaldehyde, benzyl alcohol, caprolactum blank concentrations, and ten times the reported di-n-butyl phthalate blank concentration. Sample results for acetophenone, benzaldehyde, benzyl alcohol, caprolactum were not detected; no qualification was required. Sample detections of di-n-butyl phthalate were less than the action levels and less than the reporting limit, and were qualified as not detected (U) at the reporting limit. Method blank TICs that were reported in associated samples were rejected and not reported in the final data.

SDG 360-34288-1

For a subset of samples, acetophenone (1.64 µg/L), benzaldehyde (0.742 µg/L), benzyl alcohol (1.33 µg/L), caprolactum (0.799 µg/L), di-n-butyl phthalate (0.822 µg/L) and various TICs were reported in the method blank associated with all samples. Action levels were established at five times the reported acetophenone, benzaldehyde, benzyl alcohol, caprolactum blank concentrations, and ten times the reported di-n-butyl phthalate blank concentration. Acetophenone, benzaldehyde, benzyl alcohol, caprolactum were not detected; no qualification was required. Sample detections of di-n-butyl phthalate were less than the action levels and less than the reporting limits, and were qualified not detected (U) at the reporting limits. Method blank TICs that were reported in associated samples were rejected and not reported in the final data.

For a subset of samples, acetophenone (1.65 µg/L), benzyl alcohol (0.828 µg/L), di-n-butyl phthalate (0.965 µg/L) and various TICs were reported in method blank associated with all samples. Action levels were established at five times the reported acetophenone and benzyl alcohol blank concentrations, and ten times the reported di-n-butyl phthalate blank concentration. Sample results for acetophenone and benzyl alcohol were not detected; no qualification was required. Sample detections of di-n-butyl phthalate were less than the action levels and less than the reporting limits, and were qualified not detected (U) at the reporting limits. Method blank TICs that were reported in associated samples were rejected and not reported in the final data.

SDG 360-34315-1

For a subset of samples, acetophenone (1.65 µg/L), benzyl alcohol (0.828 µg/L), di-n-butyl phthalate (0.965 µg/L) and various TICs were reported in method blank associated with all samples. Action levels were established at five times the reported acetophenone and benzyl alcohol blank concentrations, and ten times the reported di-n-butyl phthalate blank concentration. Acetophenone and benzyl alcohol were not detected in samples; no qualification was required. The detection of di-n-butyl phthalate in sample OC-SW-MMB-SW/SD-3-XXX was less than the action levels and less than the reporting limit, and was qualified not detected (U) at the reporting limits. Method blank TICs that were reported in associated samples were rejected and not reported in the final data.

3.2 Continuing Calibration Standards

In one or more continuing calibrations the following SVOC target compounds did not meet continuing calibration accuracy goals in the USEPA Region I data validation guidelines.

- Benzo(b)fluoranthene

A summary of continuing calibration qualification actions is presented in Table 3.3 for SVOCs with results being assigned validation qualifier reason code CCV%D. Detailed discussions of qualification actions for each SDG are presented in the following sections.

SDG 360-34253-1 and SDG 360-34288-1

In the continuing calibration associated with all samples, the percent difference for benzo(b)fluoranthene (33) exceeded the QC limit of 25. Results for samples where benzo(b)fluoranthene was not detected were qualified estimated (UJ) at the reporting limits.

The reported detection of benzo(b)fluoranthene in sample OC-SW-LB-2-XXX was qualified estimated (J).

3.3 Laboratory Control Samples

A subset of sample results was qualified due to LCS recoveries that were outside project QC goals. Qualified results are summarized on Table 3.3 with reason code LCS low bias (-L).

SDG 360-34253-1

The LCS/LCSD percent recoveries of aniline (38 and 34) and caprolactum (22 and 22) were less than the lower QC limit of 40. Aniline and caprolactum were not detected and results were qualified estimated (UJ) at the reporting limits.

SDG 360-34288-1

In a subset of samples, the LCS/LCSD percent recoveries of aniline (38 and 34) and caprolactum (22 and 22) were less than the lower QC limit of 40. Aniline and caprolactum were not detected and results were qualified estimated (UJ) at the reporting limits.

In a subset of samples, the LCS and/or LCSD percent recoveries of caprolactum (27 and 25) and pyrene (143) were outside of the QC limits of 40 to 140. Caprolactum was not detected and results were qualified estimated (UJ) at the reporting limits. Reported detections of pyrene were qualified estimated (J).

SDG 360-34315-1

The LCS and/or LCSD percent recoveries of caprolactum (27 and 25) and pyrene (143) were outside of the QC limits of 40 to 140. Reported detections of caprolactum were qualified

estimated (J). Caprolactum was not detected and results were qualified estimated (UJ) at the reporting limits. Pyrene was not detected; no qualification was required.

3.4 Matrix Spikes

A subset of sample results was qualified due to MS/MSD percent recoveries that were outside project QC goals. Qualified results are summarized on Table 3.3 with reason code MS-L.

SDG 360-34253-1

Sample OC-SW-ISCO-1-XXX was submitted for MS/MSD analysis. The MS and/or MSD percent recovery of 3,3'-dichlorobenzidine (0 and 0), aniline (25 and 28), benzo(b)fluoranthene (141), benzoic acid (39 and 34), and caprolactum (28 and 23) were outside of the QC limits. Associated samples are OC-SW-ISCO-1-XXX and OC-SW-ISCO-1-DUP. The associated sample results for 3,3'-Dichlorobenzidine was not detected in associated samples and results were rejected (R) due to no recovery. Aniline and caprolactum were not detected and were qualified estimated previously under LCS criteria. Benzo(b)fluoranthene was not detected; no qualification was required. The associated sample results for benzoic acid were qualified estimated (J).

Sample OC-SW-MMB-SW/SD-1-XXX was submitted for MS/MSD analysis. The MS and/or MSD percent recovery of 3,3'-dichlorobenzidine (0 and 0), aniline (31 and 28), caprolactum (22 and 24), and phenol (31 and 27) were less than the lower QC limits. Associated samples are OC-SW-MMB-SW/SD-1-XXX and OC-SW-MMB-SW/SD-1-DUP. 3,3'-Dichlorobenzidine was not detected and results were rejected (R). Aniline and caprolactum were not detected and were qualified previously under LCS criteria. Phenol was not detected and the reporting limits were qualified estimated (UJ).

3.5 Surrogate Recovery

In a subset of samples, surrogate recoveries outside project QC limits. Sample results were evaluated in accordance with USEPA Region I data validation guidelines.

SDG 360-34253-1

The surrogate percent recoveries for 2,4,6-tribromophenol in samples OC-SW-PZ-16RR-XXX (113) and OC-SW-PZ-17RR-XXX (134) exceeded the upper QC limit of 110. The remaining acid fraction surrogate recoveries were within QC limits; no qualification was required.

3.6 Performance Evaluation Results

One aqueous SVOC PE sample (OC-PE-S80479-SVOC) was obtained from USEPA Region 1 New England and submitted for analysis by Method 8270D. With the exception of phenol and 4-nitrophenol, compound results reported by TestAmerica – Westfield, MA (Sample ID: OC-PE-S80479-SVOC) received a "PASS – Within Limits" for all target analytes reported. 4-Nitrophenol

compound result reported by TestAmerica – Westfield, MA received a “PASS – Warning Low”; no qualification was required. PE results for phenol indicates a -L to the results. In all samples, detections for phenol were qualified estimated (J) and reporting limits were qualified estimated (UJ). Score sheets are presented in Attachment A. Qualification results are summarized on Table 3.3 with reason code PE-L.

3.7 Result Reporting

SDG 360-34253-1, 360-34288-1, 360-34315-1

N-nitrosodi-n-propylamine was reported from both the 8270D and modified 521 methods. The N-nitrosodi-n-propylamine results from modified 521 with lower reporting limits were reported in the final data set.

4.0 N-NITROSODIMETHYLAMINE & N-NITROSODI-N-PROPYLAMINE

Samples were analyzed for N-nitrosodimethylamine (NDMA) and N-nitrosodi-n-propylamine by modified USEPA Method 521 Modified. Data were reviewed for the following parameters:

* Data Completeness
  HTs and Preservation
* Blanks
* Instrument Tunes
* Initial and Continuing Calibration Standards
* LCS
* Matrix Spikes
* Field Duplicates
  Internal Standard Response
  Detection Limits
* Sample Result Verification/EDD

* = indicates that criteria were met for this parameter

Except for the validation actions noted below, the results are interpreted to be usable as reported by the laboratory. A summary of final results is presented on Table 2.4. A summary of data validation actions is presented on Table 3.4.

4.1 Holding Times and Preservation

SDG 360-342513-1 (G1F070508)

Samples were picked up by the laboratory courier and shipped to TestAmerica – West Sacramento, CA using FedEx overnight delivery. A shipment of four sample coolers was sent. During shipping by FedEx, one of the coolers was misplaced and arrived one day after the scheduled shipment arrival date. The sample cooler was logged in at TestAmerica – West Sacramento, CA with broken sample containers and exceeding temperature requirements for preservation.

The case narrative states that samples OC-SW-ISCO-1-DUP, OC-SW-PZ-17RR-XXX, and OC-SW-PZ-16RR-XXX were received at 16 °C, which is greater than the preservation goal of 4 °C. Reported detections for NDMA were qualified estimated (J). N-nitrosodi-n-propylamine was not detected in samples and the reporting limits were qualified estimated (UJ).

4.2 Internal Standards

A subset of sample results was qualified due to internal standard percent recoveries that were outside of project QC goals. Qualified results are summarized on Table 3.4 with reason codes IS-L.

SDG 360-342513-1 (G1F070508)

The percent recovery for the internal standard N-nitrosodi-n-propylamine–d14 in sample OC-SW-MMB-SW/SD-9-XXX (12) was less than the lower QC limit of 25. N-nitrosodi-n-propylamine was not detected in sample OC-SW-MMB-SW/SD-9-XXX and the reporting limit was qualified estimated (UJ).

SDG 360-34288-1 (G1F080473)

The percent recovery for the internal standard NDMA-d6 in sample OC-SW-OPWD-2-XXX (22) was less than the lower QC limit of 25. NDMA was not detected in sample OC-SW-OPWD-2-XXX and the reporting limit was qualified estimated (UJ).

SDG 360-34315-1 (G1F090508)

The percent recovery for the internal standard N-nitrosodi-n-propylamine–d14 in sample OC-SW-MMB-SW/SD-8A-XXX (12) was less than the lower QC limit of 25. N-nitrosodi-n-propylamine was not detected in sample OC-SW-MMB-SW/SD-8A-XXX and the reporting limit was qualified estimated (UJ).

4.3 Detection Limits

A subset of samples have elevated detection limit due to sample dilution. Samples are listed below and discussed in the following sections.

SDG	Field Sample ID	Parameter Name	Final Result	Final Qual	Unit	Dilution Factor
360-34315-1	OC-SW-EDSD/SW5(EDBS11)-XXX	N-Nitrosodimethylamine	20	U	ng/l	10.1
360-34315-1	OC-SW-EDSD/SW5(EDBS11)-XXX	N-Nitrosodi-n-propylamine	20	U	ng/l	10.1
360-34315-1	OC-SW-MMB-SW/SD-11-XXX	N-Nitrosodimethylamine	19	U	ng/l	9.56
360-34315-1	OC-SW-MMB-SW/SD-11-XXX	N-Nitrosodi-n-propylamine	19	U	ng/l	9.56
360-34315-1	OC-SW-MMB-SW/SD-2-XXX	N-Nitrosodimethylamine	20	U	ng/l	9.81
360-34315-1	OC-SW-MMB-SW/SD-2-XXX	N-Nitrosodi-n-propylamine	20	U	ng/l	9.81
360-34315-1	OC-SW-MMB-SW/SD-3-XXX	N-Nitrosodimethylamine	19	U	ng/l	9.65
360-34315-1	OC-SW-MMB-SW/SD-3-XXX	N-Nitrosodi-n-propylamine	19	U	ng/l	9.65
360-34288-1	OC-SW-MMB-SW/SD-5-XXX	N-Nitrosodimethylamine	19	U	ng/l	9.51
360-34288-1	OC-SW-MMB-SW/SD-5-XXX	N-Nitrosodi-n-propylamine	19	U	ng/l	9.51
360-34315-1	OC-SW-MMB-SW/SD-6-XXX	N-Nitrosodimethylamine	38	U	ng/l	19
360-34315-1	OC-SW-MMB-SW/SD-6-XXX	N-Nitrosodi-n-propylamine	38	U	ng/l	19
360-34315-1	OC-SW-MMB-SW/SD-8A-XXX	N-Nitrosodimethylamine	19	U	ng/l	9.66
360-34315-1	OC-SW-MMB-SW/SD-8A-XXX	N-Nitrosodi-n-propylamine	19	U	ng/l	9.66
360-34288-1	OC-SW-MMB-SW/SD-8-XXX	N-Nitrosodimethylamine	19	U	ng/l	9.53
360-34288-1	OC-SW-MMB-SW/SD-8-XXX	N-Nitrosodi-n-propylamine	19	U	ng/l	9.53
360-34288-1	OC-SW-OPWD-1-XXX	N-Nitrosodi-n-propylamine	19	U	ng/l	9.7
360-34288-1	OC-SW-OPWD-2-XXX	N-Nitrosodimethylamine	38	UJ	ng/l	18.9
360-34288-1	OC-SW-OPWD-2-XXX	N-Nitrosodi-n-propylamine	38	U	ng/l	18.9

SDG	Field Sample ID	Parameter Name	Final Result	Final Qual	Unit	Dilution Factor
360-34288-1	OC-SW-OPWD-SD/SO/SW-S-XXX	N-Nitrosodi-n-propylamine	20	U	ng/l	9.76
360-34253-1	OC-SW-PZ-16RR-XXX	N-Nitrosodi-n-propylamine	9.5	UJ	ng/l	4.76
360-34253-1	OC-SW-PZ-17RR-XXX	N-Nitrosodi-n-propylamine	21	UJ	ng/l	10.3

SDG 360-342513-1 (G1F070508)

Sample OC-SW-PZ-16RR-XXX and OC-SW-PZ-17RR-XXX were analyzed at dilution due to target analyte concentrations. N-nitrosodi-n-propylamine was not detected and the reporting limit is elevated.

SDG 360-34288-1 (G1F080473)

The case narrative states that due to matrix effects, samples OC-SW-MMB-SW/SD-5-XXX, OC-SW-MMB-SW/SD-8-XXX, OC-SW-OPWD-2-XXX, and OC-SW-OPWD-SD/SO/SW-S-XXX were analyzed at dilution. Reporting limits are elevated accordingly.

SDG 360-34315-1 (G1F090508)

The case narrative states that due to matrix effects, samples OC-SW-EDSD/SW5(EDBS11)-XXX, OC-SW-MMB-SW/SD-11-XXX, OC-SW-MMB-SW/SD-2-XXX, OC-SW-MMB-SW/SD-3-XXX, OC-SW-MMB-SW/SD-6-XXX, and OC-SW-MMB-SW/SD-8A-XXX were analyzed at dilution. Reporting limits are elevated accordingly.

5.0 EXTRACTABLE PETROLEUM HYDROCARBONS (EPH)

Samples were analyzed for extractable petroleum hydrocarbons (EPH) by MassDEP Method EPH. Data were reviewed for the following parameters:

* Data Completeness
* HTs and Preservation
* Blanks
* Surrogate Recovery
* MS/MSD
* LCS
* Field Duplicates
* Detection Limits
* Sample Result Verification/EDD

* = indicates that criteria were met for this parameter

The results are interpreted to be usable as reported by the laboratory. A summary of final results is presented on Table 2.5.

6.0 VOLATILE PETROLEUM HYDROCARBONS (VPH)

Samples were analyzed for volatile petroleum hydrocarbons (VPHs) by MassDEP Method VPH. Data were reviewed for the following parameters:

* Data Completeness
* HTs and Preservation
* Blanks
* Surrogate Recovery
* MS/MSD
* LCS
* Field Duplicates
* Detection Limits
* Sample Result Verification/EDD

* = indicates that criteria were met for this parameter

The results are interpreted to be usable as reported by the laboratory. A summary of final results is presented on Table 2.6.

7.0 TAL METALS (INCLUDING MERCURY)

Samples were analyzed for TAL metals by SW-846 Method 6010C and Method 6020A, and mercury by SW-846 Method 7470A. Data were reviewed for the following parameters:

* Data Completeness
* Sample Preservation and HTs
  Blanks
* Initial and Continuing Calibration Standards
* LCS
* Matrix Spike Analysis
* Field Duplicates
* Laboratory Duplicate Analysis
  Interference Check Sample
* Internal Standards (inductively coupled plasma [ICP-MS])
* Serial Dilution Analysis
  Detection Limits
* Total and dissolved metals concentration comparison
* Sample Result Verification/EDD
  PE Samples

* = indicates that criteria were met for this parameter

Except for the validation actions noted below, the results are interpreted to be usable as reported by the laboratory. A summary of final results is presented on Table 2.7. A summary of data validation actions is presented on Table 3.7.

7.1 Blanks

A subset of analyte results were qualified due to detections in the method and/or continuing calibration blanks. A summary of blank qualification actions is presented in Table 3.7. Results qualified due to blanks were assigned reason code BL1. A detailed discussion of qualification actions for each SDG is presented in the following sections.

The laboratory qualified sample results associated with method blank detections with a B. After review of the method blanks, the B qualifiers were removed.

SDG 360-34253-1

Cadmium (0.82 µg/L), silver (0.06 µg/L), and thallium (2.55 µg/L) were detected in the method and/or continuing calibration blanks associated with samples in SDG 360-34253-1. Action levels were established at five times the concentration reported in the blank and compared to sample results. Low concentration detections of thallium, silver and cadmium below the reporting limits and action levels were qualified not detected (U) at the reporting limit in associated samples.

SDG 360-34288-1

Cadmium (0.17 µg/L), silver (0.075 µg/L), copper (0.092 µg/L), thallium (2.55 µg/L), and sodium (281 µg/L) were detected in the method and/or continuing calibration blanks associated with samples in SDG 360-34288-1. Action levels were established at five times the concentration reported in the blank and compared to sample results. Low concentration detections of cadmium silver, and thallium below the reporting limits and action levels were qualified not detected (U) at the reporting limit in associated samples. Silver was qualified not detected (U) above the reporting limit at 0.21 µg/L in sample OC-SW-LB-1-XXX.

SDG 360-34315-1

Cadmium (0.218 µg/L), silver (0.075 µg/L), and lead (0.0636 µg/L) were detected in the method and/or continuing calibration blanks associated with samples in SDG 360-34315-1. Action levels were established at five times the concentration reported in the blank and compared to sample results. Low concentration detections of these metals occurred below the reporting limits and action levels were qualified not detected (U) at the reporting limit in associated samples. Lead was qualified not detected (U) above the reporting limit at 0.13 µg/L in sample OC-SW-EDSD/SW2(EDBS6)-XXX. Silver was qualified not detected (U) above the reporting limit at 0.23 µg/L in sample OC-SW-SDBK-001-XXX.

7.2 Interference Check Standard

A summary of interference check standard qualification actions is presented in Table 3.7 for metals with results being assigned a qualifier reason code of IFCS-H.

SDG 360-34253-1

Copper, lead and silver were analyzed by ICP-MS Method 6020. Lead (0.180 µg/L) was detected above the control limit of two times the Method Detection Limit (MDL) in the interference check sample mix A (ICSA) check standard analyzed in SDG 360-34253-1. The following samples had concentrations of calcium and/or sodium that were greater than 50,000 µg/L and low level detections of lead: OC-SW-ISCO-1-DUP, OC-SW-ISCO-1-XXX, OC-SW-MMB-SW/SD-1-XXX, OC-SW-PZ-17RR-XXX, and OC-SW-SD-1-XXX. Lead was qualified estimated (J) in these samples. Professional judgment was used to qualify detections of lead that were less than the reporting limit (0.10 µg/L) as not detected (U) in samples OC-SW-MMB-SW/SD-1-DUP, OC-SW-MMB-SW/SD-9-XXX, and OC-SW-PZ-16RR-XXX.

SDG 360-34288-1

Lead (0.194 µg/L) was detected above the control limit of two times the MDL in the ICSA check standard analyzed in SDG 360-34288-1. The following samples had concentrations of sodium that were greater than 50,000 µg/L: OC-SW-LB-3-XXX, OC-SW-MMB-SW/SD-4-XXX, OC-SW-MMB-SW/SD-5-XXX, OC-SW-MMB-SW/SD-8-XXX, OC-SW-OPWD-SD/SO/SW-S-XXX, and OC-SW-SDBK-002-XXX. Low level detections of lead were qualified estimated (J) in these

samples. Professional judgment was used to qualify a detection of lead that was less than the reporting limit (0.10 µg/L) as not detected (U) in sample OC-SW-MMB-SW/SD-4-XXX.

SDG 360-34315-1

Cadmium (0.317 µg/L) was detected above the control limit of two times the MDL in the ICSA check standard associated with analysis batch 75342. The concentrations of sodium and calcium in sample OC-SW-SDBK-001-XXX were greater than 50,000 µg/L and cadmium was qualified estimated (J) at 1.1 µg/L in OC-SW-SDBK-001-XXX.

Lead (0.194 µg/L) was detected above the control limit of two times the MDL in the ICSA check standard analyzed in SDG 360-34315-1. The following samples had concentrations of sodium and/or calcium that were greater than 50,000 µg/L: OC-SW-MMB-SW/SD-11-XXX, OC-SW-MMB-SW/SD-2-XXX, OC-SW-MMB-SW/SD-3-XXX, OC-SW-MMB-SW/SD-8A-XXX, OC-SW-SDBK-004-XXX, and OC-SW-SD-EDSD/SW0-XXX. Low level detections of lead were qualified estimated (J) in these samples.

7.3 Detection Limits

The following table presents samples that were analyzed by ICP-MS (method 6020) at a dilution due to elevated concentrations of target metals and/or matrix issues. Analyte reporting limits were elevated accordingly.

SDG	Fraction	Lab Sample ID	Field Sample ID	Dilution Factor
360-34288-1	Total	IUF0803-01	OC-SW-LB-1-XXX	2
360-34288-1	Total	IUF0803-02	OC-SW-LB-2-XXX	2
360-34288-1	Total	IUF0803-08	OC-SW-OPWD-1-XXX	2
360-34288-1	Total	IUF0803-09	OC-SW-OPWD-2-XXX	5
360-34315-1	Total	IUF0953-10	OC-SW-MMB-SW/SD-6-XXX	5

7.4 Performance Evaluation Samples

SDG 360-34288-1

The following four PE samples were obtained from USEPA Region 1 new England and analyzed for metals: HG5929 (mercury by Method 7470A), IS0662 (ICP-AES by Method 6010C), MS03400 (ICP-MS with collision cell by Method 6020A), and MS03456 (ICP-MS with collision cell by Method 6020A). The results were submitted by AMEC E&I, Inc. (AMEC) (formerly MACTEC) to USEPA Region 1 for scoring.

The TestAmerica laboratory in Westfield, MA performed the analysis of the mercury and the TAL metals PE by Method 6010C. Results reported for PE sample IS0662 received a “PASS – Within Limits” for all target analytes reported, with the exception of zinc which received a “PASS

– Warning High" score. All Method 6010C target analyte results were accepted without additional qualification due to PE results.

Mercury results reported for PE sample HG5929 received a "FAIL – Action High" score. The two Method 6020A PE samples (MS03400 and MS03456) that were analyzed for copper, lead, and silver by TestAmerica - Irvine (by ICP-MS) also received "FAIL – Action High" for the target analytes reported, with the exception of copper which received a "PASS < CRDL/CRQL" score in sample MS03400. TestAmerica was contacted by AMEC to investigate the failed results. AMEC made a request to the laboratories to review the preparation steps and analysis runs of the PE samples that received failing scores. Results of this investigation by TestAmerica indicated that the PE samples were not prepared according to the instructions provided to the laboratory and the wrong dilution was made on PE samples during the preparation step. A corrective action was made by the laboratories and the final concentrations of the metals reported were adjusted based on the actual dilutions performed during preparation of the PE samples. The adjusted results of PE samples HG5929, MS03400, and MS03456 and a corrective action narrative were submitted in a revised report to AMEC. AMEC submitted the revised results to USEPA Region 1 for scoring. The revised results for PE samples HG5929, MS03400, and MS03456 received a "PASS – Within Limits" for all target analytes reported. The original score sheets and score sheets from the revised results with corrective actions are presented in Attachment A. Based on the corrected result scores, all Method 6020A target analyte results were accepted without additional qualification due to PE results.

8.0 HEXAVALENT CHROMIUM

Samples were analyzed for hexavalent chromium (chromium+6) by SW-846 Method 7199. Data were reviewed for the following parameters:

* Data Completeness
  HT
* Blanks
* Initial and Continuing Calibration Standards
* LCS
* Matrix Spike Analysis
* Laboratory Duplicate Analysis
* Field Duplicates
* Detection Limits
* Sample Result Verification/EDD

* = indicates that criteria were met for this parameter

Except for the validation actions noted below, the results are interpreted to be usable as reported by the laboratory. A summary of final results is presented on Table 2.8. A summary of data validation actions is presented on Table 3.8.

8.1 Holding Times

A subset of samples was analyzed beyond the 24 hour hold time. A summary of qualified results is presented on Table 3.8 with reason code HT.

SDGs 360-34253-1 and 360-34315-1

The data package narrative states that samples OC-SW-ISCO-1-DUP, OC-SW-ISCO-2-XXX, and OC-SW-EDSD/SW5(EDBS11)-XXX for chromium+6 analyses were received with greater than 50 percent of the HT expired. Samples were analyzed up to twenty-three hours beyond HT. Sample results that were not detected for chromium+6 were qualified estimated (UJ) at the reporting limits.

9.0 GENERAL CHEMISTRY

General chemistry includes analysis for ammonia by QuikChem: Lachat Method 10-107-06-1-B, and chloride, nitrate, nitrite, sulfate and bromide by USEPA Method 300, hardness by SM A2340B, TOC by SM 5310B, and TSS by SM20 2540D. An Olin Level 1 validation was performed on the data. Data were reviewed for the following parameters:

* Data Completeness
  HT
* Blanks
* LCS
  Matrix Spike Analysis
  Laboratory Duplicate Analysis
  Field Duplicates
  Detection Limits
* Sample Result Verification/EDD

***** **=** indicates that criteria were met for this parameter

9.1 Holding Time

A subset of samples was analyzed beyond hold time. A summary of qualified results is presented on Table 3.9 with reason code HT.

SDG 360-34288-1

The analytical HTs for nitrate and nitrite in samples OC-SW-SDBK-002-XXX and OC-SW-LB-1-XXX were exceeded. Nitrite was not detected in the associated samples and the reporting limit was qualified estimated (UJ). Sample results for nitrate were qualified as estimated (J/UJ) in the associated samples.

SDG 360-34315-1

HTs for samples OC-SW-SDBK-001-XXX, OC-SW-MMB-SW/SD-6-XXX, OC-SW-MMB-SW/SD-8A-XXX, OC-SW-SDBK-004-XXX, OC-SW-SD-EDSD/SW0-XXX, OC-SW-MMB-SW/SD-11-XXX, and OC-SW-MMB-SW/SD-2-XXX were grossly exceeded for nitrate. Based on professional judgment and that during the nitrification process nitrite is converted to nitrate, associated sample results were estimated (J/UJ).

9.2 Matrix Spike Analysis

A subset of sample results was qualified due to MS/MSD percent recoveries or Relative Percent Difference (RPD) that were outside project QC goals. Qualified results are summarized in Table 3.9 with reason code MS-H.

SDG 360-34253-1

The laboratory performed MS/MSD analyses on samples OC-SW-ISCO-1-XXX and OC-SW-MMB-SW/SD-1-XXX. The MS percent recovery of ammonia in sample OC-SW-ISCO-1-XXX (141) was above the upper control limit of 125. The associated sample result for ammonia was qualified estimated (J).

9.3 Laboratory Duplicates

SDG 360-34253-1

In sample OC-SW-ISCO-1-DUP, the RPD for TSS (13) exceeded the QC limit of 6. Detections and reporting limits for TSS were qualified estimated (J/UJ).

9.4 Detection Limits

The following table presents samples that were analyzed at a dilution due to elevated concentrations of target metals and/or matrix issues. Reporting limits were elevated accordingly.

SDG	Lab Sample ID	Field Sample ID	Analyte	Dilution Factor
360-34253-1	360-34253-3	OC-SW-ISCO-2-XXX	Nitrite as N	10
360-34253-1	360-34253-6	OC-SW-MMB-SW/SD-9-XXX	Nitrite as N	10
360-34253-1	360-34253-8	OC-SW-PZ-17RR-XXX	Nitrite as N	10
360-34253-1	360-34253-9	OC-SW-SD-1-XXX	Nitrite as N	10
360-34288-1	360-34288-5	OC-SW-LB-1-XXX	Nitrite as N	10
360-34288-1	360-34288-7	OC-SW-LB-3-XXX	Nitrite as N	10
360-34288-1	360-34288-8	OC-SW-MMB-SW/SD-10-XXX	Nitrite as N	10
360-34288-1	360-34288-9	OC-SW-MMB-SW/SD-4-XXX	Nitrite as N	10
360-34288-1	360-34288-10	OC-SW-MMB-SW/SD-5-XXX	Nitrite as N	10
360-34288-1	360-34288-11	OC-SW-MMB-SW/SD-8-XXX	Nitrite as N	10
360-34288-1	360-34288-12	OC-SW-OPWD-1-XXX	Nitrite as N	10
360-34288-1	360-34288-14	OC-SW-MMB-OPWD-SD/SO/SW-S-XXX	Nitrite as N	10
360-34288-1	360-34288-15	OC-SW-SDBK-002-XXX	Nitrite as N	10
360-34315-1	360-34315-1	OC-SW-SDBK-001-XXX	Nitrite as N	10
360-34315-1	360-34315-2	OC-SW-SDBK-004-XXX	Nitrite as N	10
360-34315-1	360-34315-3	OC-SW-SD-EDSD/SW0-XXX	Nitrite as N	10
360-34315-1	360-34315-4	OC-SW-SD-EDSD/SW1(EDBS5)-XXX	Nitrite as N	10
360-34315-1	360-34315-5	OC-SW-SD-EDSD/SW2(EDBS6)-XXX	Nitrite as N	10
360-34315-1	360-34315-6	OC-SW-SD-EDSD/SW5(EDBS11)-XXX	Nitrite as N	10
360-34315-1	360-34315-7	OC-SW-MMB-SW/SD-11-XXX	Nitrite as N	10
360-34315-1	360-34315-8	OC-SW-MMB-SW/SD-2-XXX	Nitrite as N	10

SDG	Lab Sample ID	Field Sample ID	Analyte	Dilution Factor
360-34315-1	360-34315-9	OC-SW-MMB-SW/SD-3-XXX	Nitrite as N	10
360-34315-1	360-34315-11	OC-SW-MMB-SW/SD-8A-XXX	Nitrite as N	10

10.0 FORMALDEHYDE/ACETALDEHYDE

Samples were analyzed for formaldehyde and acetaldehyde by SW-846 Method 8315. Data were reviewed for the following parameters:

* Data Completeness
* HT
* Blanks
* Initial and Continuing Calibration Standards
* LCS
  Matrix Spike Analysis
* Laboratory Duplicate Analysis
* Field Duplicates
* Detection Limits
* Sample Result Verification/EDD

* = indicates that criteria were met for this parameter

Except for the validation actions noted below, the results are interpreted to be usable as reported by the laboratory. A summary of final results is presented on Table 2.11. A summary of data validation actions is presented on Table 3.10.

10.1 Matrix Spike Analysis

A subset of sample results was qualified due to MS/MSD percent recoveries or RPD that were outside project QC goals. Qualified results are summarized in Table 3.10 with reason code MS-L.

SDG 360-34253-1

Sample OC-SW-MMB-SW/SD-1-XXX was analyzed for MS/MSD. The formaldehyde MS/MSD percent recoveries (65 and 73) were less than the lower QC limit of 75. Formaldehyde in associated samples OC-SW-MMB-SW/SD-1-XXX and OC-SW-MMB-SW/SD-1-DUP was not detected and the reporting limits were qualified estimated (UJ).

SDG 360-34288-1

Sample OC-SW-MMB-SW/SD-10-XXX was analyzed for MS/MSD. The formaldehyde MS/MSD percent recoveries (72 and 73) were less than the lower QC limit of 75. Formaldehyde in sample OC-SW-MMB-SW/SD-10-XXX was not detected and the reporting limit was qualified estimated (UJ).

11.0 PHTHALIC ANHYDRIDE

Samples were analyzed for phthalic anhydride by a laboratory specific modified method 8000 – High Performance Liquid Chromatography (HPLC) (TestAmerica – Tallahassee: method LC65). A chemist review was performed on the phthalic anhydride data set. Data were reviewed for the following parameters:

* Data Completeness
* Holding Times and Preservation
* Blanks
* Initial Calibration Standards (10% of the data set)
* Initial Calibration Verification (ICV) Standards (10% of the data set)
* Continuing Calibration Standards (10% of the data set)
* LCS
* MS/MSD
* Field Duplicates
* Detection Limits
* Dual Column Confirmation
* Sample Result Verification/EDD

* = indicates that criteria were met for this parameter

The results are interpreted to be usable as reported by the laboratory. A summary of final results is presented on Table 2.11.

12.0 HYDRAZINE, MONO-METHYLHYDRAZINE, UNSYMMETRICAL DIMETHYLHYDRAZINE

Samples were analyzed for hydrazine, monomethylhydrazine (MMH), and unsymmetrical dimethylhydrazine (UDMH) by a modified SW-846 Method 8315A LC/MS/MS. Reporting limits for waters were hydrazine (0.2 µg/L), MMH (0.5 µg/L), and UDMH (0.5 µg/L). Data were reviewed for the following parameters:

* Data Completeness
* HT and Sample Preservation
* Blanks
* Initial and Continuing Calibration Standards
* LCS
* Matrix Spike Analysis
* Field Duplicates
* Detection Limits
* Sample Result Verification/EDD

* = indicates that criteria were met for this parameter

Results are interpreted to be usable as reported by the laboratory. A summary of final results is presented on Table 2.12.

13.0 N, N-DIMETHYLFORMAMIDE

Samples were analyzed for DMF by a modified SW-846 Method 8033 GC/NPD. Reporting limits were 20 µg/L for aqueous samples. Data were reviewed for the following parameters:

* Data Completeness
* HT
* Blanks
  Initial and Continuing Calibration Standards
* LCS
* Matrix Spike Analysis
* Surrogate Recovery
* Laboratory Duplicate Analysis
* Field Duplicates
* Detection Limits
* Sample Result Verification/EDD

* = indicates that criteria were met for this parameter

Except for the validation actions noted below, the results are interpreted to be usable as reported by the laboratory. A summary of final results is presented on Table 2.13. A summary of data validation actions is presented on Table 3.13.

13.1 Continuing Calibration Verification

SDG WIL-23

During the calibration verification conducted on June 22, 2011 (2209), the percent difference of DMF (34) exceeded the upper QC limit of 25. DMF was not detected and the reporting limits were qualified estimated (UJ).

14.0 ALKYLPHENOLS (NONYLPHENOLS)

Samples were analyzed for alkylphenols by laboratory method Modified 8270 SIM. A chemist review was performed on the alkylphenols. Data were reviewed for the following parameters:

Data Completeness
HT and Sample Preservation
* Blanks
* Initial and Continuing Calibration Standards (10% of the data set)
* LCS
* MS/MSD
* Field Duplicates
* Detection Limits
* Sample Result Verification/EDD

* = indicates that criteria were met for this parameter

Except for the validation actions noted below, the results are interpreted to be usable as reported by the laboratory. A summary of final results is presented on Table 2.14. A summary of data validation actions is presented on Table 3.14.

14.1 Data Completeness

SDG 360-34253-1

Sample OC-SW-SD-1-XXX was collected and picked up at the Site on June 6, 2011 by a TestAmerica - Westfield, MA courier. Custody of the sample was obtained by the TestAmerica – Westfield, MA courier at 15:45. The sample was shipped by TestAmerica – Westfield, MA to TestAmerica - West Sacramento, CA and subsequently lost during the shipping process. TestAmerica - West Sacramento, CA stated in the data package narrative that the bottles were not received and the analysis was cancelled at the request of TestAmerica – Westfield, MA. No data was reported for alkylphenols for OC-SW-SD-1-XXX.

14.2 Sample Preservation

SDG 360-34253-1

The temperature inside the cooler containing samples OC-SW-ISCO-1-DUP and OC-SW-PZ-17RR-XXX was 16 °C upon arrival at TestAmerica - West Sacramento, CA. Based on professional judgment, the results for alkylphenols were qualified estimated (J/UJ) in these samples.

15.0 OPEX AND KEMPORE

Samples were analyzed for Opex and Kempore by modified methods 8000 –HPLC (Lancaster Laboratory – Lancaster, Pennsylvania: Determination of Dinitrosopentamethylenetetramine (Opex) in Water, and Determination of Azodicarbonamide (Kempore) in Water. A chemist review was performed on the Opex and Kempore data sets. Data were reviewed for the following parameters:

* Data Completeness
* HTs and Preservation
* Blanks
* Initial Calibration Standards (10% of the data set)
  Continuing Calibration Standards (10% of the data set)
* LCS
  MS/MSD
* Field Duplicates
  Detection Limits
  Compound Identification
* Sample Result Verification/EDD

* = indicates that criteria were met for this parameter

Except for the validation actions noted below, the results are interpreted to be usable as reported by the laboratory. A summary of final results is presented on Table 2.15. A summary of data validation actions is presented on Table 3.15.

For both the Kempore and Opex HPLC analyses, shifts in retention times (RT) during the course of analytical sequences were observed in the lab data during the full validation reviews and raw data checks. The lab noted the RT shifts in the package narrative and indicated the RT shifts were likely due to a matrix effect. RTs reported for a subset of Continuing Calibration Verification (CCV), LCS, and MS/MSD runs were outside established RT windows. The laboratory used manual integration to quantify Kempore and Opex peaks for the confirmation column in these QC samples. This indicates that the identification of Kempore and Opex in samples may not be possible solely on RTs.

No detections of Opex were reported in samples from this sampling event. During the validation task, chromatograms from all sample runs were reviewed. In no samples were peaks identified within RTs that could be expected based on the overall review of calibration standards and the spiked QC results. During the validation task, this issue was discussed with the Lancaster Laboratory HPLC chemist, Jenifer Lewis. A secondary review of chromatography by Lancaster concluded that these compounds were not detected in samples. The AMEC validation chemist also agreed with this assessment based on reviews of sample chromatograms. Based on professional judgment, the sample results that were reported in the original lab report for Opex (non-detect in all samples) were accepted.

Kempore were reported in a subset of samples at concentrations slightly above the project quantitation limit of 1,000 µg/L. During the validation task, chromatograms from all sample runs were reviewed. In samples where Kempore was reported, there was some uncertainty in the confidence of identification based on low response (small peaks) or chromatographic peak patterns with RTs that appeared in multiple samples both within and outside the established RT windows. Because of the uncertainty in the dual column results, all detections of Kempore were qualified N indicating uncertainty in the identification.

15.1 Continuing Calibration Standards

The confirmation column percent difference reported for the second continuing calibration for Kempore had a percent difference (22) that exceeded the project goal of 20. Results from all samples were reported from the primary column. Results were reported without additional qualification.

The closing continuing calibration for Opex had percent differences on both columns (21 and 32) that exceeded the project goal of 20. Opex was not detected in associated samples OC-SW-PZ-17RR-XXX and OC-SW-SD-1-XXX, and reporting limits were qualified as estimated (UJ).

15.2 Matrix Spikes

MS/MSD analyses for Kempore were complete using sample OC-SW-ISCO-1. Percent recoveries of Kempore in both the MS and MSD (200 and 168) exceeded the project limits of 75–125 percent. Kempore was not detected in the original run of OC-SW-ISCO-1-XXX. No results were qualified due to the MS/MSD recoveries.

15.3 Detection Limits

<u>Kempore</u>

The laboratory reported matrix interference with the analysis of Kempore in sample OC-SW-EDSD/SW0-XXX. An elevated reporting limit of 3,000 µg/L was reported.

<u>Opex</u>

Based on a review of the initial calibration standards in SDG OLN70, very low response was observed for Opex in the low point standard (approximately 100 µg/L). A low response on the confirmation column indicates that the detection limit of 100 µg/L may not be obtainable. Based on professional judgment the reporting limits for Opex in all samples in SDGs OLN69, OLN70, OLN71, and OLN72 were qualified as estimated (UJ) with a reason code of LS (low sensitivity).

16.0 REFERENCES

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Data validation was completed by project chemists:

Brad LaForest
Chris Ricardi
Michael Washburn
Tige Cunningham – NRCC-EAC
Wolfgang Calicchio

TABLES

Table 1
Sample Summary
Data Validation Report
June 2011 OU1 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Test America Lab Sample ID	Location	Sample ID	Sample Date	SW8260C VOCs	SW8270 SVOCs	WS-MS-0012 NDMA	MAEPH	MAVPH	SW6010 Metals	SW7470A Mercury	SW6020 Metals	SW7199 Hexavalent Chromium	40CFR136A 300.0 Anions	E350.1 (QuickChem 10-107-06-1-B) Ammonia	A2340B Hardness	A5310_TOC_B TOC	A2540D TSS	SW8315 Formaldehyde / Acetaldehyde	LC65 Phthalic Anhydride	GCMS SIM Alkylated Phenols
360-34253-1	ISCO1	OC-SW-ISCO-1-DUP	6/6/2011	77	72	2	22	11	20	1	3	1	5	1	1	1	1	2	1	4
360-34253-2	ISCO1	OC-SW-ISCO-1-XXX	6/6/2011	77	72	2	22	11	20	1	3	1	5	1	1	1	1	2	1	4
360-34253-3	ISCO2	OC-SW-ISCO-2-XXX	6/6/2011	77	72	2	22	11	20	1	3	1	5	1	1	1	1	2	1	4
360-34253-4	MMB-SW/SD-1	OC-SW-MMB-SW/SD-1-DUP	6/6/2011	77	72	2			20	1	3		5	1	1	1	1	2		
360-34253-5	MMB-SW/SD-1	OC-SW-MMB-SW/SD-1-XXX	6/6/2011	77	72	2			20	1	3		5	1	1	1	1	2		
360-34253-6	MMB-SW/SD-9	OC-SW-MMB-SW/SD-9-XXX	6/6/2011	77	72	2			20	1	3		5	1	1	1	1	2		
360-34253-7	PZ-16RR	OC-SW-PZ-16RR-XXX	6/6/2011	77	72	2	22	11	20	1	3		5	1	1	1	1	2	1	4
360-34253-8	PZ-17RR	OC-SW-PZ-17RR-XXX	6/6/2011	77	72	2	22	11	20	1	3		5	1	1	1	1	2	1	4
360-34253-9	SD-1	OC-SW-SD-1-XXX	6/6/2011	77	72	2	22	11	20	1	3		5	1	1	1	1	2	1	
360-34253-10	TRIP BLANK	OC-TBK-078	6/6/2011	77		2		11												
360-34315-1	SDBK-001	OC-SW-SDBK-001-XXX	6/8/2011	77	72	2			20	1	3		5	1	1	1	1			
360-34315-2	SDBK-004	OC-SW-SDBK-004-XXX	6/8/2011	77	72	2			20	1	3		5	1	1	1	1			
360-34315-3	EDSD/SW0	OC-SW-SD-EDSD/SW0-XXX	6/8/2011	77	71	2			20	1	3		5	1	1	1	1			
360-34315-4	EDSD/SW1 (EDBS5)	OC-SW-EDSD/SW1(EDBS5)-XXX	6/8/2011	77	71	2			20	1	3		5	1	1	1	1			
360-34315-5	EDSD/SW2 (EDBS6)	OC-SW-EDSD/SW2(EDBS6)-XXX	6/8/2011	77	71	2			20	1	3	1	5	1	1	1	1			
360-34315-6	EDSD/SW5 (EDBS11)	OC-SW-EDSD/SW5(EDBS11)-XXX	6/8/2011	77	71	2			20	1	3	1	5	1	1	1	1			
360-34315-7	MMB-SW/SD-11	OC-SW-MMB-SW/SD-11-XXX	6/7/2011	77	72	2			20	1	3		5	1	1	1	1	2		
360-34315-8	MMB-SW/SD-2	OC-SW-MMB-SW/SD-2-XXX	6/8/2011	77	72	2			20	1	3		5	1	1	1	1	2		
360-34315-9	MMB-SW/SD-3	OC-SW-MMB-SW/SD-3-XXX	6/8/2011	77	72	2			20	1	3		5	1	1	1	1	2		
360-34315-10	MMB-SW/SD-6	OC-SW-MMB-SW/SD-6-XXX	6/8/2011	77	72	2			20	1	3		5	1	1	1	1	2		
360-34315-11	MMB-SW/SD-8A	OC-SW-MMB-SW/SD-8A-XXX	6/8/2011	77	72	2			20	1	3		5	1	1	1	1	2		
360-34315-12	TRIP BLANK	OC-TBK-080	6/7/2011	77		2														
360-34288-1	OC-PE-METALS	OC-PE-HG5929-HG	6/7/2011							1										
360-34288-2	OC-PE-METALS	OC-PE-IS0662-METAL	6/7/2011						20											
360-34288-3	OC-PE-SVOCS	OC-PE-S80479-SVOC	6/7/2011		72															
360-34288-4	OC-PE-VOCS	OC-PE-V80736-VOC	6/7/2011	77																
360-34288-5	LB-1	OC-SW-LB-1-XXX	6/7/2011	77	72	2			20	1	3		5	1	1	1	1			
360-34288-6	LB-2	OC-SW-LB-2-XXX	6/7/2011	77	72	2			20	1	3		5	1	1	1	1			
360-34288-7	LB-3	OC-SW-LB-3-XXX	6/7/2011	77	72	2			20	1	3		5	1	1	1	1			
360-34288-8	MMB-SW/SD-10	OC-SW-MMB-SW/SD-10-XXX	6/6/2011	77	72				20	1	3		5	1	1	1	1	2		
360-34288-9	MMB-SW/SD-4	OC-SW-MMB-SW/SD-4-XXX	6/6/2011	77	72				20	1	3		5	1	1	1	1	2		
360-34288-10	MMB-SW/SD-5	OC-SW-MMB-SW/SD-5-XXX	6/7/2011	77	72				20	1	3		5	1	1	1	1	2		
360-34288-11	MMB-SW/SD-8	OC-SW-MMB-SW/SD-8-XXX	6/7/2011	77	72				20	1	3		5	1	1	1	1	2		
360-34288-12	OPWD-1	OC-SW-OPWD-1-XXX	6/7/2011	77	71				20	1	3		5	1	1	1	1	2		
360-34288-13	OPWD-2	OC-SW-OPWD-2-XXX	6/7/2011	77	71				20	1	3		5	1	1	1	1	2		
360-34288-14	OPWD-SW-S	OC-SW-OPWD-SD/SO/SW-S-XXX	6/7/2011	77	71				20	1	3	1	5	1	1	1	1			
360-34288-15	SDBK-002	OC-SW-SDBK-002-XXX	6/7/2011	77	72				20	1	3		5	1	1	1	1			
360-34288-16	TRIP BLANK	OC-TBK-079	6/7/2011	77																
360-34288-17	OC-PE-METALS	OC-PE-MW03400-METAL	6/7/2011								3									
360-34288-18	OC-PE-METALS	OC-PE-MW03456-METAL	6/7/2011								3									

Lancaster Lab Sample ID	Location	Sample ID	Sample Date	SW8000B Opex / Kempore	SW8315A MOD Hydrazine
6308055	ISCO1	OC-SW-ISCO-1-XXX	6/6/2011	2	3
6308058	ISCO1	OC-SW-ISCO-1-DUP	6/6/2011	2	3
6308059	ISCO2	OC-SW-ISCO-2-XXX	6/6/2011	2	3
6308060	MMB-SW/SD-10	OC-SW-MMB-SW/SD-10-XXX	6/6/2011		3
6308068	MMB-SW/SD-1	OC-SW-MMB-SW/SD-1-XXX	6/6/2011		3
6308071	MMB-SW/SD-1	OC-SW-MMB-SW/SD-1-DUP	6/6/2011		3
6308072	MMB-SW/SD-4	OC-SW-MMB-SW/SD-4-XXX	6/6/2011		3
6308073	MMB-SW/SD-9	OC-SW-MMB-SW/SD-9-XXX	6/6/2011		3
6308074	PZ-16RR	OC-SW-PZ-16RR-XXX	6/6/2011	2	3
6308075	PZ-17RR	OC-SW-PZ-17RR-XXX	6/6/2011	2	3
6308076	SD-1	OC-SW-SD-1-XXX	6/6/2011	2	3
6309549	MMB-SW/SD-11	OC-SW-MMB-SW/SD-11-XXX	6/7/2011		3
6309550	MMB-SW/SD-5	OC-SW-MMB-SW/SD-5-XXX	6/7/2011	2	3
6309551	MMB-SW/SD-8A	OC-SW-MMB-SW/SD-8A-XXX	6/7/2011		3
6309552	MMB-SW/SD-8	OC-SW-MMB-SW/SD-8-XXX	6/7/2011		3
6309553	OPWD-1	OC-SW-OPWD-1-XXX	6/7/2011	2	3
6309554	OPWD-2	OC-SW-OPWD-2-XXX	6/7/2011	2	3
6309555	OPWD-SW-S	OC-SW-OPWD-SD/SO/SW-S-XXX	6/7/2011	2	
6310720	EDSD/SW0	OC-SW-EDSD/SW0-XXX	6/8/2011	2	
6310721	EDSD/SW1 (EDBS5)	OC-SW-EDSD/SW1(EDBS5)-XXX	6/8/2011	2	
6310722	EDSD/SW2 (EDBS6)	OC-SW-EDSD/SW2(EDBS6)-XXX	6/8/2011	2	
6310723	EDSD/SW5 (EDBS11)	OC-SW-EDSD/SW5(EDBS11)-XXX	6/8/2011	2	
6310724	MMB-SW/SD-2	OC-SW-MMB-SW/SD-2-XXX	6/8/2011	2	3
6310725	MMB-SW/SD-3	OC-SW-MMB-SW/SD-3-XXX	6/8/2011		3
6310726	MMB-SW/SD-6	OC-SW-MMB-SW/SD-6-XXX	6/8/2011		3

Katahdin Lab Sample I	Location	Sample ID	Sample Date	SW8033M Dimethylformamide
SE3250-1	ISCO1	OC-SW-ISCO-1-DUP	06-Jun-11	1
SE3250-2	ISCO1	OC-SW-ISCO-1-XXX	06-Jun-11	1
SE3250-3	ISCO2	OC-SW-ISCO-2-XXX	06-Jun-11	1
SE3250-4	PZ-16RR	OC-SW-PZ-16RR-XXX	06-Jun-11	1
SE3250-5	PZ-17RR	OC-SW-PZ-17RR-XXX	06-Jun-11	1
SE3250-6	SD-1	OC-SW-SD-1-XXX	06-Jun-11	1

Notes:
Number listed under method indicates number of target analytes reported.

Prepared by / Date: KJC 09/12/11
Checked by / Date: TLC 09/19/11

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	EDSD/SW0		EDSD/SW1 (EDBS5)		EDSD/SW2 (EDBS6)		EDSD/SW5 (EDBS11)		ISCO1	
			Field Sample ID	OC-SW-SD-EDSD/SW0-XXX		OC-SW-EDSD/SW1(EDBS5)-XXX		OC-SW-EDSD/SW2(EDBS6)-XXX		OC-SW-EDSD/SW5(EDBS11)-XXX		OC-SW-ISCO-1-DUP	
			Field Sample Date	06/08/11		06/08/11		06/08/11		06/08/11		06/06/11	
			QC Code	FS		FS		FS		FS		FD	
			Lab Sample Delivery Group	360-34315-1		360-34315-1		360-34315-1		360-34315-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	1,1,1,2-Tetrachloroethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1,1-Trichloroethane	ug/l	1	U	1.8		1	U	1	U	1	U
N	SW8260C	1,1,2,2-Tetrachloroethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/l	1	U	1.1		1	U	3.1		1	U
N	SW8260C	1,1,2-Trichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1-Dichloroethane	ug/l	1	U	0.33	J	1	U	1	U	1	U
N	SW8260C	1,1-Dichloroethene	ug/l	1	U	0.78	J	1	U	1	U	1	U
N	SW8260C	1,1-Dichloropropene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,3-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,3-Trichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,4-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,4-Trimethylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dibromo-3-chloropropane	ug/l	5	U	5	U	5	U	5	U	5	U
N	SW8260C	1,2-Dibromoethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,3,5-Trimethylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,3-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,3-Dichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,4-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,4-Dioxane	ug/l	50	U	50	U	50	U	50	U	50	U
N	SW8260C	2,2-Dichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	2,4,4-Trimethyl-1-pentene	ug/l	1	UJ	1	UJ	3.9	J	1	UJ	1	UJ
N	SW8260C	2,4,4-Trimethyl-2-pentene	ug/l	1	U	1	U	0.57	J	1	U	1	U
N	SW8260C	2-Butanone	ug/l	10	U	2.9	J	10	U	1.3	J	10	U
N	SW8260C	2-Chlorotoluene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	2-Hexanone	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	4-Chlorotoluene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	4-iso-Propyltoluene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	4-Methyl-2-pentanone	ug/l	10	U	10	U	10	U	10	U	10	U

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	EDSD/SW0		EDSD/SW1 (EDBS5)		EDSD/SW2 (EDBS6)		EDSD/SW5 (EDBS11)		ISCO1	
			Field Sample ID	OC-SW-SD-EDSD/SW0-XXX		OC-SW-EDSD/SW1(EDBS5)-XXX		OC-SW-EDSD/SW2(EDBS6)-XXX		OC-SW-EDSD/SW5(EDBS11)-XXX		OC-SW-ISCO-1-DUP	
			Field Sample Date	06/08/11		06/08/11		06/08/11		06/08/11		06/06/11	
			QC Code	FS		FS		FS		FS		FD	
			Lab Sample Delivery Group	360-34315-1		360-34315-1		360-34315-1		360-34315-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	Acetic acid, methyl ester	ug/l	20	U	20	U	20	U	20	U	20	U
N	SW8260C	Acetone	ug/l	50	U	50	U	50	U	50	U	50	U
N	SW8260C	Benzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Bromobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Bromochloromethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Bromodichloromethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	Bromoform	ug/l	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
N	SW8260C	Bromomethane	ug/l	2	U	2	U	2	U	2	U	2	U
N	SW8260C	Butane, 2-methoxy-2-methyl-	ug/l	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
N	SW8260C	Carbon disulfide	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Carbon tetrachloride	ug/l	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
N	SW8260C	Chlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Chlorodibromomethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	Chloroethane	ug/l	2	U	2.6		0.44	J	2	U	2	U
N	SW8260C	Chloroform	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Chloromethane	ug/l	2	U	2	U	2	U	2	U	2	U
N	SW8260C	Cis-1,2-Dichloroethene	ug/l	1	U	1	U	1	U	6.1		1	U
N	SW8260C	cis-1,3-Dichloropropene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Cyclohexane	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Dibromomethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Dichlorodifluoromethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Diethyl ether	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Ethyl benzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Ethyl-t-Butyl Ether	ug/l	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
N	SW8260C	Hexachlorobutadiene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Isopropyl ether	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Isopropylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Methyl cyclohexane	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Methyl Tertbutyl Ether	ug/l	1	UJ	0.22	J	1	UJ	1	UJ	1	UJ
N	SW8260C	Methylene chloride	ug/l	2	U	2	U	2	U	2	U	2	U
N	SW8260C	n-Butylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	EDSD/SW0		EDSD/SW1 (EDBS5)		EDSD/SW2 (EDBS6)		EDSD/SW5 (EDBS11)		ISCO1	
			Field Sample ID	OC-SW-SD-EDSD/SW0-XXX		OC-SW-EDSD/SW1(EDBS5)-XXX		OC-SW-EDSD/SW2(EDBS6)-XXX		OC-SW-EDSD/SW5(EDBS11)-XXX		OC-SW-ISCO-1-DUP	
			Field Sample Date	06/08/11		06/08/11		06/08/11		06/08/11		06/06/11	
			QC Code	FS		FS		FS		FS		FD	
			Lab Sample Delivery Group	360-34315-1		360-34315-1		360-34315-1		360-34315-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	Naphthalene	ug/l	5	U	5	U	5	U	5	U	5	U
N	SW8260C	Propylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	sec-Butylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Styrene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	tert-Butylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Tetrachloroethene	ug/l	1	U	1	U	1	U	0.26	J	1	U
N	SW8260C	Tetrahydrofuran	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Toluene	ug/l	1	U	1		1	U	0.74	J	1	U
N	SW8260C	trans-1,2-Dichloroethene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	trans-1,3-Dichloropropene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Trichloroethene	ug/l	1	U	0.48	J	1	U	3.4		1	U
N	SW8260C	Trichlorofluoromethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Vinyl chloride	ug/l	0.5	U	0.5	U	0.5	U	0.52		0.5	U
N	SW8260C	Xylene, o	ug/l	1	U	0.24	J	1	U	1	U	1	U
N	SW8260C	Xylenes (m&p)	ug/l	2	U	0.52	J	2	U	2	U	2	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/l = microgram per liter

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	ISCO1		ISCO2		LB-1		LB-2		LB-3		MMB-SW/SD-1	
			Field Sample ID	OC-SW-ISCO-1-XXX		OC-SW-ISCO-2-XXX		OC-SW-LB-1-XXX		OC-SW-LB-2-XXX		OC-SW-LB-3-XXX		OC-SW-MMB-SW/SD-1-DUP	
			Field Sample Date	06/06/11		06/06/11		06/07/11		06/07/11		06/07/11		06/06/11	
			QC Code	FS		FS		FS		FS		FS		FD	
			Lab Sample Delivery Group	360-34253-1		360-34253-1		360-34288-1		360-34288-1		360-34288-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	1,1,1,2-Tetrachloroethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1,1-Trichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1,2,2-Tetrachloroethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1,2-Trichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1-Dichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1-Dichloroethene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1-Dichloropropene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,3-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,3-Trichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,4-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,4-Trimethylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dibromo-3-chloropropane	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
N	SW8260C	1,2-Dibromoethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,3,5-Trimethylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,3-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,3-Dichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,4-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,4-Dioxane	ug/l	50	U	50	U	50	U	50	U	50	U	50	U
N	SW8260C	2,2-Dichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	2,4,4-Trimethyl-1-pentene	ug/l	1	UJ	1.9	J	1	UJ	1	UJ	1	UJ	1	UJ
N	SW8260C	2,4,4-Trimethyl-2-pentene	ug/l	1	U	0.45	J	1	U	1	U	1	U	1	U
N	SW8260C	2-Butanone	ug/l	10	U	10	U	10	U	10	U	1.4	J	10	U
N	SW8260C	2-Chlorotoluene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	2-Hexanone	ug/l	10	U	10	U	10	U	10	U	10	U	10	U
N	SW8260C	4-Chlorotoluene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	4-iso-Propyltoluene	ug/l	1	U	1	U	1	U	1	U	0.25	J	1	U
N	SW8260C	4-Methyl-2-pentanone	ug/l	10	U	10	U	10	U	10	U	10	U	10	U

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	ISCO1		ISCO2		LB-1		LB-2		LB-3		MMB-SW/SD-1	
			Field Sample ID	OC-SW-ISCO-1-XXX		OC-SW-ISCO-2-XXX		OC-SW-LB-1-XXX		OC-SW-LB-2-XXX		OC-SW-LB-3-XXX		OC-SW-MMB-SW/SD-1-DUP	
			Field Sample Date	06/06/11		06/06/11		06/07/11		06/07/11		06/07/11		06/06/11	
			QC Code	FS		FS		FS		FS		FS		FD	
			Lab Sample Delivery Group	360-34253-1		360-34253-1		360-34288-1		360-34288-1		360-34288-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	Acetic acid, methyl ester	ug/l	20	U	20	U	20	U	20	U	20	U	20	U
N	SW8260C	Acetone	ug/l	50	U	50	U	50	U	50	U	50	U	50	U
N	SW8260C	Benzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Bromobenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Bromochloromethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Bromodichloromethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	Bromoform	ug/l	1	UJ	0.67	J	1	UJ	1	UJ	1	UJ	1	UJ
N	SW8260C	Bromomethane	ug/l	2	U	2	U	2	U	2	U	2	U	2	U
N	SW8260C	Butane, 2-methoxy-2-methyl-	ug/l	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
N	SW8260C	Carbon disulfide	ug/l	0.21	J	10	U	0.43	J	10	UJ	10	UJ	10	U
N	SW8260C	Carbon tetrachloride	ug/l	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
N	SW8260C	Chlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Chlorodibromomethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	Chloroethane	ug/l	2	U	2	U	2	U	2	U	2	U	2	U
N	SW8260C	Chloroform	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Chloromethane	ug/l	2	U	2	U	2	U	2	U	2	U	2	U
N	SW8260C	Cis-1,2-Dichloroethene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	cis-1,3-Dichloropropene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Cyclohexane	ug/l	10	U	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Dibromomethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Dichlorodifluoromethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Diethyl ether	ug/l	10	U	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Ethyl benzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Ethyl-t-Butyl Ether	ug/l	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
N	SW8260C	Hexachlorobutadiene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Isopropyl ether	ug/l	10	U	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Isopropylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Methyl cyclohexane	ug/l	10	U	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Methyl Tertbutyl Ether	ug/l	1	UJ	1	UJ	0.2	J	0.47	J	0.35	J	1	UJ
N	SW8260C	Methylene chloride	ug/l	2	U	2	U	2	UJ	2	UJ	2	UJ	2	U
N	SW8260C	n-Butylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	ISCO1		ISCO2		LB-1		LB-2		LB-3		MMB-SW/SD-1	
			Field Sample ID	OC-SW-ISCO-1-XXX		OC-SW-ISCO-2-XXX		OC-SW-LB-1-XXX		OC-SW-LB-2-XXX		OC-SW-LB-3-XXX		OC-SW-MMB-SW/SD-1-DUP	
			Field Sample Date	06/06/11		06/06/11		06/07/11		06/07/11		06/07/11		06/06/11	
			QC Code	FS		FS		FS		FS		FS		FD	
			Lab Sample Delivery Group	360-34253-1		360-34253-1		360-34288-1		360-34288-1		360-34288-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	Naphthalene	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
N	SW8260C	Propylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	sec-Butylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Styrene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	tert-Butylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Tetrachloroethene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Tetrahydrofuran	ug/l	10	U	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Toluene	ug/l	1	U	1	U	0.36	J	1	U	4.6		1	U
N	SW8260C	trans-1,2-Dichloroethene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	trans-1,3-Dichloropropene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Trichloroethene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Trichlorofluoromethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Vinyl chloride	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	Xylene, o	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Xylenes (m&p)	ug/l	2	U	2	U	2	U	2	U	2	U	2	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/l = microgram per liter

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-1		MMB-SW/SD-10		MMB-SW/SD-11		MMB-SW/SD-2		MMB-SW/SD-3	
			Field Sample ID	OC-SW-MMB-SW/SD-1-XXX		OC-SW-MMB-SW/SD-10-XXX		OC-SW-MMB-SW/SD-11-XXX		OC-SW-MMB-SW/SD-2-XXX		OC-SW-MMB-SW/SD-3-XXX	
			Field Sample Date	06/06/11		06/06/11		06/07/11		06/08/11		06/08/11	
			QC Code	FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34288-1		360-34315-1		360-34315-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	1,1,1,2-Tetrachloroethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1,1-Trichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1,2,2-Tetrachloroethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1,2-Trichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1-Dichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1-Dichloroethene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1-Dichloropropene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,3-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,3-Trichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,4-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,4-Trimethylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dibromo-3-chloropropane	ug/l	5	U	5	U	5	U	5	U	5	U
N	SW8260C	1,2-Dibromoethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,3,5-Trimethylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,3-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,3-Dichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,4-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,4-Dioxane	ug/l	50	U	50	U	50	U	50	U	50	U
N	SW8260C	2,2-Dichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	2,4,4-Trimethyl-1-pentene	ug/l	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
N	SW8260C	2,4,4-Trimethyl-2-pentene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	2-Butanone	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	2-Chlorotoluene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	2-Hexanone	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	4-Chlorotoluene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	4-iso-Propyltoluene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	4-Methyl-2-pentanone	ug/l	10	U	10	U	10	U	10	U	10	U

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-1		MMB-SW/SD-10		MMB-SW/SD-11		MMB-SW/SD-2		MMB-SW/SD-3	
			Field Sample ID	OC-SW-MMB-SW/SD-1-XXX		OC-SW-MMB-SW/SD-10-XXX		OC-SW-MMB-SW/SD-11-XXX		OC-SW-MMB-SW/SD-2-XXX		OC-SW-MMB-SW/SD-3-XXX	
			Field Sample Date	06/06/11		06/06/11		06/07/11		06/08/11		06/08/11	
			QC Code	FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34288-1		360-34315-1		360-34315-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	Acetic acid, methyl ester	ug/l	20	U	20	U	20	U	20	U	20	U
N	SW8260C	Acetone	ug/l	50	U	50	U	50	U	50	U	50	U
N	SW8260C	Benzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Bromobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Bromochloromethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Bromodichloromethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	Bromoform	ug/l	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
N	SW8260C	Bromomethane	ug/l	2	U	2	U	2	U	2	U	2	U
N	SW8260C	Butane, 2-methoxy-2-methyl-	ug/l	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
N	SW8260C	Carbon disulfide	ug/l	10	U	10	UJ	10	U	10	U	0.27	J
N	SW8260C	Carbon tetrachloride	ug/l	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
N	SW8260C	Chlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Chlorodibromomethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	Chloroethane	ug/l	2	U	2	U	2	U	2	U	2	U
N	SW8260C	Chloroform	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Chloromethane	ug/l	2	U	2	U	2	U	2	U	2	U
N	SW8260C	Cis-1,2-Dichloroethene	ug/l	1	U	1	U	1	U	0.2	J	1	U
N	SW8260C	cis-1,3-Dichloropropene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Cyclohexane	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Dibromomethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Dichlorodifluoromethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Diethyl ether	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Ethyl benzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Ethyl-t-Butyl Ether	ug/l	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
N	SW8260C	Hexachlorobutadiene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Isopropyl ether	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Isopropylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Methyl cyclohexane	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Methyl Tertbutyl Ether	ug/l	1	UJ	1	UJ	1	UJ	0.2	J	0.2	J
N	SW8260C	Methylene chloride	ug/l	2	U	2	UJ	2	U	2	U	2	U
N	SW8260C	n-Butylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-1		MMB-SW/SD-10		MMB-SW/SD-11		MMB-SW/SD-2		MMB-SW/SD-3	
			Field Sample ID	OC-SW-MMB-SW/SD-1-XXX		OC-SW-MMB-SW/SD-10-XXX		OC-SW-MMB-SW/SD-11-XXX		OC-SW-MMB-SW/SD-2-XXX		OC-SW-MMB-SW/SD-3-XXX	
			Field Sample Date	06/06/11		06/06/11		06/07/11		06/08/11		06/08/11	
			QC Code	FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34288-1		360-34315-1		360-34315-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	Naphthalene	ug/l	5	U	5	U	5	U	5	U	5	U
N	SW8260C	Propylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	sec-Butylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Styrene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	tert-Butylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Tetrachloroethene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Tetrahydrofuran	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Toluene	ug/l	1	U	1	U	1	U	1	U	0.75	J
N	SW8260C	trans-1,2-Dichloroethene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	trans-1,3-Dichloropropene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Trichloroethene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Trichlorofluoromethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Vinyl chloride	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	Xylene, o	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Xylenes (m&p)	ug/l	2	U	2	U	2	U	2	U	2	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/l = microgram per liter

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-4		MMB-SW/SD-5		MMB-SW/SD-6		MMB-SW/SD-8		MMB-SW/SD-8A	
			Field Sample ID	OC-SW-MMB-SW/SD-4-XXX		OC-SW-MMB-SW/SD-5-XXX		OC-SW-MMB-SW/SD-6-XXX		OC-SW-MMB-SW/SD-8-XXX		OC-SW-MMB-SW/SD-8A-XXX	
			Field Sample Date	06/06/11		06/07/11		06/08/11		06/07/11		06/08/11	
			QC Code	FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34288-1		360-34288-1		360-34315-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	1,1,1,2-Tetrachloroethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1,1-Trichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1,2,2-Tetrachloroethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1,2-Trichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1-Dichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1-Dichloroethene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1-Dichloropropene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,3-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,3-Trichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,4-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,4-Trimethylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dibromo-3-chloropropane	ug/l	5	U	5	U	5	U	5	U	5	U
N	SW8260C	1,2-Dibromoethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,3,5-Trimethylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,3-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,3-Dichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,4-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,4-Dioxane	ug/l	50	U	50	U	50	U	50	U	50	U
N	SW8260C	2,2-Dichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	2,4,4-Trimethyl-1-pentene	ug/l	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
N	SW8260C	2,4,4-Trimethyl-2-pentene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	2-Butanone	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	2-Chlorotoluene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	2-Hexanone	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	4-Chlorotoluene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	4-iso-Propyltoluene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	4-Methyl-2-pentanone	ug/l	10	U	10	U	10	U	10	U	10	U

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-4		MMB-SW/SD-5		MMB-SW/SD-6		MMB-SW/SD-8		MMB-SW/SD-8A	
			Field Sample ID	OC-SW-MMB-SW/SD-4-XXX		OC-SW-MMB-SW/SD-5-XXX		OC-SW-MMB-SW/SD-6-XXX		OC-SW-MMB-SW/SD-8-XXX		OC-SW-MMB-SW/SD-8A-XXX	
			Field Sample Date	06/06/11		06/07/11		06/08/11		06/07/11		06/08/11	
			QC Code	FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34288-1		360-34288-1		360-34315-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	Acetic acid, methyl ester	ug/l	20	U	20	U	20	U	20	U	20	U
N	SW8260C	Acetone	ug/l	50	U	50	U	50	U	50	U	50	U
N	SW8260C	Benzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Bromobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Bromochloromethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Bromodichloromethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	Bromoform	ug/l	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
N	SW8260C	Bromomethane	ug/l	2	U	2	U	2	U	2	U	2	U
N	SW8260C	Butane, 2-methoxy-2-methyl-	ug/l	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
N	SW8260C	Carbon disulfide	ug/l	10	UJ	10	UJ	0.29	J	10	UJ	0.28	J
N	SW8260C	Carbon tetrachloride	ug/l	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
N	SW8260C	Chlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Chlorodibromomethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	Chloroethane	ug/l	2	U	2	U	2	U	2	U	2	U
N	SW8260C	Chloroform	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Chloromethane	ug/l	2	U	2	U	2	U	2	U	2	U
N	SW8260C	Cis-1,2-Dichloroethene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	cis-1,3-Dichloropropene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Cyclohexane	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Dibromomethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Dichlorodifluoromethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Diethyl ether	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Ethyl benzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Ethyl-t-Butyl Ether	ug/l	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
N	SW8260C	Hexachlorobutadiene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Isopropyl ether	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Isopropylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Methyl cyclohexane	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Methyl Tertbutyl Ether	ug/l	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
N	SW8260C	Methylene chloride	ug/l	2	UJ	2	UJ	2	U	2	UJ	2	U
N	SW8260C	n-Butylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-4		MMB-SW/SD-5		MMB-SW/SD-6		MMB-SW/SD-8		MMB-SW/SD-8A	
			Field Sample ID	OC-SW-MMB-SW/SD-4-XXX		OC-SW-MMB-SW/SD-5-XXX		OC-SW-MMB-SW/SD-6-XXX		OC-SW-MMB-SW/SD-8-XXX		OC-SW-MMB-SW/SD-8A-XXX	
			Field Sample Date	06/06/11		06/07/11		06/08/11		06/07/11		06/08/11	
			QC Code	FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34288-1		360-34288-1		360-34315-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	Naphthalene	ug/l	5	U	5	U	5	U	5	U	5	U
N	SW8260C	Propylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	sec-Butylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Styrene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	tert-Butylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Tetrachloroethene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Tetrahydrofuran	ug/l	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Toluene	ug/l	1	U	1	U	0.4	J	1	U	0.34	J
N	SW8260C	trans-1,2-Dichloroethene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	trans-1,3-Dichloropropene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Trichloroethene	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Trichlorofluoromethane	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Vinyl chloride	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	Xylene, o	ug/l	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Xylenes (m&p)	ug/l	2	U	2	U	2	U	2	U	2	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/l = microgram per liter

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-9		OPWD-1		OPWD-2		OPWD-SW-S		PZ-16RR		PZ-17RR	
			Field Sample ID	OC-SW-MMB-SW/SD-9-XXX		OC-SW-OPWD-1-XXX		OC-SW-OPWD-2-XXX		OC-SW-OPWD-SD/SO/SW-S-XXX		OC-SW-PZ-16RR-XXX		OC-SW-PZ-17RR-XXX	
			Field Sample Date	06/06/11		06/07/11		06/07/11		06/07/11		06/06/11		06/06/11	
			QC Code	FS		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34288-1		360-34288-1		360-34288-1		360-34253-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	1,1,1,2-Tetrachloroethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1,1-Trichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1,2,2-Tetrachloroethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1,2-Trichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1-Dichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1-Dichloroethene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,1-Dichloropropene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,3-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,3-Trichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,4-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2,4-Trimethylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dibromo-3-chloropropane	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
N	SW8260C	1,2-Dibromoethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichloroethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,3,5-Trimethylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,3-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U	0.3	J	0.57	J
N	SW8260C	1,3-Dichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,4-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	1,4-Dioxane	ug/l	50	U	50	U	50	U	50	U	50	U	50	U
N	SW8260C	2,2-Dichloropropane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	2,4,4-Trimethyl-1-pentene	ug/l	1	UJ	1	UJ	7.1	J	1	UJ	5.6	J	10	J
N	SW8260C	2,4,4-Trimethyl-2-pentene	ug/l	1	U	1	U	1.9		1	U	1.2		2	
N	SW8260C	2-Butanone	ug/l	10	U	10	U	10	U	10	U	10	U	10	U
N	SW8260C	2-Chlorotoluene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	2-Hexanone	ug/l	10	U	10	U	10	U	10	U	10	U	10	U
N	SW8260C	4-Chlorotoluene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	4-iso-Propyltoluene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	4-Methyl-2-pentanone	ug/l	10	U	10	U	10	U	10	U	10	U	10	U

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-9		OPWD-1		OPWD-2		OPWD-SW-S		PZ-16RR		PZ-17RR	
			Field Sample ID	OC-SW-MMB-SW/SD-9-XXX		OC-SW-OPWD-1-XXX		OC-SW-OPWD-2-XXX		OC-SW-OPWD-SD/SO/SW-S-XXX		OC-SW-PZ-16RR-XXX		OC-SW-PZ-17RR-XXX	
			Field Sample Date	06/06/11		06/07/11		06/07/11		06/07/11		06/06/11		06/06/11	
			QC Code	FS		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34288-1		360-34288-1		360-34288-1		360-34253-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	Acetic acid, methyl ester	ug/l	20	U	20	U	20	U	20	U	20	U	20	U
N	SW8260C	Acetone	ug/l	50	U	50	U	50	U	50	U	50	U	50	U
N	SW8260C	Benzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Bromobenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Bromochloromethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Bromodichloromethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.21	J	0.51	
N	SW8260C	Bromoform	ug/l	1	UJ	1	UJ	1	UJ	1	UJ	1.8		3.4	
N	SW8260C	Bromomethane	ug/l	2	U	2	U	2	U	2	U	2	U	2	U
N	SW8260C	Butane, 2-methoxy-2-methyl-	ug/l	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
N	SW8260C	Carbon disulfide	ug/l	10	U	10	UJ	2.5	J	10	UJ	10	U	10	U
N	SW8260C	Carbon tetrachloride	ug/l	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
N	SW8260C	Chlorobenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Chlorodibromomethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.48	J	1	
N	SW8260C	Chloroethane	ug/l	2	U	2	U	2	U	2	U	2	U	2	U
N	SW8260C	Chloroform	ug/l	1	U	1	U	1	U	1	U	0.49	J	1.2	
N	SW8260C	Chloromethane	ug/l	2	U	2	U	2	U	2	U	2	U	2	U
N	SW8260C	Cis-1,2-Dichloroethene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	cis-1,3-Dichloropropene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Cyclohexane	ug/l	10	U	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Dibromomethane	ug/l	1	U	1	U	1	U	1	U	0.57	J	1.1	
N	SW8260C	Dichlorodifluoromethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Diethyl ether	ug/l	10	U	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Ethyl benzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Ethyl-t-Butyl Ether	ug/l	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ
N	SW8260C	Hexachlorobutadiene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Isopropyl ether	ug/l	10	U	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Isopropylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Methyl cyclohexane	ug/l	10	U	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Methyl Tertbutyl Ether	ug/l	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
N	SW8260C	Methylene chloride	ug/l	2	U	2	UJ	2	UJ	2	UJ	2	U	2	U
N	SW8260C	n-Butylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-9		OPWD-1		OPWD-2		OPWD-SW-S		PZ-16RR		PZ-17RR	
			Field Sample ID	OC-SW-MMB-SW/SD-9-XXX		OC-SW-OPWD-1-XXX		OC-SW-OPWD-2-XXX		OC-SW-OPWD-SD/SO/SW-S-XXX		OC-SW-PZ-16RR-XXX		OC-SW-PZ-17RR-XXX	
			Field Sample Date	06/06/11		06/07/11		06/07/11		06/07/11		06/06/11		06/06/11	
			QC Code	FS		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34288-1		360-34288-1		360-34288-1		360-34253-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	Naphthalene	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
N	SW8260C	Propylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	sec-Butylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Styrene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	tert-Butylbenzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Tetrachloroethene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Tetrahydrofuran	ug/l	10	U	10	U	10	U	10	U	10	U	10	U
N	SW8260C	Toluene	ug/l	1	U	1	U	0.5	J	1	U	1	U	0.48	J
N	SW8260C	trans-1,2-Dichloroethene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	trans-1,3-Dichloropropene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Trichloroethene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Trichlorofluoromethane	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Vinyl chloride	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	Xylene, o	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	SW8260C	Xylenes (m&p)	ug/l	2	U	2	U	2	U	2	U	2	U	2	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/l = microgram per liter

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	SD-1		SDBK-001		SDBK-002		SDBK-004	
			Field Sample ID	OC-SW-SD-1-XXX		OC-SW-SDBK-001-XXX		OC-SW-SDBK-002-XXX		OC-SW-SDBK-004-XXX	
			Field Sample Date	06/06/11		06/08/11		06/07/11		06/08/11	
			QC Code	FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34315-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	1,1,1,2-Tetrachloroethane	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,1,1-Trichloroethane	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,1,2,2-Tetrachloroethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,1,2-Trichloroethane	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,1-Dichloroethane	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,1-Dichloroethene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,1-Dichloropropene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,2,3-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,2,3-Trichloropropane	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,2,4-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,2,4-Trimethylbenzene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dibromo-3-chloropropane	ug/l	5	U	5	U	5	U	5	U
N	SW8260C	1,2-Dibromoethane	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichloroethane	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,2-Dichloropropane	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,3,5-Trimethylbenzene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,3-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,3-Dichloropropane	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,4-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	1,4-Dioxane	ug/l	50	U	50	U	50	U	50	U
N	SW8260C	2,2-Dichloropropane	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	2,4,4-Trimethyl-1-pentene	ug/l	1.9	J	1	UJ	1	UJ	1	UJ
N	SW8260C	2,4,4-Trimethyl-2-pentene	ug/l	0.44	J	1	U	1	U	1	U
N	SW8260C	2-Butanone	ug/l	10	U	10	U	10	U	10	U
N	SW8260C	2-Chlorotoluene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	2-Hexanone	ug/l	10	U	10	U	10	U	10	U
N	SW8260C	4-Chlorotoluene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	4-iso-Propyltoluene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	4-Methyl-2-pentanone	ug/l	10	U	10	U	10	U	10	U

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	SD-1		SDBK-001		SDBK-002		SDBK-004	
			Field Sample ID	OC-SW-SD-1-XXX		OC-SW-SDBK-001-XXX		OC-SW-SDBK-002-XXX		OC-SW-SDBK-004-XXX	
			Field Sample Date	06/06/11		06/08/11		06/07/11		06/08/11	
			QC Code	FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34315-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	Acetic acid, methyl ester	ug/l	20	U	20	U	20	U	20	U
N	SW8260C	Acetone	ug/l	50	U	50	U	50	U	50	U
N	SW8260C	Benzene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	Bromobenzene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	Bromochloromethane	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	Bromodichloromethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	Bromoform	ug/l	0.72	J	1	UJ	1	UJ	1	UJ
N	SW8260C	Bromomethane	ug/l	2	U	2	U	2	U	2	U
N	SW8260C	Butane, 2-methoxy-2-methyl-	ug/l	5	UJ	5	UJ	5	UJ	5	UJ
N	SW8260C	Carbon disulfide	ug/l	10	U	0.4	J	10	UJ	10	U
N	SW8260C	Carbon tetrachloride	ug/l	1	UJ	1	UJ	1	UJ	1	UJ
N	SW8260C	Chlorobenzene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	Chlorodibromomethane	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	Chloroethane	ug/l	2	U	2	U	2	U	2	U
N	SW8260C	Chloroform	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	Chloromethane	ug/l	2	U	2	U	2	U	2	U
N	SW8260C	Cis-1,2-Dichloroethene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	cis-1,3-Dichloropropene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Cyclohexane	ug/l	10	U	10	U	10	U	10	U
N	SW8260C	Dibromomethane	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	Dichlorodifluoromethane	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	Diethyl ether	ug/l	10	U	10	U	10	U	10	U
N	SW8260C	Ethyl benzene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	Ethyl-t-Butyl Ether	ug/l	5	UJ	5	UJ	5	UJ	5	UJ
N	SW8260C	Hexachlorobutadiene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Isopropyl ether	ug/l	10	U	10	U	10	U	10	U
N	SW8260C	Isopropylbenzene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	Methyl cyclohexane	ug/l	10	U	10	U	10	U	10	U
N	SW8260C	Methyl Tertbutyl Ether	ug/l	1	UJ	1	UJ	1	UJ	1	UJ
N	SW8260C	Methylene chloride	ug/l	2	U	2	U	2	UJ	2	U
N	SW8260C	n-Butylbenzene	ug/l	1	U	1	U	1	U	1	U

Table 2.2
Final Results Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	SD-1		SDBK-001		SDBK-002		SDBK-004	
			Field Sample ID	OC-SW-SD-1-XXX		OC-SW-SDBK-001-XXX		OC-SW-SDBK-002-XXX		OC-SW-SDBK-004-XXX	
			Field Sample Date	06/06/11		06/08/11		06/07/11		06/08/11	
			QC Code	FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34315-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8260C	Naphthalene	ug/l	5	U	5	U	5	U	5	U
N	SW8260C	Propylbenzene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	sec-Butylbenzene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	Styrene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	tert-Butylbenzene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	Tetrachloroethene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	Tetrahydrofuran	ug/l	10	U	10	U	10	U	10	U
N	SW8260C	Toluene	ug/l	1	U	1.3		1	U	1	U
N	SW8260C	trans-1,2-Dichloroethene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	trans-1,3-Dichloropropene	ug/l	0.4	U	0.4	U	0.4	U	0.4	U
N	SW8260C	Trichloroethene	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	Trichlorofluoromethane	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	Vinyl chloride	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8260C	Xylene, o	ug/l	1	U	1	U	1	U	1	U
N	SW8260C	Xylenes (m&p)	ug/l	2	U	2	U	2	U	2	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/l = microgram per liter

Prepared by / Date: KJC 08/23/11

Checked by / Date: BBL 08/24/11

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	EDSD/SW0		EDSD/SW1 (EDBS5)		EDSD/SW2 (EDBS6)		EDSD/SW5 (EDBS11)		ISCO1	
			Field Sample ID	OC-SW-SD-EDSD/SW0-XXX		OC-SW-EDSD/SW1(EDBS5)-XXX		OC-SW-EDSD/SW2(EDBS6)-XXX		OC-SW-EDSD/SW5(EDBS11)-XXX		OC-SW-ISCO-1-DUP	
			Field Sample Date	06/08/11		06/08/11		06/08/11		06/08/11		06/06/11	
			QC Code	FS		FS		FS		FS		FD	
			Lab Sample Delivery Group	360-34315-1		360-34315-1		360-34315-1		360-34315-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	1,2,4,5-Tetrachlorobenzene	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	1-Methylnaphthalene	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	2,3,4,6-Tetrachlorophenol	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	2,4,5-Trichlorophenol	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	2,4,6-Trichlorophenol	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	2,4-Dichlorophenol	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	2,4-Dimethylphenol	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	2,4-Dinitrophenol	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	2,4-Dinitrotoluene	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	2,6-Dinitrotoluene	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	2-Chloronaphthalene	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	2-Chlorophenol	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	2-Methylnaphthalene	ug/l	1	U	0.95	U	1	U	1.1	U	0.91	U
N	SW8270	2-Methylphenol	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	2-Nitroaniline	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	2-Nitrophenol	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	3 & 4 Methylphenol	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	3,3`-Dichlorobenzidine	ug/l	5	U	4.8	U	5	U	5.3	U		R
N	SW8270	3-Nitroaniline	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	4,6-Dinitro-2-methylphenol	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	4-Bromophenyl phenyl ether	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	4-Chloro-3-methylphenol	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	4-Chloroaniline	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	4-Chlorophenyl phenyl ether	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	4-Nitroaniline	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	4-Nitrophenol	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Acenaphthene	ug/l	1	U	0.95	U	1	U	1.1	U	0.91	U
N	SW8270	Acenaphthylene	ug/l	0.3	U	0.29	U	0.3	U	0.32	U	0.27	U
N	SW8270	Acetophenone	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Aniline	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	UJ

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	EDSD/SW0		EDSD/SW1 (EDBS5)		EDSD/SW2 (EDBS6)		EDSD/SW5 (EDBS11)		ISCO1	
			Field Sample ID	OC-SW-SD-EDSD/SW0-XXX		OC-SW-EDSD/SW1(EDBS5)-XXX		OC-SW-EDSD/SW2(EDBS6)-XXX		OC-SW-EDSD/SW5(EDBS11)-XXX		OC-SW-ISCO-1-DUP	
			Field Sample Date	06/08/11		06/08/11		06/08/11		06/08/11		06/06/11	
			QC Code	FS		FS		FS		FS		FD	
			Lab Sample Delivery Group	360-34315-1		360-34315-1		360-34315-1		360-34315-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	Anthracene	ug/l	1	U	0.95	U	1	U	1.1	U	0.91	U
N	SW8270	Atrazine	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Azobenzene	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Benzaldehyde	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Benzo(a)anthracene	ug/l	0.3	U	0.29	U	0.3	U	0.32	U	0.27	U
N	SW8270	Benzo(a)pyrene	ug/l	0.2	U	0.19	U	0.2	U	0.21	U	0.18	U
N	SW8270	Benzo(b)fluoranthene	ug/l	0.3	U	0.29	U	0.3	U	0.32	U	0.27	UJ
N	SW8270	Benzo(ghi)perylene	ug/l	0.5	U	0.48	U	0.5	U	0.53	U	0.45	U
N	SW8270	Benzo(k)fluoranthene	ug/l	0.3	U	0.29	U	0.3	U	0.32	U	0.27	U
N	SW8270	Benzoic Acid	ug/l	2.1	J	1.9	J	2.1	J	5.3	U	1.9	J
N	SW8270	Benzyl alcohol	ug/l	10	U	9.5	U	10	U	11	U	9.1	U
N	SW8270	Biphenyl	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Bis(2-Chloroethoxy)methane	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Bis(2-Chloroethyl)ether	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Bis(2-Chloroisopropyl)ether	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Bis(2-Ethylhexyl)phthalate	ug/l	2	U	1.9	U	2	U	2.1	U	1.8	U
N	SW8270	Butylbenzylphthalate	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Caprolactum	ug/l	0.73	J	4.8	UJ	5	UJ	5.3	UJ	4.5	UJ
N	SW8270	Carbazole	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Chrysene	ug/l	1	U	0.95	U	1	U	1.1	U	0.91	U
N	SW8270	Di-n-butylphthalate	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Di-n-octylphthalate	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Dibenz(a,h)anthracene	ug/l	0.5	U	0.48	U	0.5	U	0.53	U	0.45	U
N	SW8270	Dibenzofuran	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Diethylphthalate	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Dimethylphthalate	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Diphenyl ether	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Diphenylamine	ug/l									4.5	U
N	SW8270	Diphenylmethanone	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Fluoranthene	ug/l	1	U	0.95	U	1	U	1.1	U	0.91	U

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	EDSD/SW0		EDSD/SW1 (EDBS5)		EDSD/SW2 (EDBS6)		EDSD/SW5 (EDBS11)		ISCO1	
			Field Sample ID	OC-SW-SD-EDSD/SW0-XXX		OC-SW-EDSD/SW1(EDBS5)-XXX		OC-SW-EDSD/SW2(EDBS6)-XXX		OC-SW-EDSD/SW5(EDBS11)-XXX		OC-SW-ISCO-1-DUP	
			Field Sample Date	06/08/11		06/08/11		06/08/11		06/08/11		06/06/11	
			QC Code	FS		FS		FS		FS		FD	
			Lab Sample Delivery Group	360-34315-1		360-34315-1		360-34315-1		360-34315-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	Fluorene	ug/l	1	U	0.95	U	1	U	1.1	U	0.91	U
N	SW8270	Hexachlorobenzene	ug/l	1	U	0.95	U	1	U	1.1	U	0.91	U
N	SW8270	Hexachlorocyclopentadiene	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Hexachloroethane	ug/l	3	U	2.9	U	3	U	3.2	U	2.7	U
N	SW8270	Indeno(1,2,3-cd)pyrene	ug/l	0.5	U	0.48	U	0.5	U	0.53	U	0.45	U
N	SW8270	Isophorone	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	N-Nitrosodi-n-propylamine	ug/l										
N	SW8270	N-Nitrosodiphenylamine	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Nitrobenzene	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U
N	SW8270	Pentachlorophenol	ug/l	1	U	0.95	U	1	U	1.1	U	0.91	U
N	SW8270	Phenanthrene	ug/l	0.2	U	0.19	U	0.2	U	0.21	U	0.18	U
N	SW8270	Phenol	ug/l	5	UJ	4.8	UJ	5	UJ	5.3	UJ	4.5	UJ
N	SW8270	Pyrene	ug/l	5	U	4.8	U	5	U	5.3	U	4.5	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

R = value is rejected

ug/l = microgram per liter

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	ISCO1		ISCO2		LB-1		LB-2		LB-3		MMB-SW/SD-1	
			Field Sample ID	OC-SW-ISCO-1-XXX		OC-SW-ISCO-2-XXX		OC-SW-LB-1-XXX		OC-SW-LB-2-XXX		OC-SW-LB-3-XXX		OC-SW-MMB-SW/SD-1-DUP	
			Field Sample Date	06/06/11		06/06/11		06/07/11		06/07/11		06/07/11		06/06/11	
			QC Code	FS		FS		FS		FS		FS		FD	
			Lab Sample Delivery Group	360-34253-1		360-34253-1		360-34288-1		360-34288-1		360-34288-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	1,2,4,5-Tetrachlorobenzene	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	1-Methylnaphthalene	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	2,3,4,6-Tetrachlorophenol	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	2,4,5-Trichlorophenol	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	2,4,6-Trichlorophenol	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	2,4-Dichlorophenol	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	2,4-Dimethylphenol	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	2,4-Dinitrophenol	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	2,4-Dinitrotoluene	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	2,6-Dinitrotoluene	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	2-Chloronaphthalene	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	2-Chlorophenol	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	2-Methylnaphthalene	ug/l	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U
N	SW8270	2-Methylphenol	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	2-Nitroaniline	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	2-Nitrophenol	ug/l	4.5	U	0.91	J	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	3 & 4 Methylphenol	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	3,3`-Dichlorobenzidine	ug/l		R	4.5	U	4.5	U	4.5	U	4.5	U		R
N	SW8270	3-Nitroaniline	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	4,6-Dinitro-2-methylphenol	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	4-Bromophenyl phenyl ether	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	4-Chloro-3-methylphenol	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	4-Chloroaniline	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	4-Chlorophenyl phenyl ether	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	4-Nitroaniline	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	4-Nitrophenol	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Acenaphthene	ug/l	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U
N	SW8270	Acenaphthylene	ug/l	0.27	U	0.27	U	0.27	U	0.27	U	0.27	U	0.27	U
N	SW8270	Acetophenone	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Aniline	ug/l	4.5	UJ	4.5	UJ	4.5	UJ	4.5	UJ	4.5	UJ	4.5	UJ

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	ISCO1		ISCO2		LB-1		LB-2		LB-3		MMB-SW/SD-1	
			Field Sample ID	OC-SW-ISCO-1-XXX		OC-SW-ISCO-2-XXX		OC-SW-LB-1-XXX		OC-SW-LB-2-XXX		OC-SW-LB-3-XXX		OC-SW-MMB-SW/SD-1-DUP	
			Field Sample Date	06/06/11		06/06/11		06/07/11		06/07/11		06/07/11		06/06/11	
			QC Code	FS		FS		FS		FS		FS		FD	
			Lab Sample Delivery Group	360-34253-1		360-34253-1		360-34288-1		360-34288-1		360-34288-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	Anthracene	ug/l	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U
N	SW8270	Atrazine	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Azobenzene	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Benzaldehyde	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Benzo(a)anthracene	ug/l	0.27	U	0.27	U	0.27	U	0.27	U	0.27	U	0.27	U
N	SW8270	Benzo(a)pyrene	ug/l	0.18	U	0.15	J	0.18	U	0.17	J	0.18	U	0.18	U
N	SW8270	Benzo(b)fluoranthene	ug/l	0.27	UJ	0.27	UJ	0.27	UJ	0.13	J	0.27	UJ	0.27	UJ
N	SW8270	Benzo(ghi)perylene	ug/l	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U
N	SW8270	Benzo(k)fluoranthene	ug/l	0.27	U	0.27	U	0.27	U	0.15	J	0.27	U	0.27	U
N	SW8270	Benzoic Acid	ug/l	1.9	J	1.9	J	2	J	1.9	J	1.9	J	1.9	J
N	SW8270	Benzyl alcohol	ug/l	9.1	U	9.1	U	9.1	U	9.1	U	9.1	U	9.1	U
N	SW8270	Biphenyl	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Bis(2-Chloroethoxy)methane	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Bis(2-Chloroethyl)ether	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Bis(2-Chloroisopropyl)ether	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Bis(2-Ethylhexyl)phthalate	ug/l	1.8	U	6.1		0.74	J	1.8	U	1.8	U	1.8	U
N	SW8270	Butylbenzylphthalate	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Caprolactum	ug/l	4.5	UJ	4.5	UJ	4.5	UJ	4.5	UJ	4.5	UJ	4.5	UJ
N	SW8270	Carbazole	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Chrysene	ug/l	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U
N	SW8270	Di-n-butylphthalate	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Di-n-octylphthalate	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Dibenz(a,h)anthracene	ug/l	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U
N	SW8270	Dibenzofuran	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Diethylphthalate	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Dimethylphthalate	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Diphenyl ether	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Diphenylamine	ug/l	4.5	U	4.5	U							4.5	U
N	SW8270	Diphenylmethanone	ug/l	4.5	U	0.67	J	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Fluoranthene	ug/l	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	ISCO1		ISCO2		LB-1		LB-2		LB-3		MMB-SW/SD-1	
			Field Sample ID	OC-SW-ISCO-1-XXX		OC-SW-ISCO-2-XXX		OC-SW-LB-1-XXX		OC-SW-LB-2-XXX		OC-SW-LB-3-XXX		OC-SW-MMB-SW/SD-1-DUP	
			Field Sample Date	06/06/11		06/06/11		06/07/11		06/07/11		06/07/11		06/06/11	
			QC Code	FS		FS		FS		FS		FS		FD	
			Lab Sample Delivery Group	360-34253-1		360-34253-1		360-34288-1		360-34288-1		360-34288-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	Fluorene	ug/l	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U
N	SW8270	Hexachlorobenzene	ug/l	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U
N	SW8270	Hexachlorocyclopentadiene	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Hexachloroethane	ug/l	2.7	U	2.7	U	2.7	U	2.7	U	2.7	U	2.7	U
N	SW8270	Indeno(1,2,3-cd)pyrene	ug/l	0.45	U	0.45	U	0.45	U	0.2	J	0.45	U	0.2	J
N	SW8270	Isophorone	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	N-Nitrosodi-n-propylamine	ug/l					4.5	U	4.5	U	4.5	U		
N	SW8270	N-Nitrosodiphenylamine	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Nitrobenzene	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Pentachlorophenol	ug/l	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U
N	SW8270	Phenanthrene	ug/l	0.18	U	0.18	U	0.18	U	0.18	U	0.18	U	0.18	U
N	SW8270	Phenol	ug/l	4.5	UJ	4.5	UJ	4.5	UJ	4.5	UJ	4.5	UJ	4.5	UJ
N	SW8270	Pyrene	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

R = value is rejected

ug/l = microgram per liter

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-1		MMB-SW/SD-10		MMB-SW/SD-11		MMB-SW/SD-2		MMB-SW/SD-3	
			Field Sample ID	OC-SW-MMB-SW/SD-1-XXX		OC-SW-MMB-SW/SD-10-XXX		OC-SW-MMB-SW/SD-11-XXX		OC-SW-MMB-SW/SD-2-XXX		OC-SW-MMB-SW/SD-3-XXX	
			Field Sample Date	06/06/11		06/06/11		06/07/11		06/08/11		06/08/11	
			QC Code	FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34288-1		360-34315-1		360-34315-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	1,2,4,5-Tetrachlorobenzene	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	1-Methylnaphthalene	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	2,3,4,6-Tetrachlorophenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	2,4,5-Trichlorophenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	2,4,6-Trichlorophenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	2,4-Dichlorophenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	2,4-Dimethylphenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	2,4-Dinitrophenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	2,4-Dinitrotoluene	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	2,6-Dinitrotoluene	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	2-Chloronaphthalene	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	2-Chlorophenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	2-Methylnaphthalene	ug/l	0.91	U	0.91	U	0.91	U	1	U	1	U
N	SW8270	2-Methylphenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	2-Nitroaniline	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	2-Nitrophenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	3 & 4 Methylphenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	3,3`-Dichlorobenzidine	ug/l	R		4.5	U	4.5	U	5	U	5	U
N	SW8270	3-Nitroaniline	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	4,6-Dinitro-2-methylphenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	4-Bromophenyl phenyl ether	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	4-Chloro-3-methylphenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	4-Chloroaniline	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	4-Chlorophenyl phenyl ether	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	4-Nitroaniline	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	4-Nitrophenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Acenaphthene	ug/l	0.91	U	0.91	U	0.91	U	1	U	1	U
N	SW8270	Acenaphthylene	ug/l	0.27	U	0.27	U	0.27	U	0.3	U	0.3	U
N	SW8270	Acetophenone	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Aniline	ug/l	4.5	UJ	4.5	UJ	4.5	U	5	U	5	U

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-1		MMB-SW/SD-10		MMB-SW/SD-11		MMB-SW/SD-2		MMB-SW/SD-3	
			Field Sample ID	OC-SW-MMB-SW/SD-1-XXX		OC-SW-MMB-SW/SD-10-XXX		OC-SW-MMB-SW/SD-11-XXX		OC-SW-MMB-SW/SD-2-XXX		OC-SW-MMB-SW/SD-3-XXX	
			Field Sample Date	06/06/11		06/06/11		06/07/11		06/08/11		06/08/11	
			QC Code	FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34288-1		360-34315-1		360-34315-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	Anthracene	ug/l	0.91	U	0.91	U	0.91	U	1	U	1	U
N	SW8270	Atrazine	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Azobenzene	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Benzaldehyde	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Benzo(a)anthracene	ug/l	0.27	U	0.27	U	0.27	U	0.3	U	0.3	U
N	SW8270	Benzo(a)pyrene	ug/l	0.18	U	0.18	U	0.18	U	0.2	U	0.2	U
N	SW8270	Benzo(b)fluoranthene	ug/l	0.27	UJ	0.27	UJ	0.27	U	0.3	U	0.3	U
N	SW8270	Benzo(ghi)perylene	ug/l	0.45	U	0.45	U	0.45	U	0.5	U	0.5	U
N	SW8270	Benzo(k)fluoranthene	ug/l	0.27	U	0.27	U	0.27	U	0.3	U	0.3	U
N	SW8270	Benzoic Acid	ug/l	4.5	U	4.5	U	1.9	J	2.2	J	2.1	J
N	SW8270	Benzyl alcohol	ug/l	9.1	U	9.1	U	9.1	U	10	U	10	U
N	SW8270	Biphenyl	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Bis(2-Chloroethoxy)methane	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Bis(2-Chloroethyl)ether	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Bis(2-Chloroisopropyl)ether	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Bis(2-Ethylhexyl)phthalate	ug/l	1.8	U	1.8	U	1.8	U	2	U	2	U
N	SW8270	Butylbenzylphthalate	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Caprolactum	ug/l	4.5	UJ	4.5	UJ	4.5	UJ	5	UJ	0.66	J
N	SW8270	Carbazole	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Chrysene	ug/l	0.91	U	0.91	U	0.91	U	1	U	1	U
N	SW8270	Di-n-butylphthalate	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Di-n-octylphthalate	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Dibenz(a,h)anthracene	ug/l	0.45	U	0.45	U	0.45	U	0.5	U	0.5	U
N	SW8270	Dibenzofuran	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Diethylphthalate	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Dimethylphthalate	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Diphenyl ether	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Diphenylamine	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Diphenylmethanone	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Fluoranthene	ug/l	0.91	U	0.91	U	0.91	U	1	U	1	U

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-1		MMB-SW/SD-10		MMB-SW/SD-11		MMB-SW/SD-2		MMB-SW/SD-3	
			Field Sample ID	OC-SW-MMB-SW/SD-1-XXX		OC-SW-MMB-SW/SD-10-XXX		OC-SW-MMB-SW/SD-11-XXX		OC-SW-MMB-SW/SD-2-XXX		OC-SW-MMB-SW/SD-3-XXX	
			Field Sample Date	06/06/11		06/06/11		06/07/11		06/08/11		06/08/11	
			QC Code	FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34288-1		360-34315-1		360-34315-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	Fluorene	ug/l	0.91	U	0.91	U	0.91	U	1	U	1	U
N	SW8270	Hexachlorobenzene	ug/l	0.91	U	0.91	U	0.91	U	1	U	1	U
N	SW8270	Hexachlorocyclopentadiene	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Hexachloroethane	ug/l	2.7	U	2.7	U	2.7	U	3	U	3	U
N	SW8270	Indeno(1,2,3-cd)pyrene	ug/l	0.45	U	0.45	U	0.45	U	0.5	U	0.5	U
N	SW8270	Isophorone	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	N-Nitrosodi-n-propylamine	ug/l										
N	SW8270	N-Nitrosodiphenylamine	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Nitrobenzene	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U
N	SW8270	Pentachlorophenol	ug/l	0.91	U	0.91	U	0.91	U	1	U	1	U
N	SW8270	Phenanthrene	ug/l	0.18	U	0.18	U	0.18	U	0.2	U	0.2	U
N	SW8270	Phenol	ug/l	4.5	UJ	4.5	UJ	4.5	UJ	5	UJ	5	UJ
N	SW8270	Pyrene	ug/l	4.5	U	4.5	U	4.5	U	5	U	5	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

R = value is rejected

ug/l = microgram per liter

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-4		MMB-SW/SD-5		MMB-SW/SD-6		MMB-SW/SD-8		MMB-SW/SD-8A	
			Field Sample ID	OC-SW-MMB-SW/SD-4-XXX		OC-SW-MMB-SW/SD-5-XXX		OC-SW-MMB-SW/SD-6-XXX		OC-SW-MMB-SW/SD-8-XXX		OC-SW-MMB-SW/SD-8A-XXX	
			Field Sample Date	06/06/11		06/07/11		06/08/11		06/07/11		06/08/11	
			QC Code	FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34288-1		360-34288-1		360-34315-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	1,2,4,5-Tetrachlorobenzene	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	1-Methylnaphthalene	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	2,3,4,6-Tetrachlorophenol	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	2,4,5-Trichlorophenol	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	2,4,6-Trichlorophenol	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	2,4-Dichlorophenol	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	2,4-Dimethylphenol	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	2,4-Dinitrophenol	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	2,4-Dinitrotoluene	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	2,6-Dinitrotoluene	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	2-Chloronaphthalene	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	2-Chlorophenol	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	2-Methylnaphthalene	ug/l	0.91	U	0.91	U	1	U	0.91	U	1	U
N	SW8270	2-Methylphenol	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	2-Nitroaniline	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	2-Nitrophenol	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	3 & 4 Methylphenol	ug/l	4.5	U	4.5	U	0.74	J	4.5	U	5	U
N	SW8270	3,3`-Dichlorobenzidine	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	3-Nitroaniline	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	4,6-Dinitro-2-methylphenol	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	4-Bromophenyl phenyl ether	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	4-Chloro-3-methylphenol	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	4-Chloroaniline	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	4-Chlorophenyl phenyl ether	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	4-Nitroaniline	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	4-Nitrophenol	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Acenaphthene	ug/l	0.91	U	0.91	U	1	U	0.91	U	1	U
N	SW8270	Acenaphthylene	ug/l	0.27	U	0.27	U	0.3	U	0.27	U	0.3	U
N	SW8270	Acetophenone	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Aniline	ug/l	4.5	UJ	4.5	UJ	5	U	4.5	U	5	U

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-4		MMB-SW/SD-5		MMB-SW/SD-6		MMB-SW/SD-8		MMB-SW/SD-8A	
			Field Sample ID	OC-SW-MMB-SW/SD-4-XXX		OC-SW-MMB-SW/SD-5-XXX		OC-SW-MMB-SW/SD-6-XXX		OC-SW-MMB-SW/SD-8-XXX		OC-SW-MMB-SW/SD-8A-XXX	
			Field Sample Date	06/06/11		06/07/11		06/08/11		06/07/11		06/08/11	
			QC Code	FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34288-1		360-34288-1		360-34315-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	Anthracene	ug/l	0.91	U	0.91	U	1	U	0.91	U	1	U
N	SW8270	Atrazine	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Azobenzene	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Benzaldehyde	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Benzo(a)anthracene	ug/l	0.27	U	0.27	U	0.3	U	0.27	U	0.3	U
N	SW8270	Benzo(a)pyrene	ug/l	0.18	U	0.18	U	0.2	U	0.18	U	0.2	U
N	SW8270	Benzo(b)fluoranthene	ug/l	0.27	UJ	0.27	UJ	0.3	U	0.27	U	0.3	U
N	SW8270	Benzo(ghi)perylene	ug/l	0.45	U	0.45	U	0.5	U	0.45	U	0.5	U
N	SW8270	Benzo(k)fluoranthene	ug/l	0.27	U	0.27	U	0.3	U	0.27	U	0.3	U
N	SW8270	Benzoic Acid	ug/l	1.9	J	2	J	2.4	J	1.9	J	2.1	J
N	SW8270	Benzyl alcohol	ug/l	9.1	U	9.1	U	10	U	9.1	U	10	U
N	SW8270	Biphenyl	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Bis(2-Chloroethoxy)methane	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Bis(2-Chloroethyl)ether	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Bis(2-Chloroisopropyl)ether	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Bis(2-Ethylhexyl)phthalate	ug/l	1.8	U	1.8	U	2	U	1.8	U	2	U
N	SW8270	Butylbenzylphthalate	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Caprolactum	ug/l	4.5	UJ	4.5	UJ	5	UJ	4.5	UJ	0.66	J
N	SW8270	Carbazole	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Chrysene	ug/l	0.91	U	0.91	U	1	U	0.91	U	1	U
N	SW8270	Di-n-butylphthalate	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Di-n-octylphthalate	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Dibenz(a,h)anthracene	ug/l	0.45	U	0.45	U	0.5	U	0.45	U	0.5	U
N	SW8270	Dibenzofuran	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Diethylphthalate	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Dimethylphthalate	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Diphenyl ether	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Diphenylamine	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Diphenylmethanone	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Fluoranthene	ug/l	0.91	U	0.91	U	1	U	0.91	U	1	U

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-4		MMB-SW/SD-5		MMB-SW/SD-6		MMB-SW/SD-8		MMB-SW/SD-8A	
			Field Sample ID	OC-SW-MMB-SW/SD-4-XXX		OC-SW-MMB-SW/SD-5-XXX		OC-SW-MMB-SW/SD-6-XXX		OC-SW-MMB-SW/SD-8-XXX		OC-SW-MMB-SW/SD-8A-XXX	
			Field Sample Date	06/06/11		06/07/11		06/08/11		06/07/11		06/08/11	
			QC Code	FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34288-1		360-34288-1		360-34315-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	Fluorene	ug/l	0.91	U	0.91	U	1	U	0.91	U	1	U
N	SW8270	Hexachlorobenzene	ug/l	0.91	U	0.91	U	1	U	0.91	U	1	U
N	SW8270	Hexachlorocyclopentadiene	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Hexachloroethane	ug/l	2.7	U	2.7	U	3	U	2.7	U	3	U
N	SW8270	Indeno(1,2,3-cd)pyrene	ug/l	0.45	U	0.45	U	0.5	U	0.45	U	0.5	U
N	SW8270	Isophorone	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	N-Nitrosodi-n-propylamine	ug/l										
N	SW8270	N-Nitrosodiphenylamine	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Nitrobenzene	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U
N	SW8270	Pentachlorophenol	ug/l	0.91	U	0.91	U	1	U	0.91	U	1	U
N	SW8270	Phenanthrene	ug/l	0.18	U	0.18	U	0.2	U	0.18	U	0.2	U
N	SW8270	Phenol	ug/l	4.5	UJ	4.5	UJ	0.83	J	4.5	UJ	5	UJ
N	SW8270	Pyrene	ug/l	4.5	U	4.5	U	5	U	4.5	U	5	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

R = value is rejected

ug/l = microgram per liter

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-9		OPWD-1		OPWD-2		OPWD-SW-S		PZ-16RR		PZ-17RR	
			Field Sample ID	OC-SW-MMB-SW/SD-9-XXX		OC-SW-OPWD-1-XXX		OC-SW-OPWD-2-XXX		OC-SW-OPWD-SD/SO/SW-S-XXX		OC-SW-PZ-16RR-XXX		OC-SW-PZ-17RR-XXX	
			Field Sample Date	06/06/11		06/07/11		06/07/11		06/07/11		06/06/11		06/06/11	
			QC Code	FS		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34288-1		360-34288-1		360-34288-1		360-34253-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	1,2,4,5-Tetrachlorobenzene	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	1-Methylnaphthalene	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	2,3,4,6-Tetrachlorophenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	2,4,5-Trichlorophenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	2,4,6-Trichlorophenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	2,4-Dichlorophenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	2,4-Dimethylphenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	2,4-Dinitrophenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	2,4-Dinitrotoluene	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	2,6-Dinitrotoluene	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	2-Chloronaphthalene	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	2-Chlorophenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	2-Methylnaphthalene	ug/l	0.91	U	0.91	U	0.91	U	1	U	0.91	U	0.91	U
N	SW8270	2-Methylphenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	2-Nitroaniline	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	2-Nitrophenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	1.3	J	1.8	J
N	SW8270	3 & 4 Methylphenol	ug/l	4.5	U	4.5	U	0.76	J	5	U	4.5	U	4.5	U
N	SW8270	3,3`-Dichlorobenzidine	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	3-Nitroaniline	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	4,6-Dinitro-2-methylphenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	4-Bromophenyl phenyl ether	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	4-Chloro-3-methylphenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	4-Chloroaniline	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	4-Chlorophenyl phenyl ether	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	4-Nitroaniline	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	4-Nitrophenol	ug/l	4.5	U	4.5	U	4.5	U	5	U	1.8	J	2.1	J
N	SW8270	Acenaphthene	ug/l	0.91	U	0.91	U	0.91	U	1	U	0.91	U	0.91	U
N	SW8270	Acenaphthylene	ug/l	0.27	U	0.27	U	0.27	U	0.3	U	0.27	U	0.27	U
N	SW8270	Acetophenone	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	Aniline	ug/l	4.5	UJ	4.5	U	4.5	U	5	U	4.5	UJ	4.5	UJ

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-9		OPWD-1		OPWD-2		OPWD-SW-S		PZ-16RR		PZ-17RR	
			Field Sample ID	OC-SW-MMB-SW/SD-9-XXX		OC-SW-OPWD-1-XXX		OC-SW-OPWD-2-XXX		OC-SW-OPWD-SD/SO/SW-S-XXX		OC-SW-PZ-16RR-XXX		OC-SW-PZ-17RR-XXX	
			Field Sample Date	06/06/11		06/07/11		06/07/11		06/07/11		06/06/11		06/06/11	
			QC Code	FS		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34288-1		360-34288-1		360-34288-1		360-34253-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	Anthracene	ug/l	0.91	U	0.91	U	0.91	U	1	U	0.91	U	0.91	U
N	SW8270	Atrazine	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	Azobenzene	ug/l	4.5	U	4.5	U	4.5	U	5	U	0.46	J	0.53	J
N	SW8270	Benzaldehyde	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	Benzo(a)anthracene	ug/l	0.27	U	0.27	U	0.24	J	0.3	U	0.27	U	0.27	U
N	SW8270	Benzo(a)pyrene	ug/l	0.13	J	0.22		0.59		0.2	U	0.18	U	0.18	U
N	SW8270	Benzo(b)fluoranthene	ug/l	0.27	UJ	0.29		1.1		0.3	U	0.27	UJ	0.27	UJ
N	SW8270	Benzo(ghi)perylene	ug/l	0.45	U	0.45	U	0.54		0.5	U	0.45	U	0.45	U
N	SW8270	Benzo(k)fluoranthene	ug/l	0.27	U	0.27	U	0.5		0.3	U	0.27	U	0.27	U
N	SW8270	Benzoic Acid	ug/l	1.9	J	1.9	J	2.1	J	2.1	J	2	J	2.1	J
N	SW8270	Benzyl alcohol	ug/l	9.1	U	9.1	U	9.1	U	10	U	9.1	U	9.1	U
N	SW8270	Biphenyl	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	Bis(2-Chloroethoxy)methane	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	Bis(2-Chloroethyl)ether	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	Bis(2-Chloroisopropyl)ether	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	Bis(2-Ethylhexyl)phthalate	ug/l	1.8	U	1.8	U	1.8	U	2	U	1.8	U	1.8	U
N	SW8270	Butylbenzylphthalate	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	Caprolactum	ug/l	4.5	UJ	4.5	UJ	4.5	UJ	5	UJ	4.5	UJ	4.5	UJ
N	SW8270	Carbazole	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	Chrysene	ug/l	0.91	U	0.18	J	0.67	J	1	U	0.91	U	0.91	U
N	SW8270	Di-n-butylphthalate	ug/l	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U	4.5	U
N	SW8270	Di-n-octylphthalate	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	Dibenz(a,h)anthracene	ug/l	0.45	U	0.45	U	0.45	U	0.5	U	0.45	U	0.45	U
N	SW8270	Dibenzofuran	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	Diethylphthalate	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	Dimethylphthalate	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	Diphenyl ether	ug/l	4.5	U	4.5	U	4.5	U	5	U	0.62	J	1.1	J
N	SW8270	Diphenylamine	ug/l	4.5	U							4.5	U	4.5	U
N	SW8270	Diphenylmethanone	ug/l	4.5	U	4.5	U	4.5	U	5	U	1	J	1.2	J
N	SW8270	Fluoranthene	ug/l	0.91	U	0.24	J	0.92		1	U	0.91	U	0.91	U

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-9		OPWD-1		OPWD-2		OPWD-SW-S		PZ-16RR		PZ-17RR	
			Field Sample ID	OC-SW-MMB-SW/SD-9-XXX		OC-SW-OPWD-1-XXX		OC-SW-OPWD-2-XXX		OC-SW-OPWD-SD/SO/SW-S-XXX		OC-SW-PZ-16RR-XXX		OC-SW-PZ-17RR-XXX	
			Field Sample Date	06/06/11		06/07/11		06/07/11		06/07/11		06/06/11		06/06/11	
			QC Code	FS		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34288-1		360-34288-1		360-34288-1		360-34253-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	Fluorene	ug/l	0.91	U	0.91	U	0.91	U	1	U	0.91	U	0.91	U
N	SW8270	Hexachlorobenzene	ug/l	0.91	U	0.91	U	0.91	U	1	U	0.91	U	0.91	U
N	SW8270	Hexachlorocyclopentadiene	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	Hexachloroethane	ug/l	2.7	U	2.7	U	2.7	U	3	U	2.7	U	2.7	U
N	SW8270	Indeno(1,2,3-cd)pyrene	ug/l	0.45	U	0.45	U	0.49		0.5	U	0.45	U	0.45	U
N	SW8270	Isophorone	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	N-Nitrosodi-n-propylamine	ug/l												
N	SW8270	N-Nitrosodiphenylamine	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	0.64	J
N	SW8270	Nitrobenzene	ug/l	4.5	U	4.5	U	4.5	U	5	U	4.5	U	4.5	U
N	SW8270	Pentachlorophenol	ug/l	0.91	U	0.91	U	0.91	U	1	U	0.91	U	0.91	U
N	SW8270	Phenanthrene	ug/l	0.18	U	0.1	J	0.32		0.2	U	0.18	U	0.18	U
N	SW8270	Phenol	ug/l	4.5	UJ	4.5	UJ	0.51	J	5	UJ	4.5	UJ	4.5	UJ
N	SW8270	Pyrene	ug/l	4.5	U	0.28	J	1.1	J	5	U	4.5	U	4.5	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

R = value is rejected

ug/l = microgram per liter

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	SD-1		SDBK-001		SDBK-002		SDBK-004	
			Field Sample ID	OC-SW-SD-1-XXX		OC-SW-SDBK-001-XXX		OC-SW-SDBK-002-XXX		OC-SW-SDBK-004-XXX	
			Field Sample Date	06/06/11		06/08/11		06/07/11		06/08/11	
			QC Code	FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34315-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	1,2,4,5-Tetrachlorobenzene	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	1-Methylnaphthalene	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	2,3,4,6-Tetrachlorophenol	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	2,4,5-Trichlorophenol	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	2,4,6-Trichlorophenol	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	2,4-Dichlorophenol	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	2,4-Dimethylphenol	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	2,4-Dinitrophenol	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	2,4-Dinitrotoluene	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	2,6-Dinitrotoluene	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	2-Chloronaphthalene	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	2-Chlorophenol	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	2-Methylnaphthalene	ug/l	1	U	1	U	0.91	U	0.95	U
N	SW8270	2-Methylphenol	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	2-Nitroaniline	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	2-Nitrophenol	ug/l	0.67	J	5	U	4.5	U	4.8	U
N	SW8270	3 & 4 Methylphenol	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	3,3`-Dichlorobenzidine	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	3-Nitroaniline	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	4,6-Dinitro-2-methylphenol	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	4-Bromophenyl phenyl ether	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	4-Chloro-3-methylphenol	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	4-Chloroaniline	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	4-Chlorophenyl phenyl ether	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	4-Nitroaniline	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	4-Nitrophenol	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Acenaphthene	ug/l	1	U	1	U	0.91	U	0.95	U
N	SW8270	Acenaphthylene	ug/l	0.3	U	0.3	U	0.27	U	0.29	U
N	SW8270	Acetophenone	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Aniline	ug/l	5	UJ	5	U	4.5	U	4.8	U

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	SD-1		SDBK-001		SDBK-002		SDBK-004	
			Field Sample ID	OC-SW-SD-1-XXX		OC-SW-SDBK-001-XXX		OC-SW-SDBK-002-XXX		OC-SW-SDBK-004-XXX	
			Field Sample Date	06/06/11		06/08/11		06/07/11		06/08/11	
			QC Code	FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34315-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	Anthracene	ug/l	1	U	1	U	0.91	U	0.95	U
N	SW8270	Atrazine	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Azobenzene	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Benzaldehyde	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Benzo(a)anthracene	ug/l	0.3	U	0.3	U	0.27	U	0.29	U
N	SW8270	Benzo(a)pyrene	ug/l	0.2	U	0.2	U	0.18	U	0.19	U
N	SW8270	Benzo(b)fluoranthene	ug/l	0.3	UJ	0.3	U	0.27	U	0.29	U
N	SW8270	Benzo(ghi)perylene	ug/l	0.5	U	0.5	U	0.45	U	0.48	U
N	SW8270	Benzo(k)fluoranthene	ug/l	0.3	U	0.3	U	0.27	U	0.29	U
N	SW8270	Benzoic Acid	ug/l	2.1	J	2.1	J	1.9	J	2.1	J
N	SW8270	Benzyl alcohol	ug/l	10	U	10	U	9.1	U	9.5	U
N	SW8270	Biphenyl	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Bis(2-Chloroethoxy)methane	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Bis(2-Chloroethyl)ether	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Bis(2-Chloroisopropyl)ether	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Bis(2-Ethylhexyl)phthalate	ug/l	1.8	J	2	U	1.8	U	1.9	U
N	SW8270	Butylbenzylphthalate	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Caprolactum	ug/l	5	UJ	5	UJ	4.5	UJ	0.56	J
N	SW8270	Carbazole	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Chrysene	ug/l	1	U	1	U	0.91	U	0.95	U
N	SW8270	Di-n-butylphthalate	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Di-n-octylphthalate	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Dibenz(a,h)anthracene	ug/l	0.5	U	0.5	U	0.45	U	0.48	U
N	SW8270	Dibenzofuran	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Diethylphthalate	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Dimethylphthalate	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Diphenyl ether	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Diphenylamine	ug/l	5	U						
N	SW8270	Diphenylmethanone	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Fluoranthene	ug/l	1	U	1	U	0.91	U	0.95	U

Table 2.3
Final Results Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	SD-1		SDBK-001		SDBK-002		SDBK-004	
			Field Sample ID	OC-SW-SD-1-XXX		OC-SW-SDBK-001-XXX		OC-SW-SDBK-002-XXX		OC-SW-SDBK-004-XXX	
			Field Sample Date	06/06/11		06/08/11		06/07/11		06/08/11	
			QC Code	FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34315-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8270	Fluorene	ug/l	1	U	1	U	0.91	U	0.95	U
N	SW8270	Hexachlorobenzene	ug/l	1	U	1	U	0.91	U	0.95	U
N	SW8270	Hexachlorocyclopentadiene	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Hexachloroethane	ug/l	3	U	3	U	2.7	U	2.9	U
N	SW8270	Indeno(1,2,3-cd)pyrene	ug/l	0.5	U	0.5	U	0.45	U	0.48	U
N	SW8270	Isophorone	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	N-Nitrosodi-n-propylamine	ug/l			5	U	4.5	U	4.8	U
N	SW8270	N-Nitrosodiphenylamine	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Nitrobenzene	ug/l	5	U	5	U	4.5	U	4.8	U
N	SW8270	Pentachlorophenol	ug/l	1	U	1	U	0.91	U	0.95	U
N	SW8270	Phenanthrene	ug/l	0.2	U	0.2	U	0.18	U	0.19	U
N	SW8270	Phenol	ug/l	5	UJ	5	UJ	4.5	UJ	4.8	UJ
N	SW8270	Pyrene	ug/l	5	U	5	U	4.5	U	4.8	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

R = value is rejected

ug/l = microgram per liter

Prepared by / Date: KJC 09/01/11

Checked by / Date: WDC 09/01/11

Table 2.4
Final Results Summary - NDMA
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	EDSD/SW0		EDSD/SW1 (EDBS5)		EDSD/SW2 (EDBS6)		EDSD/SW5 (EDBS11)		ISCO1	
			Field Sample ID	OC-SW-SD-EDSD/SW0-XXX		OC-SW-EDSD/SW1(EDBS5)-XXX		OC-SW-EDSD/SW2(EDBS6)-XXX		OC-SW-EDSD/SW5(EDBS11)-XXX		OC-SW-ISCO-1-DUP	
			Field Sample Date	06/08/11		06/08/11		06/08/11		06/08/11		06/06/11	
			QC Code	FS		FS		FS		FS		FD	
			Lab Sample Delivery Group	360-34315-1		360-34315-1		360-34315-1		360-34315-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	WS-MS-0012	N-Nitrosodi-n-propylamine	ng/l	3.3		1.9	U	2	U	20	U	1.9	UJ
N	WS-MS-0012	N-Nitrosodimethylamine	ng/l	2	U	1.9	U	12		20	U	20	J

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ng/l = nanogram per liter

Table 2.4
Final Results Summary - NDMA
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	ISCO1		ISCO2		MMB-SW/SD-1		MMB-SW/SD-1		MMB-SW/SD-10		MMB-SW/SD-11	
			Field Sample ID	OC-SW-ISCO-1-XXX		OC-SW-ISCO-2-XXX		OC-SW-MMB-SW/SD-1-DUP		OC-SW-MMB-SW/SD-1-XXX		OC-SW-MMB-SW/SD-10-XXX		OC-SW-MMB-SW/SD-11-XXX	
			Field Sample Date	06/06/11		06/06/11		06/06/11		06/06/11		06/06/11		06/07/11	
			QC Code	FS		FS		FD		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34253-1		360-34253-1		360-34253-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	WS-MS-0012	N-Nitrosodi-n-propylamine	ng/l	1.9	U	2	U	1.9	U	1.9	U	1.9	U	19	U
N	WS-MS-0012	N-Nitrosodimethylamine	ng/l	23		78		1.9	U	0.47	J	1.9	U	19	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ng/l = nanogram per liter

Table 2.4
Final Results Summary - NDMA
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-2		MMB-SW/SD-3		MMB-SW/SD-4		MMB-SW/SD-5		MMB-SW/SD-6	
			Field Sample ID	OC-SW-MMB-SW/SD-2-XXX		OC-SW-MMB-SW/SD-3-XXX		OC-SW-MMB-SW/SD-4-XXX		OC-SW-MMB-SW/SD-5-XXX		OC-SW-MMB-SW/SD-6-XXX	
			Field Sample Date	06/08/11		06/08/11		06/06/11		06/07/11		06/08/11	
			QC Code	FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34315-1		360-34315-1		360-34288-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	WS-MS-0012	N-Nitrosodi-n-propylamine	ng/l	20	U	19	U	1.9	U	19	U	38	U
N	WS-MS-0012	N-Nitrosodimethylamine	ng/l	20	U	19	U	1.9	U	19	U	38	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ng/l = nanogram per liter

Table 2.4
Final Results Summary - NDMA
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-8		MMB-SW/SD-8A		MMB-SW/SD-9		OPWD-1		OPWD-2		OPWD-SW-S	
			Field Sample ID	OC-SW-MMB-SW/SD-8-XXX		OC-SW-MMB-SW/SD-8A-XXX		OC-SW-MMB-SW/SD-9-XXX		OC-SW-OPWD-1-XXX		OC-SW-OPWD-2-XXX		OC-SW-OPWD-SD/SO/SW-S-XXX	
			Field Sample Date	06/07/11		06/08/11		06/06/11		06/07/11		06/07/11		06/07/11	
			QC Code	FS		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34288-1		360-34315-1		360-34253-1		360-34288-1		360-34288-1		360-34288-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	WS-MS-0012	N-Nitrosodi-n-propylamine	ng/l	19	U	19	U	1.9	UJ	19	U	38	U	20	U
N	WS-MS-0012	N-Nitrosodimethylamine	ng/l	19	U	19	U	1.9	U	60		38	UJ	23	

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ng/l = nanogram per liter

Table 2.4
Final Results Summary - NDMA
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	PZ-16RR		PZ-17RR		SD-1	
			Field Sample ID	OC-SW-PZ-16RR-XXX		OC-SW-PZ-17RR-XXX		OC-SW-SD-1-XXX	
			Field Sample Date	06/06/11		06/06/11		06/06/11	
			QC Code	FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34253-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual
N	WS-MS-0012	N-Nitrosodi-n-propylamine	ng/l	9.5	UJ	21	UJ	2	U
N	WS-MS-0012	N-Nitrosodimethylamine	ng/l	170	J	290	J	48	

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ng/l = nanogram per liter

Prepared by / Date: KJC 08/31/11

Checked by / Date: WDC 08/31/11

Table 2.5
Final Results Summary - EPH
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	ISCO1		ISCO1		ISCO2		PZ-16RR		PZ-17RR		SD-1	
			Field Sample ID	OC-SW-ISCO-1-DUP		OC-SW-ISCO-1-XXX		OC-SW-ISCO-2-XXX		OC-SW-PZ-16RR-XXX		OC-SW-PZ-17RR-XXX		OC-SW-SD-1-XXX	
			Field Sample Date	06/06/11		06/06/11		06/06/11		06/06/11		06/06/11		06/06/11	
			QC Code	FD		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34253-1		360-34253-1		360-34253-1		360-34253-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	MAEPH	2-Methylnaphthalene	ug/l	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U
N	MAEPH	Acenaphthene	ug/l	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U
N	MAEPH	Acenaphthylene	ug/l	0.27	U	0.27	U	0.27	U	0.27	U	0.27	U	0.27	U
N	MAEPH	Anthracene	ug/l	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U
N	MAEPH	Benzo(a)anthracene	ug/l	0.27	U	0.27	U	0.27	U	0.27	U	0.27	U	0.27	U
N	MAEPH	Benzo(a)pyrene	ug/l	0.18	U	0.18	U	0.18	U	0.18	U	0.18	U	0.18	U
N	MAEPH	Benzo(b)fluoranthene	ug/l	0.27	U	0.27	U	0.27	U	0.27	U	0.27	U	0.27	U
N	MAEPH	Benzo(ghi)perylene	ug/l	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U	0.45	U
N	MAEPH	Benzo(k)fluoranthene	ug/l	0.27	U	0.27	U	0.27	U	0.27	U	0.27	U	0.27	U
N	MAEPH	Chrysene	ug/l	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U
N	MAEPH	Dibenz(a,h)anthracene	ug/l	0.41	U	0.41	U	0.41	U	0.41	U	0.41	U	0.41	U
N	MAEPH	Fluoranthene	ug/l	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U
N	MAEPH	Fluorene	ug/l	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U
N	MAEPH	Indeno(1,2,3-cd)pyrene	ug/l	0.41	U	0.41	U	0.41	U	0.41	U	0.41	U	0.41	U
N	MAEPH	Naphthalene	ug/l	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U
N	MAEPH	Phenanthrene	ug/l	0.18	U	0.18	U	0.18	U	0.18	U	0.18	U	0.18	U
N	MAEPH	Pyrene	ug/l	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U	0.91	U
N	MAEPH	C11-C22 Aromatics	ug/l	91	U	91	U	91	U	91	U	91	U	91	U
N	MAEPH	C11-C22 Aromatics (unadj.)	ug/l	91	U	91	U	91	U	91	U	91	U	91	U
N	MAEPH	C19-C36 Aliphatics	ug/l	91	U	91	U	91	U	91	U	91	U	91	U
N	MAEPH	C9-C18 Aliphatics	ug/l	91	U	91	U	91	U	91	U	91	U	91	U
N	MAEPH	Extractable Petroleum Hydrocarbons, Total	ug/l	91	U	91	U	91	U	91	U	91	U	91	U

Notes:

N = normal

FS = field sample

U = not detected, value is the detection limit

ug/l = microgram per liter

Prepared by / Date: KJC 08/23/11

Checked by / Date: BBL 08/24/11

Table 2.6
Final Results Summary - VPH
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	ISCO1		ISCO1		ISCO2		PZ-16RR		PZ-17RR		SD-1	
			Field Sample ID	OC-SW-ISCO-1-DUP		OC-SW-ISCO-1-XXX		OC-SW-ISCO-2-XXX		OC-SW-PZ-16RR-XXX		OC-SW-PZ-17RR-XXX		OC-SW-SD-1-XXX	
			Field Sample Date	06/06/11		06/06/11		06/06/11		06/06/11		06/06/11		06/06/11	
			QC Code	FD		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34253-1		360-34253-1		360-34253-1		360-34253-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	MAVPH	Benzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	MAVPH	Ethyl benzene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	MAVPH	Methyl Tertbutyl Ether	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	MAVPH	Naphthalene	ug/l	5	U	5	U	5	U	5	U	5	U	5	U
N	MAVPH	Toluene	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	MAVPH	Xylene, o	ug/l	1	U	1	U	1	U	1	U	1	U	1	U
N	MAVPH	Xylenes (m&p)	ug/l	2	U	2	U	2	U	2	U	2	U	2	U
N	MAVPH	C5-C8 Aliphatics (unadj.)	ug/l	50	U	50	U	50	U	50	U	50	U	50	U
N	MAVPH	C9-C10 Aromatics	ug/l	50	U	50	U	50	U	50	U	50	U	50	U
N	MAVPH	C9-C12 Aliphatics (unadj.)	ug/l	50	U	50	U	50	U	50	U	50	U	50	U
N	MAVPH	Volatile Petroleum Hydrocarbons, Total	ug/l	50	U	50	U	50	U	50	U	50	U	50	U

Notes:

N = normal

FS = field sample

U = not detected, value is the detection limit

ug/l = microgram per liter

Prepared by / Date: KJC 08/23/11

Checked by / Date: BBL 08/24/11

Table 2.6
Final Results Summary - VPH
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	TRIP BLANK	
			Field Sample ID	OC-TBK-078	
			Field Sample Date	06/06/11	
			QC Code	TB	
			Lab Sample Delivery Group	360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual
N	MAVPH	Benzene	ug/l	1	U
N	MAVPH	Ethyl benzene	ug/l	1	U
N	MAVPH	Methyl Tertbutyl Ether	ug/l	1	U
N	MAVPH	Naphthalene	ug/l	5	U
N	MAVPH	Toluene	ug/l	1	U
N	MAVPH	Xylene, o	ug/l	1	U
N	MAVPH	Xylenes (m&p)	ug/l	2	U
N	MAVPH	C5-C8 Aliphatics (unadj.)	ug/l	50	U
N	MAVPH	C9-C10 Aromatics	ug/l	50	U
N	MAVPH	C9-C12 Aliphatics (unadj.)	ug/l	50	U
N	MAVPH	Volatile Petroleum Hydrocarbons, Total	ug/l	50	U

Notes:

N = normal

TB = Trip Blank

U = not detected, value is the detection limit

ug/l = microgram per liter

Prepared by / Date: KJC 08/23/11

Checked by / Date: BBL 08/24/11

Table 2.7
Final Results Summary - Metals
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	EDSD/SW0		EDSD/SW1 (EDBS5)		EDSD/SW2 (EDBS6)		EDSD/SW5 (EDBS11)		ISCO1		ISCO1	
			Field Sample ID	OC-SW-SD-EDSD/SW0-XXX		OC-SW-EDSD/SW1(EDBS5)-XXX		OC-SW-EDSD/SW2(EDBS6)-XXX		OC-SW-EDSD/SW5(EDBS11)-XXX		OC-SW-ISCO-1-DUP		OC-SW-ISCO-1-XXX	
			Field Sample Date	06/08/11		06/08/11		06/08/11		06/08/11		06/06/11		06/06/11	
			QC Code	FS		FS		FS		FS		FD		FS	
			Lab Sample Delivery Group	360-34315-1		360-34315-1		360-34315-1		360-34315-1		360-34253-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
T	SW6010	Aluminum	ug/L	390		100	U	28	J	130		91	J	100	
T	SW6010	Antimony	ug/L	6	U	6	U	6	U	6	U	6	U	6	U
T	SW6010	Arsenic	ug/L	5	J	10	U	10	U	10	U	10	U	10	U
T	SW6010	Barium	ug/L	100		57		57		33		28		28	
T	SW6010	Beryllium	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
T	SW6010	Cadmium	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
T	SW6010	Calcium	ug/L	46000		45000		43000		46000		25000		25000	
T	SW6010	Chromium	ug/L	1.4	J	5	U	5	U	4	J	12		12	
T	SW6010	Cobalt	ug/L	10	U	10	U	1.6	J	2.4	J	5.2	J	5.4	J
T	OSW-6020	Copper	ug/L	3.2		0.72		1.4		0.84		0.62		0.49	J
T	SW6010	Iron	ug/L	11000		890		1000		910		4600		4700	
T	OSW-6020	Lead	ug/L	0.51	J	0.1	U	0.13	U	0.1	U	0.24	J	0.32	J
T	SW6010	Magnesium	ug/L	5200		6600		6500		6900		4400		4400	
T	SW6010	Manganese	ug/L	90		270		770		710		810		810	
T	SW7470A	Mercury	ug/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
T	SW6010	Nickel	ug/L	10	U	10	U	1.7	J	2.5	J	4.1	J	4.2	J
T	SW6010	Potassium	ug/L	3700	J	2700	J	2800	J	3600	J	2400	J	2200	J
T	SW6010	Selenium	ug/L	10	U	10	U	10	U	10	U	10	U	10	U
T	OSW-6020	Silver	ug/L	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
T	SW6010	Sodium	ug/L	190000		78000		88000		81000		97000		98000	
T	SW6010	Thallium	ug/L	10	U	5.2	J	10	U	10	U	10	U	10	U
T	SW6010	Tin	ug/L	50	U	50	U	50	U	50	U	50	U	50	U
T	SW6010	Vanadium	ug/L	2.5	J	10	U	10	U	10	U	10	U	10	U
T	SW6010	Zinc	ug/L	53		50	U	8.8	J	50	U	13	J	21	J

Notes:

T = Total (unfiltered)

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/L = microgram per liter

Table 2.7
Final Results Summary - Metals
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	ISCO2		LB-1		LB-2		LB-3		MMB-SW/SD-1		MMB-SW/SD-1		MMB-SW/SD-10	
			Field Sample ID	OC-SW-ISCO-2-XXX		OC-SW-LB-1-XXX		OC-SW-LB-2-XXX		OC-SW-LB-3-XXX		OC-SW-MMB-SW/SD-1-DUP		OC-SW-MMB-SW/SD-1-XXX		OC-SW-MMB-SW/SD-10-XXX	
			Field Sample Date	06/06/11		06/07/11		06/07/11		06/07/11		06/06/11		06/06/11		06/06/11	
			QC Code	FS		FS		FS		FS		FD		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34288-1		360-34288-1		360-34288-1		360-34253-1		360-34253-1		360-34288-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
T	SW6010	Aluminum	ug/L	5400		1200		1000		35	J	100	U	63	J	100	U
T	SW6010	Antimony	ug/L	6	U	6	U	6	U	6	U	6	U	6	U	6	U
T	SW6010	Arsenic	ug/L	10	U	11		34		47		10	U	10	U	10	U
T	SW6010	Barium	ug/L	27		95		53		56		26		27		34	
T	SW6010	Beryllium	ug/L	0.74	J	1	U	1	U	1	U	1	U	1	U	1	U
T	SW6010	Cadmium	ug/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U
T	SW6010	Calcium	ug/L	67000		31000		24000		44000		22000		22000		30000	
T	SW6010	Chromium	ug/L	1100		5.4		20		3.9	J	5	U	5	U	5	U
T	SW6010	Cobalt	ug/L	32		2.6	J	1.4	J	10	U	10	U	10	U	10	U
T	OSW-6020	Copper	ug/L	7.8		12		8.7		8.7		0.5	U	2.7		0.5	U
T	SW6010	Iron	ug/L	13000		15000		18000		12000		1100		1200		1200	
T	OSW-6020	Lead	ug/L	2.1		27		22		0.42	J	0.1	U	0.23	J	0.1	U
T	SW6010	Magnesium	ug/L	14000		3300		3600		6100		3900		3900		4400	
T	SW6010	Manganese	ug/L	1700		540		990		2200		200		210		300	
T	SW7470A	Mercury	ug/L	0.2	U	0.2	U	0.2	U	0.27		0.2	U	0.2	U	0.2	U
T	SW6010	Nickel	ug/L	34		4.6	J	2.3	J	10	U	10	U	10	U	10	U
T	SW6010	Potassium	ug/L	2200	J	1400	J	4100		5700		2000	J	2000	J	1800	J
T	SW6010	Selenium	ug/L	10	U	10	U	10	U	10	U	10	U	10	U	10	U
T	OSW-6020	Silver	ug/L	0.1	U	0.21	U	0.2	U	0.1	U	0.1	U	0.1	U	0.1	U
T	SW6010	Sodium	ug/L	170000		180000		83000		94000		78000		79000		70000	
T	SW6010	Thallium	ug/L	10	U	10	U	10	U	10	U	10	U	10	U	10	U
T	SW6010	Tin	ug/L	50	U	50	U	50	U	50	U	50	U	50	U	50	U
T	SW6010	Vanadium	ug/L	10	U	7	J	4.7	J	10	U	10	U	10	U	10	U
T	SW6010	Zinc	ug/L	59		110		38	J	50	U	50	U	50	U	50	U

Notes:

T = Total (unfiltered)

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/L = microgram per liter

Table 2.7
Final Results Summary - Metals
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-11		MMB-SW/SD-2		MMB-SW/SD-3		MMB-SW/SD-4		MMB-SW/SD-5		MMB-SW/SD-6	
			Field Sample ID	OC-SW-MMB-SW/SD-11-XXX		OC-SW-MMB-SW/SD-2-XXX		OC-SW-MMB-SW/SD-3-XXX		OC-SW-MMB-SW/SD-4-XXX		OC-SW-MMB-SW/SD-5-XXX		OC-SW-MMB-SW/SD-6-XXX	
			Field Sample Date	06/07/11		06/08/11		06/08/11		06/06/11		06/07/11		06/08/11	
			QC Code	FS		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34315-1		360-34315-1		360-34315-1		360-34288-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
T	SW6010	Aluminum	ug/L	36	J	26	J	120		100	U	110		480	
T	SW6010	Antimony	ug/L	6	U	6	U	6	U	6	U	6	U	6	U
T	SW6010	Arsenic	ug/L	10	U	10	U	10	U	10	U	10	U	4.8	J
T	SW6010	Barium	ug/L	32		49		42		25		40		150	
T	SW6010	Beryllium	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
T	SW6010	Cadmium	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
T	SW6010	Calcium	ug/L	24000		33000		30000		22000		22000		40000	
T	SW6010	Chromium	ug/L	5	U	5	U	5	U	5	U	5	U	0.98	J
T	SW6010	Cobalt	ug/L	10	U	10	U	10	U	10	U	2.2	J	7.7	J
T	OSW-6020	Copper	ug/L	1.5		0.77		2.6		0.5	U	1.8		54	
T	SW6010	Iron	ug/L	1300		1600		2700		880		1900		29000	
T	OSW-6020	Lead	ug/L	0.64	J	0.44	J	1.6	J	0.1	U	1.4	J	110	
T	SW6010	Magnesium	ug/L	4600		5100		5000		3900		4200		5900	
T	SW6010	Manganese	ug/L	200		1500		2100		140		1200		9300	
T	SW7470A	Mercury	ug/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
T	SW6010	Nickel	ug/L	10	U	10	U	7.2	J	10	U	1.3	J	4.3	J
T	SW6010	Potassium	ug/L	2800	J	3300	J	1400	J	2300	J	2100	J	3600	J
T	SW6010	Selenium	ug/L	10	U	10	U	10	U	10	U	10	U	10	U
T	OSW-6020	Silver	ug/L	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.5	U
T	SW6010	Sodium	ug/L	110000		85000		65000		80000		93000		45000	
T	SW6010	Thallium	ug/L	10	U	10	U	10	U	10	U	10	U	6.6	J
T	SW6010	Tin	ug/L	50	U	50	U	50	U	50	U	50	U	50	U
T	SW6010	Vanadium	ug/L	10	U	10	U	10	U	10	U	10	U	1.5	J
T	SW6010	Zinc	ug/L	50	U	50	U	21	J	50	U	50	U	27	J

Notes:

T = Total (unfiltered)

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/L = microgram per liter

Table 2.7
Final Results Summary - Metals
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-8		MMB-SW/SD-8A		MMB-SW/SD-9		OPWD-1		OPWD-2		OPWD-SW-S	
			Field Sample ID	OC-SW-MMB-SW/SD-8-XXX		OC-SW-MMB-SW/SD-8A-XXX		OC-SW-MMB-SW/SD-9-XXX		OC-SW-OPWD-1-XXX		OC-SW-OPWD-2-XXX		OC-SW-OPWD-SD/SO/SW-S-XXX	
			Field Sample Date	06/07/11		06/08/11		06/06/11		06/07/11		06/07/11		06/07/11	
			QC Code	FS		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34288-1		360-34315-1		360-34253-1		360-34288-1		360-34288-1		360-34288-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
T	SW6010	Aluminum	ug/L	35	J	140		100	U	830		1600		100	
T	SW6010	Antimony	ug/L	6	U	6	U	6	U	6	U	6	U	6	U
T	SW6010	Arsenic	ug/L	10	U	10	U	10	U	3.8	J	12		10	U
T	SW6010	Barium	ug/L	44		42		22		42		46		28	
T	SW6010	Beryllium	ug/L	1	U	1	U	1	U	0.19	J	0.17	J	1	U
T	SW6010	Cadmium	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
T	SW6010	Calcium	ug/L	25000		24000		24000		26000		6800		24000	
T	SW6010	Chromium	ug/L	5	U	5	U	5	U	99		13		12	
T	SW6010	Cobalt	ug/L	2.1	J	1.6	J	10	U	17		3.3	J	5.6	J
T	OSW-6020	Copper	ug/L	0.83		1.2		0.5	U	3.4		3.9		0.79	
T	SW6010	Iron	ug/L	2800		3300		2200		29000		30000		5000	
T	OSW-6020	Lead	ug/L	0.42	J	1.5	J	0.1	U	2		4.1		0.82	J
T	SW6010	Magnesium	ug/L	4800		4700		4100		5400		1200		4200	
T	SW6010	Manganese	ug/L	830		570		170		1500		270		800	
T	SW7470A	Mercury	ug/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
T	SW6010	Nickel	ug/L	10	U	10	U	10	U	12		5.1	J	4.1	J
T	SW6010	Potassium	ug/L	2600	J	2500	J	1900	J	2300	J	4000	U	2200	J
T	SW6010	Selenium	ug/L	10	U	10	U	10	U	10	U	10	U	10	U
T	OSW-6020	Silver	ug/L	0.1	U	0.1	U	0.1	U	0.2	U	0.5	U	0.1	U
T	SW6010	Sodium	ug/L	110000		110000		76000		120000		42000		94000	
T	SW6010	Thallium	ug/L	10	U	10	U	10	U	10	U	10	U	10	U
T	SW6010	Tin	ug/L	50	U	50	U	50	U	50	U	50	U	50	U
T	SW6010	Vanadium	ug/L	10	U	10	U	10	U	3.1	J	12		10	U
T	SW6010	Zinc	ug/L	50	U	50	U	50	U	19	J	120		9	J

Notes:

T = Total (unfiltered)

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/L = microgram per liter

Table 2.7
Final Results Summary - Metals
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	PZ-16RR		PZ-17RR		SD-1		SDBK-001		SDBK-002		SDBK-004	
			Field Sample ID	OC-SW-PZ-16RR-XXX		OC-SW-PZ-17RR-XXX		OC-SW-SD-1-XXX		OC-SW-SDBK-001-XXX		OC-SW-SDBK-002-XXX		OC-SW-SDBK-004-XXX	
			Field Sample Date	06/06/11		06/06/11		06/06/11		06/08/11		06/07/11		06/08/11	
			QC Code	FS		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34253-1		360-34253-1		360-34315-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
T	SW6010	Aluminum	ug/L	850		9000		460		1100		26	J	440	
T	SW6010	Antimony	ug/L	6	U	6	U	6	U	6	U	6	U	6	U
T	SW6010	Arsenic	ug/L	10	U	10	U	10	U	3.6	J	10	U	10	U
T	SW6010	Barium	ug/L	23		21		26		200		34		50	
T	SW6010	Beryllium	ug/L	0.3	J	1.1		1	U	1	U	1	U	1	U
T	SW6010	Cadmium	ug/L	1	U	1	U	1	U	1.1	J	1	U	1	U
T	SW6010	Calcium	ug/L	72000		72000		81000		79000		27000		18000	
T	SW6010	Chromium	ug/L	270		1800		110		2.2	J	5	U	0.77	J
T	SW6010	Cobalt	ug/L	41		50		39		3	J	10	U	10	U
T	OSW-6020	Copper	ug/L	6.4		21		0.21	J	27		1.1		1.2	
T	SW6010	Iron	ug/L	4800		12000		2000		6700		420		2000	
T	OSW-6020	Lead	ug/L	0.1	U	0.42	J	0.3	J	14		0.27	J	1.3	J
T	SW6010	Magnesium	ug/L	16000		17000		17000		7700		4100		3400	
T	SW6010	Manganese	ug/L	1900		2200		2000		3400		160		590	
T	SW7470A	Mercury	ug/L	0.29		0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
T	SW6010	Nickel	ug/L	47		57		41		3.7	J	10	U	2.1	J
T	SW6010	Potassium	ug/L	2200	J	3400	J	2600	J	9600		3000	J	2700	J
T	SW6010	Selenium	ug/L	10	U	10	U	10	U	10	U	10	U	10	U
T	OSW-6020	Silver	ug/L	0.1	U	0.1	U	0.1	U	0.23	U	0.1	U	0.1	U
T	SW6010	Sodium	ug/L	200000		220000		220000		450000		75000		65000	
T	SW6010	Thallium	ug/L	10	U	10	U	10	U	10	U	10	U	10	U
T	SW6010	Tin	ug/L	50	U	50	U	50	U	50	U	50	U	50	U
T	SW6010	Vanadium	ug/L	10	U	10	U	10	U	2.2	J	10	U	1.5	J
T	SW6010	Zinc	ug/L	75		97		55		23	J	50	U	24	J

Notes:

T = Total (unfiltered)

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/L = microgram per liter

Prepared by / Date: KJC 09/06/11

Checked by / Date: TLC 09/07/11

Table 2.8
Final Results Summary - Hexavalent Chromium
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	EDSD/SW2 (EDBS6)		EDSD/SW5 (EDBS11)		ISCO1		ISCO1		ISCO2		OPWD-SW-S	
			Field Sample ID	OC-SW-EDSD/SW2(EDBS6)-XXX		OC-SW-EDSD/SW5(EDBS11)-XXX		OC-SW-ISCO-1-DUP		OC-SW-ISCO-1-XXX		OC-SW-ISCO-2-XXX		OC-SW-OPWD-SD/SO/SW-S-XXX	
			Field Sample Date	06/08/11		06/08/11		06/06/11		06/06/11		06/06/11		06/07/11	
			QC Code	FS		FS		FD		FS		FS		FS	
			Lab Sample Delivery Group	360-34315-1		360-34315-1		360-34253-1		360-34253-1		360-34253-1		360-34288-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
T	SW7199	Chromium, Hexavalent	ug/l	0.56	J	1	UJ	1	UJ	1	U	1	UJ	1	U

Notes:

T = Total

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/l = microgram per liter

Prepared by / Date: KJC 08/26/11

Checked by / Date: MJW 08/26/11

Table 2.9
Final Results Summary - General Chemistry
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	EDSD/SW0		EDSD/SW1 (EDBS5)		EDSD/SW2 (EDBS6)		EDSD/SW5 (EDBS11)		ISCO1		ISCO1	
			Field Sample ID	OC-SW-SD-EDSD/SW0-XXX		OC-SW-EDSD/SW1(EDBS5)-XXX		OC-SW-EDSD/SW2(EDBS6)-XXX		OC-SW-EDSD/SW5(EDBS11)-XXX		OC-SW-ISCO-1-DUP		OC-SW-ISCO-1-XXX	
			Field Sample Date	06/08/11		06/08/11		06/08/11		06/08/11		06/06/11		06/06/11	
			QC Code	FS		FS		FS		FS		FD		FS	
			Lab Sample Delivery Group	360-34315-1		360-34315-1		360-34315-1		360-34315-1		360-34253-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	E300	Bromide	mg/L	0.1	U	0.1	U	0.1	U	0.1	U	0.14		0.14	
N	E300	Chloride	mg/L	360		190		220		180		130		130	
N	E300	Nitrate as N	mg/L	2.6	J	0.68		0.81		0.93		0.05	U	0.05	U
N	E300	Nitrite as N	mg/L	0.1	U	0.1	U	0.1	U	0.1	U	0.01	U	0.01	U
N	LACH_107_06_1_B	Nitrogen, as Ammonia	mg/L	0.1	U	0.1	U	0.92		8.7		32		31	J
N	E300	Sulfate	mg/L	19		20		19		69		150		150	
N	A2340B	Hardness	mg/L	140		140		140		140		80		80	
N	A5310_TOC_B	Total Organic Carbon	mg/L	2.3		2.1		1.2		1.5		5.9		6.1	
N	A2540D	Total Suspended Solids	mg/L	14		5	U	5		5	U	8	J	6	J

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

mg/L = milligram per liter

Table 2.9
Final Results Summary - General Chemistry
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	ISCO2		LB-1		LB-2		LB-3		MMB-SW/SD-1		MMB-SW/SD-1		MMB-SW/SD-10	
			Field Sample ID	OC-SW-ISCO-2-XXX		OC-SW-LB-1-XXX		OC-SW-LB-2-XXX		OC-SW-LB-3-XXX		OC-SW-MMB-SW/SD-1-DUP		OC-SW-MMB-SW/SD-1-XXX		OC-SW-MMB-SW/SD-10-XXX	
			Field Sample Date	06/06/11		06/07/11		06/07/11		06/07/11		06/06/11		06/06/11		06/06/11	
			QC Code	FS		FS		FS		FS		FD		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34288-1		360-34288-1		360-34288-1		360-34253-1		360-34253-1		360-34288-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	E300	Bromide	mg/L	0.43		0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
N	E300	Chloride	mg/L	180		360		150		140		130		140		130	
N	E300	Nitrate as N	mg/L	0.57		0.05	UJ	0.91		0.13		0.05	U	0.05	U	0.05	U
N	E300	Nitrite as N	mg/L	0.1	U	0.1	UJ	0.01	U	0.1	U	0.01	U	0.01	U	0.1	U
N	LACH_107_06_1_B	Nitrogen, as Ammonia	mg/L	110		0.52		3.7		8.7		0.1	U	0.1	U	0.1	U
N	E300	Sulfate	mg/L	800		4.4		17		16		5.9		5.4		3.2	
N	A2340B	Hardness	mg/L	220		90		74		140		70		70		92	
N	A5310_TOC_B	Total Organic Carbon	mg/L	9.4		13		3.4		5.8		4.7		4.1		4.5	
N	A2540D	Total Suspended Solids	mg/L	240	J	32		94		26		5	UJ	5	UJ	5	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

mg/L = milligram per liter

Table 2.9
Final Results Summary - General Chemistry
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-11		MMB-SW/SD-2		MMB-SW/SD-3		MMB-SW/SD-4		MMB-SW/SD-5		MMB-SW/SD-6	
			Field Sample ID	OC-SW-MMB-SW/SD-11-XXX		OC-SW-MMB-SW/SD-2-XXX		OC-SW-MMB-SW/SD-3-XXX		OC-SW-MMB-SW/SD-4-XXX		OC-SW-MMB-SW/SD-5-XXX		OC-SW-MMB-SW/SD-6-XXX	
			Field Sample Date	06/07/11		06/08/11		06/08/11		06/06/11		06/07/11		06/08/11	
			QC Code	FS		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34315-1		360-34315-1		360-34315-1		360-34288-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	E300	Bromide	mg/L	0.1	U	0.1	U	0.1	U	0.1	U	0.1		0.1	U
N	E300	Chloride	mg/L	220		160		150		130		160		76	
N	E300	Nitrate as N	mg/L	0.31	J	0.55	J	0.05	U	0.05	U	0.05	U	0.05	UJ
N	E300	Nitrite as N	mg/L	0.1	UJ	0.1	U	0.1	U	0.1	U	0.1	U	0.01	U
N	LACH_107_06_1_B	Nitrogen, as Ammonia	mg/L	0.25		0.66		0.29		0.1	U	0.1		2.5	
N	E300	Sulfate	mg/L	13		16		8		7.1		5.7		39	
N	A2340B	Hardness	mg/L	78		100		95		70		72		120	
N	A5310_TOC_B	Total Organic Carbon	mg/L	2.3		1.7		3.4		4.8		3.7		7.5	
N	A2540D	Total Suspended Solids	mg/L	5	U	5	U	5	U	6		10		1000	

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

mg/L = milligram per liter

Table 2.9
Final Results Summary - General Chemistry
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-8		MMB-SW/SD-8A		MMB-SW/SD-9		OPWD-1		OPWD-2		OPWD-SW-S	
			Field Sample ID	OC-SW-MMB-SW/SD-8-XXX		OC-SW-MMB-SW/SD-8A-XXX		OC-SW-MMB-SW/SD-9-XXX		OC-SW-OPWD-1-XXX		OC-SW-OPWD-2-XXX		OC-SW-OPWD-SD/SO/SW-S-XXX	
			Field Sample Date	06/07/11		06/08/11		06/06/11		06/07/11		06/07/11		06/07/11	
			QC Code	FS		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34288-1		360-34315-1		360-34253-1		360-34288-1		360-34288-1		360-34288-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	E300	Bromide	mg/L	0.12		0.1	U	0.1	U	0.2		0.1		0.14	
N	E300	Chloride	mg/L	180		210		130		180		82		130	
N	E300	Nitrate as N	mg/L	0.097		0.15	J	0.05	U	0.05	U	0.05	U	0.05	U
N	E300	Nitrite as N	mg/L	0.1	U	0.1	U	0.1	U	0.1	U	0.01	U	0.1	U
N	LACH_107_06_1_B	Nitrogen, as Ammonia	mg/L	0.16		0.15		0.1	U	63		36		37	
N	E300	Sulfate	mg/L	8.7		11		3.9		320		69		160	
N	A2340B	Hardness	mg/L	83		80		77		87		22		77	
N	A5310_TOC_B	Total Organic Carbon	mg/L	2.7		2.9		5.1		5.9		17		5	
N	A2540D	Total Suspended Solids	mg/L	6		40		5	UJ	77		250		11	

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

mg/L = milligram per liter

Table 2.9
Final Results Summary - General Chemistry
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	PZ-16RR		PZ-17RR		SD-1		SDBK-001		SDBK-002		SDBK-004	
			Field Sample ID	OC-SW-PZ-16RR-XXX		OC-SW-PZ-17RR-XXX		OC-SW-SD-1-XXX		OC-SW-SDBK-001-XXX		OC-SW-SDBK-002-XXX		OC-SW-SDBK-004-XXX	
			Field Sample Date	06/06/11		06/06/11		06/06/11		06/08/11		06/07/11		06/08/11	
			QC Code	FS		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34253-1		360-34253-1		360-34315-1		360-34288-1		360-34315-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	E300	Bromide	mg/L	0.43		0.48		0.46		0.13		0.1	U	0.1	U
N	E300	Chloride	mg/L	190		230		300		930		160		140	
N	E300	Nitrate as N	mg/L	0.26		1.8		6		0.47	J	0.94	J	0.49	J
N	E300	Nitrite as N	mg/L	0.01	U	0.1	U	0.1	U	0.1	U	0.1	UJ	0.1	U
N	LACH_107_06_1_B	Nitrogen, as Ammonia	mg/L	110		130		95		0.4		0.13		0.25	
N	E300	Sulfate	mg/L	800		990		800		12		12		8.1	
N	A2340B	Hardness	mg/L	240		250		270		230		85		60	
N	A5310_TOC_B	Total Organic Carbon	mg/L	10		14		24		12		1	U	8.9	
N	A2540D	Total Suspended Solids	mg/L	14	J	70	J	19	J	82		2.5	U	5	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

mg/L = milligram per liter

Prepared by / Date: KJC 08/26/11

Checked by / Date: MJW 08/26/11

Table 2.10
Final Results Summary - Formaldehyde
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	ISCO1		ISCO1		ISCO2		MMB-SW/SD-1		MMB-SW/SD-1		MMB-SW/SD-10	
			Field Sample ID	OC-SW-ISCO-1-DUP		OC-SW-ISCO-1-XXX		OC-SW-ISCO-2-XXX		OC-SW-MMB-SW/SD-1-DUP		OC-SW-MMB-SW/SD-1-XXX		OC-SW-MMB-SW/SD-10-XXX	
			Field Sample Date	06/06/11		06/06/11		06/06/11		06/06/11		06/06/11		06/06/11	
			QC Code	FD		FS		FS		FD		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34253-1		360-34253-1		360-34253-1		360-34253-1		360-34288-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8315	Acetaldehyde	ug/l	30	U	30	U	30	U	30	U	30	U	30	U
N	SW8315	Formaldehyde	ug/l	30	U	30	U	30	U	30	UJ	30	UJ	30	UJ

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/l = microgram per liter

Table 2.10
Final Results Summary - Formaldehyde
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-11		MMB-SW/SD-2		MMB-SW/SD-3		MMB-SW/SD-4		MMB-SW/SD-5	
			Field Sample ID	OC-SW-MMB-SW/SD-11-XXX		OC-SW-MMB-SW/SD-2-XXX		OC-SW-MMB-SW/SD-3-XXX		OC-SW-MMB-SW/SD-4-XXX		OC-SW-MMB-SW/SD-5-XXX	
			Field Sample Date	06/07/11		06/08/11		06/08/11		06/06/11		06/07/11	
			QC Code	FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34315-1		360-34315-1		360-34315-1		360-34288-1		360-34288-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8315	Acetaldehyde	ug/l	30	U	30	U	30	U	30	U	30	U
N	SW8315	Formaldehyde	ug/l	30	U	30	U	30	U	30	U	30	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/l = microgram per liter

Table 2.10
Final Results Summary - Formaldehyde
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-6		MMB-SW/SD-8		MMB-SW/SD-8A		MMB-SW/SD-9		OPWD-1		OPWD-2	
			Field Sample ID	OC-SW-MMB-SW/SD-6-XXX		OC-SW-MMB-SW/SD-8-XXX		OC-SW-MMB-SW/SD-8A-XXX		OC-SW-MMB-SW/SD-9-XXX		OC-SW-OPWD-1-XXX		OC-SW-OPWD-2-XXX	
			Field Sample Date	06/08/11		06/07/11		06/08/11		06/06/11		06/07/11		06/07/11	
			QC Code	FS		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34315-1		360-34288-1		360-34315-1		360-34253-1		360-34288-1		360-34288-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8315	Acetaldehyde	ug/l	30	U	30	U	30	U	30	U	30	U	30	U
N	SW8315	Formaldehyde	ug/l	30	U	30	U	30	U	30	U	30	U	6.4	J

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/l = microgram per liter

Table 2.10
Final Results Summary - Formaldehyde
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	PZ-16RR		PZ-17RR		SD-1	
			Field Sample ID	OC-SW-PZ-16RR-XXX		OC-SW-PZ-17RR-XXX		OC-SW-SD-1-XXX	
			Field Sample Date	06/06/11		06/06/11		06/06/11	
			QC Code	FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34253-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual
N	SW8315	Acetaldehyde	ug/l	30	U	30	U	30	U
N	SW8315	Formaldehyde	ug/l	30	U	30	U	30	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/l = microgram per liter

Prepared by / Date: KJC 08/31/11

Checked by / Date: WDC 08/31/11

Table 2.11
Final Results Summary - Phthalic Anhydride
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	ISCO1		ISCO1		ISCO2		PZ-16RR		PZ-17RR		SD-1	
			Field Sample ID	OC-SW-ISCO-1-DUP		OC-SW-ISCO-1-XXX		OC-SW-ISCO-2-XXX		OC-SW-PZ-16RR-XXX		OC-SW-PZ-17RR-XXX		OC-SW-SD-1-XXX	
			Field Sample Date	06/06/11		06/06/11		06/06/11		06/06/11		06/06/11		06/06/11	
			QC Code	FD		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34253-1		360-34253-1		360-34253-1		360-34253-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	LC65	Phthalic Acid/Phthalic anhydride	ug/l	10	U	10	U	10	U	10	U	10	U	10	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

ug/l = microgram per liter

Prepared by / Date: KJC 09/02/11

Checked by / Date: TLC 09/07/11

Table 2.12
Final Results Summary - Hydrazine
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	ISCO1		ISCO1		ISCO2		MMB-SW/SD-1		MMB-SW/SD-1		MMB-SW/SD-10		MMB-SW/SD-11	
			Field Sample ID	OC-SW-ISCO-1-DUP		OC-SW-ISCO-1-XXX		OC-SW-ISCO-2-XXX		OC-SW-MMB-SW/SD-1-DUP		OC-SW-MMB-SW/SD-1-XXX		OC-SW-MMB-SW/SD-10-XXX		OC-SW-MMB-SW/SD-11-XXX	
			Field Sample Date	06/06/11		06/06/11		06/06/11		06/06/11		06/06/11		06/06/11		06/07/11	
			QC Code	FD		FS		FS		FD		FS		FS		FS	
			Lab Sample Delivery Group	1250152		1250152		1250152		1250154		1250154		1250152		1250414	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8315A MOD	Hydrazine	ug/l	0.1	U	0.1	U	0.08	J	0.1	U	0.1	U	0.1	U	0.1	U
N	SW8315A MOD	Monomethylhydrazine (MMH)	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8315A MOD	UDMH	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/l = microgram per liter

Table 2.12
Final Results Summary - Hydrazine
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-2		MMB-SW/SD-3		MMB-SW/SD-4		MMB-SW/SD-5		MMB-SW/SD-6		MMB-SW/SD-8	
			Field Sample ID	OC-SW-MMB-SW/SD-2-XXX		OC-SW-MMB-SW/SD-3-XXX		OC-SW-MMB-SW/SD-4-XXX		OC-SW-MMB-SW/SD-5-XXX		OC-SW-MMB-SW/SD-6-XXX		OC-SW-MMB-SW/SD-8-XXX	
			Field Sample Date	06/08/11		06/08/11		06/06/11		06/07/11		06/08/11		06/07/11	
			QC Code	FS		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	1250627		1250627		1250154		1250414		1250627		1250414	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8315A MOD	Hydrazine	ug/l	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.06	J
N	SW8315A MOD	Monomethylhydrazine (MMH)	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8315A MOD	UDMH	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/l = microgram per liter

Table 2.12
Final Results Summary - Hydrazine
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	MMB-SW/SD-8A		MMB-SW/SD-9		OPWD-1		OPWD-2		PZ-16RR		PZ-17RR		SD-1	
			Field Sample ID	OC-SW-MMB-SW/SD-8A-XXX		OC-SW-MMB-SW/SD-9-XXX		OC-SW-OPWD-1-XXX		OC-SW-OPWD-2-XXX		OC-SW-PZ-16RR-XXX		OC-SW-PZ-17RR-XXX		OC-SW-SD-1-XXX	
			Field Sample Date	06/07/11		06/06/11		06/07/11		06/07/11		06/06/11		06/06/11		06/06/11	
			QC Code	FS		FS		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	1250414		1250154		1250414		1250414		1250154		1250154		1250154	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8315A MOD	Hydrazine	ug/l	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.076	J
N	SW8315A MOD	Monomethylhydrazine (MMH)	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N	SW8315A MOD	UDMH	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Notes:

N = normal

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

ug/l = microgram per liter

Prepared by / Date: KJC 08/22/11

Checked by / Date: CSR 08/29/11

Table 2.13
Final Results Summary - DMF
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	ISCO1		ISCO1		ISCO2		PZ-16RR		PZ-17RR		SD-1	
			Field Sample ID	OC-SW-ISCO-1-DUP		OC-SW-ISCO-1-XXX		OC-SW-ISCO-2-XXX		OC-SW-PZ-16RR-XXX		OC-SW-PZ-17RR-XXX		OC-SW-SD-1-XXX	
			Field Sample Date	06/06/11		06/06/11		06/06/11		06/06/11		06/06/11		06/06/11	
			QC Code	FD		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	WIL-23		WIL-23		WIL-23		WIL-23		WIL-23		WIL-23	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
T	SW8033M	Dimethylformamide	mg/L	0.02	UJ	0.02	UJ	0.02	UJ	0.02	UJ	0.02	UJ	0.02	UJ

Notes:

T = total

FS = field sample

FD = field duplicate

U = not detected, value is the detection limit

J = value is estimated

mg/L = milligram per liter

Prepared by / Date: KJC 08/26/11

Checked by / Date: MJW 08/26/11

Table 2.14
Final Results Summary - Nonylphenol/Alkylphenols
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	ISCO1		ISCO1		ISCO2		PZ-16RR		PZ-17RR	
			Field Sample ID	OC-SW-ISCO-1-DUP		OC-SW-ISCO-1-XXX		OC-SW-ISCO-2-XXX		OC-SW-PZ-16RR-XXX		OC-SW-PZ-17RR-XXX	
			Field Sample Date	06/06/11		06/06/11		06/06/11		06/06/11		06/06/11	
			QC Code	FD		FS		FS		FS		FS	
			Lab Sample Delivery Group	360-34253-1		360-34253-1		360-34253-1		360-34253-1		360-34253-1	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	GCMS SIM	4,4'-Isopropylidenediphenol	ug/l	0.95	UJ	0.95	U	0.65	J	0.96		0.87	J
N	GCMS SIM	4-(1,1,3,3-Tetramethylbutyl)phenol	ug/l	0.95	UJ	0.95	U	0.99	U	0.95	U	0.95	UJ
N	GCMS SIM	4-Nonylphenol	ug/l	4.8	UJ	4.8	U	5.6		17		18	J
N	GCMS SIM	Nonylphenol Diethoxylate	ug/l	19	UJ	19	U	20	U	19	U	19	UJ

Notes:
N = normal
FS = field sample
FD = field duplicate
U = not detected, value is the detection limit
J = value is estimated
ug/l = microgram per liter

Prepared by / Date: KJC 09/06/11
Checked by / Date: TLC 09/07/11

Table 2.15
Final Results Summary - OPEX/Kempore
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	EDSD/SW0		EDSD/SW1 (EDBS5)		EDSD/SW2 (EDBS6)		EDSD/SW5 (EDBS11)	
			Field Sample ID	OC-SW-EDSD/SW0-XXX		OC-SW-EDSD/SW1(EDBS5)-XXX		OC-SW-EDSD/SW2(EDBS6)-XXX		OC-SW-EDSD/SW5(EDBS11)-XXX	
			Field Sample Date	06/08/11		06/08/11		06/08/11		06/08/11	
			QC Code	FS		FS		FS		FS	
			Lab Sample Delivery Group	1250627		1250627		1250627		1250627	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8000B	Kempore (Azodicarbonamide)	ug/l	3000	U	1000	U	4100	N	1200	N
N	SW8000B	OPEX	ug/l	100	UJ	100	UJ	100	UJ	100	UJ

Notes:
N = normal
FS = field sample
FD = field duplicate
U = not detected, value is the detection limit
J = value is estimated
N = presumptively present
ug/l = microgram per liter

Table 2.15
Final Results Summary - OPEX/Kempore
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	ISCO1		ISCO1		ISCO2		MMB-SW/SD-2		MMB-SW/SD-5	
			Field Sample ID	OC-SW-ISCO-1-DUP		OC-SW-ISCO-1-XXX		OC-SW-ISCO-2-XXX		OC-SW-MMB-SW/SD-2-XXX		OC-SW-MMB-SW/SD-5-XXX	
			Field Sample Date	06/06/11		06/06/11		06/06/11		06/08/11		06/07/11	
			QC Code	FD		FS		FS		FS		FS	
			Lab Sample Delivery Group	1250152		1250152		1250152		1250627		1250414	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8000B	Kempore (Azodicarbonamide)	ug/l	1000	U	1000	U	1200	N	710	NJ	1000	U
N	SW8000B	OPEX	ug/l	100	UJ	100	UJ	100	UJ	100	UJ	100	UJ

Notes:
N = normal
FS = field sample
FD = field duplicate
U = not detected, value is the detection limit
J = value is estimated
N = presumptively present
ug/l = microgram per liter

Table 2.15
Final Results Summary - OPEX/Kempore
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

			Loc Name	OPWD-1		OPWD-2		OPWD-SW-S		PZ-16RR		PZ-17RR		SD-1	
			Field Sample ID	OC-SW-OPWD-1-XXX		OC-SW-OPWD-2-XXX		OC-SW-OPWD-SD/SO/SW-S-XXX		OC-SW-PZ-16RR-XXX		OC-SW-PZ-17RR-XXX		OC-SW-SD-1-XXX	
			Field Sample Date	06/07/11		06/07/11		06/07/11		06/06/11		06/06/11		06/06/11	
			QC Code	FS		FS		FS		FS		FS		FS	
			Lab Sample Delivery Group	1250414		1250414		1250414		1250154		1250154		1250154	
Frac	**Method**	**Analyte**	**Units**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
N	SW8000B	Kempore (Azodicarbonamide)	ug/l	1000	U	1000	U	1000	U	1100	U	1100	NJ	1400	N
N	SW8000B	OPEX	ug/l	100	UJ	100	UJ	100	UJ	100	UJ	100	UJ	100	UJ

Notes:
N = normal
FS = field sample
FD = field duplicate
U = not detected, value is the detection limit
J = value is estimated
N = presumptively present
ug/l = microgram per liter

Prepared by / Date: KJC 08/22/11
Checked by / Date: CSR 08/29/11

Table 3.2
Data Validation Action Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units
360-34253-1	360-34253-1	SW8260C	OC-SW-ISCO-1-DUP	2,4,4-Trimethyl-1-pentene	1	U	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-2	SW8260C	OC-SW-ISCO-1-XXX	2,4,4-Trimethyl-1-pentene	1	U	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-3	SW8260C	OC-SW-ISCO-2-XXX	2,4,4-Trimethyl-1-pentene	1.9		1.9	J	CCV%D	ug/L
360-34253-1	360-34253-4	SW8260C	OC-SW-MMB-SW/SD-1-DUP	2,4,4-Trimethyl-1-pentene	1	U	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-5	SW8260C	OC-SW-MMB-SW/SD-1-XXX	2,4,4-Trimethyl-1-pentene	1	U	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-6	SW8260C	OC-SW-MMB-SW/SD-9-XXX	2,4,4-Trimethyl-1-pentene	1	U	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-7	SW8260C	OC-SW-PZ-16RR-XXX	2,4,4-Trimethyl-1-pentene	5.6		5.6	J	CCV%D	ug/L
360-34253-1	360-34253-8	SW8260C	OC-SW-PZ-17RR-XXX	2,4,4-Trimethyl-1-pentene	10		10	J	CCV%D	ug/L
360-34253-1	360-34253-9	SW8260C	OC-SW-SD-1-XXX	2,4,4-Trimethyl-1-pentene	1.9		1.9	J	CCV%D	ug/L
360-34253-1	360-34253-1	SW8260C	OC-SW-ISCO-1-DUP	Bromoform	1	U *	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-2	SW8260C	OC-SW-ISCO-1-XXX	Bromoform	1	U *	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-3	SW8260C	OC-SW-ISCO-2-XXX	Bromoform	0.67	J *	0.67	J	CCV%D, LCS-H	ug/L
360-34253-1	360-34253-4	SW8260C	OC-SW-MMB-SW/SD-1-DUP	Bromoform	1	U *	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-5	SW8260C	OC-SW-MMB-SW/SD-1-XXX	Bromoform	1	U *	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-6	SW8260C	OC-SW-MMB-SW/SD-9-XXX	Bromoform	1	U *	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-9	SW8260C	OC-SW-SD-1-XXX	Bromoform	0.72	J *	0.72	J	CCV%D, LCS-H	ug/L
360-34253-1	360-34253-1	SW8260C	OC-SW-ISCO-1-DUP	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34253-1	360-34253-2	SW8260C	OC-SW-ISCO-1-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34253-1	360-34253-3	SW8260C	OC-SW-ISCO-2-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34253-1	360-34253-4	SW8260C	OC-SW-MMB-SW/SD-1-DUP	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34253-1	360-34253-5	SW8260C	OC-SW-MMB-SW/SD-1-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34253-1	360-34253-6	SW8260C	OC-SW-MMB-SW/SD-9-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34253-1	360-34253-7	SW8260C	OC-SW-PZ-16RR-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34253-1	360-34253-8	SW8260C	OC-SW-PZ-17RR-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34253-1	360-34253-9	SW8260C	OC-SW-SD-1-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34253-1	360-34253-2	SW8260C	OC-SW-ISCO-1-XXX	Carbon disulfide	0.21	J *	0.21	J	LCS-H	ug/L
360-34253-1	360-34253-1	SW8260C	OC-SW-ISCO-1-DUP	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-2	SW8260C	OC-SW-ISCO-1-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-3	SW8260C	OC-SW-ISCO-2-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-4	SW8260C	OC-SW-MMB-SW/SD-1-DUP	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-5	SW8260C	OC-SW-MMB-SW/SD-1-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-6	SW8260C	OC-SW-MMB-SW/SD-9-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-7	SW8260C	OC-SW-PZ-16RR-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-8	SW8260C	OC-SW-PZ-17RR-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-9	SW8260C	OC-SW-SD-1-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-1	SW8260C	OC-SW-ISCO-1-DUP	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34253-1	360-34253-2	SW8260C	OC-SW-ISCO-1-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34253-1	360-34253-3	SW8260C	OC-SW-ISCO-2-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34253-1	360-34253-4	SW8260C	OC-SW-MMB-SW/SD-1-DUP	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34253-1	360-34253-5	SW8260C	OC-SW-MMB-SW/SD-1-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34253-1	360-34253-6	SW8260C	OC-SW-MMB-SW/SD-9-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34253-1	360-34253-7	SW8260C	OC-SW-PZ-16RR-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34253-1	360-34253-8	SW8260C	OC-SW-PZ-17RR-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L

Table 3.2
Data Validation Action Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units
360-34253-1	360-34253-9	SW8260C	OC-SW-SD-1-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34253-1	360-34253-1	SW8260C	OC-SW-ISCO-1-DUP	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-2	SW8260C	OC-SW-ISCO-1-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-3	SW8260C	OC-SW-ISCO-2-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-4	SW8260C	OC-SW-MMB-SW/SD-1-DUP	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-5	SW8260C	OC-SW-MMB-SW/SD-1-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-6	SW8260C	OC-SW-MMB-SW/SD-9-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-7	SW8260C	OC-SW-PZ-16RR-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-8	SW8260C	OC-SW-PZ-17RR-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34253-1	360-34253-9	SW8260C	OC-SW-SD-1-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-10	SW8260C	OC-SW-MMB-SW/SD-5-XXX	2,4,4-Trimethyl-1-pentene	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-11	SW8260C	OC-SW-MMB-SW/SD-8-XXX	2,4,4-Trimethyl-1-pentene	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-12	SW8260C	OC-SW-OPWD-1-XXX	2,4,4-Trimethyl-1-pentene	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-13	SW8260C	OC-SW-OPWD-2-XXX	2,4,4-Trimethyl-1-pentene	7.1		7.1	J	CCV%D	ug/L
360-34288-1	360-34288-14	SW8260C	OC-SW-OPWD-SD/SO/SW-S-XXX	2,4,4-Trimethyl-1-pentene	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-15	SW8260C	OC-SW-SDBK-002-XXX	2,4,4-Trimethyl-1-pentene	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-5	SW8260C	OC-SW-LB-1-XXX	2,4,4-Trimethyl-1-pentene	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-6	SW8260C	OC-SW-LB-2-XXX	2,4,4-Trimethyl-1-pentene	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-7	SW8260C	OC-SW-LB-3-XXX	2,4,4-Trimethyl-1-pentene	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-8	SW8260C	OC-SW-MMB-SW/SD-10-XXX	2,4,4-Trimethyl-1-pentene	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-9	SW8260C	OC-SW-MMB-SW/SD-4-XXX	2,4,4-Trimethyl-1-pentene	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-10	SW8260C	OC-SW-MMB-SW/SD-5-XXX	Bromoform	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-11	SW8260C	OC-SW-MMB-SW/SD-8-XXX	Bromoform	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-12	SW8260C	OC-SW-OPWD-1-XXX	Bromoform	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-13	SW8260C	OC-SW-OPWD-2-XXX	Bromoform	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-14	SW8260C	OC-SW-OPWD-SD/SO/SW-S-XXX	Bromoform	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-15	SW8260C	OC-SW-SDBK-002-XXX	Bromoform	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-5	SW8260C	OC-SW-LB-1-XXX	Bromoform	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-6	SW8260C	OC-SW-LB-2-XXX	Bromoform	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-7	SW8260C	OC-SW-LB-3-XXX	Bromoform	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-8	SW8260C	OC-SW-MMB-SW/SD-10-XXX	Bromoform	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-9	SW8260C	OC-SW-MMB-SW/SD-4-XXX	Bromoform	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-10	SW8260C	OC-SW-MMB-SW/SD-5-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-11	SW8260C	OC-SW-MMB-SW/SD-8-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-12	SW8260C	OC-SW-OPWD-1-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-13	SW8260C	OC-SW-OPWD-2-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-14	SW8260C	OC-SW-OPWD-SD/SO/SW-S-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-15	SW8260C	OC-SW-SDBK-002-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-5	SW8260C	OC-SW-LB-1-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-6	SW8260C	OC-SW-LB-2-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-7	SW8260C	OC-SW-LB-3-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-8	SW8260C	OC-SW-MMB-SW/SD-10-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-9	SW8260C	OC-SW-MMB-SW/SD-4-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L

Table 3.2
Data Validation Action Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units
360-34288-1	360-34288-10	SW8260C	OC-SW-MMB-SW/SD-5-XXX	Carbon disulfide	10	U *	10	UJ	CCV%D	ug/L
360-34288-1	360-34288-11	SW8260C	OC-SW-MMB-SW/SD-8-XXX	Carbon disulfide	10	U *	10	UJ	CCV%D	ug/L
360-34288-1	360-34288-12	SW8260C	OC-SW-OPWD-1-XXX	Carbon disulfide	10	U *	10	UJ	CCV%D	ug/L
360-34288-1	360-34288-13	SW8260C	OC-SW-OPWD-2-XXX	Carbon disulfide	2.5	J *	2.5	J	CCV%D, LCS-H	ug/L
360-34288-1	360-34288-14	SW8260C	OC-SW-OPWD-SD/SO/SW-S-XXX	Carbon disulfide	10	U *	10	UJ	CCV%D	ug/L
360-34288-1	360-34288-15	SW8260C	OC-SW-SDBK-002-XXX	Carbon disulfide	10	U *	10	UJ	CCV%D	ug/L
360-34288-1	360-34288-5	SW8260C	OC-SW-LB-1-XXX	Carbon disulfide	0.43	J *	0.43	J	CCV%D, LCS-H	ug/L
360-34288-1	360-34288-6	SW8260C	OC-SW-LB-2-XXX	Carbon disulfide	10	U *	10	UJ	CCV%D	ug/L
360-34288-1	360-34288-7	SW8260C	OC-SW-LB-3-XXX	Carbon disulfide	10	U *	10	UJ	CCV%D	ug/L
360-34288-1	360-34288-8	SW8260C	OC-SW-MMB-SW/SD-10-XXX	Carbon disulfide	10	U *	10	UJ	CCV%D	ug/L
360-34288-1	360-34288-9	SW8260C	OC-SW-MMB-SW/SD-4-XXX	Carbon disulfide	10	U *	10	UJ	CCV%D	ug/L
360-34288-1	360-34288-10	SW8260C	OC-SW-MMB-SW/SD-5-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-11	SW8260C	OC-SW-MMB-SW/SD-8-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-12	SW8260C	OC-SW-OPWD-1-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-13	SW8260C	OC-SW-OPWD-2-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-14	SW8260C	OC-SW-OPWD-SD/SO/SW-S-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-15	SW8260C	OC-SW-SDBK-002-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-5	SW8260C	OC-SW-LB-1-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-6	SW8260C	OC-SW-LB-2-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-7	SW8260C	OC-SW-LB-3-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-8	SW8260C	OC-SW-MMB-SW/SD-10-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-9	SW8260C	OC-SW-MMB-SW/SD-4-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-10	SW8260C	OC-SW-MMB-SW/SD-5-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-11	SW8260C	OC-SW-MMB-SW/SD-8-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-12	SW8260C	OC-SW-OPWD-1-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-13	SW8260C	OC-SW-OPWD-2-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-14	SW8260C	OC-SW-OPWD-SD/SO/SW-S-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-15	SW8260C	OC-SW-SDBK-002-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-5	SW8260C	OC-SW-LB-1-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-6	SW8260C	OC-SW-LB-2-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-7	SW8260C	OC-SW-LB-3-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-8	SW8260C	OC-SW-MMB-SW/SD-10-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-9	SW8260C	OC-SW-MMB-SW/SD-4-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34288-1	360-34288-10	SW8260C	OC-SW-MMB-SW/SD-5-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-11	SW8260C	OC-SW-MMB-SW/SD-8-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-12	SW8260C	OC-SW-OPWD-1-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-13	SW8260C	OC-SW-OPWD-2-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-14	SW8260C	OC-SW-OPWD-SD/SO/SW-S-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-15	SW8260C	OC-SW-SDBK-002-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-5	SW8260C	OC-SW-LB-1-XXX	Methyl Tertbutyl Ether	0.2	J *	0.2	J	CCV%D, LCS-H	ug/L
360-34288-1	360-34288-6	SW8260C	OC-SW-LB-2-XXX	Methyl Tertbutyl Ether	0.47	J *	0.47	J	CCV%D, LCS-H	ug/L
360-34288-1	360-34288-7	SW8260C	OC-SW-LB-3-XXX	Methyl Tertbutyl Ether	0.35	J *	0.35	J	CCV%D, LCS-H	ug/L
360-34288-1	360-34288-8	SW8260C	OC-SW-MMB-SW/SD-10-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L

Table 3.2
Data Validation Action Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units
360-34288-1	360-34288-9	SW8260C	OC-SW-MMB-SW/SD-4-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34288-1	360-34288-10	SW8260C	OC-SW-MMB-SW/SD-5-XXX	Methylene chloride	2	U	2	UJ	CCV%D	ug/L
360-34288-1	360-34288-11	SW8260C	OC-SW-MMB-SW/SD-8-XXX	Methylene chloride	2	U	2	UJ	CCV%D	ug/L
360-34288-1	360-34288-12	SW8260C	OC-SW-OPWD-1-XXX	Methylene chloride	2	U	2	UJ	CCV%D	ug/L
360-34288-1	360-34288-13	SW8260C	OC-SW-OPWD-2-XXX	Methylene chloride	2	U	2	UJ	CCV%D	ug/L
360-34288-1	360-34288-14	SW8260C	OC-SW-OPWD-SD/SO/SW-S-XXX	Methylene chloride	2	U	2	UJ	CCV%D	ug/L
360-34288-1	360-34288-15	SW8260C	OC-SW-SDBK-002-XXX	Methylene chloride	2	U	2	UJ	CCV%D	ug/L
360-34288-1	360-34288-5	SW8260C	OC-SW-LB-1-XXX	Methylene chloride	2	U	2	UJ	CCV%D	ug/L
360-34288-1	360-34288-6	SW8260C	OC-SW-LB-2-XXX	Methylene chloride	2	U	2	UJ	CCV%D	ug/L
360-34288-1	360-34288-7	SW8260C	OC-SW-LB-3-XXX	Methylene chloride	2	U	2	UJ	CCV%D	ug/L
360-34288-1	360-34288-8	SW8260C	OC-SW-MMB-SW/SD-10-XXX	Methylene chloride	2	U	2	UJ	CCV%D	ug/L
360-34288-1	360-34288-9	SW8260C	OC-SW-MMB-SW/SD-4-XXX	Methylene chloride	2	U	2	UJ	CCV%D	ug/L
360-34315-1	360-34315-1	SW8260C	OC-SW-SDBK-001-XXX	2,4,4-Trimethyl-1-pentene	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-10	SW8260C	OC-SW-MMB-SW/SD-6-XXX	2,4,4-Trimethyl-1-pentene	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-11	SW8260C	OC-SW-MMB-SW/SD-8A-XXX	2,4,4-Trimethyl-1-pentene	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-2	SW8260C	OC-SW-SDBK-004-XXX	2,4,4-Trimethyl-1-pentene	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-3	SW8260C	OC-SW-SD-EDSD/SW0-XXX	2,4,4-Trimethyl-1-pentene	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-4	SW8260C	OC-SW-EDSD/SW1(EDBS5)-XXX	2,4,4-Trimethyl-1-pentene	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-5	SW8260C	OC-SW-EDSD/SW2(EDBS6)-XXX	2,4,4-Trimethyl-1-pentene	3.9	*	3.9	J	CCV%D, LCS-H	ug/L
360-34315-1	360-34315-6	SW8260C	OC-SW-EDSD/SW5(EDBS11)-XXX	2,4,4-Trimethyl-1-pentene	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-7	SW8260C	OC-SW-MMB-SW/SD-11-XXX	2,4,4-Trimethyl-1-pentene	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-8	SW8260C	OC-SW-MMB-SW/SD-2-XXX	2,4,4-Trimethyl-1-pentene	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-9	SW8260C	OC-SW-MMB-SW/SD-3-XXX	2,4,4-Trimethyl-1-pentene	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-1	SW8260C	OC-SW-SDBK-001-XXX	Bromoform	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-10	SW8260C	OC-SW-MMB-SW/SD-6-XXX	Bromoform	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-11	SW8260C	OC-SW-MMB-SW/SD-8A-XXX	Bromoform	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-2	SW8260C	OC-SW-SDBK-004-XXX	Bromoform	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-3	SW8260C	OC-SW-SD-EDSD/SW0-XXX	Bromoform	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-4	SW8260C	OC-SW-EDSD/SW1(EDBS5)-XXX	Bromoform	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-5	SW8260C	OC-SW-EDSD/SW2(EDBS6)-XXX	Bromoform	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-6	SW8260C	OC-SW-EDSD/SW5(EDBS11)-XXX	Bromoform	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-7	SW8260C	OC-SW-MMB-SW/SD-11-XXX	Bromoform	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-8	SW8260C	OC-SW-MMB-SW/SD-2-XXX	Bromoform	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-9	SW8260C	OC-SW-MMB-SW/SD-3-XXX	Bromoform	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-1	SW8260C	OC-SW-SDBK-001-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-10	SW8260C	OC-SW-MMB-SW/SD-6-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-11	SW8260C	OC-SW-MMB-SW/SD-8A-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-2	SW8260C	OC-SW-SDBK-004-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-3	SW8260C	OC-SW-SD-EDSD/SW0-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-4	SW8260C	OC-SW-EDSD/SW1(EDBS5)-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-5	SW8260C	OC-SW-EDSD/SW2(EDBS6)-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-6	SW8260C	OC-SW-EDSD/SW5(EDBS11)-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-7	SW8260C	OC-SW-MMB-SW/SD-11-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L

Table 3.2
Data Validation Action Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units
360-34315-1	360-34315-8	SW8260C	OC-SW-MMB-SW/SD-2-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-9	SW8260C	OC-SW-MMB-SW/SD-3-XXX	Butane, 2-methoxy-2-methyl-	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-1	SW8260C	OC-SW-SDBK-001-XXX	Carbon disulfide	0.4	J *	0.4	J	LCS-H	ug/L
360-34315-1	360-34315-10	SW8260C	OC-SW-MMB-SW/SD-6-XXX	Carbon disulfide	0.29	J *	0.29	J	LCS-H	ug/L
360-34315-1	360-34315-11	SW8260C	OC-SW-MMB-SW/SD-8A-XXX	Carbon disulfide	0.28	J *	0.28	J	LCS-H	ug/L
360-34315-1	360-34315-9	SW8260C	OC-SW-MMB-SW/SD-3-XXX	Carbon disulfide	0.27	J *	0.27	J	LCS-H	ug/L
360-34315-1	360-34315-1	SW8260C	OC-SW-SDBK-001-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-10	SW8260C	OC-SW-MMB-SW/SD-6-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-11	SW8260C	OC-SW-MMB-SW/SD-8A-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-2	SW8260C	OC-SW-SDBK-004-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-3	SW8260C	OC-SW-SD-EDSD/SW0-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-4	SW8260C	OC-SW-EDSD/SW1(EDBS5)-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-5	SW8260C	OC-SW-EDSD/SW2(EDBS6)-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-6	SW8260C	OC-SW-EDSD/SW5(EDBS11)-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-7	SW8260C	OC-SW-MMB-SW/SD-11-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-8	SW8260C	OC-SW-MMB-SW/SD-2-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-9	SW8260C	OC-SW-MMB-SW/SD-3-XXX	Carbon tetrachloride	1	U	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-1	SW8260C	OC-SW-SDBK-001-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-10	SW8260C	OC-SW-MMB-SW/SD-6-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-11	SW8260C	OC-SW-MMB-SW/SD-8A-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-2	SW8260C	OC-SW-SDBK-004-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-3	SW8260C	OC-SW-SD-EDSD/SW0-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-4	SW8260C	OC-SW-EDSD/SW1(EDBS5)-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-5	SW8260C	OC-SW-EDSD/SW2(EDBS6)-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-6	SW8260C	OC-SW-EDSD/SW5(EDBS11)-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-7	SW8260C	OC-SW-MMB-SW/SD-11-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-8	SW8260C	OC-SW-MMB-SW/SD-2-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-9	SW8260C	OC-SW-MMB-SW/SD-3-XXX	Ethyl-t-Butyl Ether	5	U *	5	UJ	CCV%D	ug/L
360-34315-1	360-34315-1	SW8260C	OC-SW-SDBK-001-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-10	SW8260C	OC-SW-MMB-SW/SD-6-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-11	SW8260C	OC-SW-MMB-SW/SD-8A-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-2	SW8260C	OC-SW-SDBK-004-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-3	SW8260C	OC-SW-SD-EDSD/SW0-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-4	SW8260C	OC-SW-EDSD/SW1(EDBS5)-XXX	Methyl Tertbutyl Ether	0.22	J *	0.22	J	CCV%D, LCS-H	ug/L
360-34315-1	360-34315-5	SW8260C	OC-SW-EDSD/SW2(EDBS6)-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-6	SW8260C	OC-SW-EDSD/SW5(EDBS11)-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-7	SW8260C	OC-SW-MMB-SW/SD-11-XXX	Methyl Tertbutyl Ether	1	U *	1	UJ	CCV%D	ug/L
360-34315-1	360-34315-8	SW8260C	OC-SW-MMB-SW/SD-2-XXX	Methyl Tertbutyl Ether	0.2	J *	0.2	J	CCV%D, LCS-H, MS-H	ug/L
360-34315-1	360-34315-9	SW8260C	OC-SW-MMB-SW/SD-3-XXX	Methyl Tertbutyl Ether	0.2	J *	0.2	J	CCV%D, LCS-H	ug/L

Table 3.2
Data Validation Action Summary - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units

Units:
ug/L = microgram per liter

Validation Qualifier:
U = not detected, value is the detection limit
J = value is estimated

Validation Reason Codes:
CCV%D = Continuing calibration %D
LCS-H = LCS recovery high
MS-H = MS and/or MSD recovery high

Prepared by / Date: KJC 08/23/11
Checked by / Date: BBL 08/24/11

Table 3.3
Data Validation Action Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units
360-34253-1	360-34253-1	SW8270	OC-SW-ISCO-1-DUP	3,3`-Dichlorobenzidine	4.5	U		R	MS-L	ug/L
360-34253-1	360-34253-2	SW8270	OC-SW-ISCO-1-XXX	3,3`-Dichlorobenzidine	4.5	U		R	MS-L	ug/L
360-34253-1	360-34253-4	SW8270	OC-SW-MMB-SW/SD-1-DUP	3,3`-Dichlorobenzidine	4.5	U		R	MS-L	ug/L
360-34253-1	360-34253-5	SW8270	OC-SW-MMB-SW/SD-1-XXX	3,3`-Dichlorobenzidine	4.5	U		R	MS-L	ug/L
360-34253-1	360-34253-1	SW8270	OC-SW-ISCO-1-DUP	Aniline	4.5	U *	4.5	UJ	LCS-L, MS-L	ug/L
360-34253-1	360-34253-2	SW8270	OC-SW-ISCO-1-XXX	Aniline	4.5	U *	4.5	UJ	LCS-L, MS-L	ug/L
360-34253-1	360-34253-3	SW8270	OC-SW-ISCO-2-XXX	Aniline	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34253-1	360-34253-4	SW8270	OC-SW-MMB-SW/SD-1-DUP	Aniline	4.5	U *	4.5	UJ	LCS-L, MS-L	ug/L
360-34253-1	360-34253-5	SW8270	OC-SW-MMB-SW/SD-1-XXX	Aniline	4.5	U *	4.5	UJ	LCS-L, MS-L	ug/L
360-34253-1	360-34253-6	SW8270	OC-SW-MMB-SW/SD-9-XXX	Aniline	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34253-1	360-34253-7	SW8270	OC-SW-PZ-16RR-XXX	Aniline	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34253-1	360-34253-8	SW8270	OC-SW-PZ-17RR-XXX	Aniline	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34253-1	360-34253-9	SW8270	OC-SW-SD-1-XXX	Aniline	5	U *	5	UJ	LCS-L	ug/L
360-34253-1	360-34253-1	SW8270	OC-SW-ISCO-1-DUP	Benzo(b)fluoranthene	0.27	U	0.27	UJ	CCV%D	ug/L
360-34253-1	360-34253-2	SW8270	OC-SW-ISCO-1-XXX	Benzo(b)fluoranthene	0.27	U	0.27	UJ	CCV%D	ug/L
360-34253-1	360-34253-3	SW8270	OC-SW-ISCO-2-XXX	Benzo(b)fluoranthene	0.27	U	0.27	UJ	CCV%D	ug/L
360-34253-1	360-34253-4	SW8270	OC-SW-MMB-SW/SD-1-DUP	Benzo(b)fluoranthene	0.27	U	0.27	UJ	CCV%D	ug/L
360-34253-1	360-34253-5	SW8270	OC-SW-MMB-SW/SD-1-XXX	Benzo(b)fluoranthene	0.27	U	0.27	UJ	CCV%D	ug/L
360-34253-1	360-34253-6	SW8270	OC-SW-MMB-SW/SD-9-XXX	Benzo(b)fluoranthene	0.27	U	0.27	UJ	CCV%D	ug/L
360-34253-1	360-34253-7	SW8270	OC-SW-PZ-16RR-XXX	Benzo(b)fluoranthene	0.27	U	0.27	UJ	CCV%D	ug/L
360-34253-1	360-34253-8	SW8270	OC-SW-PZ-17RR-XXX	Benzo(b)fluoranthene	0.27	U	0.27	UJ	CCV%D	ug/L
360-34253-1	360-34253-9	SW8270	OC-SW-SD-1-XXX	Benzo(b)fluoranthene	0.3	U	0.3	UJ	CCV%D	ug/L
360-34253-1	360-34253-1	SW8270	OC-SW-ISCO-1-DUP	Benzoic Acid	1.9	J	1.9	J	MS-L	ug/L
360-34253-1	360-34253-2	SW8270	OC-SW-ISCO-1-XXX	Benzoic Acid	1.9	J	1.9	J	MS-L	ug/L
360-34253-1	360-34253-1	SW8270	OC-SW-ISCO-1-DUP	Caprolactum	4.5	U *	4.5	UJ	LCS-L, MS-L	ug/L
360-34253-1	360-34253-2	SW8270	OC-SW-ISCO-1-XXX	Caprolactum	4.5	U *	4.5	UJ	LCS-L, MS-L	ug/L
360-34253-1	360-34253-3	SW8270	OC-SW-ISCO-2-XXX	Caprolactum	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34253-1	360-34253-4	SW8270	OC-SW-MMB-SW/SD-1-DUP	Caprolactum	4.5	U *	4.5	UJ	LCS-L, MS-L	ug/L
360-34253-1	360-34253-5	SW8270	OC-SW-MMB-SW/SD-1-XXX	Caprolactum	4.5	U *	4.5	UJ	LCS-L, MS-L	ug/L
360-34253-1	360-34253-6	SW8270	OC-SW-MMB-SW/SD-9-XXX	Caprolactum	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34253-1	360-34253-7	SW8270	OC-SW-PZ-16RR-XXX	Caprolactum	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34253-1	360-34253-8	SW8270	OC-SW-PZ-17RR-XXX	Caprolactum	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34253-1	360-34253-9	SW8270	OC-SW-SD-1-XXX	Caprolactum	5	U *	5	UJ	LCS-L	ug/L
360-34253-1	360-34253-1	SW8270	OC-SW-ISCO-1-DUP	Di-n-butylphthalate	0.56	J B	4.5	U	BL1	ug/L
360-34253-1	360-34253-2	SW8270	OC-SW-ISCO-1-XXX	Di-n-butylphthalate	0.68	J B	4.5	U	BL1	ug/L
360-34253-1	360-34253-6	SW8270	OC-SW-MMB-SW/SD-9-XXX	Di-n-butylphthalate	0.64	J B	4.5	U	BL1	ug/L
360-34253-1	360-34253-9	SW8270	OC-SW-SD-1-XXX	Di-n-butylphthalate	0.72	J B	5	U	BL1	ug/L
360-34253-1	360-34253-1	SW8270	OC-SW-ISCO-1-DUP	Phenol	4.5	U	4.5	UJ	PE-L	ug/L
360-34253-1	360-34253-2	SW8270	OC-SW-ISCO-1-XXX	Phenol	4.5	U	4.5	UJ	PE-L	ug/L
360-34253-1	360-34253-3	SW8270	OC-SW-ISCO-2-XXX	Phenol	4.5	U	4.5	UJ	PE-L	ug/L
360-34253-1	360-34253-4	SW8270	OC-SW-MMB-SW/SD-1-DUP	Phenol	4.5	U	4.5	UJ	MS-L, PE-L	ug/L

Table 3.3
Data Validation Action Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units
360-34253-1	360-34253-5	SW8270	OC-SW-MMB-SW/SD-1-XXX	Phenol	4.5	U	4.5	UJ	MS-L, PE-L	ug/L
360-34253-1	360-34253-6	SW8270	OC-SW-MMB-SW/SD-9-XXX	Phenol	4.5	U	4.5	UJ	PE-L	ug/L
360-34253-1	360-34253-7	SW8270	OC-SW-PZ-16RR-XXX	Phenol	4.5	U	4.5	UJ	PE-L	ug/L
360-34253-1	360-34253-8	SW8270	OC-SW-PZ-17RR-XXX	Phenol	4.5	U	4.5	UJ	PE-L	ug/L
360-34253-1	360-34253-9	SW8270	OC-SW-SD-1-XXX	Phenol	5	U	5	UJ	PE-L	ug/L
360-34288-1	360-34288-5	SW8270	OC-SW-LB-1-XXX	Aniline	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34288-1	360-34288-6	SW8270	OC-SW-LB-2-XXX	Aniline	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34288-1	360-34288-7	SW8270	OC-SW-LB-3-XXX	Aniline	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34288-1	360-34288-8	SW8270	OC-SW-MMB-SW/SD-10-XXX	Aniline	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34288-1	360-34288-9	SW8270	OC-SW-MMB-SW/SD-4-XXX	Aniline	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34288-1	360-34288-10	SW8270	OC-SW-MMB-SW/SD-5-XXX	Aniline	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34288-1	360-34288-5	SW8270	OC-SW-LB-1-XXX	Benzo(b)fluoranthene	0.27	U	0.27	UJ	CCV%D	ug/L
360-34288-1	360-34288-6	SW8270	OC-SW-LB-2-XXX	Benzo(b)fluoranthene	0.13	J	0.13	J	CCV%D	ug/L
360-34288-1	360-34288-7	SW8270	OC-SW-LB-3-XXX	Benzo(b)fluoranthene	0.27	U	0.27	UJ	CCV%D	ug/L
360-34288-1	360-34288-8	SW8270	OC-SW-MMB-SW/SD-10-XXX	Benzo(b)fluoranthene	0.27	U	0.27	UJ	CCV%D	ug/L
360-34288-1	360-34288-9	SW8270	OC-SW-MMB-SW/SD-4-XXX	Benzo(b)fluoranthene	0.27	U	0.27	UJ	CCV%D	ug/L
360-34288-1	360-34288-10	SW8270	OC-SW-MMB-SW/SD-5-XXX	Benzo(b)fluoranthene	0.27	U	0.27	UJ	CCV%D	ug/L
360-34288-1	360-34288-5	SW8270	OC-SW-LB-1-XXX	Caprolactum	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34288-1	360-34288-6	SW8270	OC-SW-LB-2-XXX	Caprolactum	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34288-1	360-34288-7	SW8270	OC-SW-LB-3-XXX	Caprolactum	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34288-1	360-34288-8	SW8270	OC-SW-MMB-SW/SD-10-XXX	Caprolactum	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34288-1	360-34288-9	SW8270	OC-SW-MMB-SW/SD-4-XXX	Caprolactum	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34288-1	360-34288-10	SW8270	OC-SW-MMB-SW/SD-5-XXX	Caprolactum	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34288-1	360-34288-11	SW8270	OC-SW-MMB-SW/SD-8-XXX	Caprolactum	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34288-1	360-34288-12	SW8270	OC-SW-OPWD-1-XXX	Caprolactum	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34288-1	360-34288-13	SW8270	OC-SW-OPWD-2-XXX	Caprolactum	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34288-1	360-34288-14	SW8270	OC-SW-OPWD-SD/SO/SW-S-XXX	Caprolactum	5	U *	5	UJ	LCS-L	ug/L
360-34288-1	360-34288-15	SW8270	OC-SW-SDBK-002-XXX	Caprolactum	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34288-1	360-34288-5	SW8270	OC-SW-LB-1-XXX	Di-n-butylphthalate	0.74	J B	4.5	U	BL1	ug/L
360-34288-1	360-34288-6	SW8270	OC-SW-LB-2-XXX	Di-n-butylphthalate	0.59	J B	4.5	U	BL1	ug/L
360-34288-1	360-34288-7	SW8270	OC-SW-LB-3-XXX	Di-n-butylphthalate	0.6	J B	4.5	U	BL1	ug/L
360-34288-1	360-34288-8	SW8270	OC-SW-MMB-SW/SD-10-XXX	Di-n-butylphthalate	1.3	J B	4.5	U	BL1	ug/L
360-34288-1	360-34288-9	SW8270	OC-SW-MMB-SW/SD-4-XXX	Di-n-butylphthalate	0.68	J B	4.5	U	BL1	ug/L
360-34288-1	360-34288-11	SW8270	OC-SW-MMB-SW/SD-8-XXX	Di-n-butylphthalate	0.56	J B	4.5	U	BL1	ug/L
360-34288-1	360-34288-12	SW8270	OC-SW-OPWD-1-XXX	Di-n-butylphthalate	0.71	J B	4.5	U	BL1	ug/L
360-34288-1	360-34288-13	SW8270	OC-SW-OPWD-2-XXX	Di-n-butylphthalate	0.65	J B	4.5	U	BL1	ug/L
360-34288-1	360-34288-14	SW8270	OC-SW-OPWD-SD/SO/SW-S-XXX	Di-n-butylphthalate	0.61	J B	4.5	U	BL1	ug/L
360-34288-1	360-34288-5	SW8270	OC-SW-LB-1-XXX	Phenol	4.5	U	4.5	UJ	PE-L	ug/L
360-34288-1	360-34288-6	SW8270	OC-SW-LB-2-XXX	Phenol	4.5	U	4.5	UJ	PE-L	ug/L
360-34288-1	360-34288-7	SW8270	OC-SW-LB-3-XXX	Phenol	4.5	U	4.5	UJ	PE-L	ug/L
360-34288-1	360-34288-8	SW8270	OC-SW-MMB-SW/SD-10-XXX	Phenol	4.5	U	4.5	UJ	PE-L	ug/L

Table 3.3
Data Validation Action Summary - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units
360-34288-1	360-34288-9	SW8270	OC-SW-MMB-SW/SD-4-XXX	Phenol	4.5	U	4.5	UJ	PE-L	ug/L
360-34288-1	360-34288-10	SW8270	OC-SW-MMB-SW/SD-5-XXX	Phenol	4.5	U	4.5	UJ	PE-L	ug/L
360-34288-1	360-34288-11	SW8270	OC-SW-MMB-SW/SD-8-XXX	Phenol	4.5	U	4.5	UJ	PE-L	ug/L
360-34288-1	360-34288-12	SW8270	OC-SW-OPWD-1-XXX	Phenol	4.5	U	4.5	UJ	PE-L	ug/L
360-34288-1	360-34288-13	SW8270	OC-SW-OPWD-2-XXX	Phenol	0.51	J	0.51	J	PE-L	ug/L
360-34288-1	360-34288-14	SW8270	OC-SW-OPWD-SD/SO/SW-S-XXX	Phenol	5	U	5	UJ	PE-L	ug/L
360-34288-1	360-34288-15	SW8270	OC-SW-SDBK-002-XXX	Phenol	4.5	U	4.5	UJ	PE-L	ug/L
360-34288-1	360-34288-12	SW8270	OC-SW-OPWD-1-XXX	Pyrene	0.28	J	0.28	J	LCS-H	ug/L
360-34288-1	360-34288-13	SW8270	OC-SW-OPWD-2-XXX	Pyrene	1.1	J *	1.1	J	LCS-H	ug/L
360-34315-1	360-34315-4	SW8270	OC-SW-EDSD/SW1(EDBS5)-XXX	Caprolactum	4.8	U *	4.8	UJ	LCS-L	ug/L
360-34315-1	360-34315-5	SW8270	OC-SW-EDSD/SW2(EDBS6)-XXX	Caprolactum	5	U *	5	UJ	LCS-L	ug/L
360-34315-1	360-34315-6	SW8270	OC-SW-EDSD/SW5(EDBS11)-XXX	Caprolactum	5.3	U *	5.3	UJ	LCS-L	ug/L
360-34315-1	360-34315-7	SW8270	OC-SW-MMB-SW/SD-11-XXX	Caprolactum	4.5	U *	4.5	UJ	LCS-L	ug/L
360-34315-1	360-34315-8	SW8270	OC-SW-MMB-SW/SD-2-XXX	Caprolactum	5	U *	5	UJ	LCS-L	ug/L
360-34315-1	360-34315-9	SW8270	OC-SW-MMB-SW/SD-3-XXX	Caprolactum	0.66	J *	0.66	J	LCS-L	ug/L
360-34315-1	360-34315-10	SW8270	OC-SW-MMB-SW/SD-6-XXX	Caprolactum	5	U *	5	UJ	LCS-L	ug/L
360-34315-1	360-34315-11	SW8270	OC-SW-MMB-SW/SD-8A-XXX	Caprolactum	0.66	J *	0.66	J	LCS-L	ug/L
360-34315-1	360-34315-1	SW8270	OC-SW-SDBK-001-XXX	Caprolactum	5	U *	5	UJ	LCS-L	ug/L
360-34315-1	360-34315-2	SW8270	OC-SW-SDBK-004-XXX	Caprolactum	0.56	J *	0.56	J	LCS-L	ug/L
360-34315-1	360-34315-3	SW8270	OC-SW-SD-EDSD/SW0-XXX	Caprolactum	0.73	J *	0.73	J	LCS-L	ug/L
360-34315-1	360-34315-9	SW8270	OC-SW-MMB-SW/SD-3-XXX	Di-n-butylphthalate	0.64	J B	5	U	BL1	ug/L
360-34315-1	360-34315-4	SW8270	OC-SW-EDSD/SW1(EDBS5)-XXX	Phenol	4.8	U	4.8	UJ	PE-L	ug/L
360-34315-1	360-34315-5	SW8270	OC-SW-EDSD/SW2(EDBS6)-XXX	Phenol	5	U	5	UJ	PE-L	ug/L
360-34315-1	360-34315-6	SW8270	OC-SW-EDSD/SW5(EDBS11)-XXX	Phenol	5.3	U	5.3	UJ	PE-L	ug/L
360-34315-1	360-34315-7	SW8270	OC-SW-MMB-SW/SD-11-XXX	Phenol	4.5	U	4.5	UJ	PE-L	ug/L
360-34315-1	360-34315-8	SW8270	OC-SW-MMB-SW/SD-2-XXX	Phenol	5	U	5	UJ	PE-L	ug/L
360-34315-1	360-34315-9	SW8270	OC-SW-MMB-SW/SD-3-XXX	Phenol	5	U	5	UJ	PE-L	ug/L
360-34315-1	360-34315-10	SW8270	OC-SW-MMB-SW/SD-6-XXX	Phenol	0.83	J	0.83	J	PE-L	ug/L
360-34315-1	360-34315-11	SW8270	OC-SW-MMB-SW/SD-8A-XXX	Phenol	5	U	5	UJ	PE-L	ug/L
360-34315-1	360-34315-1	SW8270	OC-SW-SDBK-001-XXX	Phenol	5	U	5	UJ	PE-L	ug/L
360-34315-1	360-34315-2	SW8270	OC-SW-SDBK-004-XXX	Phenol	4.8	U	4.8	UJ	PE-L	ug/L
360-34315-1	360-34315-3	SW8270	OC-SW-SD-EDSD/SW0-XXX	Phenol	5	U	5	UJ	PE-L	ug/L

Units:
ug/L = microgram per liter

Validation Qualifier:
U = not detected, value is the detection limit
J = value is estimated
R = value is rejected

Validation Reason Codes:
BL1 = Method Blank Qualifier
CCV%D = Continuing calibration %D
LCS-H = LCS recovery high
LCS-L = LCS recovery low
MS-L = MS and/or MSD recovery low
PE-L = Performance evaluation sample reported below limits

Prepared by / Date: KJC 09/01/11
Checked by / Date: WDC 09/01/11

Table 3.4
Data Validation Action Summary - NDMA
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units
360-34253-1	G1F070508001	WS-MS-0012	OC-SW-ISCO-1-DUP	N-Nitrosodimethylamine	20		20	J	TEMP	ng/L
360-34253-1	G1F070508001	WS-MS-0012	OC-SW-ISCO-1-DUP	N-Nitrosodi-n-propylamine	1.9	U	1.9	UJ	TEMP	ng/L
360-34253-1	G1F070508006	WS-MS-0012	OC-SW-MMB-SW/SD-9-XXX	N-Nitrosodi-n-propylamine	1.9	U	1.9	UJ	IS-L	ng/L
360-34253-1	G1F070508007	WS-MS-0012	OC-SW-PZ-16RR-XXX	N-Nitrosodimethylamine	170	Q	170	J	TEMP	ng/L
360-34253-1	G1F070508007	WS-MS-0012	OC-SW-PZ-16RR-XXX	N-Nitrosodi-n-propylamine	9.5	U	9.5	UJ	TEMP	ng/L
360-34253-1	G1F070508008	WS-MS-0012	OC-SW-PZ-17RR-XXX	N-Nitrosodimethylamine	290	Q	290	J	TEMP	ng/L
360-34253-1	G1F070508008	WS-MS-0012	OC-SW-PZ-17RR-XXX	N-Nitrosodi-n-propylamine	21	U	21	UJ	TEMP	ng/L
360-34288-1	G1F080473006	WS-MS-0012	OC-SW-OPWD-2-XXX	N-Nitrosodimethylamine	38	G U	38	UJ	IS-L	ng/L

Units:
ng/L = nanogram per liter

Validation Qualifier:
U = not detected, value is the detection limit
J = value is estimated

Validation Reason Codes:
IS-L = Internal Standard response below limit
TEMP = Sample termperature exceeds preservation goal

Prepared by / Date: KJC 08/31/11
Checked by / Date: WDC 08/31/11

Table 3.7
Data Validation Action Summary - Metals
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Fraction	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units
360-34253-1	360-34253-2	SW6010	T	OC-SW-ISCO-1-XXX	Cadmium	0.66	J	1	U	BL1	ug/L
360-34253-1	360-34253-3	SW6010	T	OC-SW-ISCO-2-XXX	Cadmium	0.32	J	1	U	BL1	ug/L
360-34253-1	360-34253-7	SW6010	T	OC-SW-PZ-16RR-XXX	Cadmium	0.47	J	1	U	BL1	ug/L
360-34253-1	360-34253-8	SW6010	T	OC-SW-PZ-17RR-XXX	Cadmium	0.66	J	1	U	BL1	ug/L
360-34253-1	360-34253-9	SW6010	T	OC-SW-SD-1-XXX	Cadmium	0.35	J	1	U	BL1	ug/L
360-34253-1	IUF0653-01	SW6020	T	OC-SW-ISCO-1-DUP	Lead	0.24		0.24	J	IFCS-H	ug/L
360-34253-1	IUF0653-02	SW6020	T	OC-SW-ISCO-1-XXX	Lead	0.32		0.32	J	IFCS-H	ug/L
360-34253-1	IUF0653-05	SW6020	T	OC-SW-MMB-SW/SD-1-DUP	Lead	0.07	J	0.1	U	IFCS-H	ug/L
360-34253-1	IUF0653-06	SW6020	T	OC-SW-MMB-SW/SD-1-XXX	Lead	0.23		0.23	J	IFCS-H	ug/L
360-34253-1	IUF0653-08	SW6020	T	OC-SW-MMB-SW/SD-9-XXX	Lead	0.097	J	0.1	U	IFCS-H	ug/L
360-34253-1	IUF0653-09	SW6020	T	OC-SW-PZ-16RR-XXX	Lead	0.068	J	0.1	U	IFCS-H	ug/L
360-34253-1	IUF0653-10	SW6020	T	OC-SW-PZ-17RR-XXX	Lead	0.42		0.42	J	IFCS-H	ug/L
360-34253-1	IUF0653-11	SW6020	T	OC-SW-SD-1-XXX	Lead	0.3		0.3	J	IFCS-H	ug/L
360-34253-1	IUF0653-01	SW6020	T	OC-SW-ISCO-1-DUP	Silver	0.094	J	0.1	U	BL1	ug/L
360-34253-1	IUF0653-02	SW6020	T	OC-SW-ISCO-1-XXX	Silver	0.094	J	0.1	U	BL1	ug/L
360-34253-1	360-34253-1	SW6010	T	OC-SW-ISCO-1-DUP	Thallium	3.6	J	10	U	BL1	ug/L
360-34253-1	360-34253-3	SW6010	T	OC-SW-ISCO-2-XXX	Thallium	4	J	10	U	BL1	ug/L
360-34253-1	360-34253-6	SW6010	T	OC-SW-MMB-SW/SD-9-XXX	Thallium	3.8	J	10	U	BL1	ug/L
360-34288-1	360-34288-5	SW6010	T	OC-SW-LB-1-XXX	Cadmium	0.66	J	1	U	BL1	ug/L
360-34288-1	360-34288-6	SW6010	T	OC-SW-LB-2-XXX	Cadmium	0.42	J	1	U	BL1	ug/L
360-34288-1	360-34288-13	SW6010	T	OC-SW-OPWD-2-XXX	Cadmium	0.13	J	1	U	BL1	ug/L
360-34288-1	IUF0803-05	SW6020	T	OC-SW-MMB-SW/SD-4-XXX	Copper	0.29	J	0.5	U	BL1	ug/L
360-34288-1	IUF0803-03	SW6020	T	OC-SW-LB-3-XXX	Lead	0.42		0.42	J	IFCS-H	ug/L
360-34288-1	IUF0803-05	SW6020	T	OC-SW-MMB-SW/SD-4-XXX	Lead	0.095	J	0.1	U	IFCS-H	ug/L
360-34288-1	IUF0803-06	SW6020	T	OC-SW-MMB-SW/SD-5-XXX	Lead	1.4		1.4	J	IFCS-H	ug/L
360-34288-1	IUF0803-07	SW6020	T	OC-SW-MMB-SW/SD-8-XXX	Lead	0.42		0.42	J	IFCS-H	ug/L
360-34288-1	IUF0803-10	SW6020	T	OC-SW-OPWD-SD/SO/SW-S-XXX	Lead	0.82		0.82	J	IFCS-H	ug/L
360-34288-1	IUF0803-11	SW6020	T	OC-SW-SDBK-002-XXX	Lead	0.27		0.27	J	IFCS-H	ug/L
360-34288-1	IUF0803-01	SW6020	T	OC-SW-LB-1-XXX	Silver	0.21		0.21	U	BL1	ug/L
360-34288-1	IUF0803-11	SW6020	T	OC-SW-SDBK-002-XXX	Silver	0.081	J	0.1	U	BL1	ug/L
360-34288-1	360-34288-15	SW6010	T	OC-SW-SDBK-002-XXX	Thallium	4.7	J	10	U	BL1	ug/L
360-34315-1	360-34315-2	SW6010	T	OC-SW-SDBK-004-XXX	Cadmium	0.28	J	1	U	BL1	ug/L
360-34315-1	360-34315-3	SW6010	T	OC-SW-SD-EDSD/SW0-XXX	Cadmium	0.16	J	1	U	BL1	ug/L
360-34315-1	360-34315-1	SW6010	T	OC-SW-SDBK-001-XXX	Cadmium	1.1		1.1	J	IFCS-H	ug/L
360-34315-1	IUF0953-05	OSW-6020	T	OC-SW-EDSD/SW2(EDBS6)-XXX	Lead	0.13	B	0.13	U	BL1	ug/L
360-34315-1	IUF0953-07	OSW-6020	T	OC-SW-MMB-SW/SD-11-XXX	Lead	0.64	B-1	0.64	J	IFCS-H	ug/L
360-34315-1	IUF0953-08	OSW-6020	T	OC-SW-MMB-SW/SD-2-XXX	Lead	0.44	B	0.44	J	IFCS-H	ug/L
360-34315-1	IUF0953-09	OSW-6020	T	OC-SW-MMB-SW/SD-3-XXX	Lead	1.6	B-1	1.6	J	IFCS-H	ug/L
360-34315-1	IUF0953-11	OSW-6020	T	OC-SW-MMB-SW/SD-8A-XXX	Lead	1.5	B-1	1.5	J	IFCS-H	ug/L
360-34315-1	IUF0953-02	OSW-6020	T	OC-SW-SDBK-004-XXX	Lead	1.3	B-1	1.3	J	IFCS-H	ug/L
360-34315-1	IUF0953-03	OSW-6020	T	OC-SW-SD-EDSD/SW0-XXX	Lead	0.51	B	0.51	J	IFCS-H	ug/L
360-34315-1	IUF0953-04	OSW-6020	T	OC-SW-EDSD/SW1(EDBS5)-XXX	Silver	0.074	J	0.1	U	BL1	ug/L
360-34315-1	IUF0953-10	OSW-6020	T	OC-SW-MMB-SW/SD-6-XXX	Silver	0.32	RL1, J	0.5	U	BL1	ug/L
360-34315-1	IUF0953-01	OSW-6020	T	OC-SW-SDBK-001-XXX	Silver	0.23		0.23	U	BL1	ug/L

Table 3.7
Data Validation Action Summary - Metals
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Fraction	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units

Units:
ug/L = microgram per liter

Validation Qualifier:
U = not detected, value is the detection limit
J = value is estimated

Fraction
T = Total (unfiltered)

Validation Reason Codes:
BL1 = Method Blank Qualifier
IFCS-H = Interference Check Sample indicates possible high bias

Prepared by / Date: KJC 09/02/11
Checked by / Date: TLC 09/07/11

Table 3.8
Data Validation Action Summary - Hexavalent Chromium
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units
360-34253-1	360-34253-1	SW7199	OC-SW-ISCO-1-DUP	Chromium, Hexavalent	1	U H	1	UJ	HT	ug/L
360-34253-1	360-34253-3	SW7199	OC-SW-ISCO-2-XXX	Chromium, Hexavalent	1	U H	1	UJ	HT	ug/L
360-34315-1	360-34315-6	SW7199	OC-SW-EDSD/SW5(EDBS11)-XXX	Chromium, Hexavalent	1	U H	1	UJ	HT	ug/L

Units:
ug/L = microgram per liter

Validation Reason Codes:
HT = Holding time for prep or analysis exceeded

Prepared by / Date: KJC 08/25/11
Checked by / Date: MJW 08/26/11

Validation Qualifier:
U = not detected, value is the detection limit
J = value is estimated

Table 3.9
Data Validation Action Summary - General Chemistry
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units
360-34253-1	360-34253-1	A2540D	OC-SW-ISCO-1-DUP	Total Suspended Solids	8		8	J	LD	mg/L
360-34253-1	360-34253-2	LACH_107_06_1_B	OC-SW-ISCO-1-XXX	Nitrogen, as Ammonia	31		31	J	MS-H	mg/L
360-34253-1	360-34253-2	A2540D	OC-SW-ISCO-1-XXX	Total Suspended Solids	6		6	J	LD	mg/L
360-34253-1	360-34253-3	A2540D	OC-SW-ISCO-2-XXX	Total Suspended Solids	240		240	J	LD	mg/L
360-34253-1	360-34253-4	A2540D	OC-SW-MMB-SW/SD-1-DUP	Total Suspended Solids	5	U	5	UJ	LD	mg/L
360-34253-1	360-34253-5	A2540D	OC-SW-MMB-SW/SD-1-XXX	Total Suspended Solids	5	U	5	UJ	LD	mg/L
360-34253-1	360-34253-6	A2540D	OC-SW-MMB-SW/SD-9-XXX	Total Suspended Solids	5	U	5	UJ	LD	mg/L
360-34253-1	360-34253-7	A2540D	OC-SW-PZ-16RR-XXX	Total Suspended Solids	14		14	J	LD	mg/L
360-34253-1	360-34253-8	A2540D	OC-SW-PZ-17RR-XXX	Total Suspended Solids	70		70	J	LD	mg/L
360-34253-1	360-34253-9	A2540D	OC-SW-SD-1-XXX	Total Suspended Solids	19		19	J	LD	mg/L
360-34288-1	360-34288-15	E300	OC-SW-SDBK-002-XXX	Nitrate as N	0.94	H	0.94	J	HT	mg/L
360-34288-1	360-34288-15	E300	OC-SW-SDBK-002-XXX	Nitrite as N	0.1	U H	0.1	UJ	HT	mg/L
360-34288-1	360-34288-5	E300	OC-SW-LB-1-XXX	Nitrate as N	0.05	U H	0.05	UJ	HT	mg/L
360-34288-1	360-34288-5	E300	OC-SW-LB-1-XXX	Nitrite as N	0.1	U H	0.1	UJ	HT	mg/L
360-34315-1	360-34315-1	E300	OC-SW-SDBK-001-XXX	Nitrate as N	0.47	H	0.47	J	HT	mg/L
360-34315-1	360-34315-10	E300	OC-SW-MMB-SW/SD-6-XXX	Nitrate as N	0.05	U H	0.05	UJ	HT	mg/L
360-34315-1	360-34315-11	E300	OC-SW-MMB-SW/SD-8A-XXX	Nitrate as N	0.15	H	0.15	J	HT	mg/L
360-34315-1	360-34315-2	E300	OC-SW-SDBK-004-XXX	Nitrate as N	0.49	H	0.49	J	HT	mg/L
360-34315-1	360-34315-3	E300	OC-SW-SD-EDSD/SW0-XXX	Nitrate as N	2.6	H	2.6	J	HT	mg/L
360-34315-1	360-34315-7	E300	OC-SW-MMB-SW/SD-11-XXX	Nitrate as N	0.31	H	0.31	J	HT	mg/L
360-34315-1	360-34315-7	E300	OC-SW-MMB-SW/SD-11-XXX	Nitrite as N	0.1	U H	0.1	UJ	HT	mg/L
360-34315-1	360-34315-8	E300	OC-SW-MMB-SW/SD-2-XXX	Nitrate as N	0.55	H	0.55	J	HT	mg/L

Units:
mg/L = milligram per liter

Validation Qualifier:
U = not detected, value is the detection limit
J = value is estimated

Validation Reason Codes:
HT = Holding time for prep or analysis exceeded
LD = Lab Duplicate limit exceeded
MS-H = MS and/or MSD recovery high

Prepared by / Date: KJC 08/25/11
Checked by / Date: MJW 08/26/11

Table 3.10
Data Validation Action Summary - Formaldehyde
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units
360-34253-1	360-34253-4	SW8315	OC-SW-MMB-SW/SD-1-DUP	Formaldehyde	30	U	30	UJ	MS-L	ug/L
360-34253-1	360-34253-5	SW8315	OC-SW-MMB-SW/SD-1-XXX	Formaldehyde	30	U	30	UJ	MS-L	ug/L
360-34288-1	360-34288-8	SW8315	OC-SW-MMB-SW/SD-10-XXX	Formaldehyde	30	U	30	UJ	MS-L	ug/L

Units:
ug/L = microgram per liter

Validation Reason Codes:
MS-L = MS and/or MSD recovery low

Validation Qualifier:
U = not detected, value is the detection limit
J = value is estimated

Prepared by / Date: KJC 08/31/11
Checked by / Date: WDC 08/31/11

Table 3.13
Data Validation Action Summary - DMF
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units
WIL-23	SE3250-1	SW8033M	OC-SW-ISCO-1-DUP	Dimethylformamide	0.02	U	0.02	UJ	CCV%D	mg/L
WIL-23	SE3250-2	SW8033M	OC-SW-ISCO-1-XXX	Dimethylformamide	0.02	U	0.02	UJ	CCV%D	mg/L
WIL-23	SE3250-3	SW8033M	OC-SW-ISCO-2-XXX	Dimethylformamide	0.02	U	0.02	UJ	CCV%D	mg/L
WIL-23	SE3250-4	SW8033M	OC-SW-PZ-16RR-XXX	Dimethylformamide	0.02	U	0.02	UJ	CCV%D	mg/L
WIL-23	SE3250-5	SW8033M	OC-SW-PZ-17RR-XXX	Dimethylformamide	0.02	U	0.02	UJ	CCV%D	mg/L
WIL-23	SE3250-6	SW8033M	OC-SW-SD-1-XXX	Dimethylformamide	0.02	U	0.02	UJ	CCV%D	mg/L

Units:
mg/L = milligram per liter

Validation Reason Codes:
CCV%D = Continuing calibration %D

Validation Qualifier:
U = not detected, value is the detection limit
J = value is estimated

Prepared by / Date: KJC 08/25/11
Checked by / Date: MJW 08/26/11

Table 3.14
Data Validation Action Summary - Nonylphenol/Alkylphenols
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units
360-34253-1	G1F070508001	GCMS SIM	OC-SW-ISCO-1-DUP	4-(1,1,3,3-Tetramethylbutyl)phenol	0.95	U	0.95	UJ	TEMP	ug/L
360-34253-1	G1F070508001	GCMS SIM	OC-SW-ISCO-1-DUP	4,4'-Isopropylidenediphenol	0.95	U	0.95	UJ	TEMP	ug/L
360-34253-1	G1F070508001	GCMS SIM	OC-SW-ISCO-1-DUP	4-Nonylphenol	4.8	U	4.8	UJ	TEMP	ug/L
360-34253-1	G1F070508001	GCMS SIM	OC-SW-ISCO-1-DUP	Nonylphenol Diethoxylate	19	U	19	UJ	TEMP	ug/L
360-34253-1	G1F070508008	GCMS SIM	OC-SW-PZ-17RR-XXX	4-(1,1,3,3-Tetramethylbutyl)phenol	0.95	U	0.95	UJ	TEMP	ug/L
360-34253-1	G1F070508008	GCMS SIM	OC-SW-PZ-17RR-XXX	4,4'-Isopropylidenediphenol	0.87	J	0.87	J	TEMP	ug/L
360-34253-1	G1F070508008	GCMS SIM	OC-SW-PZ-17RR-XXX	4-Nonylphenol	18		18	J	TEMP	ug/L
360-34253-1	G1F070508008	GCMS SIM	OC-SW-PZ-17RR-XXX	Nonylphenol Diethoxylate	19	U	19	UJ	TEMP	ug/L

Units:
ug/L = microgram per liter

Validation Reason Codes:
TEMP = Sample temperature exceeds preservation goal during lab receipt

Prepared by / Date: KJC 09/06/11
Checked by / Date: TLC 09/07/11

Validation Qualifier:
U = not detected, value is the detection limit
J = value is estimated

Table 3.15
Data Validation Action Summary - OPEX/Kempore
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

Sample Delivery Group	Lab Sample ID	Analysis Method	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Validation Reason Code	Result Units
1250152	6308059	SW8000B	OC-SW-ISCO-2-XXX	Kempore (Azodicarbonamide)	1200		1200	N	N	ug/L
1250154	6308076	SW8000B	OC-SW-SD-1-XXX	Kempore (Azodicarbonamide)	1400		1400	N	N	ug/L
1250154	6308075	SW8000B	OC-SW-PZ-17RR-XXX	Kempore (Azodicarbonamide)	1100		1100	NJ	N, DC-PD	ug/L
1250627	6310722	SW8000B	OC-SW-EDSD/SW2(EDBS6)-XXX	Kempore (Azodicarbonamide)	4100		4100	N	N	ug/L
1250627	6310723	SW8000B	OC-SW-EDSD/SW5(EDBS11)-XXX	Kempore (Azodicarbonamide)	1200		1200	N	N	ug/L
1250627	6310724	SW8000B	OC-SW-MMB-SW/SD-2-XXX	Kempore (Azodicarbonamide)	710	J	710	NJ	N	ug/L
1250152	6308055	SW8000B	OC-SW-ISCO-1-XXX	OPEX	100	U	100	UJ	LS	ug/L
1250152	6308058	SW8000B	OC-SW-ISCO-1-DUP	OPEX	100	U	100	UJ	LS	ug/L
1250152	6308059	SW8000B	OC-SW-ISCO-2-XXX	OPEX	100	U	100	UJ	LS	ug/L
1250154	6308075	SW8000B	OC-SW-PZ-17RR-XXX	OPEX	100	U	100	UJ	CCV%D, LS	ug/L
1250154	6308076	SW8000B	OC-SW-SD-1-XXX	OPEX	100	U	100	UJ	CCV%D, LS	ug/L
1250154	6308074	SW8000B	OC-SW-PZ-16RR-XXX	OPEX	100	U	100	UJ	LS	ug/L
1250414	6309550	SW8000B	OC-SW-MMB-SW/SD-5-XXX	OPEX	100	U	100	UJ	LS	ug/L
1250414	6309553	SW8000B	OC-SW-OPWD-1-XXX	OPEX	100	U	100	UJ	LS	ug/L
1250414	6309554	SW8000B	OC-SW-OPWD-2-XXX	OPEX	100	U	100	UJ	LS	ug/L
1250414	6309555	SW8000B	OC-SW-OPWD-SD/SO/SW-S-XXX	OPEX	100	U	100	UJ	LS	ug/L
1250627	6310720	SW8000B	OC-SW-EDSD/SW0-XXX	OPEX	100	U	100	UJ	LS	ug/L
1250627	6310721	SW8000B	OC-SW-EDSD/SW1(EDBS5)-XXX	OPEX	100	U	100	UJ	LS	ug/L
1250627	6310722	SW8000B	OC-SW-EDSD/SW2(EDBS6)-XXX	OPEX	100	U	100	UJ	LS	ug/L
1250627	6310723	SW8000B	OC-SW-EDSD/SW5(EDBS11)-XXX	OPEX	100	U	100	UJ	LS	ug/L
1250627	6310724	SW8000B	OC-SW-MMB-SW/SD-2-XXX	OPEX	100	U	100	UJ	LS	ug/L

Units:
ug/L = microgram per liter

Validation Qualifier:
U = not detected, value is the detection limit
J = value is estimated
N = presumptively present

Validation Reason Codes:
CCV%D = Continuing calibration %D
DC-PD = Dual column percent difference exceeds limit
LS = Reporting limit estimated due to low sensitivity
N = Analyte identification is not certain

Prepared by / Date: KJC 08/22/11
Checked by / Date: CSR 08/29/11

Table 4-1
Tentatively Identified Compounds - VOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

SDG	Lab Sample ID	Method	Field Sample ID	Sample Date	CAS #	Analyte	RT	Final Result	Q	Final Qualifier	Units	DF	Analysis Date	Analysis Time
360-34253-1	360-34253-3	SW8260C	OC-SW-ISCO-2-XXX	6/6/2011	TIC01	Unknown	11.83	2.7	T J	JN	ug/l	1	6/13/2011	4:47:00 PM
360-34253-1	360-34253-5	SW8260C	OC-SW-MMB-SW/SD-1-XXX	6/6/2011	TIC01	Unknown	17.69	15	T J	JN	ug/l	1	6/13/2011	5:30:00 PM
360-34253-1	360-34253-7	SW8260C	OC-SW-PZ-16RR-XXX	6/6/2011	TIC01	Unknown	11.83	6.7	T J	JN	ug/l	1	6/13/2011	6:13:00 PM
360-34253-1	360-34253-8	SW8260C	OC-SW-PZ-17RR-XXX	6/6/2011	TIC01	Unknown	11.83	11	T J	JN	ug/l	1	6/13/2011	6:35:00 PM
360-34253-1	360-34253-9	SW8260C	OC-SW-SD-1-XXX	6/6/2011	TIC01	Unknown	11.83	3.2	T J	JN	ug/l	1	6/13/2011	7:00:00 PM
360-34288-1	360-34288-13	SW8260C	OC-SW-OPWD-2-XXX	6/7/2011	TIC01	Unknown	11.83	7.6	TJ	JN	ug/l	1	6/15/2011	2:27:00 AM

ug/l = microgram per liter
J = value is estimated
N = presumptively present
T = Tentatively identified compound, the result is estimated

Prepared by / Date: KJC 08/19/11
Checked by / Date: BBL 08/23/11

Table 4-2
Tentatively Identified Compounds - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

SDG	Lab Sample ID	Method	Field Sample ID	Date	CAS #	Analyte	RT	Result	Q	qualifier	Units	DF	Date	Analysis Time
360-34253-1	360-34253-1	SW8270	OC-SW-ISCO-1-DUP	6/6/2011	TIC01	Unknown	1.83	7.9	TJ	JN	ug/l	1	6/14/2011	6:33:00 PM
360-34253-1	360-34253-1	SW8270	OC-SW-ISCO-1-DUP	6/6/2011	934-34-9	2(3H)-Benzothiazolone	11.02	0.84	TJN	JN	ug/l	1	6/14/2011	6:33:00 PM
360-34253-1	360-34253-1	SW8270	OC-SW-ISCO-1-DUP	6/6/2011	6750-34-1	1-Dodecanol, 3,7,11-trimethyl-	11.47	1.1	TJN	JN	ug/l	1	6/14/2011	6:33:00 PM
360-34253-1	360-34253-1	SW8270	OC-SW-ISCO-1-DUP	6/6/2011	57-10-3	n-Hexadecanoic acid	12.18	0.98	TJN	JN	ug/l	1	6/14/2011	6:33:00 PM
360-34253-1	360-34253-1	SW8270	OC-SW-ISCO-1-DUP	6/6/2011	57-11-4	Octadecanoic acid	12.96	1.4	TJN	JN	ug/l	1	6/14/2011	6:33:00 PM
360-34253-1	360-34253-1	SW8270	OC-SW-ISCO-1-DUP	6/6/2011	TIC03	Unknown	14.33	0.58	TJ	JN	ug/l	1	6/14/2011	6:33:00 PM
360-34253-1	360-34253-2	SW8270	OC-SW-ISCO-1-XXX	6/6/2011	934-34-9	2(3H)-Benzothiazolone	11.03	0.85	TJN	JN	ug/l	1	6/14/2011	7:03:00 PM
360-34253-1	360-34253-2	SW8270	OC-SW-ISCO-1-XXX	6/6/2011	TIC05	Unknown	11.47	0.94	TJ	JN	ug/l	1	6/14/2011	7:03:00 PM
360-34253-1	360-34253-2	SW8270	OC-SW-ISCO-1-XXX	6/6/2011	57-10-3	n-Hexadecanoic acid	12.18	1.1	TJN	JN	ug/l	1	6/14/2011	7:03:00 PM
360-34253-1	360-34253-2	SW8270	OC-SW-ISCO-1-XXX	6/6/2011	57-11-4	Octadecanoic acid	12.96	1.2	TJN	JN	ug/l	1	6/14/2011	7:03:00 PM
360-34253-1	360-34253-2	SW8270	OC-SW-ISCO-1-XXX	6/6/2011	791-28-6	Triphenylphosphine oxide	14.33	0.58	TJN	JN	ug/l	1	6/14/2011	7:03:00 PM
360-34253-1	360-34253-2	SW8270	OC-SW-ISCO-1-XXX	6/6/2011	TIC06	Unknown	15.99	0.98	TJ	JN	ug/l	1	6/14/2011	7:03:00 PM
360-34253-1	360-34253-2	SW8270	OC-SW-ISCO-1-XXX	6/6/2011	TIC04	Unknown	8.65	0.43	TJ	JN	ug/l	1	6/14/2011	7:03:00 PM
360-34253-1	360-34253-3	SW8270	OC-SW-ISCO-2-XXX	6/6/2011	57-10-3	n-Hexadecanoic acid	12.18	2.2	TJN	JN	ug/l	1	6/14/2011	8:31:00 PM
360-34253-1	360-34253-3	SW8270	OC-SW-ISCO-2-XXX	6/6/2011	TIC08	Unknown	13.52	1.2	TJ	JN	ug/l	1	6/14/2011	8:31:00 PM
360-34253-1	360-34253-3	SW8270	OC-SW-ISCO-2-XXX	6/6/2011	TIC02	Unknown	5.24	2.8	TJ	JN	ug/l	1	6/14/2011	8:31:00 PM
360-34253-1	360-34253-3	SW8270	OC-SW-ISCO-2-XXX	6/6/2011	TIC05	Unknown	8.54	0.63	TJ	JN	ug/l	1	6/14/2011	8:31:00 PM
360-34253-1	360-34253-3	SW8270	OC-SW-ISCO-2-XXX	6/6/2011	TIC06	Unknown	8.67	1.3	TJ	JN	ug/l	1	6/14/2011	8:31:00 PM
360-34253-1	360-34253-3	SW8270	OC-SW-ISCO-2-XXX	6/6/2011	TIC07	Unknown	8.77	0.85	TJ	JN	ug/l	1	6/14/2011	8:31:00 PM
360-34253-1	360-34253-4	SW8270	OC-SW-MMB-SW/SD-1-DUP	6/6/2011	57-10-3	n-Hexadecanoic acid	12.18	1.1	TJN	JN	ug/l	1	6/14/2011	9:00:00 PM
360-34253-1	360-34253-4	SW8270	OC-SW-MMB-SW/SD-1-DUP	6/6/2011	112-88-9	1-Octadecene	12.7	2.4	TJN	JN	ug/l	1	6/14/2011	9:00:00 PM
360-34253-1	360-34253-4	SW8270	OC-SW-MMB-SW/SD-1-DUP	6/6/2011	57-11-4	Octadecanoic acid	12.96	1.5	TJN	JN	ug/l	1	6/14/2011	9:00:00 PM
360-34253-1	360-34253-4	SW8270	OC-SW-MMB-SW/SD-1-DUP	6/6/2011	791-28-6	Triphenylphosphine oxide	14.33	0.73	TJN	JN	ug/l	1	6/14/2011	9:00:00 PM
360-34253-1	360-34253-4	SW8270	OC-SW-MMB-SW/SD-1-DUP	6/6/2011	111-76-2	Ethanol, 2-butoxy-	5.84	1	TJN	JN	ug/l	1	6/14/2011	9:00:00 PM
360-34253-1	360-34253-5	SW8270	OC-SW-MMB-SW/SD-1-XXX	6/6/2011	57-10-3	n-Hexadecanoic acid	12.18	0.51	TJN	JN	ug/l	1	6/14/2011	9:29:00 PM
360-34253-1	360-34253-5	SW8270	OC-SW-MMB-SW/SD-1-XXX	6/6/2011	1000197-14-1	4b,8-Dimethyl-2-isopropylphenanthrene, 4	12.59	0.44	TJN	JN	ug/l	1	6/14/2011	9:29:00 PM
360-34253-1	360-34253-5	SW8270	OC-SW-MMB-SW/SD-1-XXX	6/6/2011	57-11-4	Octadecanoic acid	12.96	0.69	TJN	JN	ug/l	1	6/14/2011	9:29:00 PM
360-34253-1	360-34253-5	SW8270	OC-SW-MMB-SW/SD-1-XXX	6/6/2011	28900-91-6	Formylmethylenetriphenylphosphorane	14.33	0.71	TJN	JN	ug/l	1	6/14/2011	9:29:00 PM
360-34253-1	360-34253-6	SW8270	OC-SW-MMB-SW/SD-9-XXX	6/6/2011	57-10-3	n-Hexadecanoic acid	12.18	0.81	TJN	JN	ug/l	1	6/14/2011	10:57:00 PM
360-34253-1	360-34253-6	SW8270	OC-SW-MMB-SW/SD-9-XXX	6/6/2011	57-11-4	Octadecanoic acid	12.96	1	TJN	JN	ug/l	1	6/14/2011	10:57:00 PM
360-34253-1	360-34253-6	SW8270	OC-SW-MMB-SW/SD-9-XXX	6/6/2011	28900-91-6	Formylmethylenetriphenylphosphorane	14.33	0.63	TJN	JN	ug/l	1	6/14/2011	10:57:00 PM
360-34253-1	360-34253-7	SW8270	OC-SW-PZ-16RR-XXX	6/6/2011	TIC01	Unknown	1.82	6.7	TJ	JN	ug/l	1	6/14/2011	11:26:00 PM
360-34253-1	360-34253-7	SW8270	OC-SW-PZ-16RR-XXX	6/6/2011	TIC05	Unknown	11.14	1.7	TJ	JN	ug/l	1	6/14/2011	11:26:00 PM
360-34253-1	360-34253-7	SW8270	OC-SW-PZ-16RR-XXX	6/6/2011	TIC06	Unknown	11.17	2.8	TJ	JN	ug/l	1	6/14/2011	11:26:00 PM
360-34253-1	360-34253-7	SW8270	OC-SW-PZ-16RR-XXX	6/6/2011	25154-52-3	Phenol, nonyl-	11.21	1.6	TJN	JN	ug/l	1	6/14/2011	11:26:00 PM
360-34253-1	360-34253-7	SW8270	OC-SW-PZ-16RR-XXX	6/6/2011	TIC07	Unknown	11.27	1.3	TJ	JN	ug/l	1	6/14/2011	11:26:00 PM
360-34253-1	360-34253-7	SW8270	OC-SW-PZ-16RR-XXX	6/6/2011	TIC08	Unknown	11.32	1.7	TJ	JN	ug/l	1	6/14/2011	11:26:00 PM
360-34253-1	360-34253-7	SW8270	OC-SW-PZ-16RR-XXX	6/6/2011	TIC09	Unknown	11.35	1.6	TJ	JN	ug/l	1	6/14/2011	11:26:00 PM
360-34253-1	360-34253-7	SW8270	OC-SW-PZ-16RR-XXX	6/6/2011	TIC02	Unknown	5.24	7.3	TJ	JN	ug/l	1	6/14/2011	11:26:00 PM
360-34253-1	360-34253-7	SW8270	OC-SW-PZ-16RR-XXX	6/6/2011	TIC04	Unknown	8.67	1.7	TJ	JN	ug/l	1	6/14/2011	11:26:00 PM
360-34253-1	360-34253-8	SW8270	OC-SW-PZ-17RR-XXX	6/6/2011	TIC01	Unknown	1.83	6.4	TJ	JN	ug/l	1	6/14/2011	11:55:00 PM
360-34253-1	360-34253-8	SW8270	OC-SW-PZ-17RR-XXX	6/6/2011	TIC04	Unknown	11.14	1.9	TJ	JN	ug/l	1	6/14/2011	11:55:00 PM
360-34253-1	360-34253-8	SW8270	OC-SW-PZ-17RR-XXX	6/6/2011	TIC05	Unknown	11.17	3.1	TJ	JN	ug/l	1	6/14/2011	11:55:00 PM
360-34253-1	360-34253-8	SW8270	OC-SW-PZ-17RR-XXX	6/6/2011	104-40-5	4-Nonylphenol	11.21	1.8	TJN	JN	ug/l	1	6/14/2011	11:55:00 PM
360-34253-1	360-34253-8	SW8270	OC-SW-PZ-17RR-XXX	6/6/2011	TIC06	Unknown	11.32	1.9	TJ	JN	ug/l	1	6/14/2011	11:55:00 PM
360-34253-1	360-34253-8	SW8270	OC-SW-PZ-17RR-XXX	6/6/2011	140-66-9	Phenol, 4-(1,1,3,3-tetramethylbutyl)-	11.36	1.7	TJN	JN	ug/l	1	6/14/2011	11:55:00 PM

Table 4-2
Tentatively Identified Compounds - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

SDG	Lab Sample ID	Method	Field Sample ID	Date	CAS #	Analyte	RT	Result	Q	qualifier	Units	DF	Date	Analysis Time
360-34253-1	360-34253-8	SW8270	OC-SW-PZ-17RR-XXX	6/6/2011	57-10-3	n-Hexadecanoic acid	12.18	1.6	TJN	JN	ug/l	1	6/14/2011	11:55:00 PM
360-34253-1	360-34253-8	SW8270	OC-SW-PZ-17RR-XXX	6/6/2011	57-11-4	Octadecanoic acid	12.96	1.9	TJN	JN	ug/l	1	6/14/2011	11:55:00 PM
360-34253-1	360-34253-8	SW8270	OC-SW-PZ-17RR-XXX	6/6/2011	TIC02	Unknown	5.24	10	TJ	JN	ug/l	1	6/14/2011	11:55:00 PM
360-34253-1	360-34253-8	SW8270	OC-SW-PZ-17RR-XXX	6/6/2011	TIC03	Unknown	8.67	2.1	TJ	JN	ug/l	1	6/14/2011	11:55:00 PM
360-34253-1	360-34253-9	SW8270	OC-SW-SD-1-XXX	6/6/2011	134-62-3	Diethyltoluamide	10.54	7.6	TJN	JN	ug/l	1	6/15/2011	12:24:00 AM
360-34253-1	360-34253-9	SW8270	OC-SW-SD-1-XXX	6/6/2011	934-34-9	2(3H)-Benzothiazolone	11.03	0.91	TJN	JN	ug/l	1	6/15/2011	12:24:00 AM
360-34253-1	360-34253-9	SW8270	OC-SW-SD-1-XXX	6/6/2011	57-10-3	n-Hexadecanoic acid	12.18	3	TJN	JN	ug/l	1	6/15/2011	12:24:00 AM
360-34253-1	360-34253-9	SW8270	OC-SW-SD-1-XXX	6/6/2011	TIC05	Unknown	13.52	1.3	TJ	JN	ug/l	1	6/15/2011	12:24:00 AM
360-34253-1	360-34253-9	SW8270	OC-SW-SD-1-XXX	6/6/2011	630-6-8	Hexatriacontane	14.12	0.76	TJN	JN	ug/l	1	6/15/2011	12:24:00 AM
360-34253-1	360-34253-9	SW8270	OC-SW-SD-1-XXX	6/6/2011	295-65-8	Cyclohexadecane	14.7	0.94	TJN	JN	ug/l	1	6/15/2011	12:24:00 AM
360-34253-1	360-34253-9	SW8270	OC-SW-SD-1-XXX	6/6/2011	TIC02	Unknown	5.24	1.7	TJ	JN	ug/l	1	6/15/2011	12:24:00 AM
360-34253-1	360-34253-9	SW8270	OC-SW-SD-1-XXX	6/6/2011	TIC04	Unknown	8.67	1.2	TJ	JN	ug/l	1	6/15/2011	12:24:00 AM
360-34288-1	360-34288-10	SW8270	OC-SW-MMB-SW/SD-5-XXX	6/7/2011	TIC01	Unknown	1.51	5.5	TJ	JN	ug/l	1	6/15/2011	11:53:00 PM
360-34288-1	360-34288-10	SW8270	OC-SW-MMB-SW/SD-5-XXX	6/7/2011	TIC02	Unknown	1.65	8.6	TJ	JN	ug/l	1	6/15/2011	11:53:00 PM
360-34288-1	360-34288-10	SW8270	OC-SW-MMB-SW/SD-5-XXX	6/7/2011	TIC03	Unknown	1.68	0.45	TJ	JN	ug/l	1	6/15/2011	11:53:00 PM
360-34288-1	360-34288-10	SW8270	OC-SW-MMB-SW/SD-5-XXX	6/7/2011	134-62-3	Diethyltoluamide	10.35	1.5	TJN	JN	ug/l	1	6/15/2011	11:53:00 PM
360-34288-1	360-34288-10	SW8270	OC-SW-MMB-SW/SD-5-XXX	6/7/2011	57-10-3	n-Hexadecanoic acid	11.99	0.9	TJN	JN	ug/l	1	6/15/2011	11:53:00 PM
360-34288-1	360-34288-10	SW8270	OC-SW-MMB-SW/SD-5-XXX	6/7/2011	57-11-4	Octadecanoic acid	12.78	1.5	TJN	JN	ug/l	1	6/15/2011	11:53:00 PM
360-34288-1	360-34288-10	SW8270	OC-SW-MMB-SW/SD-5-XXX	6/7/2011	TIC04	Unknown	5.62	1.3	TJ	JN	ug/l	1	6/15/2011	11:53:00 PM
360-34288-1	360-34288-11	SW8270	OC-SW-MMB-SW/SD-8-XXX	6/7/2011	TIC01	Unknown	1.52	5.5	TJ	JN	ug/l	1	6/16/2011	12:23:00 AM
360-34288-1	360-34288-12	SW8270	OC-SW-OPWD-1-XXX	6/7/2011	110-82-7	Cyclohexane	1.51	5.2	TJN	JN	ug/l	1	6/16/2011	12:52:00 AM
360-34288-1	360-34288-12	SW8270	OC-SW-OPWD-1-XXX	6/7/2011	TIC05	Unknown	10.21	0.67	TJ	JN	ug/l	1	6/16/2011	12:52:00 AM
360-34288-1	360-34288-12	SW8270	OC-SW-OPWD-1-XXX	6/7/2011	10544-50-0	Cyclic octaatomic sulfur	12.69	2.8	TJN	JN	ug/l	1	6/16/2011	12:52:00 AM
360-34288-1	360-34288-12	SW8270	OC-SW-OPWD-1-XXX	6/7/2011	TIC02	Unknown	4.97	0.52	TJ	JN	ug/l	1	6/16/2011	12:52:00 AM
360-34288-1	360-34288-12	SW8270	OC-SW-OPWD-1-XXX	6/7/2011	TIC04	Unknown	8.12	0.47	TJ	JN	ug/l	1	6/16/2011	12:52:00 AM
360-34288-1	360-34288-13	SW8270	OC-SW-OPWD-2-XXX	6/7/2011	TIC03	Unknown	10.21	4	TJ	JN	ug/l	1	6/16/2011	2:50:00 AM
360-34288-1	360-34288-13	SW8270	OC-SW-OPWD-2-XXX	6/7/2011	934-34-9	2(3H)-Benzothiazolone	10.83	2.4	TJN	JN	ug/l	1	6/16/2011	2:50:00 AM
360-34288-1	360-34288-13	SW8270	OC-SW-OPWD-2-XXX	6/7/2011	10544-50-0	Cyclic octaatomic sulfur	12.69	6.9	TJN	JN	ug/l	1	6/16/2011	2:50:00 AM
360-34288-1	360-34288-13	SW8270	OC-SW-OPWD-2-XXX	6/7/2011	544-85-4	Dotriacontane	13.94	3	TJN	JN	ug/l	1	6/16/2011	2:50:00 AM
360-34288-1	360-34288-13	SW8270	OC-SW-OPWD-2-XXX	6/7/2011	629-78-7	Heptadecane	14.52	3.8	TJN	JN	ug/l	1	6/16/2011	2:50:00 AM
360-34288-1	360-34288-13	SW8270	OC-SW-OPWD-2-XXX	6/7/2011	629-78-7	Heptadecane	15.06	2.1	TJN	JN	ug/l	1	6/16/2011	2:50:00 AM
360-34288-1	360-34288-13	SW8270	OC-SW-OPWD-2-XXX	6/7/2011	TIC04	Unknown	15.76	1.8	TJ	JN	ug/l	1	6/16/2011	2:50:00 AM
360-34288-1	360-34288-13	SW8270	OC-SW-OPWD-2-XXX	6/7/2011	TIC02	Unknown	4.97	12	TJ	JN	ug/l	1	6/16/2011	2:50:00 AM
360-34288-1	360-34288-14	SW8270	OC-SW-OPWD-SD/SO/SW-S-XXX	6/7/2011	934-34-9	2(3H)-Benzothiazolone	10.83	0.81	TJN	JN	ug/l	1	6/16/2011	3:20:00 AM
360-34288-1	360-34288-14	SW8270	OC-SW-OPWD-SD/SO/SW-S-XXX	6/7/2011	TIC02	Unknown	11.28	1.4	TJ	JN	ug/l	1	6/16/2011	3:20:00 AM
360-34288-1	360-34288-14	SW8270	OC-SW-OPWD-SD/SO/SW-S-XXX	6/7/2011	544-63-8	Tetradecanoic acid	11.99	2	TJN	JN	ug/l	1	6/16/2011	3:20:00 AM
360-34288-1	360-34288-14	SW8270	OC-SW-OPWD-SD/SO/SW-S-XXX	6/7/2011	629-73-2	1-Hexadecene	12.51	1.2	TJN	JN	ug/l	1	6/16/2011	3:20:00 AM
360-34288-1	360-34288-14	SW8270	OC-SW-OPWD-SD/SO/SW-S-XXX	6/7/2011	TIC03	Unknown	15.76	3.3	TJ	JN	ug/l	1	6/16/2011	3:20:00 AM
360-34288-1	360-34288-14	SW8270	OC-SW-OPWD-SD/SO/SW-S-XXX	6/7/2011	111-76-2	Ethanol, 2-butoxy-	5.62	1.3	TJN	JN	ug/l	1	6/16/2011	3:20:00 AM
360-34288-1	360-34288-15	SW8270	OC-SW-SDBK-002-XXX	6/7/2011	638-53-9	Tridecanoic acid	11.99	0.72	TJN	JN	ug/l	1	6/16/2011	3:49:00 AM
360-34288-1	360-34288-15	SW8270	OC-SW-SDBK-002-XXX	6/7/2011	36653-82-4	1-Hexadecanol	12.51	0.7	TJN	JN	ug/l	1	6/16/2011	3:49:00 AM
360-34288-1	360-34288-15	SW8270	OC-SW-SDBK-002-XXX	6/7/2011	TIC03	Unknown	5.95	0.69	TJ	JN	ug/l	1	6/16/2011	3:49:00 AM
360-34288-1	360-34288-5	SW8270	OC-SW-LB-1-XXX	6/7/2011	57-10-3	n-Hexadecanoic acid	12.18	1.3	TJN	JN	ug/l	1	6/15/2011	1:23:00 AM
360-34288-1	360-34288-5	SW8270	OC-SW-LB-1-XXX	6/7/2011	791-28-6	Triphenylphosphine oxide	14.33	0.57	TJN	JN	ug/l	1	6/15/2011	1:23:00 AM
360-34288-1	360-34288-5	SW8270	OC-SW-LB-1-XXX	6/7/2011	TIC03	Unknown	14.7	0.6	TJ	JN	ug/l	1	6/15/2011	1:23:00 AM
360-34288-1	360-34288-5	SW8270	OC-SW-LB-1-XXX	6/7/2011	7683-64-9	Squalene	15.04	2.1	TJN	JN	ug/l	1	6/15/2011	1:23:00 AM

Table 4-2
Tentatively Identified Compounds - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

SDG	Lab Sample ID	Method	Field Sample ID	Date	CAS #	Analyte	RT	Result	Q	qualifier	Units	DF	Date	Analysis Time
360-34288-1	360-34288-5	SW8270	OC-SW-LB-1-XXX	6/7/2011	TIC04	Unknown	15.27	2.6	TJ	JN	ug/l	1	6/15/2011	1:23:00 AM
360-34288-1	360-34288-5	SW8270	OC-SW-LB-1-XXX	6/7/2011	TIC05	Unknown	15.98	3.8	TJ	JN	ug/l	1	6/15/2011	1:23:00 AM
360-34288-1	360-34288-5	SW8270	OC-SW-LB-1-XXX	6/7/2011	TIC06	Unknown	16.67	1.8	TJ	JN	ug/l	1	6/15/2011	1:23:00 AM
360-34288-1	360-34288-5	SW8270	OC-SW-LB-1-XXX	6/7/2011	112-34-5	Ethanol, 2-(2-butoxyethoxy)-	8.29	0.44	TJN	JN	ug/l	1	6/15/2011	1:23:00 AM
360-34288-1	360-34288-6	SW8270	OC-SW-LB-2-XXX	6/7/2011	100-23-2	Benzenamine, N,N-dimethyl-4-nitro-	11.35	0.69	TJN	JN	ug/l	1	6/15/2011	1:52:00 AM
360-34288-1	360-34288-6	SW8270	OC-SW-LB-2-XXX	6/7/2011	57-10-3	n-Hexadecanoic acid	12.18	1.3	TJN	JN	ug/l	1	6/15/2011	1:52:00 AM
360-34288-1	360-34288-6	SW8270	OC-SW-LB-2-XXX	6/7/2011	57-11-4	Octadecanoic acid	12.96	1.6	TJN	JN	ug/l	1	6/15/2011	1:52:00 AM
360-34288-1	360-34288-6	SW8270	OC-SW-LB-2-XXX	6/7/2011	791-28-6	Triphenylphosphine oxide	14.33	0.52	TJN	JN	ug/l	1	6/15/2011	1:52:00 AM
360-34288-1	360-34288-6	SW8270	OC-SW-LB-2-XXX	6/7/2011	TIC03	Unknown	6.17	0.9	TJ	JN	ug/l	1	6/15/2011	1:52:00 AM
360-34288-1	360-34288-6	SW8270	OC-SW-LB-2-XXX	6/7/2011	TIC04	Unknown	7.92	0.48	TJ	JN	ug/l	1	6/15/2011	1:52:00 AM
360-34288-1	360-34288-7	SW8270	OC-SW-LB-3-XXX	6/7/2011	15687-27-1	Ibuprofen	10.7	0.84	TJN	JN	ug/l	1	6/15/2011	2:21:00 AM
360-34288-1	360-34288-7	SW8270	OC-SW-LB-3-XXX	6/7/2011	58-8-2	Caffeine	11.81	1.2	TJN	JN	ug/l	1	6/15/2011	2:21:00 AM
360-34288-1	360-34288-7	SW8270	OC-SW-LB-3-XXX	6/7/2011	57-10-3	n-Hexadecanoic acid	12.18	2.4	TJN	JN	ug/l	1	6/15/2011	2:21:00 AM
360-34288-1	360-34288-7	SW8270	OC-SW-LB-3-XXX	6/7/2011	111-2-4	2,6,10,14,18,22-Tetracosahexaene, 2,6,10	15.04	5.3	TJN	JN	ug/l	1	6/15/2011	2:21:00 AM
360-34288-1	360-34288-7	SW8270	OC-SW-LB-3-XXX	6/7/2011	TIC04	Unknown	15.88	3.7	TJ	JN	ug/l	1	6/15/2011	2:21:00 AM
360-34288-1	360-34288-7	SW8270	OC-SW-LB-3-XXX	6/7/2011	TIC05	Unknown	15.98	5.9	TJ	JN	ug/l	1	6/15/2011	2:21:00 AM
360-34288-1	360-34288-7	SW8270	OC-SW-LB-3-XXX	6/7/2011	15356-70-4	Cyclohexanol, 5-methyl-2-(1-methylethyl)	8.3	1.1	TJN	JN	ug/l	1	6/15/2011	2:21:00 AM
360-34288-1	360-34288-7	SW8270	OC-SW-LB-3-XXX	6/7/2011	TIC03	Unknown	8.98	0.88	TJ	JN	ug/l	1	6/15/2011	2:21:00 AM
360-34288-1	360-34288-8	SW8270	OC-SW-MMB-SW/SD-10-XXX	6/6/2011	57-10-3	n-Hexadecanoic acid	12.18	1.3	TJN	JN	ug/l	1	6/15/2011	2:50:00 AM
360-34288-1	360-34288-8	SW8270	OC-SW-MMB-SW/SD-10-XXX	6/6/2011	57-11-4	Octadecanoic acid	12.96	2	TJN	JN	ug/l	1	6/15/2011	2:50:00 AM
360-34288-1	360-34288-8	SW8270	OC-SW-MMB-SW/SD-10-XXX	6/6/2011	TIC04	Unknown	14.33	0.8	TJ	JN	ug/l	1	6/15/2011	2:50:00 AM
360-34288-1	360-34288-8	SW8270	OC-SW-MMB-SW/SD-10-XXX	6/6/2011	TIC03	Unknown	8.98	0.45	TJ	JN	ug/l	1	6/15/2011	2:50:00 AM
360-34288-1	360-34288-9	SW8270	OC-SW-MMB-SW/SD-4-XXX	6/6/2011	57-10-3	n-Hexadecanoic acid	12.18	0.87	TJN	JN	ug/l	1	6/15/2011	3:19:00 AM
360-34288-1	360-34288-9	SW8270	OC-SW-MMB-SW/SD-4-XXX	6/6/2011	111-76-2	Ethanol, 2-butoxy-	5.84	1.4	TJN	JN	ug/l	1	6/15/2011	3:19:00 AM
360-34288-1	360-34288-9	SW8270	OC-SW-MMB-SW/SD-4-XXX	6/6/2011	112-34-5	Ethanol, 2-(2-butoxyethoxy)-	8.29	0.43	TJN	JN	ug/l	1	6/15/2011	3:19:00 AM
360-34315-1	360-34315-1	SW8270	OC-SW-SDBK-001-XXX	6/8/2011	629-73-2	1-Hexadecene	12.51	2.1	TJN	JN	ug/l	1	6/16/2011	4:48:00 AM
360-34315-1	360-34315-1	SW8270	OC-SW-SDBK-001-XXX	6/8/2011	TIC03	Unknown	8.11	0.41	TJ	JN	ug/l	1	6/16/2011	4:48:00 AM
360-34315-1	360-34315-1	SW8270	OC-SW-SDBK-001-XXX	6/8/2011	1138-52-9	Phenol, 3,5-bis(1,1-dimethylethyl)-	9.97	0.88	TJN	JN	ug/l	1	6/16/2011	4:48:00 AM
360-34315-1	360-34315-10	SW8270	OC-SW-MMB-SW/SD-6-XXX	6/8/2011	134-62-3	Diethyltoluamide	10.35	3.2	TJN	JN	ug/l	1	6/16/2011	8:43:00 AM
360-34315-1	360-34315-10	SW8270	OC-SW-MMB-SW/SD-6-XXX	6/8/2011	TIC04	Unknown	12.53	0.72	TJ	JN	ug/l	1	6/16/2011	8:43:00 AM
360-34315-1	360-34315-10	SW8270	OC-SW-MMB-SW/SD-6-XXX	6/8/2011	TIC05	Unknown	15.76	1.5	TJ	JN	ug/l	1	6/16/2011	8:43:00 AM
360-34315-1	360-34315-10	SW8270	OC-SW-MMB-SW/SD-6-XXX	6/8/2011	TIC02	Unknown	4.54	0.55	TJ	JN	ug/l	1	6/16/2011	8:43:00 AM
360-34315-1	360-34315-10	SW8270	OC-SW-MMB-SW/SD-6-XXX	6/8/2011	103-82-2	Benzeneacetic acid	8.46	0.75	TJN	JN	ug/l	1	6/16/2011	8:43:00 AM
360-34315-1	360-34315-11	SW8270	OC-SW-MMB-SW/SD-8A-XXX	6/8/2011	111-76-2	Ethanol, 2-butoxy-	5.62	1.4	TJN	JN	ug/l	1	6/16/2011	9:12:00 AM
360-34315-1	360-34315-13	SW8270	OC-EBK-019	6/8/2011	110-82-7	Cyclohexane	1.52	7.1	TJN	JN	ug/l	1	6/16/2011	9:42:00 AM
360-34315-1	360-34315-13	SW8270	OC-EBK-019	6/8/2011	TIC01	Unknown	1.65	13	TJ	JN	ug/l	1	6/16/2011	9:42:00 AM
360-34315-1	360-34315-13	SW8270	OC-EBK-019	6/8/2011	134-62-3	Diethyltoluamide	10.35	13	TJN	JN	ug/l	1	6/16/2011	9:42:00 AM
360-34315-1	360-34315-13	SW8270	OC-EBK-019	6/8/2011	TIC03	Unknown	11.09	0.85	TJ	JN	ug/l	1	6/16/2011	9:42:00 AM
360-34315-1	360-34315-13	SW8270	OC-EBK-019	6/8/2011	TIC04	Unknown	11.91	1.3	TJ	JN	ug/l	1	6/16/2011	9:42:00 AM
360-34315-1	360-34315-13	SW8270	OC-EBK-019	6/8/2011	TIC05	Unknown	14.44	0.81	TJ	JN	ug/l	1	6/16/2011	9:42:00 AM
360-34315-1	360-34315-13	SW8270	OC-EBK-019	6/8/2011	111-76-2	Ethanol, 2-butoxy-	5.62	1.1	TJN	JN	ug/l	1	6/16/2011	9:42:00 AM
360-34315-1	360-34315-13	SW8270	OC-EBK-019	6/8/2011	95-16-9	Benzothiazole	8.46	1.9	TJN	JN	ug/l	1	6/16/2011	9:42:00 AM
360-34315-1	360-34315-13	SW8270	OC-EBK-019	6/8/2011	TIC02	Unknown	8.75	0.93	TJ	JN	ug/l	1	6/16/2011	9:42:00 AM
360-34315-1	360-34315-2	SW8270	OC-SW-SDBK-004-XXX	6/8/2011	TIC02	Unknown	1.67	0.87	TJ	JN	ug/l	1	6/16/2011	5:17:00 AM
360-34315-1	360-34315-2	SW8270	OC-SW-SDBK-004-XXX	6/8/2011	TIC04	Unknown	5.95	0.65	TJ	JN	ug/l	1	6/16/2011	5:17:00 AM
360-34315-1	360-34315-2	SW8270	OC-SW-SDBK-004-XXX	6/8/2011	TIC05	Unknown	7.75	0.57	TJ	JN	ug/l	1	6/16/2011	5:17:00 AM

Table 4-2
Tentatively Identified Compounds - SVOCs
June 2011 Surface Water Sampling
Olin Chemical Superfund Site
Wilmington, Massachusetts

SDG	Lab Sample ID	Method	Field Sample ID	Date	CAS #	Analyte	RT	Result	Q	qualifier	Units	DF	Date	Analysis Time
360-34315-1	360-34315-3	SW8270	OC-SW-SD-EDSD/SW0-XXX	6/8/2011	TIC02	Unknown	1.67	0.85	TJ	JN	ug/l	1	6/16/2011	5:47:00 AM
360-34315-1	360-34315-3	SW8270	OC-SW-SD-EDSD/SW0-XXX	6/8/2011	TIC04	Unknown	12.77	1.3	TJ	JN	ug/l	1	6/16/2011	5:47:00 AM
360-34315-1	360-34315-4	SW8270	OC-SW-EDSD/SW1(EDBS5)-XXX	6/8/2011	111-76-2	Ethanol, 2-butoxy-	5.62	1.1	TJN	JN	ug/l	1	6/16/2011	6:16:00 AM
360-34315-1	360-34315-4	SW8270	OC-SW-EDSD/SW1(EDBS5)-XXX	6/8/2011	TIC02	Unknown	5.95	1	TJ	JN	ug/l	1	6/16/2011	6:16:00 AM
360-34315-1	360-34315-5	SW8270	OC-SW-EDSD/SW2(EDBS6)-XXX	6/8/2011	110-82-7	Cyclohexane	1.52	8.4	TJN	JN	ug/l	1	6/16/2011	6:45:00 AM
360-34315-1	360-34315-5	SW8270	OC-SW-EDSD/SW2(EDBS6)-XXX	6/8/2011	295-65-8	Cyclohexadecane	12.51	0.88	TJN	JN	ug/l	1	6/16/2011	6:45:00 AM
360-34315-1	360-34315-5	SW8270	OC-SW-EDSD/SW2(EDBS6)-XXX	6/8/2011	TIC03	Unknown	7.75	0.66	TJ	JN	ug/l	1	6/16/2011	6:45:00 AM
360-34315-1	360-34315-6	SW8270	OC-SW-EDSD/SW5(EDBS11)-XXX	6/8/2011	110-82-7	Cyclohexane	1.51	9.2	TJN	JN	ug/l	1	6/16/2011	7:15:00 AM
360-34315-1	360-34315-6	SW8270	OC-SW-EDSD/SW5(EDBS11)-XXX	6/8/2011	123-91-1	1,4-Dioxane	1.94	0.75	J	JN	ug/l	1	6/16/2011	7:15:00 AM
360-34315-1	360-34315-6	SW8270	OC-SW-EDSD/SW5(EDBS11)-XXX	6/8/2011	100-23-2	Benzenamine, N,N-dimethyl-4-nitro-	11.15	0.47	TJN	JN	ug/l	1	6/16/2011	7:15:00 AM
360-34315-1	360-34315-6	SW8270	OC-SW-EDSD/SW5(EDBS11)-XXX	6/8/2011	1599-67-3	1-Docosene	13.93	0.9	TJN	JN	ug/l	1	6/16/2011	7:15:00 AM
360-34315-1	360-34315-6	SW8270	OC-SW-EDSD/SW5(EDBS11)-XXX	6/8/2011	TIC02	Unknown	14.52	1.3	TJ	JN	ug/l	1	6/16/2011	7:15:00 AM
360-34315-1	360-34315-6	SW8270	OC-SW-EDSD/SW5(EDBS11)-XXX	6/8/2011	111-76-2	Ethanol, 2-butoxy-	5.62	1.4	TJN	JN	ug/l	1	6/16/2011	7:15:00 AM
360-34315-1	360-34315-7	SW8270	OC-SW-MMB-SW/SD-11-XXX	6/7/2011	110-82-7	Cyclohexane	1.52	8.5	TJN	JN	ug/l	1	6/16/2011	4:18:00 AM
360-34315-1	360-34315-7	SW8270	OC-SW-MMB-SW/SD-11-XXX	6/7/2011	111-76-2	Ethanol, 2-butoxy-	5.62	1.1	TJN	JN	ug/l	1	6/16/2011	4:18:00 AM
360-34315-1	360-34315-7	SW8270	OC-SW-MMB-SW/SD-11-XXX	6/7/2011	TIC02	Unknown	5.95	0.69	TJ	JN	ug/l	1	6/16/2011	4:18:00 AM
360-34315-1	360-34315-8	SW8270	OC-SW-MMB-SW/SD-2-XXX	6/8/2011	110-82-7	Cyclohexane	1.52	9.2	TJN	JN	ug/l	1	6/16/2011	7:44:00 AM
360-34315-1	360-34315-8	SW8270	OC-SW-MMB-SW/SD-2-XXX	6/8/2011	100-23-2	Benzenamine, N,N-dimethyl-4-nitro-	11.15	0.59	TJN	JN	ug/l	1	6/16/2011	7:44:00 AM
360-34315-1	360-34315-8	SW8270	OC-SW-MMB-SW/SD-2-XXX	6/8/2011	TIC03	Unknown	5.95	0.69	TJ	JN	ug/l	1	6/16/2011	7:44:00 AM
360-34315-1	360-34315-8	SW8270	OC-SW-MMB-SW/SD-2-XXX	6/8/2011	TIC04	Unknown	7.75	0.58	TJ	JN	ug/l	1	6/16/2011	7:44:00 AM
360-34315-1	360-34315-9	SW8270	OC-SW-MMB-SW/SD-3-XXX	6/8/2011	TIC01	Unknown	1.54	0.41	TJ	JN	ug/l	1	6/16/2011	8:13:00 AM
360-34315-1	360-34315-9	SW8270	OC-SW-MMB-SW/SD-3-XXX	6/8/2011	TIC03	Unknown	1.66	4	TJ	JN	ug/l	1	6/16/2011	8:13:00 AM
360-34315-1	360-34315-9	SW8270	OC-SW-MMB-SW/SD-3-XXX	6/8/2011	544-63-8	Tetradecanoic acid	11.99	2.3	TJN	JN	ug/l	1	6/16/2011	8:13:00 AM
360-34315-1	360-34315-9	SW8270	OC-SW-MMB-SW/SD-3-XXX	6/8/2011	112-88-9	1-Octadecene	12.51	0.58	TJN	JN	ug/l	1	6/16/2011	8:13:00 AM
360-34315-1	360-34315-9	SW8270	OC-SW-MMB-SW/SD-3-XXX	6/8/2011	TIC05	Unknown	12.53	0.45	TJ	JN	ug/l	1	6/16/2011	8:13:00 AM
360-34315-1	360-34315-9	SW8270	OC-SW-MMB-SW/SD-3-XXX	6/8/2011	111-76-2	Ethanol, 2-butoxy-	5.62	1.3	TJN	JN	ug/l	1	6/16/2011	8:13:00 AM
360-34315-1	360-34315-9	SW8270	OC-SW-MMB-SW/SD-3-XXX	6/8/2011	TIC04	Unknown	7.75	0.53	TJ	JN	ug/l	1	6/16/2011	8:13:00 AM

ug/l = microgram per liter
J = value is estimated
N = presumptively present
T = Tentatively identified compound, the result is estimated

Prepared by / Date: KJC 08/19/11
Checked by / Date: WDC 09/01/11

ATTACHMENT A
USEPA SCORE SHEETS

PES SCORING EVALUATION REPORT

PES V80736 Rev: 1 EPA Sample No.: 360-34288-4 Report Date: 08/31/2011

Lab Name: Testamerica Westfeld
Contract: 360-34288-1
SDG No.: 360-34288-1
Lab File ID: NA
Sample Wt./Vol. (g/mL): 5 mL
Purge Volume (mL): NA
Length (m): NA
Dilution Factor: 10

Case No.: 360-34288-1
Matrix: Water
Date Received: 06/08/2011
Level: N/A
GC Column: NA
Soil Extract. Vol. (uL): NA
Units: ug/L

Lab Code: TESWES
SAS/Client No.: NA
Lab Sample ID: 360-34288-4
Date Analyzed: 06/15/2011
% Moisture (not dec.): NA
ID (mm): NA
Soil Aliquot Vol. (uL): NA

Analysis Method: 8260C
Scoring Method: SOM01.1
Comments:

CAS No.	Analyte	Laboratory Results		PES Evaluation	
		Concentration	Q		
75-01-4	Vinyl Chloride	64		PASS	Within Limits
75-00-3	Chloroethane	110		PASS	Within Limits
75-35-4	1,1-Dichloroethene	38		PASS	Within Limits
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	58		PASS	Within Limits
156-60-5	trans-1,2-Dichloroethene	72		PASS	Within Limits
71-55-6	1,1,1-Trichloroethane	42		PASS	Within Limits
110-82-7	Cyclohexane	43	J	PASS	Within Limits
56-23-5	Carbon Tetrachloride	28		PASS	Within Limits
71-43-2	Benzene	34		PASS	Within Limits
107-06-2	1,2-Dichloroethane	24		PASS	Warning Low
79-01-6	Trichloroethene	17		PASS	Within Limits
75-27-4	Bromodichloromethane	67		PASS	Within Limits
108-10-1	4-Methyl-2-pentanone	120		PASS	Within Limits
127-18-4	Tetrachloroethene	71		PASS	Within Limits
108-90-7	Chlorobenzene	67		PASS	Within Limits
100-41-4	Ethylbenzene	48		PASS	Within Limits
541-73-1	1,3-Dichlorobenzene	21		PASS	Within Limits
95-50-1	1,2-Dichlorobenzene	63		PASS	Within Limits
96-12-8	1,2-Dibromo-3-chloropropane	120		PASS	Within Limits
110-54-3	Hexane	0		N.E.	Scorer Request
462-06-6	Fluorobenzene	0		N.E.	Scorer Request
1190-22-3	1,3-Dichlorobutane	0		N.E.	Scorer Request
108-86-1	Bromobenzene	47		PASS	TIC Found
****	END Main Analytes	**********	****	****	**********
****	END All Analytes	**********	****	****	**********

PES SCORING EVALUATION REPORT

PES S80479 Rev: 1 EPA Sample No.: 360-34288-3 Report Date: 08/30/2011

Lab Name: Testamerica Westfeld
Contract: 360-34288-1
SDG No.: 360-34288-1
Lab File ID: NA
Date Analyzed: 06/15/2011
% Moisture: NA
Injection Vol. (uL): 1
Dilution Factor: 1.0, 5.0

Case No.: 360-34288-1
Matrix: Water
Date Received: 06/08/2011
Sample Wt./Vol. (g/mL): 1000 mL
Decanted: N/A
GPC Cleanup: N/A
Extraction Type: N/A

Lab Code: TESWES
SAS/Client No.: NA
Lab Sample ID: 360-34288-3
Date Extracted: 06/13/2011
Level: N/A
Conc. Extract Vol. (uL): NA
pH: NA
Units: ug/L

Analysis Method: 8270D
Scoring Method: SOM01.1
Comments:

CAS No.	Analyte	Laboratory Results		PES Evaluation	
		Concentration	Q		
108-95-2	Phenol	11		FAIL	Action Low
111-44-4	bis(2-Chloroethyl)ether	23	J	PASS	Within Limits
95-48-7	2-Methylphenol	24	J	PASS	Within Limits
98-86-2	Acetophenone	19	B	PASS	Within Limits
67-72-1	Hexachloroethane	9.9		PASS	Within Limits
91-20-3	Naphthalene	10		PASS	Within Limits
106-47-8	4-Chloroaniline	32		PASS	Within Limits
91-57-6	2-Methylnaphthalene	11		PASS	Within Limits
95-95-4	2,4,5-Trichlorophenol	40		PASS	Within Limits
92-52-4	1,1'-Biphenyl	24	J	PASS	Within Limits
91-58-7	2-Chloronaphthalene	12		PASS	Within Limits
131-11-3	Dimethylphthalate	39		PASS	Within Limits
606-20-2	2,6-Dinitrotoluene	43		PASS	Within Limits
100-02-7	4-Nitrophenol	12		PASS	Warning Low
85-01-8	Phenanthrene	11		PASS	Within Limits
120-12-7	Anthracene	26		PASS	Within Limits
86-74-8	Carbazole	23	J	PASS	Within Limits
207-08-9	Benzo(k)fluoranthene	13		PASS	Within Limits
191-24-2	Benzo(g,h,i)perylene	20		PASS	Within Limits
1031-07-8	Endosulfan sulfate	15		PASS	TIC Found
92-93-3	4-Nitrobiphenyl	18		PASS	TIC Found
35693-92-6	2,4,6-Trichlorobiphenyl	0		N.E.	Scorer Request
56-49-5	3-Methylcholanthrene	20		PASS	TIC Found
****	END Main Analytes	**********	****	****	**********
65-85-0	BENZOIC ACID	2.1	J	N.E.	Non-spiked TIC
100-51-6	BENZYL ALCOHOL	0.96	JB	N.E.	Non-spiked TIC
84-74-2	Di-n-butylphthalate	0.83	JB	PASS	Less Than CRQL
108-38-3	Benzene,1,3-dimethyl-	3.1	J	N.E.	Non-spiked TIC
541-2-6	Cyclopentasiloxane,decamethyl-	1.1	J	N.E.	Non-spiked TIC
38444-84-7	1,1"-Biphenyl,2,3,3"-trichloro	18	J	N.E.	Non-spiked TIC
84-65-1	9,10-Anthracenedione	1.7	J	N.E.	Non-spiked TIC
****	END All Analytes	**********	****	****	**********

PES SCORING EVALUATION REPORT

PES IS0662 Rev: 1 EPA Sample No.: 360-34288-2 Report Date: 08/31/2011

Lab Name: Testamerica Westfeld
Contract: 360-34288-1
SDG No.: 360-34288-1
Date Received: 06/08/2011
Color Before: NA
Clarity After: NA
Units: ug/L

Case No.: 360-34288-1
Matrix: Water
Level: N/A
Color After: NA
Texture: NA

Lab Code: TESWES
SAS/NRAS No.: NA
Lab Sample ID: 360-34288-2
Percent Solids: NA
Clarity Before: NA
Artifacts: NA

Analysis Method: 6010BMetals Analysis ICP
Scoring Method: ISM01.1 Metals Analysis ICP
Comments:

CAS No.	Analyte	Laboratory Results				PES Evaluation	
		Concentration	C	Q	M		
7429-90-5	Aluminum	1900				PASS	Within Limits
7440-36-0	Antimony	130				PASS	Within Limits
7440-38-2	Arsenic	44				PASS	Within Limits
7440-41-7	Beryllium	34				PASS	Within Limits
7440-70-2	Calcium	17000				PASS	Within Limits
7440-47-3	Chromium	90				PASS	Within Limits
7440-50-8	Copper	0				N.E.	Scorer Request
7439-89-6	Iron	1100				PASS	Within Limits
7439-92-1	Lead	0				N.E.	Scorer Request
7439-96-5	Manganese	50				PASS	Within Limits
7440-09-7	Potassium	9700				PASS	Within Limits
7440-22-4	Silver	0				N.E.	Scorer Request
7440-62-2	Vanadium	130				PASS	Within Limits
7440-66-6	Zinc	210				PASS	Warning High
****	END Main Analytes	**********	****	****	****	****	**********
7440-23-5	Sodium	320				PASS	< CRDL/CRQL
7440-02-0	Nickel	8.7				PASS	< CRDL/CRQL
****	END All Analytes	**********	****	****	****	****	**********

PES SCORING EVALUATION REPORT

PES HG5929 · Rev: 1 EPA Sample No.: 360-34288-1 Report Date: 08/31/2011

Lab Name: Testamerica Westfield
Contract: 360-34288-1
SDG No.: 360-34288-1
Date Received: 06/08/11
Color Before: NA
Clarity After: NA
Units: ug/L

Case No.: 360-34288-1
Matrix: Water
Level: N/A
Color After: NA
Texture: NA

Lab Code: TESWES
SAS/NRAS No.: NA
Lab Sample ID: 360-34288-1
Percent Solids: NA
Clarity Before: NA
Artifacts: NA

Analysis Method: 7470A Mercury/Cyanide
Scoring Method: ISM01.1 Mercury/Cyanide Analysis
Comments:

CAS No.	Analyte	Laboratory Results				PES Evaluation	
		Concentration	C	Q	M		
7439-97-6	Mercury	22				FAIL	Action High
****	END Main Analytes	**********	****	****	****	****	**********
****	END All Analytes	**********	****	****	****	****	**********

PES SCORING EVALUATION REPORT

PES HG5929 Rev: 2 EPA Sample No.: 360-34288-1 Resubm Report Date: 09/19/2011

Lab Name: Testamerica Westfield
Contract: 360-34288-1
SDG No.: 360-34288-1
Date Received: 06/08/11
Color Before: NA
Clarity After: NA
Units: ug/L

Case No.: 360-34288-1
Matrix: Water
Level: N/A
Color After: NA
Texture: NA

Lab Code: TESWES
SAS/NRAS No.: NA
Lab Sample ID: 360-34288-1
Percent Solids: NA
Clarity Before: NA
Artifacts: NA

Analysis Method: 7470A Mercury/Cyanide
Scoring Method: ISM01.1 Mercury/Cyanide Analysis
Comments:

CAS No.	Analyte	Laboratory Results				PES Evaluation	
		Concentration	C	Q	M		
7439-97-6	Mercury	4.5				PASS	Within Limits
****	END Main Analytes	**********	****	****	****	****	**********
****	END All Analytes	**********	****	****	****	****	**********

PES SCORING EVALUATION REPORT

PES MS03400 Rev: 1 EPA Sample No.: IUF0803-12 Report Date: 08/31/2011

Lab Name: Testamerica Irvune
Contract: 360-34288-1
SDG No.: 360-34288-1
Date Received: 06/07/11
Color Before: NA
Clarity After: NA
Units: ug/L

Case No.: 360-34288-1
Matrix: Water
Level: N/A
Color After: NA
Texture: NA

Lab Code: TESIRV
SAS/NRAS No.: NA
Lab Sample ID: IUF0803-12
Percent Solids: 0.00
Clarity Before: NA
Artifacts: NA

Analysis Method: 6020 Metals Analysis ICP-MS
Scoring Method: ISM01.1 Metals Analysis ICP-MS
Comments: Analyzed for Copper, Lead & Silver only.

CAS No.	Analyte	Laboratory Results				PES Evaluation	
		Concentration	C	Q	M		
7429-90-5	Aluminum	0				N.E.	Scorer Request
7440-38-2	Arsenic	0				N.E.	Scorer Request
7440-39-3	Barium	0				N.E.	Scorer Request
7440-41-7	Beryllium	0				N.E.	Scorer Request
7440-43-9	Cadmium	0				N.E.	Scorer Request
7440-70-2	Calcium	0				N.E.	Scorer Request
7440-47-3	Chromium	0				N.E.	Scorer Request
7440-48-4	Cobalt	0				N.E.	Scorer Request
7439-89-6	Iron	0				N.E.	Scorer Request
7439-92-1	Lead	230		E		FAIL	Action High
7439-95-4	Magnesium	0				N.E.	Scorer Request
7439-96-5	Manganese	0				N.E.	Scorer Request
7440-02-0	Nickel	0				N.E.	Scorer Request
7440-09-7	Potassium	0				N.E.	Scorer Request
7782-49-2	Selenium	0				N.E.	Scorer Request
7440-22-4	Silver	160		D		FAIL	Action High
7440-23-5	Sodium	0				N.E.	Scorer Request
7440-28-0	Thallium	0				N.E.	Scorer Request
7440-62-2	Vanadium	0				N.E.	Scorer Request
7440-66-6	Zinc	0				N.E.	Scorer Request
****	END Main Analytes	**********	****	****	****	****	**********
7440-50-8	Copper	0.51				PASS	< CRDL/CRQL
****	END All Analytes	**********	****	****	****	****	**********

PES SCORING EVALUATION REPORT

PES MS03400 Rev: 2 EPA Sample No.: IUF0803-12 Resubmit Report Date: 09/19/2011

Lab Name: Testamerica Irvine
Contract: 360-34288-1
SDG No.: 360-34288-1
Date Received: 06/07/11
Color Before: NA
Clarity After: NA
Units: ug/L

Case No.: 360-34288-1
Matrix: Water
Level: N/A
Color After: NA
Texture: NA

Lab Code: TESIRV
SAS/NRAS No.: NA
Lab Sample ID: IUF0803-12
Percent Solids: 0.00
Clarity Before: NA
Artifacts: NA

Analysis Method: 6020 Metals Analysis ICP-MS
Scoring Method: ISM01.1 Metals Analysis ICP-MS
Comments: Analyzed for Copper, Lead & Silver only.

CAS No.	Analyte	Laboratory Results				PES Evaluation	
		Concentration	C	Q	M		
7429-90-5	Aluminum	0				N.E.	Scorer Request
7440-38-2	Arsenic	0				N.E.	Scorer Request
7440-39-3	Barium	0				N.E.	Scorer Request
7440-41-7	Beryllium	0				N.E.	Scorer Request
7440-43-9	Cadmium	0				N.E.	Scorer Request
7440-70-2	Calcium	0				N.E.	Scorer Request
7440-47-3	Chromium	0				N.E.	Scorer Request
7440-48-4	Cobalt	0				N.E.	Scorer Request
7439-89-6	Iron	0				N.E.	Scorer Request
7439-92-1	Lead	12		D		PASS	Within Limits
7439-95-4	Magnesium	0				N.E.	Scorer Request
7439-96-5	Manganese	0				N.E.	Scorer Request
7440-02-0	Nickel	0				N.E.	Scorer Request
7440-09-7	Potassium	0				N.E.	Scorer Request
7782-49-2	Selenium	0				N.E.	Scorer Request
7440-22-4	Silver	8.0		D		PASS	Within Limits
7440-23-5	Sodium	0				N.E.	Scorer Request
7440-28-0	Thallium	0				N.E.	Scorer Request
7440-62-2	Vanadium	0				N.E.	Scorer Request
7440-66-6	Zinc	0				N.E.	Scorer Request
****	END Main Analytes	**********	****	****	****	****	**********
7440-50-8	Copper	0.025		D		PASS	< CRDL/CRQL
****	END All Analytes	**********	****	****	****	****	**********

PES SCORING EVALUATION REPORT

PES MS03456 Rev: 1 EPA Sample No.: IUF0803-13 Report Date: 08/31/2011

Lab Name: Testamerica Irvune
Contract: 360-34288-1
SDG No.: 360-34288-1
Date Received: 06/07/11
Color Before: NA
Clarity After: NA
Units: ug/L

Case No.: 360-34288-1
Matrix: Water
Level: N/A
Color After: NA
Texture: NA

Lab Code: TESIRV
SAS/NRAS No.: NA
Lab Sample ID: IUF0803-13
Percent Solids: 0.00
Clarity Before: NA
Artifacts: NA

Analysis Method: 6020 Metals Analysis ICP-MS
Scoring Method: ISM01.1 Metals Analysis ICP-MS
Comments: Anayzed for Copper,Lead & Silver only.

CAS No.	Analyte	Laboratory Results				PES Evaluation	
		Concentration	C	Q	M		
7429-90-5	Aluminum	0				N.E.	Scorer Request
7440-36-0	Antimony	0				N.E.	Scorer Request
7440-38-2	Arsenic	0				N.E.	Scorer Request
7440-41-7	Beryllium	0				N.E.	Scorer Request
7440-43-9	Cadmium	0				N.E.	Scorer Request
7440-70-2	Calcium	0				N.E.	Scorer Request
7440-47-3	Chromium	0				N.E.	Scorer Request
7440-48-4	Cobalt	0				N.E.	Scorer Request
7440-50-8	Copper	120				FAIL	Action High
7439-89-6	Iron	0				N.E.	Scorer Request
7439-92-1	Lead	160				FAIL	Action High
7439-95-4	Magnesium	0				N.E.	Scorer Request
7439-96-5	Manganese	0				N.E.	Scorer Request
7440-02-0	Nickel	0				N.E.	Scorer Request
7440-09-7	Potassium	0				N.E.	Scorer Request
7782-49-2	Selenium	0				N.E.	Scorer Request
7440-22-4	Silver	60				FAIL	Action High
7440-23-5	Sodium	0				N.E.	Scorer Request
7440-28-0	Thallium	0				N.E.	Scorer Request
7440-62-2	Vanadium	0				N.E.	Scorer Request
7440-66-6	Zinc	0				N.E.	Scorer Request
****	END Main Analytes	**********	****	****	****	****	**********
****	END All Analytes	**********	****	****	****	****	**********

PES SCORING EVALUATION REPORT

PES MS03456 Rev: 2 EPA Sample No.: IUF0803-13 Resubm Report Date: 09/19/2011

Lab Name: Testamerica Irvune
Contract: 360-34288-1
SDG No.: 360-34288-1
Date Received: 06/07/11
Color Before: NA
Clarity After: NA
Units: ug/L

Case No.: 360-34288-1
Matrix: Water
Level: N/A
Color After: NA
Texture: NA

Lab Code: TESIRV
SAS/NRAS No.: NA
Lab Sample ID: IUF0803-13
Percent Solids: 0.00
Clarity Before: NA
Artifacts: NA

Analysis Method: 6020 Metals Analysis ICP-MS
Scoring Method: ISM01.1 Metals Analysis ICP-MS
Comments: Anayzed for Copper,Lead & Silver only.

CAS No.	Analyte	Laboratory Results				PES Evaluation	
		Concentration	C	Q	M		
7429-90-5	Aluminum	0				N.E.	Scorer Request
7440-36-0	Antimony	0				N.E.	Scorer Request
7440-38-2	Arsenic	0				N.E.	Scorer Request
7440-41-7	Beryllium	0				N.E.	Scorer Request
7440-43-9	Cadmium	0				N.E.	Scorer Request
7440-70-2	Calcium	0				N.E.	Scorer Request
7440-47-3	Chromium	0				N.E.	Scorer Request
7440-48-4	Cobalt	0				N.E.	Scorer Request
7440-50-8	Copper	5.9		D		PASS	Within Limits
7439-89-6	Iron	0				N.E.	Scorer Request
7439-92-1	Lead	8.1		D		PASS	Within Limits
7439-95-4	Magnesium	0				N.E.	Scorer Request
7439-96-5	Manganese	0				N.E.	Scorer Request
7440-02-0	Nickel	0				N.E.	Scorer Request
7440-09-7	Potassium	0				N.E.	Scorer Request
7782-49-2	Selenium	0				N.E.	Scorer Request
7440-22-4	Silver	3.0		D		PASS	Within Limits
7440-23-5	Sodium	0				N.E.	Scorer Request
7440-28-0	Thallium	0				N.E.	Scorer Request
7440-62-2	Vanadium	0				N.E.	Scorer Request
7440-66-6	Zinc	0				N.E.	Scorer Request
****	END Main Analytes	**********	****	****	****	****	**********
****	END All Analytes	**********	****	****	****	****	**********

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

September 14, 2011

Tige L. Cunningham, NRCC EAC
Project Environmental Scientist
MACTEC Engineering and Consulting, Inc.
511 Congress Street, Portland, Maine 04101

Subject: *Corrective Action Response for Olin Wilmington PT (Lab 360-34288)*

Dear Mr. Cunningham,

Please find attached the revised form 1 for sample 360-34288-1.

As submitted previously the corrective actions have been implemented for the mercury analysis.

Mercury (SW846 7470)
Review of the project file information revealed that the PT instructions were not followed completely. The sample was originally prepped using 5mL to 100 where the instructions state 1mL to 100. To account for the 5x difference the data was multiplied by a factor of 0.2.

If you have any questions or require further clarification, please do not hesitate to contact the Laboratory Director, Steve Hartmann or myself at (413) 572-4000.

Sincerely yours,
TestAmerica-Westfield

Christine Furcinite-Reynolds

Christine Furcinite-Reynolds
Quality Assurance Manager

Analytical Data

Client: Olin Corporation

Job Number: 360-34288-1
Sdg Number: 360-34288-1

Client Sample ID: **OC-PE-HG5929-HG**

Lab Sample ID: 360-34288-1
Client Matrix: Water

Date Sampled: 06/07/2011 1300
Date Received: 06/08/2011 1019

7470A Mercury (CVAA)

Analysis Method:	7470A	Analysis Batch:	360-75378	Instrument ID:	Hg Analyzer
Prep Method:	7470A	Prep Batch:	360-75192	Lab File ID:	061611.PRN
Dilution:	0.2			Initial Weight/Volume:	10 mL
Analysis Date:	06/16/2011 1322			Final Weight/Volume:	10 mL
Prep Date:	06/14/2011 0905				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	4.5		0.031	0.040

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: OC-PE-HG5929-HG

Lab Sample ID: 360-34288-1

Lab Name: TestAmerica Westfield

Job No.: 360-34288-1

SDG ID.: 360-34288-1

Matrix: Water

Date Sampled: 06/07/2011 13:00

Reporting Basis: WET

Date Received: 06/08/2011 10:19

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-97-6	Mercury	4.5	0.040	0.031	ug/L			0.2	7470A

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

Client:	TestAmerica	**Date Sampled:**	6/6/2011 to 6/7/2011
Project:	Olin 360-34288-1	**Date Received:**	6/8/2011
Lab:	IUF0803		

SAMPLE RECEIPT: Samples were received intact, on ice, with chain of custody documentation. The sample temperature was measured at 1.4° C upon receipt at the laboratory.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the TestAmerica Sample Acceptance Policy unless otherwise noted in the report.

PROBLEMS ENCOUNTERED: No problems were encountered during sample analysis.

QA/QC CRITERIA: There was no MS/MSD analyzed with EPA 6020 QC batch 11F3328 due to insufficient sample volume. See LCS/LCSD.

OBSERVATIONS: Results that fall between the MDL and RL are 'J' flagged.

Silver reporting limit was raised due to sample matrix effects for EPA 6020 samples IUF0803-02, 08, and 09.

REVISIONS: The report was revised to include the correct dilution factor for samples IUF0803-12 and IUF0803-13. Using a compensating dilution factor of 0.05 multiplied by any actual dilutions performed.

TestAmerica Irvine

Kathleen Robb
Project Manager
ra

17461 Derian Avenue. Suite 100 Irvine, CA 92614 (949) 261-1022 (949) 260-3297

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

September 12, 2011

Christine Furcinite-Reynolds, QA Manager
TestAmerica Wesfield
53 Southampton Road
Westfield, MA 01085

Subject: *Corrective Action Response for Olin Wilmington PT (Lab workorder IUF0803)*

Dear Ms. Reynolds,

Please find below the corrective action responses for TestAmerica-Irvine (EPA #CA01531). Corrective actions have been implemented for all parameters recorded as "FAIL" on the PES Evaluation Report issued 08/31/11.

Lead, Silver and Copper (EPA 6020 collision cell)
Review of the project file information revealed that the PT instructions were not provided when TA Westfield shipped the samples to Irvine. Because of this, the samples (IUF0803-12 & -13) were not diluted 20x prior to analysis.

As for the results qualified as above calibration range ("E"), this was a reporting oversight. The upper calibration concentration was not entered into the data system. A review of the raw data clearly reveals that the reported results, even without the 20x dilution, did not exceed the calibration range.

The laboratory will revise the reported results, using a compensating dilution factor of 0.05 multiplied by any actual dilutions performed. The Form 1's in the data package will also be revised to remove the E qualifiers.

If you have any questions or require further clarification, please do not hesitate to contact the Laboratory Director, Fred Haley or myself at (949) 261-1022.

Sincerely yours,

TestAmerica-Irvine

David C. Dawes
Quality Assurance Manager