



**DEPARTMENT OF THE NAVY**  
BASE REALIGNMENT AND CLOSURE  
PROGRAM MANAGEMENT OFFICE, NORTHEAST  
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5090  
BPMO NE/LM  
Ser 08-013  
October 25, 2007

Mr. Michael Daly  
Remedial Project Manager  
Federal Facilities Superfund Section  
United States Environmental Protection Agency (EPA)  
1 Congress Street, Suite 1100 (HBT)  
Boston, MA 02114-2023

Ms. Claudia Sait  
Remedial Project Manager  
Maine Department of Environmental Protection (MEDEP)  
Bureau of Remediation and Waste Management  
State House, Station 17  
Augusta, ME 04333-0017

Dear Mr. Daly and Ms. Sait:

**SUBJECT: FINAL ADDENDUM TO THE BASE-WIDE QUALITY  
ASSURANCE PROJECT PLAN (QAPP) FOR SITE 9 SOILS,  
NAVAL AIR STATION (NAS) BRUNSWICK, MAINE**

Enclosed you will find the Final Addendum to the Base-wide QAPP for Site 9 Soils. This addendum is provided for use in conducting the upcoming Site 9 field work south of Neptune Drive scheduled for mid November 2007.

If you have any questions, or comments, please contact the Navy's Remedial Project Manager, Lonnie Monaco at (215) 897-4911, or me at (215) 897-4915.

Sincerely,

A handwritten signature in cursive script that reads "Dawn C. Kincaid".

Dawn C. Kincaid, P.E.  
BRAC Environmental Coordinator  
By direction of BRAC PMO

Enclosure:  
Final Addendum to the Base-Wide QAPP for Site 9 Soils, NASB, Maine

Copy to:

MEDEP (C. Evans)

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NAVFAC ATLANTIC (D. Waddill, J. Wright, A. Van Dercook, B. Capito)

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**SUBJECT: Final Base-Wide Quality Assurance Project Plan for the Long-Term Monitoring Program (ECC/EC 2006) Page-Inserts**

Enclosed you will find the Navy's page-inserts to the Final Base-Wide Quality Assurance Project Plan for the Long-Term Monitoring Program (ECC/EC 2006) for Site 9. Please refer to the enclosed List of Revisions Table (Revision 3), which describes the October 2007 page inserts. Please remove the existing tables/pages, and replace them with the provided page-inserts. Please add the Stakeholder comments and Navy responses to comments to Appendix F.

If you have any questions, or comments, please contact Jackson Kiker at (508) 229-2270 ext 124 or email [Jkiker@ecc.net](mailto:Jkiker@ecc.net).

Sincerely,

A handwritten signature in black ink, appearing to read "Jackson Kiker". The signature is fluid and cursive, with a large initial "J" and "K".

### LIST OF REVISIONS

| Chapter/Section           | Revision Date | Revision       | Revision Description                                                                                                                            |
|---------------------------|---------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Cover page                | June 2007     | Revision 1     | New Cover                                                                                                                                       |
| Cover Sign Page           | June 2007     | Revision 2     | Update ECC project manager signature and ECC project chemist signature, and corrected with Navy RPM new mailing address in Philadelphia.        |
| Chapter 1 (Approval Page) | June 2007     | Revision 2     | Update ECC project manager information, and corrected with Navy RPM new mailing address in Philadelphia.                                        |
| Chapter 3                 | June 2007     | Revision 2     | Update ECC project manager information, and corrected with Navy RPM new mailing address in Philadelphia.                                        |
| Chapter 4                 | June 2007     | Revision 1     | Update ECC project manager information.                                                                                                         |
| Chapter 4/Figure 4-1      | June 2007     | Revision 1     | Update ECC project manager information.                                                                                                         |
| Chapter 4/Table 4-1       | June 2007     | Revision 1     | Update ECC project manager information.                                                                                                         |
| Chapter 5/Table 5-1       | June 2007     | Revision 1     | Update ECC project manager information.                                                                                                         |
| Appendix C                | October 2007  | Revision 1     | Standard Operating Procedure No. 5 – Sediment Sampling Procedure                                                                                |
| Appendix F                | October 2007  | Not applicable | Stakeholder comments and Navy response to comments on Sediment sampling SOP QAPP addendum inserts, including cover-page.                        |
| Chapter 7/Table 7-1-S9    | October 2007  | Revision 1     | Update Tables for Site 09 for the following analyses; MEDEP 4.1.25 DRO, and 1,4 dioxane                                                         |
| Chapter 7/Table 7-2-S9    | October 2007  | Revision 1     | Update Tables for Site 09 for the following analyses; TCLP SVOC/Metals, and MEDEP 4.1.25 DRO                                                    |
| Chapter 7/Table 7-3-S9    | October 2007  | Revision 1     | Update Tables for Site 09 for the following analyses; TCLP SVOC/Metals, MEDEP 4.1.25 DRO (soil/sediment and aqueous), and 1,4 dioxane (aqueous) |
| Chapter 7/Table 7-4-S9    | October 2007  | Revision 1     | Update Tables for Site 09 for the following analyses; TCLP SVOC/Metals, MEDEP 4.1.25 DRO (soil/sediment and aqueous), and 1,4 dioxane (aqueous) |
| Chapter 12/Table 12-1-S9  | October 2007  | Revision 1     | Update Tables for Site 09 for the following analyses; MEDEP 4.1.25 DRO and 1,4 dioxane                                                          |
| Chapter 12/Table 12-2-S9  | October 2007  | Revision 1     | Update Tables for Site 09 for the following analyses; TCLP SVOC/Metals, and MEDEP 4.1.25 DRO                                                    |

| Chapter/Section          | Revision Date | Revision       | Revision Description                                                                                                                            |
|--------------------------|---------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Chapter 12/Table 12-3-S9 | October 2007  | Revision 1     | Update Tables for Site 09 for the following analyses; TCLP SVOC/Metals, MEDEP 4.1.25 DRO (soil/sediment and aqueous), and 1,4 dioxane (aqueous) |
| Chapter 12/Table 12-4-S9 | October 2007  | Revision 1     | Update Tables for Site 09 for the following analyses; TCLP SVOC/Metals, MEDEP 4.1.25 DRO (soil/sediment and aqueous), and 1,4 dioxane (aqueous) |
| Chapter 13/Table 13-1-S9 | October 2007  | Revision 1     | Update Tables for Site 09 for the following analyses; TCLP SVOC/Metals, MEDEP 4.1.25 DRO (soil/sediment and aqueous), and 1,4 dioxane (aqueous) |
| Chapter 19/Table 19-1-S9 | October 2007  | Revision 1     | Update Tables for Site 09 for the following analyses; TCLP SVOC/Metals, MEDEP 4.1.25 DRO (soil/sediment and aqueous), and 1,4 dioxane (aqueous) |
| Appendix F               | October 2007  | Not applicable | Stakeholder comments and Navy response to comments on Site 09 QAPP insert pages and tables, including cover-page.                               |

TABLE 7-1-S9 SUMMARY OF TARGET COMPOUNDS AND ANALYTES  
FOR SITE 9 – AQUEOUS

| Analyte                                                          | CAS Number | MEG (µg/L)         | MCL (µg/L)        | Project Quantitation Limits <sup>(a)</sup> (µg/L) |
|------------------------------------------------------------------|------------|--------------------|-------------------|---------------------------------------------------|
| <b>AQUEOUS VOLATILE ORGANIC COMPOUNDS (SW-846 5030A/8260B)</b>   |            |                    |                   |                                                   |
| <b>1,2-Dichloroethene (total)</b>                                | 540-59-0   | 70                 | 70                | 1                                                 |
| <b>1,1-Dichloroethane</b>                                        | 75-34-3    | 70                 | NC                | 1                                                 |
| 1,1,2-Trichloroethane                                            | 79-00-5    | 3                  | 5                 | 1                                                 |
| <b>1,1,2,2-Tetrachloroethane</b>                                 | 79-34-5    | NC                 | NC                | 1                                                 |
| 1,2-Dichloropropane                                              | 78-87-5    | 5                  | 5                 | 1                                                 |
| <b>1,1,1-Trichloroethane</b>                                     | 71-55-6    | 200                | 200               | 1                                                 |
| <b>1,1-Dichloroethene</b>                                        | 75-35-4    | 7                  | 7                 | 1                                                 |
| 1,2-Dichloroethane                                               | 107-06-2   | 5                  | 70                | 1                                                 |
| <b>1,2-Dichlorobenzene</b>                                       | 95-50-1    | 85                 | 600               | 1                                                 |
| <b>1,3-Dichlorobenzene</b>                                       | 541-73-1   | 85                 | NC                | 1                                                 |
| <b>1,4-Dichlorobenzene</b>                                       | 106-46-7   | 27                 | 75                | 1                                                 |
| <b>2-Butanone</b>                                                | 78-93-3    | 170                | NC                | 5                                                 |
| <b>2-Hexanone</b>                                                | 591-78-6   | NC                 | NC                | 5                                                 |
| <b>4-Methyl-2-Pentanone</b>                                      | 108-10-1   | NC                 | NC                | 5                                                 |
| <b>Acetone</b>                                                   | 67-64-1    | NC                 | NC                | 5                                                 |
| <b>Benzene</b>                                                   | 71-43-2    | 5                  | 5                 | 1                                                 |
| <b>Bromodichloromethane</b>                                      | 75-27-4    | 100 <sup>(b)</sup> | 80                | 1                                                 |
| <b>Bromoform</b>                                                 | 75-25-2    | 100 <sup>(b)</sup> | 80                | 1                                                 |
| <b>Bromomethane</b>                                              | 74-83-9    | 10                 | NC                | 1                                                 |
| <b>Carbon Tetrachloride</b>                                      | 56-23-5    | 2.7                | 5                 | 1                                                 |
| <b>Carbon Disulfide</b>                                          | 75-15-0    | NC                 | NC                | 1                                                 |
| <b>Chlorobenzene</b>                                             | 108-90-7   | 47                 | 100               | 1                                                 |
| <b>Chloroethane</b>                                              | 75-00-3    | NC                 | NC                | 1                                                 |
| <b>Chloroform</b>                                                | 67-66-3    | 100 <sup>(b)</sup> | 80                | 1                                                 |
| <b>Chloromethane</b>                                             | 74-87-3    | 3                  | NC                | 1                                                 |
| <i>cis</i> -1,2-Dichloroethene                                   | 156-59-2   | 70                 | 70                | 1                                                 |
| <i>cis</i> -1,3-Dichloropropene                                  | 10061-01-5 | 2 <sup>(d)</sup>   | NC                | 0.67                                              |
| <b>Dibromochloromethane</b>                                      | 124-48-1   | 100 <sup>(b)</sup> | 80 <sup>(c)</sup> | 1                                                 |
| <b>Ethylbenzene</b>                                              | 100-41-4   | 700                | 700               | 1                                                 |
| <b>Methylene Chloride</b>                                        | 75-09-2    | 48                 | 5                 | 1                                                 |
| <b>Methyl tertiary-butyl ether</b>                               | 1634-04-4  | 35                 | 35                | 1                                                 |
| <b>Styrene</b>                                                   | 100-42-5   | 5                  | 100               | 1                                                 |
| <b>Tetrachloroethene</b>                                         | 127-18-4   | 5                  | 5                 | 1                                                 |
| <b>Toluene</b>                                                   | 108-88-3   | 1,400              | 1,000             | 1                                                 |
| <i>cis</i> -1,2-Dichloroethene                                   | 156-60-5   | 140                | 70                | 1                                                 |
| <i>trans</i> -1,3-Dichloropropene                                | 10061-02-6 | 2 <sup>(d)</sup>   | NC                | 0.66                                              |
| <b>Trichloroethene</b>                                           | 79-01-6    | 5                  | 5                 | 1                                                 |
| <b>Trichlorofluoromethane</b>                                    | 75-69-4    | 2,100              | NC                | 2                                                 |
| <b>Vinyl Chloride<sup>(e)</sup></b>                              | 75-01-4    | 0.15               | 2                 | 0.1                                               |
| <b>Xylenes (total)</b>                                           | 1330-20-7  | 600                | 10,000            | 1                                                 |
| <b>VOLATILE ORGANIC COMPOUNDS (SW-846 5030B/8260B SIM)</b>       |            |                    |                   |                                                   |
| <b>Vinyl Chloride<sup>(e)</sup></b>                              | 75-01-4    | 0.15               | 2                 | 0.1                                               |
| <b>SEMIVOLATILE ORGANIC COMPOUNDS (SW-846 3510C/3520C/8270C)</b> |            |                    |                   |                                                   |
| <b>Bis(2-chloroethyl)ether</b>                                   | 111-44-4   | NC                 | NC                | 10                                                |
| <b>Bis(2-chloroethoxy)methane</b>                                | 111-91-1   | NC                 | NC                | 10                                                |

| Analyte                           | CAS Number | MEG (µg/L) | MCL (µg/L) | Project Quantitation Limits <sup>(a)</sup> (µg/L) |
|-----------------------------------|------------|------------|------------|---------------------------------------------------|
| <b>Bis(2-ethylhexyl)phthalate</b> | 117-81-7   | 25         | 6          | 2.0                                               |
| 4-Bromophenyl phenyl ether        | 101-55-3   | NC         | NC         | 10                                                |
| Butylbenzylphthalate              | 85-68-7    | NC         | NC         | 10                                                |
| Carbazole                         | 86-74-8    | NC         | NC         | 10                                                |
| 4-Chloroaniline                   | 106-47-8   | NC         | NC         | 10                                                |
| 4-Chloro-3-methylphenol           | 59-50-7    | NC         | NC         | 10                                                |
| 2-Chloronaphthalene               | 91-58-7    | NC         | NC         | 10                                                |
| 2-Chlorophenol                    | 95-57-8    | 35         | NC         | 10                                                |
| 4-Chlorophenyl phenyl ether       | 7005-72-3  | NC         | NC         | 10                                                |
| Dibenzofuran                      | 132-64-9   | NC         | NC         | 10                                                |
| Di-n-octylphthalate               | 117-84-0   | NC         | NC         | 10                                                |
| Di-n-butyl phthalate              | 84-74-2    | 700        | NC         | 10                                                |
| 1,2-Dichlorobenzene               | 95-50-1    | NC         | NC         | 10                                                |
| 1,3-Dichlorobenzene               | 541-73-1   | NC         | NC         | 10                                                |
| 1,4-Dichlorobenzene               | 106-46-7   | NC         | NC         | 10                                                |
| 3,3'-Dichlorobenzidine            | 91-94-1    | NC         | NC         | 20                                                |
| 2,4-Dichlorophenol                | 120-83-2   | 21         | NC         | 10                                                |
| Diethyl phthalate                 | 84-66-2    | 5,000      | NC         | 10                                                |
| 2,4-Dimethylphenol                | 105-67-9   | NC         | NC         | 10                                                |
| Dimethyl phthalate                | 131-11-3   | NC         | NC         | 10                                                |
| 4,6-Dinitro-2-methylphenol        | 534-52-1   | NC         | NC         | 10                                                |
| 2,4-Dinitrophenol                 | 51-28-5    | 14         | NC         | 4.6                                               |
| 2,4-Dinitrotoluene                | 121-14-2   | 0.5        | NC         | 0.2                                               |
| 2,6-Dinitrotoluene                | 606-20-2   | 0.5        | NC         | 0.2                                               |
| Hexachlorobenzene                 | 118-74-1   | 0.2        | NC         | 0.2                                               |
| Hexachlorobutadiene               | 87-68-3    | 1          | NC         | 1                                                 |
| Hexachlorocyclopentadiene         | 77-47-4    | 50         | 50         | 10                                                |
| Hexachloroethane                  | 67-72-1    | 7          | NC         | 2.3                                               |
| Isophorone                        | 78-59-1    | 370        | NC         | 10                                                |
| 2-Methylnaphthalene               | 91-57-6    | NC         | NC         | 10                                                |
| 2-Methylphenol                    | 95-48-7    | NC         | NC         | 10                                                |
| 4-Methylphenol                    | 106-44-5   | NC         | NC         | 10                                                |
| 2-Nitroaniline                    | 88-74-4    | NC         | NC         | 10                                                |
| 3-Nitroaniline                    | 99-09-2    | NC         | NC         | 50                                                |
| 4-Nitroaniline                    | 100-01-6   | NC         | NC         | 50                                                |
| Nitrobenzene                      | 98-95-3    | 1.4        | NC         | 10                                                |
| 2-Nitrophenol                     | 88-75-5    | NC         | NC         | 10                                                |
| 4-Nitrophenol                     | 100-02-7   | 60         | NC         | 50                                                |
| N-Nitrosodiphenylamine            | 86-30-6    | NC         | NC         | 10                                                |
| N-Nitroso-di-n-propylamine        | 621-64-7   | NC         | NC         | 10                                                |
| Pentachlorophenol                 | 87-86-5    | 3          | 1          | 0.3                                               |
| 2,2'-Oxybis (1-chloropropane)     | 108-60-1   | 300        | NC         | 10                                                |
| 1,2,4-Trichlorobenzene            | 120-82-1   | 70         | 70         | 10                                                |
| 2,4,5-Trichlorophenol             | 95-95-4    | NC         | NC         | 10                                                |
| 2,4,6-Trichlorophenol             | 88-06-2    | 32         | NC         | 10                                                |
| Acenaphthene                      | 83-32-9    | NC         | NC         | 10                                                |
| Acenaphthylene                    | 208-96-8   | NC         | NC         | 10                                                |
| Anthracene                        | 120-12-7   | NC         | NC         | 10                                                |
| Benzo(a)anthracene                | 56-55-3    | NC         | NC         | 10                                                |
| Benzo(b)fluoranthene              | 205-99-2   | NC         | NC         | 10                                                |
| Benzo(k)fluoranthene              | 207-08-9   | NC         | NC         | 10                                                |
| Benzo(a)pyrene                    | 50-32-8    | NC         | 0.2        | 0.07                                              |
| Benzo(ghi)perylene                | 191-24-2   | NC         | NC         | 10                                                |

| Analyte                                                                                                               | CAS Number | MEG (µg/L) | MCL (µg/L) | Project Quantitation Limits <sup>(a)</sup> (µg/L) |
|-----------------------------------------------------------------------------------------------------------------------|------------|------------|------------|---------------------------------------------------|
| <b>SEMIVOLATILE ORGANIC COMPOUNDS (SW-846 3510C/3520C/8270C) (Continued)</b>                                          |            |            |            |                                                   |
| Chrysene                                                                                                              | 218-01-9   | NC         | NC         | 10                                                |
| Dibenz(a,h)anthracene                                                                                                 | 53-70-3    | NC         | NC         | 10                                                |
| <b>Fluoranthene</b>                                                                                                   | 206-44-0   | NC         | NC         | 10                                                |
| Fluorene                                                                                                              | 86-73-7    | NC         | NC         | 10                                                |
| Indeno(1,2,3-cd)pyrene                                                                                                | 193-39-5   | NC         | NC         | 10                                                |
| Naphthalene                                                                                                           | 91-20-3    | 25         | NC         | 10                                                |
| Phenol                                                                                                                | 108-95-2   | 4000       | NC         | 10                                                |
| Phenanthrene                                                                                                          | 85-01-8    | NC         | NC         | 10                                                |
| <b>Pyrene</b>                                                                                                         | 129-00-0   | NC         | NC         | 10                                                |
| <b>AQUEOUS TARGET ANALYTE LIST METALS (SW-846 3010A/6010B/6020/7041/7060A/7421/7740/7841/7470A)</b>                   |            |            |            |                                                   |
| <b>Aluminum</b>                                                                                                       | 7429-90-5  | 1,430      | 200        | 20                                                |
| <b>Antimony<sup>(f)</sup></b>                                                                                         | 7440-36-0  | 2.8        | 6          | 2.5                                               |
| <b>Arsenic<sup>(g)</sup></b>                                                                                          | 7440-38-2  | NC         | 10         | 1.6                                               |
| <b>Barium</b>                                                                                                         | 7440-39-3  | 1,500      | 2,000      | 200                                               |
| <b>Beryllium</b>                                                                                                      | 7440-41-7  | NC         | 4          | 1.3                                               |
| <b>Cadmium</b>                                                                                                        | 7440-43-9  | 5          | 5          | 3                                                 |
| <b>Calcium</b>                                                                                                        | 7440-70-2  | NC         | NC         | 5,000                                             |
| <b>Chromium</b>                                                                                                       | 7440-47-3  | 100        | 100        | 10                                                |
| <b>Cobalt</b>                                                                                                         | 7440-48-4  | NC         | NC         | 50                                                |
| <b>Copper</b>                                                                                                         | 7440-50-8  | NC         | 1,300      | 25                                                |
| <b>Cyanide</b>                                                                                                        | 57-12-5    | 140        | 200        | 20                                                |
| <b>Iron</b>                                                                                                           | 7439-89-6  | NC         | 300        | 100                                               |
| <b>Lead<sup>(h)</sup></b>                                                                                             | 7439-92-1  | NC         | 3          | 1                                                 |
| <b>Magnesium</b>                                                                                                      | 7439-95-4  | NC         | NC         | 5,000                                             |
| <b>Manganese</b>                                                                                                      | 7439-96-5  | 200        | 50         | 15                                                |
| <b>Mercury</b>                                                                                                        | 7439-97-6  | 2          | 2          | 0.2                                               |
| <b>Nickel</b>                                                                                                         | 7440-02-0  | 100        | 100        | 33                                                |
| <b>Potassium</b>                                                                                                      | 7440-09-7  | NC         | NC         | 5,000                                             |
| <b>Selenium<sup>(i)</sup></b>                                                                                         | 7782-49-2  | 10         | 50         | 3.3                                               |
| <b>Silver</b>                                                                                                         | 7440-22-4  | 50         | 100        | 10                                                |
| <b>Sodium</b>                                                                                                         | 7440-23-5  | NC         | NC         | 5,000                                             |
| <b>Thallium<sup>(j)</sup></b>                                                                                         | 7440-28-0  | 0.4        | 2          | 0.13                                              |
| <b>Vanadium</b>                                                                                                       | 7440-62-2  | NC         | NC         | 50                                                |
| <b>Zinc</b>                                                                                                           | 7440-66-6  | NC         | 5,000      | 20                                                |
| <b>VOLATILE ORGANIC COMPOUNDS (SW-846 5030B/ U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 1 SOP EIASOP – VOADIOX3)</b> |            |            |            |                                                   |
| <b>1,4-Dioxane</b>                                                                                                    | 123-91-1   | 32         | NC         | 1                                                 |
| <b>AQUEOUS DRO (MEDEP 4.1.25)</b>                                                                                     |            |            |            |                                                   |
| <b>DRO</b>                                                                                                            | NA         | 50         | NC         | 50                                                |

| Analyte                                                             | CAS Number | SWQC<br>(µg/L) | NWQC<br>(µg/L) | Project Quantitation<br>Limits <sup>(a)</sup> (µg/L) |
|---------------------------------------------------------------------|------------|----------------|----------------|------------------------------------------------------|
| <b>SURFACE WATER VOLATILE ORGANIC COMPOUNDS (SW-846 5030A/8260)</b> |            |                |                |                                                      |
| <b>1,2-Dichloroethene (total)</b>                                   | 540-59-0   | NC             | NC             | 1                                                    |
| 1,1-Dichloroethane                                                  | 75-34-3    | NC             | NC             | 1                                                    |
| 1,1,2-Trichloroethane                                               | 79-00-5    | 9,400          | NC             | 1                                                    |
| <b>1,1,2,2-Tetrachloroethane</b>                                    | 79-34-5    | 2,400          | NC             | 1                                                    |
| 1,2-Dichloropropane                                                 | 78-87-5    | 23,000         | NC             | 1                                                    |
| <b>1,1,1-Trichloroethane</b>                                        | 71-55-6    | NC             | NC             | 1                                                    |
| 1,1-Dichloroethene                                                  | 75-35-4    | 11,600         | NC             | 1                                                    |
| 1,2-Dichloroethane                                                  | 107-06-2   | 118,000        | NC             | 1                                                    |
| 1,2-Dichlorobenzene                                                 | 95-50-1    | 1,120          | NC             | 1                                                    |
| 1,3-Dichlorobenzene                                                 | 541-73-1   | 1,120          | NC             | 1                                                    |
| 1,4-Dichlorobenzene                                                 | 106-46-7   | 1,120          | NC             | 1                                                    |
| <b>2-Butanone</b>                                                   | 78-93-3    | NC             | NC             | 1                                                    |
| <b>2-Hexanone</b>                                                   | 591-78-6   | NC             | NC             | 5                                                    |
| <b>4-Methyl-2-Pentanone</b>                                         | 108-10-1   | NC             | NC             | 5                                                    |
| <b>Acetone</b>                                                      | 67-64-1    | NC             | NC             | 5                                                    |
| <b>Benzene</b>                                                      | 71-43-2    | 5,300          | NC             | 1                                                    |
| Bromodichloromethane                                                | 75-27-4    | NC             | NC             | 1                                                    |
| Bromoform                                                           | 75-25-2    | NC             | NC             | 1                                                    |
| Bromomethane                                                        | 74-83-9    | NC             | NC             | 1                                                    |
| Carbon Tetrachloride                                                | 56-23-5    | 35,200         | NC             | 1                                                    |
| <b>Carbon Disulfide</b>                                             | 75-15-0    | NC             | NC             | 1                                                    |
| Chlorobenzene                                                       | 108-90-7   | NC             | NC             | 1                                                    |
| Chloroethane                                                        | 75-00-3    | NC             | NC             | 1                                                    |
| Chloroform                                                          | 67-66-3    | 28,900         | NC             | 1                                                    |
| Chloromethane                                                       | 74-87-3    | NC             | NC             | 1                                                    |
| <i>cis</i> -1,3-Dichloropropene                                     | 10061-01-5 | NC             | NC             | 1                                                    |
| Dibromochloromethane                                                | 124-48-1   | NC             | NC             | 1                                                    |
| <b>Ethylbenzene</b>                                                 | 100-41-4   | 32,000         | NC             | 1                                                    |
| <b>Methylene Chloride</b>                                           | 75-09-2    | NC             | NC             | 1                                                    |
| Styrene                                                             | 100-42-5   | NC             | NC             | 1                                                    |
| <b>Tetrachloroethene</b>                                            | 127-18-4   | 5,280          | NC             | 1                                                    |
| <b>Toluene</b>                                                      | 108-88-3   | 17,500         | NC             | 1                                                    |
| <i>trans</i> -1,3-Dichloropropene                                   | 10061-02-6 | NC             | NC             | 1                                                    |
| <b>Trichloroethene</b>                                              | 79-01-6    | 45,000         | NC             | 1                                                    |
| <b>Xylenes (total)</b>                                              | 1330-20-7  | NC             | NC             | 1                                                    |

| VOLATILE ORGANIC COMPOUNDS (SW-846 5030B/8260B SIM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         |    |    |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----|----|-----|
| <b>Vinyl Chloride<sup>(e)</sup></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 75-01-4 | NC | NC | 0.1 |
| <p>NOTE: SWQC = State of Maine Recommended Water Quality Criteria.<br/>           NWQC = National Recommended Water Quality Criteria.<br/>           NC = No criteria; indicates no applicable SWQC or NWQC for that inorganic element.<br/>           Surface water samples included surface water and leachate seep matrices<br/>           SIM = Selected ion monitoring.</p> <p>NOTE: MEG = Maximum Exposure Guideline.<br/>           MCL = Maximum Contaminant Level.<br/>           NC = No criteria; indicates no applicable MEG or MCL for that inorganic element.<br/>           Constituents in bold indicate either contaminants of concern or contaminants which are historically tracked at the site.</p> <p>(a) Project quantitation limits were derived based on what are the typical achievable laboratory quantitation limits and the project quantitation limit is at least one-third the project action limit.<br/>           (b) Total trihalomethane cannot exceed 100 µg/L (MEG).<br/>           (c) There are four trihalomethane compounds included in total trihalomethane.<br/>           (d) Total 1,3-dichloropropene cannot exceed 2 µg/L (MEG).<br/>           (e) If a monitoring well is being considered for deletion from the sampling program for volatile organic compounds, groundwater samples from that well will be analyzed using Method 8260B Modified for SIM for four sampling rounds, in order to achieve the detection limit of 0.15 µg/L (State MEG for vinyl chloride). This method will not be used at a well where vinyl chloride is known to be above 2 µg/L, as established using U.S. Environmental Protection Agency Method 8260B.<br/>           (f) The project required detection limit can be achieved for antimony using Method 6020 (mass spectrometry) or Method 7041 (Furnace).<br/>           (g) The project required detection limit can be achieved for arsenic using Method 6020 (mass spectrometry) or Method 7060A (Furnace).<br/>           (h) The project required detection limit can be achieved for lead using Method 6020 (mass spectrometry) or Method 7421 (Furnace).<br/>           (i) The project required detection limit can be achieved for selenium using Method 6020 (mass spectrometry) or Method 7740 (Furnace).<br/>           The project required detection limit can be achieved for thallium using Method 6020 (mass spectrometry) or Method 7841 (Furnace).</p> |         |    |    |     |

TABLE 7-2-S9 SUMMARY OF TARGET COMPOUNDS AND ANALYTES  
FOR SITE 9 – SOIL/SEDIMENT

| Analyte                                                                                       | CAS Number | Project Quantitation Limits <sup>(a)(b)</sup> (mg/kg) | Project Action Limit <sup>(c)</sup> (mg/kg) |
|-----------------------------------------------------------------------------------------------|------------|-------------------------------------------------------|---------------------------------------------|
| <b>SOIL/SEDIMENT VOLATILE ORGANIC COMPOUNDS<sup>(d)</sup><br/>(SW-846 5035A/8260B)</b>        |            |                                                       |                                             |
| 1,2-Dichloroethene (total)                                                                    | 540-59-0   | 0.125                                                 |                                             |
| 1,1-Dichloroethane                                                                            | 75-34-3    | 0.125                                                 | 645                                         |
| 1,1,2-Trichloroethane                                                                         | 79-00-5    | 0.125                                                 |                                             |
| 1,1,2,2-Tetrachloroethane                                                                     | 79-34-5    | 0.125                                                 |                                             |
| 1,2-Dichloropropane                                                                           | 78-87-5    | 0.125                                                 |                                             |
| 1,1,1-Trichloroethane                                                                         | 71-55-6    | 0.125                                                 | 260                                         |
| 1,1-Dichloroethene                                                                            | 75-35-4    | 0.125                                                 | 0.2                                         |
| 1,2-Dichloroethane                                                                            | 107-06-2   | 0.125                                                 |                                             |
| 1,2-Dichlorobenzene                                                                           | 95-50-1    | 0.330                                                 |                                             |
| 1,3-Dichlorobenzene                                                                           | 541-73-1   | 0.330                                                 |                                             |
| 1,4-Dichlorobenzene                                                                           | 106-46-7   | 0.330                                                 |                                             |
| 2-Butanone                                                                                    | 78-93-3    | 0.250                                                 |                                             |
| 2-Hexanone                                                                                    | 591-78-6   | 0.250                                                 |                                             |
| 4-Methyl-2-pentanone                                                                          | 108-10-1   | 0.250                                                 |                                             |
| Acetone                                                                                       | 67-64-1    | 0.250                                                 | 475                                         |
| Benzene                                                                                       | 71-43-2    | 0.125                                                 | 5                                           |
| Bromodichloromethane                                                                          | 75-27-4    | 0.125                                                 |                                             |
| Bromoform                                                                                     | 75-25-2    | 0.125                                                 |                                             |
| Bromomethane                                                                                  | 74-83-9    | 0.125                                                 |                                             |
| Carbon Tetrachloride                                                                          | 56-23-5    | 0.125                                                 |                                             |
| Carbon Disulfide                                                                              | 75-15-0    | 0.125                                                 |                                             |
| Chlorobenzene                                                                                 | 108-90-7   | 0.125                                                 | 310                                         |
| Chloroethane                                                                                  | 75-00-3    | 0.125                                                 |                                             |
| Chloroform                                                                                    | 67-66-3    | 0.125                                                 |                                             |
| Chloromethane                                                                                 | 74-87-3    | 0.125                                                 |                                             |
| cis-1,3-Dichloropropene                                                                       | 10061-01-5 | 0.125                                                 |                                             |
| Dibromochloromethane                                                                          | 124-48-1   | 0.125                                                 |                                             |
| Ethylbenzene                                                                                  | 100-41-4   | 0.125                                                 | 1670                                        |
| Hexachlorobutadine                                                                            | 87-68-3    | 0.125                                                 |                                             |
| Methylene Chloride                                                                            | 75-09-1    | 0.125                                                 | 13                                          |
| Styrene                                                                                       | 100-42-5   | 0.125                                                 |                                             |
| Tetrachloroethene                                                                             | 127-18-4   | 0.125                                                 |                                             |
| Toluene                                                                                       | 108-88-3   | 0.125                                                 | 2390                                        |
| trans-1,3-Dichloropropene                                                                     | 10061-02-6 | 0.125                                                 |                                             |
| Trichloroethene                                                                               | 79-01-6    | 0.125                                                 | 19                                          |
| Vinyl Chloride                                                                                | 75-01-4    | 0.125                                                 | 0.04                                        |
| Xylene (total)                                                                                | 1330-20-7  | 0.125                                                 | 10000                                       |
| <b>SOIL/SEDIMENT TPH DRO (MEDEP 4.1.25)</b>                                                   |            |                                                       |                                             |
| TPH DRO                                                                                       | NA         | 0.010                                                 | 10                                          |
| <b>SOIL/SEDIMENT TARGET ANALYTE LIST METALS<br/>(SW 3010A/6010B/7471A/6020)<sup>(d)</sup></b> |            |                                                       |                                             |
| Aluminum                                                                                      | 7429-90-5  | 20                                                    |                                             |

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| Analyte                                                                          | CAS Number | Project Quantitation Limits <sup>(a)(b)</sup> (mg/kg) | Project Action Limit <sup>(c)</sup> (mg/kg) |
|----------------------------------------------------------------------------------|------------|-------------------------------------------------------|---------------------------------------------|
| <b>Antimony<sup>(d)</sup></b>                                                    | 7440-36-0  | 6                                                     |                                             |
| <b>Arsenic<sup>(e)</sup></b>                                                     | 7440-38-2  | 1                                                     | 10                                          |
| <b>Barium</b>                                                                    | 7440-39-3  | 0.120                                                 | 10000                                       |
| <b>Beryllium</b>                                                                 | 7440-41-7  | 0.50                                                  | 4                                           |
| <b>Cadmium</b>                                                                   | 7440-43-9  | 0.0097                                                | 27                                          |
| <b>Calcium</b>                                                                   | 7440-70-2  | 0.50                                                  |                                             |
| <b>Chromium</b>                                                                  | 7440-47-3  | 1                                                     | 950                                         |
| <b>Cobalt</b>                                                                    | 7440-48-4  | 0.30                                                  |                                             |
| <b>Copper</b>                                                                    | 7440-50-8  | 1                                                     | 650                                         |
| <b>Iron</b>                                                                      | 7439-89-6  | 10                                                    |                                             |
| <b>Lead<sup>(f)</sup></b>                                                        | 7439-92-1  | 0.30                                                  | 375                                         |
| <b>Magnesium</b>                                                                 | 7439-95-4  | 0.50                                                  |                                             |
| <b>Manganese</b>                                                                 | 7439-96-5  | 1.5                                                   |                                             |
| <b>Mercury</b>                                                                   | 7439-97-6  | 0.10                                                  | 60                                          |
| <b>Nickel</b>                                                                    | 7440-02-0  | 4                                                     | 3800                                        |
| <b>Potassium</b>                                                                 | 7440-09-7  | 179                                                   |                                             |
| <b>Selenium<sup>(g)</sup></b>                                                    | 7782-49-2  | 0.088                                                 | 950                                         |
| <b>Silver</b>                                                                    | 7440-22-4  | 0.090                                                 | 950                                         |
| <b>Sodium</b>                                                                    | 7440-23-5  | 88.8                                                  |                                             |
| <b>Thallium<sup>(h)</sup></b>                                                    | 7440-28-0  | 0.059                                                 |                                             |
| <b>Vanadium</b>                                                                  | 7440-62-2  | 12.2                                                  |                                             |
| <b>Zinc</b>                                                                      | 7440-66-6  | 2                                                     | 1500                                        |
| <b>TCLP ANALYTE LIST METALS<br/>(SW-846 1311/6010B/7471A/6020)<sup>(i)</sup></b> |            |                                                       |                                             |
| Arsenic                                                                          | 7440-38-2  | 1.0 mg/L                                              | 5.0 mg/L                                    |
| Barium                                                                           | 7440-39-3  | 1.0 mg/L                                              | 100 mg/L                                    |
| Cadmium                                                                          | 7440-43-9  | 1.0 mg/L                                              | 1.0 mg/L                                    |
| Chromium                                                                         | 7440-47-3  | 1.0 mg/L                                              | 5.0 mg/L                                    |
| Lead                                                                             | 7439-92-1  | 1.0 mg/L                                              | 5.0 mg/L                                    |
| Mercury                                                                          | 7439-97-6  | 0.2 mg/L                                              | 0.2 mg/L                                    |
| Selenium                                                                         | 7782-49-2  | 1.0 mg/L                                              | 1.0 mg/L                                    |
| Silver                                                                           | 7440-22-4  | 1.0 mg/L                                              | 5.0 mg/L                                    |
| <b>TCLP SEMIVOLATILE ORGANIC COMPOUNDS<br/>(SW-846 1311/8270C)<sup>(i)</sup></b> |            |                                                       |                                             |
| 1,4-Dichlorobenzene                                                              | 106-46-7   | 0.5 mg/L                                              | 7.5 mg/L                                    |
| 2,4-Dinitrotoluene                                                               | 121-14-2   | 0.1 mg/L                                              | 0.13 mg/L                                   |
| Hexachlorobenzene                                                                | 118-74-1   | 0.1 mg/L                                              | 0.13 mg/L                                   |
| Hexachlorobutadiene                                                              | 87-68-3    | 0.5 mg/L                                              | 0.5 mg/L                                    |
| Hexachloroethane                                                                 | 67-72-1    | 0.5 mg/L                                              | 3.0 mg/L                                    |

| Analyte               | CAS Number | Project Quantitation Limits <sup>(a)(b)</sup> (mg/kg) | Project Action Limit <sup>(c)</sup> (mg/kg) |
|-----------------------|------------|-------------------------------------------------------|---------------------------------------------|
| 2-Methylphenol        | 95-48-7    | 0.5 mg/L                                              | 200 mg/L                                    |
| 3/4-Methylphenol      | 106-44-5   | 0.5 mg/L                                              | 200 mg/L                                    |
| Nitrobenzene          | 98-95-3    | 0.5 mg/L                                              | 2.0 mg/L                                    |
| Pentachlorophenol     | 87-86-5    | 0.5 mg/L                                              | 100 mg/L                                    |
| Pyridine              | 110-86-1   | 0.5 mg/L                                              | 5.0 mg/L                                    |
| 2,4,5-Trichlorophenol | 95-95-4    | 0.5 mg/L                                              | 400 mg/L                                    |
| 2,4,6-Trichlorophenol | 88-06-2    | 0.5 mg/L                                              | 2.0 mg/L                                    |

- (a) Project quantitation limits were derived based on what are the typical achievable laboratory quantitation limits and the project quantitation limit is at least one-third the project action limit.
- (b) Sediment project quantitation limits are based on dry weight (except to TCLP).
- (c) The Project Action Limits used for Volatile Organic Compounds, TAL Metals, are MEDEP RAGs Residential Guidelines
- (d) The project required detection limit can be achieved for antimony using Method 6020 (mass spectrometry) or Method 7041 (Furnace).
- (e) The project required detection limit can be achieved for arsenic using Method 6020 (mass spectrometry) or Method 7060A (Furnace).
- (f) The project required detection limit can be achieved for lead using Method 6020 (mass spectrometry) or Method 7421 (Furnace).
- (g) The project required detection limit can be achieved for selenium using Method 6020 (mass spectrometry) or Method 7740 (Furnace).
- (h) The project required detection limit can be achieved for thallium using Method 6020 (mass spectrometry) or Method 7841 (Furnace).
- (i) TCLP ("D" List) Regulatory Levels

NOTE: Constituents in bold indicate either contaminants of concern or contaminants which are historically tracked at the site.

**TABLE 7-3-S9 QUALITY CONTROL CRITERIA FOR PRECISION AND ACCURACY FOR MATRIX SPIKES, MATRIX SPIKE DUPLICATES, SURROGATES, AND LABORATORY CONTROL SAMPLES FOR SITE 9**

| Quality Control Parameter                                                       | Spiking Compounds  | Accuracy (%R)    | Precision (Relative Percent Difference) |
|---------------------------------------------------------------------------------|--------------------|------------------|-----------------------------------------|
|                                                                                 |                    | Water            | Water                                   |
| <b>AQUEOUS TARGET ANALYTE LIST METALS (SW-846 3010A/6010B/6020/7000 Series)</b> |                    |                  |                                         |
| Laboratory Control Sample                                                       | Aluminum           | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Antimony           | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Arsenic            | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Barium             | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Beryllium          | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Cadmium            | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Calcium            | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Chromium           | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Cobalt             | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Copper             | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Cyanide (optional) | 80-120(nominal)  | ≤20                                     |
|                                                                                 | Iron               | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Lead               | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Magnesium          | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Manganese          | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Mercury            | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Nickel             | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Potassium          | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Selenium           | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Silver             | 80-120 (nominal) | ≤20                                     |
|                                                                                 | Sodium             | 80-120 (nominal) | ≤20                                     |
| Thallium                                                                        | 80-120 (nominal)   | ≤20              |                                         |
| Vanadium                                                                        | 80-120 (nominal)   | ≤20              |                                         |
| Zinc                                                                            | 80-120 (nominal)   | ≤20              |                                         |
| Matrix Spike and Laboratory Replicate or Matrix Spike Duplicate                 | Aluminum           | 75-125           | ≤20                                     |
|                                                                                 | Antimony           | 75-125           | ≤20                                     |
|                                                                                 | Arsenic            | 75-125           | ≤20                                     |
|                                                                                 | Barium             | 75-125           | ≤20                                     |
|                                                                                 | Beryllium          | 75-125           | ≤20                                     |
|                                                                                 | Cadmium            | 75-125           | ≤20                                     |
|                                                                                 | Calcium            | 75-125           | ≤20                                     |
|                                                                                 | Chromium           | 75-125           | ≤20                                     |
|                                                                                 | Cobalt             | 75-125           | ≤20                                     |
|                                                                                 | Copper             | 75-125           | ≤20                                     |
|                                                                                 | Cyanide (optional) | 75-125           | ≤20                                     |
|                                                                                 | Iron               | 75-125           | ≤20                                     |
|                                                                                 | Lead               | 75-125           | ≤20                                     |
|                                                                                 | Magnesium          | 75-125           | ≤20                                     |

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| Quality Control Parameter                                                                     | Spiking Compounds               | Accuracy (%R) | Precision (Relative Percent Difference) |
|-----------------------------------------------------------------------------------------------|---------------------------------|---------------|-----------------------------------------|
|                                                                                               |                                 | Water         | Water                                   |
| <b>AQUEOUS ANALYTE LIST METALS (SW-846 3010A/6010B/6020/7000 Series) (Continued)</b>          |                                 |               |                                         |
| Matrix Spike and Laboratory Replicate or Matrix Spike Duplicate                               | Manganese                       | 75-125        | ≤20                                     |
|                                                                                               | Mercury                         | 75-125        | ≤20                                     |
|                                                                                               | Nickel                          | 75-125        | ≤20                                     |
|                                                                                               | Potassium                       | 75-125        | ≤20                                     |
|                                                                                               | Selenium                        | 75-125        | ≤20                                     |
|                                                                                               | Silver                          | 75-125        | ≤20                                     |
|                                                                                               | Sodium                          | 75-125        | ≤20                                     |
|                                                                                               | Thallium                        | 75-125        | ≤20                                     |
|                                                                                               | Vanadium                        | 75-125        | ≤20                                     |
|                                                                                               | Zinc                            | 75-125        | ≤20                                     |
| <b>VOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPH/MASS SPECTROMETRY (SW-846 5030B/8260B)</b> |                                 |               |                                         |
| Surrogate Spike                                                                               | Toluene-d8                      | 88-110        | NA                                      |
|                                                                                               | 1,2-Dichloroethane-d4           | 76-114        | NA                                      |
|                                                                                               | Bromofluorobenzene              | 86-115        | NA                                      |
| Laboratory Control Sample/Matrix Spike/Matrix Spike Duplicate                                 | 1,1,1-Trichloroethane           | 75-125        | ≤20                                     |
|                                                                                               | 1,1,2,2-Tetrachloroethane       | 74-125        | ≤20                                     |
|                                                                                               | 1,1,2-Trichloroethane           | 75-127        | ≤20                                     |
|                                                                                               | 1,1-Dichloroethane              | 72-125        | ≤20                                     |
|                                                                                               | 1,1-Dichloroethene              | 75-125        | ≤20                                     |
|                                                                                               | 1,2-Dichlorobenzene             | 60-140        | ≤20                                     |
|                                                                                               | 1,2-Dichloroethane              | 68-127        | ≤20                                     |
|                                                                                               | 1,2-Dichloropropane             | 60-140        | ≤20                                     |
|                                                                                               | 1,3-Dichlorobenzene             | 60-140        | ≤20                                     |
|                                                                                               | 1,4-Dichlorobenzene             | 60-140        | ≤20                                     |
|                                                                                               | 2-Butanone                      | 60-140        | ≤20                                     |
|                                                                                               | 2-Hexanone                      | 60-140        | ≤20                                     |
|                                                                                               | 4-Methyl-2-pentanone            | 60-140        | ≤20                                     |
|                                                                                               | Acetone                         | 60-140        | ≤20                                     |
|                                                                                               | Benzene                         | 75-125        | ≤20                                     |
|                                                                                               | Bromodichloromethane            | 75-125        | ≤20                                     |
|                                                                                               | Bromoform                       | 75-125        | ≤20                                     |
|                                                                                               | Bromomethane                    | 72-125        | ≤20                                     |
|                                                                                               | Carbon Disulfide                | 75-125        | ≤20                                     |
|                                                                                               | Carbon Tetrachloride            | 62-125        | ≤20                                     |
|                                                                                               | Chlorobenzene                   | 75-125        | ≤20                                     |
|                                                                                               | Chloroethane                    | 65-125        | ≤20                                     |
|                                                                                               | Chloroform                      | 74-125        | ≤20                                     |
|                                                                                               | Chloromethane                   | 75-125        | ≤20                                     |
|                                                                                               | <i>Cis</i> -1,2-Dichloroethene  | 60-140        | ≤20                                     |
|                                                                                               | <i>cis</i> -1,3-Dichloropropene | 74-125        | ≤20                                     |
|                                                                                               | Dibromochloromethane            | 73-125        | ≤20                                     |
| Ethylbenzene                                                                                  | 75-125                          | ≤20           |                                         |
| Hexachlorobutadiene                                                                           | 75-125                          | ≤20           |                                         |
| Methyl tertiary-butyl ether                                                                   | 75-125                          | ≤20           |                                         |

| Quality Control Parameter                                                                                      | Spiking Compounds                 | Accuracy (%R) | Precision (Relative Percent Difference) |
|----------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------|-----------------------------------------|
|                                                                                                                |                                   | Water         | Water                                   |
| <b>VOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPH/MASS SPECTROMETRY (SW-846 1311/5030B/8260B) (Continued)</b> |                                   |               |                                         |
| Laboratory Control Sample/Matrix Spike/Matrix Spike Duplicate (Continued)                                      | Methylene Chloride                | 75-125        | ≤20                                     |
|                                                                                                                | Sytrene                           | 75-125        | ≤20                                     |
|                                                                                                                | Tetrachloroethene                 | 71-125        | ≤20                                     |
|                                                                                                                | Toluene                           | 74-125        | ≤20                                     |
|                                                                                                                | Total 1,2-dichloroethene          | 75-125        | ≤20                                     |
|                                                                                                                | Total xylenes                     | 75-125        | ≤20                                     |
|                                                                                                                | <i>Trans</i> -1,2-dichloroethene  | 75-125        | ≤20                                     |
|                                                                                                                | <i>trans</i> -1,3-dichloropropene | 66-125        | ≤20                                     |
|                                                                                                                | Trichloroethene                   | 71-125        | ≤20                                     |
|                                                                                                                | Trichlorofluoromethane            | 60-140        | ≤20                                     |
|                                                                                                                | Vinyl chloride                    | 46-134        | ≤20                                     |
| <b>AQUEOUS SEMIVOLATILE ORGANICS BY GAS CHROMATOGRAPH/MASS SPECTROMETRY (SW-846 3510C/3520C/8270C)</b>         |                                   |               |                                         |
| Surrogate Spike                                                                                                | Terphenyl-d14                     | 33-141        | ≤20                                     |
|                                                                                                                | 2-Fluorophenol                    | 21-110        | ≤20                                     |
|                                                                                                                | Phenol-d5                         | 10-110        | ≤20                                     |
|                                                                                                                | 2,4,6-Tribromophenol              | 37-122        | ≤20                                     |
|                                                                                                                | 2-Fluorobiphenyl                  | 21-110        | ≤20                                     |
|                                                                                                                | Nitrobenzene-d5                   | 43-116        | ≤20                                     |
| Laboratory Control Sample/Matrix Spike/Matrix Spike Duplicate                                                  | Phenol                            | 10-127        | ≤20                                     |
|                                                                                                                | Bis(2-Chloroethyl)Ether           | 46-109        | ≤20                                     |
|                                                                                                                | 2-Chlorophenol                    | 22-117        | ≤20                                     |
|                                                                                                                | 1,3-Dichlorobenzene               | 28-103        | ≤20                                     |
|                                                                                                                | 1,4-Dichlorobenzene               | 28-104        | ≤20                                     |
|                                                                                                                | 1,2-Dichlorobenzene               | 29-107        | ≤20                                     |
|                                                                                                                | 2-Methylphenol                    | 40-104        | ≤20                                     |
|                                                                                                                | 2,2'-oxybis (1-Chloropropane)     | 10-134        | ≤20                                     |
|                                                                                                                | 4-Methylphenol                    | 35-106        | ≤20                                     |
|                                                                                                                | N-Nitroso-di-n-propylamine        | 44-122        | ≤20                                     |
|                                                                                                                | Hexachloroethane                  | 24-104        | ≤20                                     |
|                                                                                                                | Hexachlorobenzene                 | 34-103        | ≤20                                     |
|                                                                                                                | Hexachlorobutadiene               | 34-103        | ≤20                                     |
|                                                                                                                | Nitrobenzene                      | 47-112        | ≤20                                     |
|                                                                                                                | Isophorone                        | 48-118        | ≤20                                     |
|                                                                                                                | 2-Nitrophenol                     | 29-122        | ≤20                                     |
|                                                                                                                | 2,4-Dimethylphenol                | 14-109        | ≤20                                     |
|                                                                                                                | 2,4-Dichlorophenol                | 31-122        | ≤20                                     |
|                                                                                                                | 1,2,4-Trichlorobenzene            | 33-108        | ≤20                                     |
|                                                                                                                | Naphthalene                       | 38-117        | ≤20                                     |
|                                                                                                                | 4-Chloroaniline                   | 10-152        | ≤20                                     |
|                                                                                                                | Bis (2-chloroethoxy) methane      | 49-112        | ≤20                                     |
|                                                                                                                | 4-Chloro-3-Methylphenol           | 48-117        | ≤20                                     |
| 2-Methylnaphthalene                                                                                            | 43-113                            | ≤20           |                                         |
| Hexachlorocyclopentadiene                                                                                      | 34-103                            | ≤20           |                                         |
| 2,4,6-Trichlorophenol                                                                                          | 34-127                            | ≤20           |                                         |

| Quality Control Parameter                                                                                          | Spiking Compounds          | Accuracy (%R) | Precision (Relative Percent Difference) |
|--------------------------------------------------------------------------------------------------------------------|----------------------------|---------------|-----------------------------------------|
|                                                                                                                    |                            | Water         | Water                                   |
| <b>AQUEOUS SEMIVOLATILE ORGANICS BY GAS CHROMATOGRAPH/MASS SPECTROMETRY (SW-846 3510C/3520C/8270C) (Continued)</b> |                            |               |                                         |
| Laboratory Control<br>Sample/Matrix<br>Spike/Matrix Spike<br>Duplicate (Continued)                                 | 2,4,5-Trichlorophenol      | 32-131        | ≤20                                     |
|                                                                                                                    | 2-Chloronaphthalene        | 47-116        | ≤20                                     |
|                                                                                                                    | 2-Nitroaniline             | 51-120        | ≤20                                     |
|                                                                                                                    | Dimethylphthalate          | 53-124        | ≤20                                     |
|                                                                                                                    | Acenaphthylene             | 50-119        | ≤20                                     |
|                                                                                                                    | 2,6-Dinitrotoluene         | 52-122        | ≤20                                     |
|                                                                                                                    | 3-Nitroaniline             | 47-115        | ≤20                                     |
|                                                                                                                    | Acenaphthene               | 50-121        | ≤20                                     |
|                                                                                                                    | 2,4-Dinitrophenol          | 10-144        | ≤20                                     |
|                                                                                                                    | 4-Nitrophenol              | 10-160        | ≤20                                     |
|                                                                                                                    | Dibenzofuran               | 51-122        | ≤20                                     |
|                                                                                                                    | 2,4-Dinitrotoluene         | 52-126        | ≤20                                     |
|                                                                                                                    | Diethylphthalate           | 53-126        | ≤20                                     |
|                                                                                                                    | 4-Chlorophenyl-phenylether | 50-124        | ≤20                                     |
|                                                                                                                    | Fluorene                   | 52-125        | ≤20                                     |
|                                                                                                                    | 4-Nitroaniline             | 47-117        | ≤20                                     |
|                                                                                                                    | 4,6-Dinitro-2-methylphenol | 10-151        | ≤20                                     |
|                                                                                                                    | N-Nitrosodiphenylamine     | 48-121        | ≤20                                     |
|                                                                                                                    | 4-Bromophenyl-phenylether  | 51-124        | ≤20                                     |
|                                                                                                                    | Pentachlorophenol          | 10-125        | ≤20                                     |
|                                                                                                                    | Phenanthrene               | 52-128        | ≤20                                     |
|                                                                                                                    | Anthracene                 | 52-127        | ≤20                                     |
|                                                                                                                    | Carbazole                  | 54-126        | ≤20                                     |
|                                                                                                                    | Di-n-butylphthalate        | 56-132        | ≤20                                     |
|                                                                                                                    | Fluoranthene               | 53-130        | ≤20                                     |
|                                                                                                                    | Pyrene                     | 53-131        | ≤20                                     |
|                                                                                                                    | Butylbenzylphthalate       | 54-128        | ≤20                                     |
|                                                                                                                    | 3,3'-Dichlorobenzidine     | 41-117        | ≤20                                     |
|                                                                                                                    | Benzo(a)anthracene         | 56-124        | ≤20                                     |
|                                                                                                                    | Chrysene                   | 53-123        | ≤20                                     |
| Bis(2-Ethylhexyl)phthalate                                                                                         | 56-127                     | ≤20           |                                         |
| Di-n-octylphthalate                                                                                                | 59-138                     | ≤20           |                                         |
| Benzo(b)fluoranthene                                                                                               | 58-126                     | ≤20           |                                         |
| Benzo(k)fluoranthene                                                                                               | 60-124                     | ≤20           |                                         |
| Benzo(a)pyrene                                                                                                     | 61-121                     | ≤20           |                                         |
| Indeno(1,2,3-cd)pyrene                                                                                             | 23-152                     | ≤20           |                                         |
| Dibenzo(a,h)anthracene                                                                                             | 60-122                     | ≤20           |                                         |
| Benzo(g,h,i)perylene                                                                                               | 57-124                     | ≤20           |                                         |

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| Quality Control Parameter                                                                     | Spiking Compounds               | Accuracy (%R) | Precision (Relative Percent Difference) |
|-----------------------------------------------------------------------------------------------|---------------------------------|---------------|-----------------------------------------|
|                                                                                               |                                 | Sediment      | Sediment                                |
| <b>VOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPH/MASS SPECTROMETRY (SW-846 5035A/8260B)</b> |                                 |               |                                         |
| Surrogate Spike                                                                               | Toluene-d8                      | 84-138        | ≤40                                     |
|                                                                                               | 1,2-Dichloroethane-d4           | 76-114        | ≤40                                     |
|                                                                                               | Bromofluorobenzene              | 59-113        | ≤40                                     |
| Laboratory Control Sample/Matrix Spike/Matrix Spike Duplicate                                 | 1,1,1-Trichloroethane           | 65-135        | ≤40                                     |
|                                                                                               | 1,1,2,2-Tetrachloroethane       | 64-135        | ≤40                                     |
|                                                                                               | 1,1,2-Trichloroethane           | 64-135        | ≤40                                     |
|                                                                                               | 1,1-Dichloroethane              | 62-135        | ≤40                                     |
|                                                                                               | 1,1-Dichloroethene              | 65-135        | ≤40                                     |
|                                                                                               | 1,2-Dichlorobenzene             | 65-135        | ≤40                                     |
|                                                                                               | 1,2-Dichloroethane              | 58-137        | ≤40                                     |
|                                                                                               | 1,2-Dichloropropane             | 65-135        | ≤40                                     |
|                                                                                               | 1,3-Dichlorobenzene             | 65-135        | ≤40                                     |
|                                                                                               | 1,4-Dichlorobenzene             | 65-135        | ≤40                                     |
|                                                                                               | 2-Butanone                      | 60-140        | ≤40                                     |
|                                                                                               | 2-Hexanone                      | 60-140        | ≤40                                     |
|                                                                                               | 4-Methyl-2-pentanone            | 60-140        | ≤40                                     |
|                                                                                               | Acetone                         | 60-140        | ≤40                                     |
|                                                                                               | Benzene                         | 75-125        | ≤40                                     |
|                                                                                               | Bromodichloromethane            | 75-125        | ≤40                                     |
|                                                                                               | Bromoform                       | 75-125        | ≤40                                     |
|                                                                                               | Bromomethane                    | 75-125        | ≤40                                     |
|                                                                                               | Carbon disulfide                | 75-125        | ≤40                                     |
|                                                                                               | Carbon tetrachloride            | 62-125        | ≤40                                     |
|                                                                                               | Chlorobenzene                   | 75-125        | ≤40                                     |
|                                                                                               | Chloroethane                    | 65-125        | ≤40                                     |
|                                                                                               | Chloroform                      | 75-125        | ≤40                                     |
|                                                                                               | Chloromethane                   | 75-125        | ≤40                                     |
|                                                                                               | <i>cis</i> -1,3-Dichloropropene | 74-125        | ≤40                                     |
|                                                                                               | Dibromochloromethane            | 73-125        | ≤40                                     |
|                                                                                               | Ethylbenzene                    | 75-125        | ≤40                                     |
|                                                                                               | Hexachlorobutadiene             | 75-125        | ≤40                                     |
|                                                                                               | Methylene chloride              | 75-125        | ≤40                                     |
|                                                                                               | Sytrene                         | 75-125        | ≤40                                     |
|                                                                                               | Tetrachloroethene               | 71-125        | ≤40                                     |
|                                                                                               | Toluene                         | 74-125        | ≤40                                     |
|                                                                                               | Total 1,2-dichloroethene        | 75-125        | ≤40                                     |
| Total xylenes                                                                                 | 75-125                          | ≤40           |                                         |
| <i>trans</i> -1,3-dichloropropene                                                             | 66-125                          | ≤40           |                                         |
| Trichloroethene                                                                               | 71-125                          | ≤40           |                                         |
| Vinyl chloride                                                                                | 46-134                          | ≤40           |                                         |
| <b>AQUEOUS and SOIL/SEDIMENT TPH DRO (ME 4.1.25)</b>                                          |                                 |               |                                         |
| Surrogate                                                                                     | p-Terphenyl                     | 60-140        | ≤40                                     |

| Quality Control Parameter                                                                                                                                                                                                                                                                                                                                                                                     | Spiking Compounds     | Accuracy (%R)    | Precision (Relative Percent Difference) |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------|-----------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                               |                       | Sediment         | Sediment                                |
| Laboratory Control Sample/Matrix Spike/Matrix Spike Duplicate                                                                                                                                                                                                                                                                                                                                                 | TPH DRO               | 60-140           | ≤40                                     |
| <b>TCLP TARGET ANALYTE LIST METALS (SW 1311/3010A/6010B/7471A/6020)</b>                                                                                                                                                                                                                                                                                                                                       |                       |                  |                                         |
| Laboratory Control Sample/Matrix Spike                                                                                                                                                                                                                                                                                                                                                                        | Arsenic               | 80-120 (nominal) | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | Barium                | 80-120 (nominal) | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | Cadmium               | 80-120 (nominal) | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | Chromium              | 80-120 (nominal) | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | Lead                  | 80-120 (nominal) | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | Mercury               | 80-120 (nominal) | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | Selenium              | 80-120 (nominal) | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | Silver                | 80-120 (nominal) | ≤20                                     |
| <b>TCLP SEMIVOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPH/MASS SPECTROMETRY (SW-846 1311/3510C/3520C/8270C)</b>                                                                                                                                                                                                                                                                                             |                       |                  |                                         |
| Surrogate Spike                                                                                                                                                                                                                                                                                                                                                                                               | Terphenyl-d14         | 33-141           | NA                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                               | 2-Fluorophenol        | 21-110           | NA                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                               | Phenol-d5             | 10-110           | NA                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                               | 2,4,6-Tribromophenol  | 37-122           | NA                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                               | 2-Fluorobiphenyl      | 21-110           | NA                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                               | Nitrobenzene-d5       | 43-116           | NA                                      |
| Laboratory Control Sample/Matrix Spike/Matrix Spike Duplicate                                                                                                                                                                                                                                                                                                                                                 | 2,4-Dinitrotoluene    | 52-126           | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | Hexachlorobenzene     | 34-103           | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | Hexachlorobutadiene   | 34-103           | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | Hexachloroethane      | 24-104           | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | 2-Methylphenol        | 40-104           | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | 3-Methylphenol        | 38-120           | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | 4-Methylphenol        | 35-106           | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | Nitrobenzene          | 47-112           | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | Pentachlorophenol     | 11-125           | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | Pyridine              | 53-131           | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | 2,4,5-Trichlorophenol | 32-131           | ≤20                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                               | 2,4,6-Trichlorophenol | 34-127           | ≤20                                     |
| <b>AQUEOUS VOLATILE ORGANIC COMPOUNDS (SW-846 5030B/ U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 1 SOP EIASOP – VOADIOX3)</b>                                                                                                                                                                                                                                                                                 |                       |                  |                                         |
| Laboratory Control Sample/Matrix Spike/Matrix Spike Duplicate                                                                                                                                                                                                                                                                                                                                                 | 1,4 Dioxane           | 60-140           | ≤30                                     |
| Surrogate Spike                                                                                                                                                                                                                                                                                                                                                                                               | 1,4 Dioxane (D-8)     | 60-140           | NA                                      |
| <p>NOTE: %R = Percent recovery.<br/> The acceptance window for the solid laboratory control sample material is established statistically by the vendor through a round robin study prior to release of the material. This window is specific to the selected material and lot and represents the 95 percent confidence interval as calculated against the mean recovery.</p> <p>NOTE: NA = Not applicable</p> |                       |                  |                                         |

TABLE 7-4-S9 MEASUREMENT PERFORMANCE CRITERIA FOR SITE 9

| Sampling Procedure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Analytical Method/ Standard Operating Procedure | Data Quality Indicators       | Measurement Performance Criteria                                                                                                                                               | Quality Control Sample and/or Activity Used to Assess Measurement Performance | Quality Control Sample Assesses Error for Sampling (S), Analytical (A), or Both (S&A) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>LOW LEVEL VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER (SW-846 SIM)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                 |                               |                                                                                                                                                                                |                                                                               |                                                                                       |
| SOP provided in Appendixes C and D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 8260B SIM                                       | Precision – overall           | RPD $\leq$ 30%                                                                                                                                                                 | Field Duplicates                                                              | S&A                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                 | Precision – laboratory        | RPD $\leq$ 20%                                                                                                                                                                 | MS/MSDs                                                                       | A                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                 | Accuracy/bias                 | See Table 7-3-S9                                                                                                                                                               | MS/MSDs, Laboratory Control Samples                                           | A                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                 | Accuracy/bias – Contamination | No target compounds $\geq$ QL                                                                                                                                                  | Equipment Blanks, Trip Blanks, Method Blanks, Instrument Blanks               | S&A                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                 | Sensitivity                   | The laboratory minimum detection limit will be $<1/3$ project quantitation limits in Table 12-1-S9, and a low level standard will be run at the laboratory quantitation limit. | Low level standard                                                            | A                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                 | Data completeness             | 90% Overall                                                                                                                                                                    | Data Completeness Check                                                       | S&A                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                 | Comparability                 | Not applicable                                                                                                                                                                 | Not applicable                                                                | Not applicable                                                                        |
| <b>VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                 |                               |                                                                                                                                                                                |                                                                               |                                                                                       |
| SOP provided in Appendixes C and D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 8260B                                           | Precision – overall           | RPD $\leq$ 30%                                                                                                                                                                 | Field Duplicates                                                              | S&A                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                 | Precision – laboratory        | RPD $\leq$ 20%                                                                                                                                                                 | MS/MSDs                                                                       | A                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                 | Accuracy/bias                 | See Table 7-3-S9                                                                                                                                                               | MS/MSDs, Laboratory Control Samples                                           | A                                                                                     |
| <p>(a) If either one or both analytes are below the QL, then the acceptance criteria shall be <math>&lt;</math> or <math>=</math> (less than or equal to) 200 % RPD.</p> <p>NOTE: SOP = Standard operating procedure.<br/> SIM = Selective ion monitoring.<br/> RPD = Relative percent difference.<br/> MS = Matrix spike.<br/> MSD = Matrix spike duplicate.<br/> QL = Quantitation limit.</p> <p>Quality control sample and/or activity; for all analyses except metals, a passing Initial Calibration Curve and the QL verified by annual Method Detection Limit study. For metals, the QL will be verified by annual Method Detection Limit studies.</p> |                                                 |                               |                                                                                                                                                                                |                                                                               |                                                                                       |

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| Sampling Procedure                                                                                      | Analytical Method/ Standard Operating Procedure                                   | Data Quality Indicators       | Measurement Performance Criteria                                                                                                                                               | Quality Control Sample and/or Activity Used to Assess Measurement Performance | Quality Control Sample Assesses Error for Sampling (S), Analytical (A), or Both (S&A) |
|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER (Continued)</b>                                            |                                                                                   |                               |                                                                                                                                                                                |                                                                               |                                                                                       |
| SOP provided in Appendixes C and D                                                                      | 8260B                                                                             | Accuracy/bias – Contamination | No target compounds $\geq$ QL                                                                                                                                                  | Equipment blanks, trip blanks, method blanks, instrument blanks               | S&A                                                                                   |
|                                                                                                         |                                                                                   | Sensitivity                   | The laboratory minimum detection limit will be $<1/3$ project quantitation limits in Table 12-1-S9, and a low level standard will be run at the laboratory quantitation limit. | Low level standard                                                            | A                                                                                     |
|                                                                                                         |                                                                                   | Data completeness             | 90% Overall                                                                                                                                                                    | Data completeness check                                                       | S&A                                                                                   |
|                                                                                                         |                                                                                   | Comparability                 | Not applicable                                                                                                                                                                 | Not applicable                                                                | Not applicable                                                                        |
| <b>1,4-DIOXANE IN GROUNDWATER (U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 1 SOP EIASOP – VOADIOX3)</b> |                                                                                   |                               |                                                                                                                                                                                |                                                                               |                                                                                       |
| SOP provided in Appendixes C and D                                                                      | SW-846 5030B/U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 1 SOP EIASOP – VOADIOX3) | Precision – overall           | RPD $\leq$ 30%                                                                                                                                                                 | Field Duplicates                                                              | S&A                                                                                   |
|                                                                                                         |                                                                                   | Precision – laboratory        | RPD $\leq$ 30%                                                                                                                                                                 | MS/MSDs                                                                       | A                                                                                     |
|                                                                                                         |                                                                                   | Accuracy/bias                 | See Table 7-3-S9                                                                                                                                                               | MS/MSDs, laboratory control samples                                           | A                                                                                     |
|                                                                                                         |                                                                                   | Accuracy/bias – contamination | No target compounds $\geq$ QL                                                                                                                                                  | Equipment blanks, trip blanks, method blanks, instrument blanks               | S&A                                                                                   |
|                                                                                                         |                                                                                   | Sensitivity                   | The quantitation limit will be below the Project Action Limit or meet the quantitation limits in Table 12-1-EP                                                                 | Low level standard                                                            | A                                                                                     |
|                                                                                                         |                                                                                   | Data completeness             | 90% Overall                                                                                                                                                                    | Data completeness check                                                       | S&A                                                                                   |
|                                                                                                         |                                                                                   | Comparability                 | Not applicable                                                                                                                                                                 | Not applicable                                                                | Not applicable                                                                        |
| <b>VOLATILE ORGANIC COMPOUNDS IN SEDIMENT</b>                                                           |                                                                                   |                               |                                                                                                                                                                                |                                                                               |                                                                                       |
| SOP provided in Appendixes C and D                                                                      | 3035A/8260B                                                                       | Precision – overall           | RPD $\leq$ 50%                                                                                                                                                                 | Field duplicates                                                              | S&A                                                                                   |
|                                                                                                         |                                                                                   | Precision – laboratory        | RPD $\leq$ 30%                                                                                                                                                                 | MS/MSDs                                                                       | A                                                                                     |
|                                                                                                         |                                                                                   | Accuracy/bias                 | See Table 7-3-S9                                                                                                                                                               | MS/MSDs, laboratory control samples                                           | A                                                                                     |
|                                                                                                         |                                                                                   | Accuracy/bias – Contamination | No target compounds $\geq$ QL                                                                                                                                                  | Equipment blanks, trip blanks, method blanks, instrument blanks               | S&A                                                                                   |

ECC/EA

| Sampling Procedure                                | Analytical Method/ Standard Operating Procedure  | Data Quality Indicators       | Measurement Performance Criteria                                                                                                                                                          | Quality Control Sample and/or Activity Used to Assess Measurement Performance | Quality Control Sample Assesses Error for Sampling (S), Analytical (A), or Both (S&A) |
|---------------------------------------------------|--------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                   |                                                  | Sensitivity                   | The laboratory minimum detection limit will be $<1/3$ project quantitation limits in Table 12-1-S9, and a low level standard will be run at the laboratory quantitation limit.            | Low level standard                                                            | A                                                                                     |
|                                                   |                                                  | Data completeness             | 90% Overall                                                                                                                                                                               | Data completeness check                                                       | S&A                                                                                   |
|                                                   |                                                  | Comparability                 | Not applicable                                                                                                                                                                            | Not applicable                                                                | Not applicable                                                                        |
| <b>SEMIVOLATILE ORGANICS IN GROUND WATER/TCLP</b> |                                                  |                               |                                                                                                                                                                                           |                                                                               |                                                                                       |
| SOP provided in Appendixes C and D                | 3510C/3520C/8270C                                | Precision – overall           | RPD $\leq$ 30%                                                                                                                                                                            | Field duplicates                                                              | S&A                                                                                   |
|                                                   |                                                  | Precision – laboratory        | RPD $\leq$ 30% when polycyclic aromatic hydrocarbon detects for both field duplicate samples are $\geq$ QL                                                                                | MS/MSDs                                                                       | A                                                                                     |
|                                                   |                                                  | Accuracy/bias                 | See Table 7-3-S9                                                                                                                                                                          | MS/MSDs, laboratory control samples                                           | A                                                                                     |
| SOP provided in Appendixes C and D                | 3510C/3520C/8270C                                | Accuracy/bias – Contamination | No target compounds $\geq$ QL                                                                                                                                                             | Method blanks, instrument blanks                                              | S&A                                                                                   |
|                                                   |                                                  | Sensitivity                   | The laboratory minimum detection limit will be $<1/3$ project quantitation limits in Table 12-1-S9 or 12-2-S9 and a low level standard will be run at the laboratory quantitation limit.  | Low level standard                                                            | A                                                                                     |
|                                                   |                                                  | Data completeness             | 90% Overall                                                                                                                                                                               | Data completeness check                                                       | S&A                                                                                   |
|                                                   |                                                  | Comparability                 | Not applicable                                                                                                                                                                            | Not applicable                                                                | Not applicable                                                                        |
| <b>METALS IN GROUNDWATER/TCLP</b>                 |                                                  |                               |                                                                                                                                                                                           |                                                                               |                                                                                       |
| SOP provided in Appendixes C and D                | 3010A/6010B/6020/7041/7060A/7421/7740/7841/7470A | Precision – overall           | RPD $\leq$ 30%                                                                                                                                                                            | Field duplicates                                                              | S&A                                                                                   |
|                                                   |                                                  | Precision – laboratory        | RPD $\leq$ 20% when Metal detects for both field duplicate samples are $\geq$ QL                                                                                                          | MS/MSDs                                                                       | A                                                                                     |
|                                                   |                                                  | Accuracy/bias                 | See Table 7-3-S9                                                                                                                                                                          | MS/MSDs, laboratory control samples                                           | A                                                                                     |
|                                                   |                                                  | Accuracy/bias – Contamination | No target compounds $\geq$ QL                                                                                                                                                             | Equipment blanks, method blanks, instrument blanks                            | S&A                                                                                   |
|                                                   |                                                  | Sensitivity                   | The laboratory minimum detection limit will be $<1/3$ project quantitation limits in Table 12-1-S9 or 12-2-S9, and a low level standard will be run at the laboratory quantitation limit. | Low level check                                                               | A                                                                                     |
|                                                   |                                                  | Data completeness             | 90% Overall                                                                                                                                                                               | Data completeness check                                                       | S&A                                                                                   |

ECC/EA

| Sampling Procedure                             | Analytical Method/ Standard Operating Procedure | Data Quality Indicators       | Measurement Performance Criteria                                                                                                                                                          | Quality Control Sample and/or Activity Used to Assess Measurement Performance | Quality Control Sample Assesses Error for Sampling (S), Analytical (A), or Both (S&A) |
|------------------------------------------------|-------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                |                                                 | Comparability                 | Not applicable                                                                                                                                                                            | Not applicable                                                                | Not applicable                                                                        |
| <b>TPH DRO IN SOIL/SEDIMENT or GROUNDWATER</b> |                                                 |                               |                                                                                                                                                                                           |                                                                               |                                                                                       |
| SOP provided in Appendixes C and D             | ME 4.1.25                                       | Precision – overall           | RPD $\leq$ 30% WATER, RPD $\leq$ 50% SEDIMENT                                                                                                                                             | Field Duplicates                                                              | S&A                                                                                   |
|                                                |                                                 | Precision – laboratory        | RPD $\leq$ 40%                                                                                                                                                                            | MS/MSDs                                                                       | A                                                                                     |
|                                                |                                                 | Accuracy/bias                 | See Table 7-3-S9                                                                                                                                                                          | MS/MSDs, Laboratory Control Samples                                           | A                                                                                     |
|                                                |                                                 | Accuracy/bias – Contamination | No target compounds $\geq$ QL                                                                                                                                                             | Equipment blanks, trip blanks, method blanks, instrument blanks               | S&A                                                                                   |
|                                                |                                                 | Sensitivity                   | The laboratory minimum detection limit will be $<1/3$ project quantitation limits in Table 12-1-S9 or 12-1-S9, and a low level standard will be run at the laboratory quantitation limit. | Low level standard                                                            | A                                                                                     |
|                                                |                                                 | Data completeness             | 90% Overall                                                                                                                                                                               | Data completeness check                                                       | S&A                                                                                   |
|                                                |                                                 | Comparability                 | Not applicable                                                                                                                                                                            | Not applicable                                                                | Not applicable                                                                        |

TABLE 12-1-S9 PROJECT REPORTING LIMITS, ACCURACY/BIAS, AND ANALYTICAL PRECISION FOR AQUEOUS SAMPLES AT SITE 9

| Analyte                                             | Analytical Accuracy/Bias (%R) | Analytical Precision (%RPD) | Project Quantitation Limits <sup>(a)</sup> (µg/L) |
|-----------------------------------------------------|-------------------------------|-----------------------------|---------------------------------------------------|
| <b>VOLATILE ORGANIC ANALYTES (SW-846 8260B SIM)</b> |                               |                             |                                                   |
| Vinyl Chloride                                      | 46-134                        | ≤20                         | 0.1                                               |
| <b>VOLATILE ORGANIC ANALYTES (SW-846 8260B)</b>     |                               |                             |                                                   |
| Acetone                                             | 60-140                        | ≤20                         | 5                                                 |
| Benzene                                             | 75-125                        | ≤20                         | 1                                                 |
| Bromodichloromethane                                | 75-125                        | ≤20                         | 1                                                 |
| Bromoform                                           | 75-125                        | ≤20                         | 1                                                 |
| Bromomethane                                        | 72-125                        | ≤20                         | 1                                                 |
| 2-Butanone                                          | 60-140                        | ≤20                         | 5                                                 |
| Carbon Disulfide                                    | 75-125                        | ≤20                         | 1                                                 |
| Carbon Tetrachloride                                | 62-125                        | ≤20                         | 1                                                 |
| Chlorobenzene                                       | 75-125                        | ≤20                         | 1                                                 |
| Chloroethane                                        | 65-125                        | ≤20                         | 1                                                 |
| Chloroform                                          | 74-125                        | ≤20                         | 1                                                 |
| Chloromethane                                       | 75-125                        | ≤20                         | 1                                                 |
| Dibromochloromethane                                | 73-125                        | ≤20                         | 1                                                 |
| 1,1-Dichloroethane                                  | 72-125                        | ≤20                         | 1                                                 |
| 1,2-Dichloroethane                                  | 68-127                        | ≤20                         | 1                                                 |
| 1,1-Dichloroethene                                  | 75-125                        | ≤20                         | 1                                                 |
| 1,2-Dichlorobenzene                                 | 60-140                        | ≤20                         | 1                                                 |
| 1,3-Dichlorobenzene                                 | 60-140                        | ≤20                         | 1                                                 |
| 1,4-Dichlorobenzene                                 | 60-140                        | ≤20                         | 1                                                 |
| cis-1,2-Dichloroethene                              | 60-140                        | ≤20                         | 1                                                 |
| tran-1,2-Dichloroethene                             | 60-140                        | ≤20                         | 1                                                 |
| 1,2-Dichloropropane                                 | 60-140                        | ≤20                         | 1                                                 |
| cis-1,3-Dichloropropene                             | 74-125                        | ≤20                         | 0.67                                              |
| trans-1,3-Dichloropropene                           | 66-125                        | ≤20                         | 0.66                                              |
| Ethylbenzene                                        | 75-125                        | ≤20                         | 1                                                 |
| 2-Hexanone                                          | 60-140                        | ≤20                         | 5                                                 |
| 4-Methyl-2-pentanone (MIBK)                         | 60-140                        | ≤20                         | 5                                                 |
| Methyl-tertiary-butyl- ether                        | 75-125                        | ≤20                         | 1                                                 |
| Methylene Chloride                                  | 75-125                        | ≤20                         | 1                                                 |
| Styrene                                             | 75-125                        | ≤20                         | 1                                                 |
| 1,1,2,2-Tetrachloroethane                           | 74-125                        | ≤20                         | 1                                                 |
| Tetrachloroethene                                   | 71-125                        | ≤20                         | 1                                                 |
| Toluene                                             | 74-125                        | ≤20                         | 1                                                 |
| Total 1,2-Dichloroethene                            | 75-125                        | ≤20                         | 1                                                 |
| 1,1,2-Trichloroethane                               | 75-125                        | ≤20                         | 1                                                 |
| 1,1,1-Trichloroethane                               | 75-125                        | ≤20                         | 1                                                 |
| Trichloroethene                                     | 71-125                        | ≤20                         | 1                                                 |
| Trichlorofluoromethane                              | 60-140                        | ≤20                         | 2                                                 |
| Vinyl Chloride                                      | 46-134                        | ≤20                         | 0.1                                               |
| Total xylenes                                       | 75-125                        | ≤20                         | 1                                                 |

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| Analyte                                                                                                              | Analytical Accuracy/Bias (%R) | Analytical Precision (%RPD) | Project Quantitation Limits <sup>(a)</sup> (µg/L) |
|----------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------|---------------------------------------------------|
| <b>VOLATILE ORGANIC ANALYTES (SW-846 5030B/ U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 1 SOP EIASOP – VOADIOX3)</b> |                               |                             |                                                   |
| 1,4-Dioxane                                                                                                          | 60-140                        | ≤30                         | 1                                                 |
| <b>SEMIVOLATILE ORGANIC ANALYTES (SW-846 8270C)</b>                                                                  |                               |                             |                                                   |
| Bis(2-chloroethyl)ether                                                                                              | 46-109                        | ≤20                         | 10                                                |
| Bis(2-chloroethoxy)methane                                                                                           | 49-112                        | ≤20                         | 10                                                |
| Bis(2-ethylhexyl)phthalate                                                                                           | 56-127                        | ≤20                         | 2.0                                               |
| 4-Bromophenyl phenyl ether                                                                                           | 51-124                        | ≤20                         | 10                                                |
| Butylbenzylphthalate                                                                                                 | 54-128                        | ≤20                         | 10                                                |
| Carbazole                                                                                                            | 54-126                        | ≤20                         | 10                                                |
| 4-Chloroaniline                                                                                                      | 10-152                        | ≤20                         | 10                                                |
| 4-Chloro-3-methylphenol                                                                                              | 48-117                        | ≤20                         | 10                                                |
| 2-Chloronaphthalene                                                                                                  | 47-116                        | ≤20                         | 10                                                |
| 2-Chlorophenol                                                                                                       | 22-117                        | ≤20                         | 10                                                |
| 4-Chlorophenyl phenyl ether                                                                                          | 50-124                        | ≤20                         | 10                                                |
| Dibenzofuran                                                                                                         | 51-122                        | ≤20                         | 10                                                |
| Di-n-butyl phthalate                                                                                                 | 56-132                        | ≤20                         | 10                                                |
| Di-n-octylphthalate                                                                                                  | 59-138                        | ≤20                         | 10                                                |
| 1,2-Dichlorobenzene                                                                                                  | 29-107                        | ≤20                         | 10                                                |
| 1,3-Dichlorobenzene                                                                                                  | 28-103                        | ≤20                         | 10                                                |
| 1,4-Dichlorobenzene                                                                                                  | 28-104                        | ≤20                         | 10                                                |
| 3,3'-Dichlorobenzidine                                                                                               | 41-117                        | ≤20                         | 20                                                |
| 2,4-Dichlorophenol                                                                                                   | 31-122                        | ≤20                         | 10                                                |
| Diethyl phthalate                                                                                                    | 53-126                        | ≤20                         | 10                                                |
| 4,6-Dinitro-2-methylphenol                                                                                           | 3-151                         | ≤20                         | 10                                                |
| 2,4-Dimethylphenol                                                                                                   | 14-109                        | ≤20                         | 10                                                |
| Dimethyl phthalate                                                                                                   | 53-124                        | ≤20                         | 10                                                |
| 2,4-Dinitrophenol                                                                                                    | 10-144                        | ≤20                         | 4.6                                               |
| 2,4-Dinitrotoluene                                                                                                   | 52-126                        | ≤20                         | 0.2                                               |
| 2,6-Dinitrotoluene                                                                                                   | 52-122                        | ≤20                         | 0.2                                               |
| Hexachlorobenzene                                                                                                    | 34-103                        | ≤20                         | 0.2                                               |
| Hexachlorobutadiene                                                                                                  | 34-103                        | ≤20                         | 1                                                 |
| Hexachlorocyclopentadiene                                                                                            | 34-103                        | ≤20                         | 10                                                |
| Hexachloroethane                                                                                                     | 24-104                        | ≤20                         | 2.3                                               |
| Isophorone                                                                                                           | 48-118                        | ≤20                         | 10                                                |
| 2-Methylnaphthalene                                                                                                  | 43-113                        | ≤20                         | 10                                                |
| 2-Methylphenol                                                                                                       | 40-104                        | ≤20                         | 10                                                |
| 4-Methylphenol                                                                                                       | 35-106                        | ≤20                         | 10                                                |
| 2-Nitroaniline                                                                                                       | 51-120                        | ≤20                         | 10                                                |
| 3-Nitroaniline                                                                                                       | 47-115                        | ≤20                         | 50                                                |
| 4-Nitroaniline                                                                                                       | 47-117                        | ≤20                         | 50                                                |
| Nitrobenzene                                                                                                         | 47-112                        | ≤20                         | 10                                                |
| 2-Nitrophenol                                                                                                        | 29-122                        | ≤20                         | 10                                                |
| 4-Nitrophenol                                                                                                        | 10-160                        | ≤20                         | 50                                                |
| N-Nitrosodiphenylamine                                                                                               | 48-121                        | ≤20                         | 10                                                |
| N-Nitroso-di-n-propylamine                                                                                           | 44-122                        | ≤20                         | 10                                                |

| Analyte                                                         | Analytical Accuracy/Bias (%R) | Analytical Precision (%RPD) | Project Quantitation Limits <sup>(a)</sup> (µg/L) |
|-----------------------------------------------------------------|-------------------------------|-----------------------------|---------------------------------------------------|
| <b>SEMIVOLATILE ORGANIC ANALYTES (SW-846 8270C) (Continued)</b> |                               |                             |                                                   |
| Pentachlorophenol                                               | 11-125                        | ≤20                         | 0.3                                               |
| 2,2'-Oxybis (1-chloropropane)                                   | 10-134                        | ≤20                         | 10                                                |
| 1,2,4-Trichlorobenzene                                          | 33-108                        | ≤20                         | 10                                                |
| 2,4,5-Trichlorophenol                                           | 32-131                        | ≤20                         | 10                                                |
| 2,4,6-Trichlorophenol                                           | 34-127                        | ≤20                         | 10                                                |
| Acenaphthene                                                    | 50-121                        | ≤20                         | 10                                                |
| Acenaphthylene                                                  | 50-119                        | ≤20                         | 10                                                |
| Anthracene                                                      | 52-127                        | ≤20                         | 10                                                |
| Benzo(a)anthracene                                              | 56-124                        | ≤20                         | 10                                                |
| Benzo(b)fluoranthene                                            | 58-126                        | ≤20                         | 10                                                |
| Benzo(k)fluoranthene                                            | 60-124                        | ≤20                         | 10                                                |
| Benzo(a)pyrene                                                  | 61-121                        | ≤20                         | 0.07                                              |
| Benzo(ghi)perylene                                              | 57-124                        | ≤20                         | 10                                                |
| Chrysene                                                        | 53-123                        | ≤20                         | 10                                                |
| Dibenz(a,h)anthracene                                           | 60-122                        | ≤20                         | 10                                                |
| Fluoranthene                                                    | 53-130                        | ≤20                         | 10                                                |
| Fluorene                                                        | 52-125                        | ≤20                         | 10                                                |
| Indeno(1,2,3-cd)pyrene                                          | 23-152                        | ≤20                         | 10                                                |
| Naphthalene                                                     | 38-117                        | ≤20                         | 10                                                |
| Phenol                                                          | 11-127                        | ≤20                         | 10                                                |
| Phenanthrene                                                    | 52-128                        | ≤20                         | 10                                                |
| Pyrene                                                          | 53-131                        | ≤20                         | 10                                                |
| <b>METALS (SW-846 9012)</b>                                     |                               |                             |                                                   |
| Cyanide                                                         | 75-125                        | ≤20                         | 20                                                |
| <b>METALS (SW-846 6010B)</b>                                    |                               |                             |                                                   |
| Aluminum                                                        | 75-125                        | ≤20                         | 20                                                |
| Arsenic                                                         | 75-125                        | ≤20                         | 1.6                                               |
| Barium                                                          | 75-125                        | ≤20                         | 200                                               |
| Beryllium                                                       | 75-125                        | ≤20                         | 1.3                                               |
| Cadmium                                                         | 75-125                        | ≤20                         | 3                                                 |
| Calcium                                                         | 75-125                        | ≤20                         | 5,000                                             |
| Chromium                                                        | 75-125                        | ≤20                         | 10                                                |
| Cobalt                                                          | 75-125                        | ≤20                         | 50                                                |
| Iron                                                            | 75-125                        | ≤20                         | 100                                               |
| Nickel                                                          | 75-125                        | ≤20                         | 33                                                |
| Magnesium                                                       | 75-125                        | ≤20                         | 5,000                                             |
| Manganese                                                       | 75-125                        | ≤20                         | 15                                                |
| Potassium                                                       | 75-125                        | ≤20                         | 5,000                                             |
| Sodium                                                          | 75-125                        | ≤20                         | 5,000                                             |
| Silver                                                          | 75-125                        | ≤20                         | 10                                                |
| Vanadium                                                        | 75-125                        | ≤20                         | 50                                                |
| Zinc                                                            | 75-125                        | ≤20                         | 20                                                |
| Copper                                                          | 75-125                        | ≤20                         | 25                                                |
| <b>METALS (SW-846 6020, 7041, 7060A, 7421, 7740, 7841)</b>      |                               |                             |                                                   |
| Antimony                                                        | 75-125                        | ≤20                         | 2.5                                               |
| Arsenic                                                         | 75-125                        | ≤20                         | 1.6                                               |

| Analyte                                                                                                                                                                                                                                                                                                                                          | Analytical Accuracy/Bias (%R) | Analytical Precision (%RPD) | Project Quantitation Limits <sup>(a)</sup> (µg/L) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------|---------------------------------------------------|
| Lead                                                                                                                                                                                                                                                                                                                                             | 75-125                        | ≤20                         | 1                                                 |
| Selenium                                                                                                                                                                                                                                                                                                                                         | 75-125                        | ≤20                         | 3.3                                               |
| Thallium                                                                                                                                                                                                                                                                                                                                         | 75-125                        | ≤20                         | 0.13                                              |
| <b>METALS (SW-846 7470A)</b>                                                                                                                                                                                                                                                                                                                     |                               |                             |                                                   |
| Mercury                                                                                                                                                                                                                                                                                                                                          | 75-125                        | ≤20                         | 0.2                                               |
| <b>AQUEOUS DRO (ME 4.1.25)</b>                                                                                                                                                                                                                                                                                                                   |                               |                             |                                                   |
| DRO                                                                                                                                                                                                                                                                                                                                              | 60-140                        | ≤40                         | 50                                                |
| <p>(a) Project quantitation limits were derived based on what are the typical achievable laboratory quantitation limits and the project quantitation limit is at least one-third the project action limit.</p> <p>NOTE: %R = Percent recovery.<br/>         %RPD = Relative percent difference.<br/>         SIM = Selective ion monitoring.</p> |                               |                             |                                                   |

TABLE 12-2-S9 PROJECT REPORTING LIMITS, ACCURACY/BIAS, AND ANALYTICAL PRECISION FOR SOILS/SEDIMENT SAMPLES AT SITE 9

| Analyte                                                                                    | Analytical Accuracy/ Bias (%R) | Analytical Precision (%RPD) | Project Action Limit <sup>(a)</sup> |
|--------------------------------------------------------------------------------------------|--------------------------------|-----------------------------|-------------------------------------|
| <b>SOILS/SEDIMENT TARGET COMPOUND LIST VOLATILE ORGANIC COMPOUNDS (SW-846 5035A/8260B)</b> |                                |                             |                                     |
| 1,1,1-Trichloroethane                                                                      | 65-135                         | ≤40                         | 260                                 |
| 1,1,2,2-Tetrachloroethane                                                                  | 64-135                         | ≤40                         |                                     |
| 1,1,2-Trichloroethane                                                                      | 64-135                         | ≤40                         |                                     |
| 1,1-Dichloroethane                                                                         | 62-135                         | ≤40                         | 645                                 |
| 1,1-Dichloroethene                                                                         | 65-135                         | ≤40                         | 0.2                                 |
| 1,2-Dichlorobenzene                                                                        | 65-135                         | ≤40                         |                                     |
| 1,2-Dichloroethane                                                                         | 58-137                         | ≤40                         |                                     |
| 1,2-Dichloropropane                                                                        | 65-135                         | ≤40                         |                                     |
| 1,3-Dichlorobenzene                                                                        | 65-135                         | ≤40                         |                                     |
| 1,4-Dichlorobenzene                                                                        | 65-135                         | ≤40                         |                                     |
| 2-Butanone                                                                                 | 60-140                         | ≤40                         |                                     |
| 2-Hexanone                                                                                 | 60-140                         | ≤40                         |                                     |
| 4-Methyl-2-pentanone                                                                       | 60-140                         | ≤40                         |                                     |
| Acetone                                                                                    | 60-140                         | ≤40                         | 475                                 |
| Benzene                                                                                    | 75-125                         | ≤40                         | 5                                   |
| Bromodichloromethane                                                                       | 75-125                         | ≤40                         |                                     |
| Bromoform                                                                                  | 75-125                         | ≤40                         |                                     |
| Bromomethane                                                                               | 72-125                         | ≤40                         |                                     |
| Carbon Disulfide                                                                           | 75-125                         | ≤40                         |                                     |
| Carbon Tetrachloride                                                                       | 62-125                         | ≤40                         |                                     |
| Chlorobenzene                                                                              | 75-125                         | ≤40                         | 310                                 |
| Chloroethane                                                                               | 65-125                         | ≤40                         |                                     |
| Chloroform                                                                                 | 74-125                         | ≤40                         |                                     |
| Chloromethane                                                                              | 75-125                         | ≤40                         |                                     |
| <i>cis</i> -1,3-Dichloropropene                                                            | 74-125                         | ≤40                         |                                     |
| Dibromochloromethane                                                                       | 73-125                         | ≤40                         |                                     |
| Ethylbenzene                                                                               | 75-125                         | ≤40                         | 1670                                |
| Hexachlorobutadiene                                                                        | 75-125                         | ≤40                         |                                     |
| Methylene Chloride                                                                         | 75-125                         | ≤40                         | 13                                  |
| Sytrene                                                                                    | 75-125                         | ≤40                         |                                     |
| Tetrachloroethene                                                                          | 71-125                         | ≤40                         |                                     |
| Toluene                                                                                    | 74-125                         | ≤40                         | 2390                                |
| Total 1,2-dichloroethene                                                                   | 75-125                         | ≤40                         |                                     |
| Total xylenes                                                                              | 75-125                         | ≤40                         |                                     |
| <i>trans</i> -1,3-dichloropropene                                                          | 66-125                         | ≤40                         |                                     |
| Xylene(total)                                                                              | 66-125                         | ≤40                         | 10,000                              |
| Trichloroethene                                                                            | 71-125                         | ≤40                         | 19                                  |
| Vinyl Chloride                                                                             | 46-134                         | ≤40                         | 0.04                                |

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| Analyte                                                                      | Analytical Accuracy/ Bias (%R) | Analytical Precision (%RPD) | Project Action Limit <sup>(a)</sup> |
|------------------------------------------------------------------------------|--------------------------------|-----------------------------|-------------------------------------|
| <b>(a) MEDEP Remedial Action Guidelines</b>                                  |                                |                             |                                     |
| NOTE: %R = Percent recovery.<br>%RPD = Relative percent difference.          |                                |                             |                                     |
| <b>SOIL/SEDIMENTS TPH DRO (ME 4.1.25)</b>                                    |                                |                             |                                     |
| TPH DRO                                                                      | 60-140                         | ≤30                         | 10 mg/kg                            |
| <b>TCLP TARGET ANALYTE LIST METALS (SW-846 1311/ 3010A/6010B/7471A/6020)</b> |                                |                             |                                     |
| Arsenic                                                                      | 75-125                         | ≤20                         | 5.0 mg/L                            |
| Barium                                                                       | 75-125                         | ≤20                         | 100 mg/L                            |
| Cadmium                                                                      | 75-125                         | ≤20                         | 1.0 mg/L                            |
| Chromium                                                                     | 75-125                         | ≤20                         | 5.0 mg/L                            |
| Lead                                                                         | 75-125                         | ≤20                         | 5.0 mg/L                            |
| Mercury                                                                      | 75-125                         | ≤20                         | 0.2 mg/L                            |
| Selenium                                                                     | 75-125                         | ≤20                         | 1.0 mg/L                            |
| Silver                                                                       | 75-125                         | ≤20                         | 5.0 mg/L                            |
| <b>TCLP SEMIVOLATILE ORGANIC COMPOUNDS (SW-846 1311/3510C/3520C/8270C)</b>   |                                |                             |                                     |
| 2,4-Dinitrotoluene                                                           | 52-126                         | ≤20                         | 0.13 mg/L                           |
| Hexachlorobenzene                                                            | 34-103                         | ≤20                         | 0.13 mg/L                           |
| Hexachlorobutadiene                                                          | 34-103                         | ≤20                         | 0.5 mg/L                            |
| Hexachloroethane                                                             | 24-104                         | ≤20                         | 3.0 mg/L                            |
| 2-Methylphenol                                                               | 40-104                         | ≤20                         | 200 mg/L                            |
| 3-Methylphenol                                                               | 38-120                         | ≤20                         | 200 mg/L                            |
| 4-Methylphenol                                                               | 35-106                         | ≤20                         | 200 mg/L                            |
| Nitrobenzene                                                                 | 47-112                         | ≤20                         | 2.0 mg/L                            |
| 1,4 dichlorobenzene                                                          | 35-136                         | ≤20                         | 7.5 mg/L                            |
| Pentachlorophenol                                                            | 11-125                         | ≤20                         | 100 mg/L                            |
| Pyridine                                                                     | 53-131                         | ≤20                         | 5.0 mg/L                            |
| 2,4,5-Trichlorophenol                                                        | 32-131                         | ≤20                         | 400 mg/L                            |
| 2,4,6-Trichlorophenol                                                        | 34-127                         | ≤20                         | 2.0 mg/L                            |

TABLE 12-3-S9 FIXED LABORATORY ANALYTICAL METHOD/STANDARD OPERATING PROCEDURE  
REFERENCE FOR SITE 9

| Reference Number                 | Fixed Laboratory Performing Analysis | Title, Revision Date, and/or Number              | Definitive or Screening Data | Region I NESTS Method Code | Analytical Parameter                       | Instrument | Modified for Project Work Y or N |
|----------------------------------|--------------------------------------|--------------------------------------------------|------------------------------|----------------------------|--------------------------------------------|------------|----------------------------------|
| <b>AQUEOUS SAMPLES</b>           |                                      |                                                  |                              |                            |                                            |            |                                  |
| SW-846 Methods 5030B/8260B       | Selected laboratory (TBD)            | SOPs will be provided by the selected laboratory | Definitive                   | Not applicable             | Target Compound List volatile organics     | GC/MS      | N                                |
| SW-846 Methods 5030B/8260B SIM   | Selected laboratory (TBD)            | SOPs will be provided by the selected laboratory | Definitive                   | Not applicable             | Vinyl chloride                             | GC/MS      | N                                |
| SW-846 Methods 3510C/3520C/8270C | Selected laboratory (TBD)            | SOPs will be provided by the selected laboratory | Definitive                   | Not applicable             | Target Compound List semivolatile organics | GC/MS      | N                                |
| SW-846 Methods 3010A/6010B       | Selected laboratory (TBD)            | SOPs will be provided by the selected laboratory | Definitive                   | Not applicable             | Target Analyte List metals                 | ICP/AES    | N                                |
| SW-846 Methods 3010A/6020        | Selected laboratory (TBD)            | SOPs will be provided by the selected laboratory | Definitive                   | Not applicable             | Target Analyte List metals                 | ICP/MS     | N                                |
| SW-846 Methods 3010A/7041        | Selected laboratory (TBD)            | SOPs will be provided by the selected laboratory | Definitive                   | Not applicable             | Antimony                                   | Furnace    | N                                |
| SW-846 Methods 3010A/7060A       | Selected laboratory (TBD)            | SOPs will be provided by the selected laboratory | Definitive                   | Not applicable             | Arsenic                                    | Furnace    | N                                |
| SW-846 Methods 3010A/7421        | Selected laboratory (TBD)            | SOPs will be provided by the selected laboratory | Definitive                   | Not applicable             | Lead                                       | Furnace    | N                                |
| SW-846 Methods 3010A/7740        | Selected laboratory (TBD)            | SOPs will be provided by the selected laboratory | Definitive                   | Not applicable             | Selenium                                   | Furnace    | N                                |
| SW-846 Methods 3010A/7841        | Selected laboratory (TBD)            | SOPs will be provided by the selected laboratory | Definitive                   | Not applicable             | Thallium                                   | Furnance   | N                                |
| SW-846 Methods 3010A/7470A       | Selected laboratory (TBD)            | SOPs will be provided by the selected laboratory | Definitive                   | Not applicable             | Mercury                                    | Cold vapor | N                                |
| ME 4.1.25                        | Selected laboratory (TBD)            | SOPs will be provided by the selected laboratory | Definitive                   | Not applicable             | MEDEP DRO                                  | GC         | N                                |
| EIASOP – VOADIOX3                | Selected laboratory (TBD)            | SOPs will be provided by the selected laboratory | Definitive                   | Not applicable             | 1,4-Dioxane                                | GC/MS-SIM  | N                                |
| <b>SEDIMENT/SOIL SAMPLES</b>     |                                      |                                                  |                              |                            |                                            |            |                                  |
| SW-846 Methods 5035A/8260B       | Selected laboratory (TBD)            | SOPs will be provided by the selected laboratory | Definitive                   | Not applicable             | Target Compound List volatile organics     | GC/MS      | N                                |

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| Reference Number                                                                                                                                                                                                                                           | Fixed Laboratory Performing Analysis | Title, Revision Date, and/or Number                 | Definitive or Screening Data | Region I NESTS Method Code | Analytical Parameter | Instrument     | Modified for Project Work Y or N |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------------------------------------------|------------------------------|----------------------------|----------------------|----------------|----------------------------------|
| SW-846 Methods<br>1311/3010A/6010B/<br>7471A/6020                                                                                                                                                                                                          | Selected laboratory<br>(TBD)         | SOPs will be provided by<br>the selected laboratory | Definitive                   | Not applicable             | TCLP list/Metals     | ICP/MS/<br>AES | N                                |
| ME 4.1.25                                                                                                                                                                                                                                                  | Selected laboratory<br>(TBD)         | SOPs will be provided by<br>the selected laboratory | Definitive                   | Not applicable             | MEDEP DRO            | GC             | N                                |
| SW-846 Methods<br>1311/3510C/3520C/<br>8270C                                                                                                                                                                                                               | Selected laboratory<br>(TBD)         | SOPs will be provided by<br>the selected laboratory | Definitive                   | Not applicable             | TCLP list/SVOC       | GC-MS          | N                                |
| NOTE: SIM = Selective ion monitoring.<br>TBD = To be determined by the selected laboratory in Appendix H<br>SOP = Standard operating procedure.<br>GC/MS = Gas chromatography/mass spectrometry.<br>ICP/MS = Inductively coupled plasma/mass spectrometry. |                                      |                                                     |                              |                            |                      |                |                                  |

TABLE 12-4-S9 FIXED LABORATORY INSTRUMENT MAINTENANCE AND CALIBRATION FOR SITE 9

| Instrument                               | Activity                                                                                                | Maintenance, Testing, and Inspection Activities                                                                                                                                                                                                           | Frequency of Calibration                                      | Acceptance Criteria                                                                                                                                                                           | Corrective Action                              | Person Responsible for Corrective Action | Method/SOP Reference |
|------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------|----------------------|
| <b>AQUEOUS AND SOIL/SEDIMENT SAMPLES</b> |                                                                                                         |                                                                                                                                                                                                                                                           |                                                               |                                                                                                                                                                                               |                                                |                                          |                      |
| GC/MS                                    | Volatile organic compound analysis<br>Groundwater, diffusion bag sampling, surface water, leachate seep | Daily Checks <sup>(a)</sup> :<br><ul style="list-style-type: none"> <li>• Check trap and column performance</li> <li>• Check supply of gases, check data file space and quant space.</li> <li>• Mass Spectrometer Tune Check prior to analysis</li> </ul> | ICAL: Prior to sample analysis                                | Meet SPCC/CCC criteria<br>%RSD≤15% each analyte<br>or grand mean<br>%RSD≤15% with no analyte >30% RSD<br>or linear regression<br>R≥0.995<br>or non-linear regression<br>R <sup>2</sup> ≥0.995 | Perform maintenance and recalibrate            | Analyst                                  | 8260B/8260B SIM      |
|                                          |                                                                                                         |                                                                                                                                                                                                                                                           | Tune Check prior to analysis                                  | Tune Check; Method Requirements                                                                                                                                                               |                                                |                                          |                      |
|                                          |                                                                                                         |                                                                                                                                                                                                                                                           | ICV: Second source standard immediately following calibration | ICV: 25% of ICAL Curve.                                                                                                                                                                       | Perform maintenance and recalibrate            |                                          |                      |
|                                          |                                                                                                         |                                                                                                                                                                                                                                                           | CCV: Daily before sample analysis and every 12 hours          | CCV: Meet SPCC/CCC criteria, ±20% of ICAL curve.                                                                                                                                              | Correct problem, re-run CCV and/or recalibrate |                                          |                      |

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|                                    |                                                                                                |                                                                                                                                                                                                                                                                                                           |                                                            |                                                         |                                                         |         |                               |
|------------------------------------|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------|---------|-------------------------------|
| ICP/AES<br>ICP/MS                  | Target Analyte List or TCLP<br>Inorganics<br>Groundwater                                       | Daily Checks:<br><ul style="list-style-type: none"> <li>Acid Waste, pump tubing, argon pressure</li> <li>Verify intensity counts of first standard</li> <li>Change pump tubing if required</li> <li>Mass Spectrometer Tune Check prior to analysis (6020)</li> </ul>                                      | ICAL: Daily prior to analysis                              | High standard and blank: >1 standard use $R \geq 0.995$ | Perform maintenance and recalibrate                     | Analyst | 6010B/6020                    |
|                                    |                                                                                                |                                                                                                                                                                                                                                                                                                           | ICV: Daily prior to use                                    | ICV: 90-110% recovery                                   | Perform maintenance and recalibrate                     |         |                               |
|                                    |                                                                                                |                                                                                                                                                                                                                                                                                                           | CCV: After every 20 samples and at the end of the sequence | CCV: $\pm 10\%$ of ICAL Curve                           | Perform maintenance and recalibrate                     |         |                               |
|                                    |                                                                                                |                                                                                                                                                                                                                                                                                                           | Tune Check prior to analysis (6020)                        | Tune Check; Method Requirements (6020)                  |                                                         |         |                               |
| Cold Vapor Atomic Absorption       | Mercury Groundwater                                                                            | Daily check:<br><ul style="list-style-type: none"> <li>Check acid waste, pump tubing, and argon pressure</li> <li>Rinse system thoroughly (1,000 mL) at the end of the day with DI</li> <li>Verify peak height for first standard is in the range that indicates efficient sample introduction</li> </ul> | ICAL: Daily prior to analysis                              | $R \geq 0.995$                                          | Perform maintenance and recalibrate                     | Analyst | 7470A                         |
|                                    |                                                                                                |                                                                                                                                                                                                                                                                                                           | ICV: Immediately after calibration                         | ICV: $\pm 10\%$ of IC Curve                             | Correct problem rerun ICV, recalibrate if not corrected |         |                               |
|                                    |                                                                                                |                                                                                                                                                                                                                                                                                                           | CCV: Every 10 samples                                      | CCV: $\pm 20\%$ of IC Curve                             | Correct problem rerun ICV, recalibrate if not corrected |         |                               |
| Graphite Furnace Atomic Absorption | Target Analyte List<br>Inorganics – antimony, arsenic, lead, selenium, thallium<br>Groundwater | Daily Checks:<br><ul style="list-style-type: none"> <li>Clean furnace</li> <li>Check graphite tube/platform</li> </ul>                                                                                                                                                                                    | ICAL: Daily prior to analysis                              | $R \geq 0.995$                                          | Perform maintenance and recalibrate                     | Analyst | 7041, 7060A, 7421, 7740, 7841 |
|                                    |                                                                                                |                                                                                                                                                                                                                                                                                                           | ICV: Immediately following calibration                     | ICV: 90-110%                                            | Correct problem rerun ICV, recalibrate if not corrected |         |                               |

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|                                                                       |                                                                                     |                                                                                                                                                                                                                                                      |                                                               |                                                                                                                                                                                                                        |                                                         |         |                       |
|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|---------|-----------------------|
|                                                                       |                                                                                     |                                                                                                                                                                                                                                                      | CCV: Every 10 samples                                         | CCV: $\pm 20\%$                                                                                                                                                                                                        | Correct problem rerun ICV, recalibrate if not corrected |         |                       |
| NOTE: ICP = Inductively coupled plasma.<br>IC = Internal calibration. |                                                                                     |                                                                                                                                                                                                                                                      |                                                               |                                                                                                                                                                                                                        |                                                         |         |                       |
| GC/MS                                                                 | Target Compound List and TCLP Semivolatile organic compound analysis<br>Groundwater | Daily Checks <sup>(a)</sup> :<br><ul style="list-style-type: none"> <li>Check trap and column performance,</li> <li>Check supply of gases, check data file space and quant space.</li> <li>Mass Spectrometer Tune Check prior to analysis</li> </ul> | ICAL: Prior to sample analysis                                | Meet SPCC/CCC criteria<br>$\%RSD \leq 15\%$ each analyte.<br>or Grand mean<br>$\%RSD \leq 15\%$ with no analyte $> 30\%$ RSD<br>or linear regression<br>$R \geq 0.995$<br>or non-linear regression<br>$R^2 \geq 0.995$ | Perform maintenance and recalibrate                     | Analyst | 3510C/3520C/<br>8270C |
|                                                                       |                                                                                     |                                                                                                                                                                                                                                                      | Tune Check prior to analysis                                  | Tune Check; Method Requirements                                                                                                                                                                                        |                                                         |         |                       |
|                                                                       |                                                                                     |                                                                                                                                                                                                                                                      | ICV: Second source standard immediately following calibration | ICV: 25% of ICAL Curve.                                                                                                                                                                                                | Perform maintenance and recalibrate                     |         |                       |
|                                                                       |                                                                                     |                                                                                                                                                                                                                                                      | CCV: Daily before sample analysis and every 12 hours          | CCV: Meet SPCC/CCC criteria, $\pm 20\%$ of ICAL curve.                                                                                                                                                                 | Correct problem, re-run CCV and/or recalibrate          |         |                       |
| GC/MS                                                                 | 1, 4 Dioxane<br>Groundwater                                                         | Daily Checks:<br><ul style="list-style-type: none"> <li>Check trap and column performance,</li> <li>Check supply of gases, check data file space and quant space.</li> </ul>                                                                         | ICAL: Prior to sample analysis                                | $\%RSD \leq 30\%$                                                                                                                                                                                                      | Perform maintenance and recalibrate                     | Analyst | EIASOP –<br>VOADIOX3  |

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|    |                              |                                                                                                                                                              |                                                                                  |                                                                                  |                                                                                                                                                        |         |           |
|----|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------|
|    |                              | <ul style="list-style-type: none"> <li>Mass Spectrometer Tune Check prior to analysis</li> </ul>                                                             | Tune Check prior to analysis                                                     | Tune Check; Method Requirements                                                  |                                                                                                                                                        |         |           |
|    |                              |                                                                                                                                                              | ICV: Second source standard immediately following calibration                    | ICV: 30% of ICAL Curve.                                                          | Perform maintenance and recalibrate                                                                                                                    |         |           |
|    |                              |                                                                                                                                                              | CCV: Daily before sample analysis and every 12 hours                             | CCV: 30% of ICAL Curve.                                                          | Correct problem, re-run CCV and/or recalibrate                                                                                                         |         |           |
| GC | TPH DRO Sediment/Groundwater | Daily checks: <ul style="list-style-type: none"> <li>System and liner</li> <li>Column performance</li> <li>Gas quantity</li> </ul> Data file and quant space | ICAL: Prior to sample analysis                                                   | or linear regression $R \geq 0.995$<br>Or non-linear regression $R^2 \geq 0.995$ | Perform maintenance and recalibrate before sample analysis                                                                                             | Analyst | ME 4.1.25 |
|    |                              |                                                                                                                                                              | ICV: Second source standard immediately following calibration                    | ICV: 20% of ICAL Curve                                                           | Perform maintenance and recalibrate before sample analysis                                                                                             |         |           |
|    |                              |                                                                                                                                                              | CCV: Prior to sample analysis, every 10 samples, and at end of analysis sequence | CCV: 20% of ICAL Curve                                                           | Prior to analysis<br>CCV: correct problem re-run CCV, if not corrected recalibrate.<br>Other CCVs: correct problem, repeat CCV and re-analyze samples. |         |           |

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|-------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|---------|-------------|
| GC/MS | Volatile organic compound analysis<br>Sediment | Daily Checks <sup>(a)</sup> :<br><ul style="list-style-type: none"> <li>• Check trap and column performance,</li> <li>• Check supply of gases, check data file space and quant space.</li> <li>• Mass Spectrometer Tune Check prior to analysis</li> </ul> | ICAL: Prior to sample analysis                                | Meet SPCC/CCC criteria<br>%RSD≤15% each analyte.<br>or grand mean<br>%RSD≤15% with no analyte >30% RSD<br>or linear regression<br>R≥0.995<br>or non-linear regression<br>R <sup>2</sup> ≥0.995 | Perform maintenance and recalibrate            | Analyst | 5035A/8260B |
|       |                                                |                                                                                                                                                                                                                                                            | Tune Check prior to analysis                                  | Tune Check; Method Requirements                                                                                                                                                                |                                                |         |             |
|       |                                                |                                                                                                                                                                                                                                                            | ICV: Second source standard immediately following calibration | ICV: 25% of ICAL Curve                                                                                                                                                                         | Perform maintenance and recalibrate            |         |             |
|       |                                                |                                                                                                                                                                                                                                                            | CCV: Daily before sample analysis and every 12 hours          | CCV: Meet SPCC/CCC criteria, ±20% of ICAL curve                                                                                                                                                | Correct problem, re-run CCV and/or recalibrate |         |             |

(a) Daily checks only are listed. For further scheduled maintenance procedures, check the laboratory SOP/QSM.

- NOTE: SOP = Standard operating procedure.  
 GC = Gas chromatography.  
 MS = Mass spectrometry.  
 ICAL = Initial calibration.  
 SPCC = System performance check compound.  
 CCC = Calibration check compound.  
 RSD = Relative standard deviation.  
 ICV = Initial calibration verification.  
 CCV = Continuing calibration verification.  
 SIM = Selective ion monitoring.

TABLE 13-1-S9 FIXED LABORATORY ANALYTICAL QUALITY CONTROL SAMPLE SUMMARY –FOR SITE 9

| Laboratory Quality Control                                                                                                                                             | Frequency/Number                       | Method/SOP Quality Control Acceptance Limits | Corrective Action                                                                                                                                                                                                                                     | Person(s) Responsible for Corrective Action | Data Quality Indicator      | Measurement Performance Criteria       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------|----------------------------------------|
| <b>VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER (SW-846 8260B SIM) (ANALYTICAL SOP TO BE PROVIDED BY SELECTED LABORATORY)</b>                                             |                                        |                                              |                                                                                                                                                                                                                                                       |                                             |                             |                                        |
| Method Blank                                                                                                                                                           | 1 per analytical batch                 | No analytes $\geq$ QL                        | Re-analyze before sample analysis. If corrective action is ineffective, flag data in final report.                                                                                                                                                    | Analyst                                     | Accuracy/bias contamination | No analytes $\geq$ QL                  |
| Reagent Blank                                                                                                                                                          | NA                                     | NA                                           | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                                     |
| Storage Blank                                                                                                                                                          | NA                                     | NA                                           | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                                     |
| Instrument Blank                                                                                                                                                       | Per Method and Data Quality Objectives | No carry-over<br>No analytes $\geq$ QL       | Re-analyze before sample analysis. If corrective action is ineffective, flag data in final report.                                                                                                                                                    | Analyst                                     | Accuracy/bias contamination | No carry-over<br>No analytes $\geq$ QL |
| Laboratory Duplicate                                                                                                                                                   | NA                                     | NA                                           | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                                     |
| Laboratory Matrix Spike                                                                                                                                                | 1 per 20 samples                       | See Tables 7-3-S9 and 12-1-S9                | Assess data to determine whether there is a matrix effect or analytical error. Analyze LCS for failed target analytes. Potential matrix effects should be communicated to the prime contractor so an evaluation can be made with respect to the PQLs. | Analyst                                     | Precision and bias          | See Tables 7-3-S9 and 12-1-S9          |
| Matrix Spike Duplicates                                                                                                                                                | 1 per 20 samples                       | See Tables 7-3-S9 and 12-1-S9                | Assess data to determine whether there is a matrix effect or analytical error. Analyze LCS for failed target analytes. Potential matrix effects should be communicated to the prime contractor so an evaluation can be made with respect to the PQLs. | Analyst                                     | Precision and bias          | See Tables 7-3-S9 and 12-1-S9          |
| Laboratory Control Sample                                                                                                                                              | 1 per analytical batch                 | See Tables 7-3-S9 and 12-1-S9                | Correct problem, then re-analyze. If still out, re-prepare and re-analyze the LCS and all samples in the affected batch.                                                                                                                              | Analyst                                     | Bias                        | See Tables 7-3-S9 and 12-1-S9          |
| Laboratory fortified blank                                                                                                                                             | NA                                     | NA                                           | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                                     |
| NOTE: SOP = Standard operating procedure.<br>QL = Quantitation limit.<br>NA = Not applicable.<br>LCS = Laboratory control sample.<br>PQS = Project quantitation limit. |                                        |                                              |                                                                                                                                                                                                                                                       |                                             |                             |                                        |

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| Laboratory Quality Control                                                                                                             | Frequency/Number                                        | Method/SOP Quality Control Acceptance Limits                                          | Corrective Action                                                                                                                                                                                                                                     | Person(s) Responsible for Corrective Action | Data Quality Indicator      | Measurement Performance Criteria                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------|---------------------------------------------------------------------------------------|
| <b>VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER (SW-846 8260B SIM) (ANALYTICAL SOP TO BE PROVIDED BY SELECTED LABORATORY) (Continued)</b> |                                                         |                                                                                       |                                                                                                                                                                                                                                                       |                                             |                             |                                                                                       |
| Surrogates                                                                                                                             | Every sample, spiked sample, standard, and method blank | %R = 70-130                                                                           | Correct problem, then re-prepare and re-analyze the affected samples. If matrix effect is verified, discuss in case narrative.                                                                                                                        | Analyst                                     | Bias                        | %R = 70-130                                                                           |
| Internal Standards                                                                                                                     | Each sample                                             | Retention time < 30 seconds from ICAL standard<br>Response to be -50 to +100% of CCAL | Inspect mass spectrometer and GC for malfunctioning, mandatory re-analysis of associated samples.                                                                                                                                                     | Analyst                                     | Precision and accuracy/bias | Retention time < 30 seconds from ICAL standard<br>Response to be -50 to +100% of CCAL |
| <b>VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER (SW-846 8260B) (ANALYTICAL SOP TO BE PROVIDED BY SELECTED LABORATORY)</b>                 |                                                         |                                                                                       |                                                                                                                                                                                                                                                       |                                             |                             |                                                                                       |
| Method Blank                                                                                                                           | 1 per analytical batch and daily after calibration      | No analytes ≥QL                                                                       | Re-analyze before sample analysis. If corrective action is ineffective, flag data in final report.                                                                                                                                                    | Analyst                                     | Accuracy/bias contamination | No analytes ≥QL                                                                       |
| Reagent Blank                                                                                                                          | NA                                                      | NA                                                                                    | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                                                                                    |
| Storage Blank                                                                                                                          | NA                                                      | NA                                                                                    | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                                                                                    |
| Instrument Blank                                                                                                                       | Per Method and Data Quality Objectives                  | No carry-over<br>No analytes ≥QL                                                      | Re-analyze before sample analysis. If corrective action is ineffective, flag data in final report.                                                                                                                                                    | Analyst                                     | Accuracy/bias contamination | No carry-over<br>No analytes ≥QL                                                      |
| Laboratory Duplicate                                                                                                                   | NA                                                      | NA                                                                                    | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                                                                                    |
| Laboratory Matrix Spike                                                                                                                | 1 per 20 samples                                        | See Tables 7-3-S9 and 12-1-S9                                                         | Assess data to determine whether there is a matrix effect or analytical error. Analyze LCS for failed target analytes. Potential matrix effects should be communicated to the prime contractor so an evaluation can be made with respect to the PQLs. | Analyst                                     | Bias                        | See Tables 7-3-S9 and 12-1-S9                                                         |
| Matrix Spike Duplicates                                                                                                                | 1 per 20 samples                                        | See Tables 7-3-S9 and 12-1-S9                                                         | Assess data to determine whether there is a matrix effect or analytical error. Analyze LCS for failed target analytes. Potential matrix effects should be communicated to the prime contractor so an evaluation can be made with respect to the PQLs. | Analyst                                     | Precision and bias          | See Tables 7-3-S9 and 12-1-S9                                                         |
| NOTE: SIM = Selective ion monitoring.<br>%R = Percent recovery.<br>ICAL = Initial calibration.<br>CCAL = Continuing calibration.       |                                                         |                                                                                       |                                                                                                                                                                                                                                                       |                                             |                             |                                                                                       |

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| Laboratory Quality Control                                                                                                                                                                | Frequency/Number                       | Method/SOP Quality Control Acceptance Limits   | Corrective Action                                                                                                                                                                                                                                    | Person(s) Responsible for Corrective Action | Data Quality Indicator      | Measurement Performance Criteria               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------|------------------------------------------------|
| <b>VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER (SW-846 8260B) (ANALYTICAL SOP TO BE PROVIDED BY SELECTED LABORATORY) (Continued)</b>                                                        |                                        |                                                |                                                                                                                                                                                                                                                      |                                             |                             |                                                |
| Laboratory Control Sample                                                                                                                                                                 | 1 per analytical batch                 | See Tables 7-3-S9 and 12-1-S9                  | Correct problem, then re-analyze. If still out, re-prepare and re-analyze the LCS and all samples in the affected batch.                                                                                                                             | Analyst                                     | Bias                        | See Tables 7-3-S9 and 12-1-S9                  |
| Laboratory Fortified Blank                                                                                                                                                                | NA                                     | NA                                             | NA                                                                                                                                                                                                                                                   | NA                                          | NA                          | NA                                             |
| Surrogates                                                                                                                                                                                | 4 per sample                           | See Table 7-3-S9                               | Correct problem, then re-prepare and re-analyze the affected samples. If matrix effect is verified, discuss in case narrative.                                                                                                                       | Analyst                                     | Bias                        | See Table 7-3-S9                               |
| Internal Standards                                                                                                                                                                        | 3 per sample                           | Retention time < 30 seconds from ICAL standard | Inspect mass spectrometer and GC for malfunctioning, mandatory re-analysis of associated samples.                                                                                                                                                    | Analyst                                     | Precision and accuracy/bias | Retention time < 30 seconds from ICAL standard |
| <b>VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER (SW-846 5030B/ U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 1 SOP EIASOP – VOADIOX3) (SAMPLING SOP TO BE PROVIDED BY SELECTED LABORATORY)</b> |                                        |                                                |                                                                                                                                                                                                                                                      |                                             |                             |                                                |
| Method Blank                                                                                                                                                                              | Before analysis and every 12 hours     | No analytes $\geq$ QL                          | Check blank source.<br>Check reagent source.<br>Bake trap.<br>Clean purge vessel.<br>Rinse syringes.                                                                                                                                                 | Analyst                                     | Accuracy/bias contamination | No analytes $\geq$ QL                          |
| Reagent Blank                                                                                                                                                                             | NA                                     | NA                                             | NA                                                                                                                                                                                                                                                   | NA                                          | NA                          | NA                                             |
| Storage Blank                                                                                                                                                                             | NA                                     | NA                                             | NA                                                                                                                                                                                                                                                   | NA                                          | NA                          | NA                                             |
| Instrument Blank                                                                                                                                                                          | Per Method and Data Quality Objectives | No carry-over                                  | Re-analyze before sample analysis. If corrective action is ineffective, flag data in final report.                                                                                                                                                   | Analyst                                     | Accuracy/bias contamination | No carry-over                                  |
| Laboratory Duplicate                                                                                                                                                                      | NA                                     | NA                                             | NA                                                                                                                                                                                                                                                   | NA                                          | NA                          | NA                                             |
| Laboratory Matrix Spike                                                                                                                                                                   | 1 per 20 samples                       | See Table 7-3-S9                               | Asses data to determine whether there is a matrix effect or analytical error. Analyze LCS for failed target analytes. Potential matrix effects should be communicated to the prime contractor so an evaluation can be made with respect to the PQLs. | Analyst                                     | Precision and bias          | See Table 7-3-S9                               |

| Laboratory Quality Control                                                                                              | Frequency/Number                                        | Method/SOP Quality Control Acceptance Limits                                         | Corrective Action                                                                                                                                                                                                                                    | Person(s) Responsible for Corrective Action | Data Quality Indicator      | Measurement Performance Criteria                                                     |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------|
| Matrix Spike Duplicates                                                                                                 | 1 per 20 samples                                        | See Table 7-3-S9                                                                     | Asses data to determine whether there is a matrix effect or analytical error. Analyze LCS for failed target analytes. Potential matrix effects should be communicated to the prime contractor so an evaluation can be made with respect to the PQLs. | Analyst                                     | Precision and bias          | See Tables 7-3-S9 and 12-1-S9                                                        |
| Laboratory Control Sample                                                                                               | Before analysis and every 12 hours                      | See Table 7-3-S9                                                                     | Check peak integration. Test for leaks. Repeat.                                                                                                                                                                                                      | Analyst                                     | Bias                        | See Tables 7-3-S9 and 12-1-S9                                                        |
| Laboratory Fortified Blank                                                                                              | NA                                                      | NA                                                                                   | NA                                                                                                                                                                                                                                                   | NA                                          | NA                          | NA                                                                                   |
| Surrogates                                                                                                              | Every sample, spiked sample, standard, and method blank | See Table 7-3-S9                                                                     | Correct problem, then re-prepare and re-analyze the affected samples. If matrix effect is verified, discuss in case narrative.                                                                                                                       | Analyst                                     | Bias                        | See Table 7-3-S9                                                                     |
| Internal Standards                                                                                                      | Each sample                                             | Retention time <30 seconds from ICAL standard<br>Response to be -50 to +200% of CCAL | Inspect mass spectrometer and gas chromatograph for malfunctioning, mandatory re-analysis of associated samples.                                                                                                                                     | Analyst                                     | Precision and accuracy/bias | Retention time <30 seconds from ICAL standard<br>Response to be -50 to +200% of CCAL |
| <b>TCLP or TAL METALS IN GROUNDWATER (SW-846 6010B/6020/7470A) (SAMPLING SOP TO BE PROVIDED BY SELECTED LABORATORY)</b> |                                                         |                                                                                      |                                                                                                                                                                                                                                                      |                                             |                             |                                                                                      |
| Method Blank                                                                                                            | 1 per digestion batch                                   | No analytes ≥QL                                                                      | Re-analyze before sample analysis. If corrective action is ineffective, flag data in final report.                                                                                                                                                   | Analyst                                     | Accuracy/bias contamination | No analytes ≥QL                                                                      |
| Reagent Blank                                                                                                           | NA                                                      | NA                                                                                   | NA                                                                                                                                                                                                                                                   | NA                                          | NA                          | NA                                                                                   |
| Storage Blank                                                                                                           | NA                                                      | NA                                                                                   | NA                                                                                                                                                                                                                                                   | NA                                          | NA                          | NA                                                                                   |
| Instrument Blank                                                                                                        | NA                                                      | NA                                                                                   | NA                                                                                                                                                                                                                                                   | NA                                          | NA                          | NA                                                                                   |
| Laboratory Duplicate                                                                                                    | 1 per 20 samples                                        | ≤ 20% RPD                                                                            | Flag final report                                                                                                                                                                                                                                    | Analyst                                     | Precision                   | ≤ 20% RPD                                                                            |
| Laboratory Matrix Spike                                                                                                 | 1 per 20 samples                                        | 75-125%R                                                                             | Perform post-spike, flag final report.                                                                                                                                                                                                               | Analyst                                     | Bias                        | 75-125%                                                                              |
| Matrix Spike Duplicates                                                                                                 | NA                                                      | NA                                                                                   | NA                                                                                                                                                                                                                                                   | NA                                          | NA                          | NA                                                                                   |
| Laboratory Control Sample                                                                                               | 1 per digestion batch                                   | See Tables 7-3-S9 and 12-1-S9                                                        | Correct problem, then re-analyze. If still out, re-prepare and re-analyze the LCS and all samples in the affected batch.                                                                                                                             | Analyst                                     | Bias                        | See Tables 7-3-S9 and 12-1-S9                                                        |
| Laboratory fortified blank                                                                                              | NA                                                      | NA                                                                                   | NA                                                                                                                                                                                                                                                   | NA                                          | NA                          | NA                                                                                   |
| Surrogates                                                                                                              | NA                                                      | NA                                                                                   | NA                                                                                                                                                                                                                                                   | NA                                          | NA                          | NA                                                                                   |
| Internal Standards                                                                                                      | NA                                                      | NA                                                                                   | NA                                                                                                                                                                                                                                                   | NA                                          | NA                          | NA                                                                                   |

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| Laboratory Quality Control                                                                                                          | Frequency/Number       | Method/SOP Quality Control Acceptance Limits                                                                                                                                                        | Corrective Action                                                                                                                                                                                                                                     | Person(s) Responsible for Corrective Action | Data Quality Indicator      | Measurement Performance Criteria                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------|
| Other: Serial Dilution                                                                                                              | 1 per digestion batch  | If the analyte concentration is sufficiently high (minimally, a factor of 10 above the detection limit after dilution); fivefold dilution should agree within $\pm 10\%$ of original determination. | Flag final report.                                                                                                                                                                                                                                    | Analyst                                     | Matrix effects              | If percent difference is greater than 10% and the associated results $\geq 50X$ IDL |
| <b>TCLP or TCL SEMIVOLATILE ORGANIC COMPOUNDS IN GROUNDWATER SW-846 8270C) (SAMPLING SOP TO BE PROVIDED BY SELECTED LABORATORY)</b> |                        |                                                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                             |                             |                                                                                     |
| Method Blank                                                                                                                        | 1 per extraction batch | No analytes $\geq QL$                                                                                                                                                                               | Re-analyze before sample analysis. If corrective action is ineffective, flag data in final report.                                                                                                                                                    | Analyst                                     | Accuracy/bias contamination | No analytes $\geq QL$                                                               |
| Reagent Blank                                                                                                                       | NA                     | NA                                                                                                                                                                                                  | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                                                                                  |
| Storage Blank                                                                                                                       | NA                     | NA                                                                                                                                                                                                  | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                                                                                  |
| Instrument Blank                                                                                                                    | NA                     | NA                                                                                                                                                                                                  | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                                                                                  |
| Laboratory Duplicate                                                                                                                | NA                     | NA                                                                                                                                                                                                  | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                                                                                  |
| Laboratory Matrix Spike                                                                                                             | 1 per 20 samples       | See Tables 7-3-S9 and 12-1-S9                                                                                                                                                                       | Assess data to determine whether there is a matrix effect or analytical error. Analyze LCS for failed target analytes. Potential matrix effects should be communicated to the prime contractor so an evaluation can be made with respect to the PQLs. | Analyst                                     | Bias                        | See Tables 7-3-S9 and 12-1-S9                                                       |
| Matrix Spike Duplicates                                                                                                             | 1 per 20 samples       | RPD < 20%                                                                                                                                                                                           | Assess data to determine whether there is a matrix effect or analytical error. Analyze LCS for failed target analytes. Potential matrix effects should be communicated to the prime contractor so an evaluation can be made with respect to the PQLs. | Analyst                                     | Precision and bias          | RPD < 20%                                                                           |
| Laboratory Control Sample                                                                                                           | 1 per analytical batch | See Tables 7-3-S9 and 12-1-S9                                                                                                                                                                       | Correct problem, then re-analyze. If still out, re-prepare and re-analyze the LCS and all samples in the affected batch.                                                                                                                              | Analyst                                     | Bias                        | See Tables 7-3-S9 and 12-1-S9                                                       |
| Laboratory fortified blank                                                                                                          | NA                     | NA                                                                                                                                                                                                  | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                                                                                  |

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| Laboratory Quality Control                                                                                       | Frequency/Number                                                                                            | Method/SOP Quality Control Acceptance Limits | Corrective Action                                                                                                                                                                                                                                     | Person(s) Responsible for Corrective Action | Data Quality Indicator      | Measurement Performance Criteria |
|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------|----------------------------------|
| Surrogates                                                                                                       | Nitrobenzene-d5<br>2-Fluorobiphenyl<br>Terphenyl-d14<br>Phenol-d5<br>2-Fluorophenol<br>2,4,6-Tribromophenol | See Table 7-3-S9                             | Correct problem, then re-prepare and re-analyze the affected samples. If matrix effect is verified, discuss in case narrative.                                                                                                                        | Analyst                                     | Bias                        | See Table 7-3-S9                 |
| Internal Standards                                                                                               | NA                                                                                                          | NA                                           | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                               |
| NOTE: RPD = Relative percent difference.                                                                         |                                                                                                             |                                              |                                                                                                                                                                                                                                                       |                                             |                             |                                  |
| <b>DRO IN GROUNDWATER and SOIL/SEDIMENTS (MEDEP 4.1.25) (SAMPLING SOP TO BE PROVIDED BY SELECTED LABORATORY)</b> |                                                                                                             |                                              |                                                                                                                                                                                                                                                       |                                             |                             |                                  |
| Method Blank                                                                                                     | 1 per extraction batch                                                                                      | No analytes $\geq$ QL                        | Re-analyze before sample analysis. If corrective action is ineffective, flag data in final report.                                                                                                                                                    | Analyst                                     | Accuracy/bias contamination | No analytes $\geq$ QL            |
| Reagent Blank                                                                                                    | NA                                                                                                          | NA                                           | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                               |
| Storage Blank                                                                                                    | NA                                                                                                          | NA                                           | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                               |
| Instrument Blank                                                                                                 | NA                                                                                                          | NA                                           | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                               |
| Laboratory Duplicate                                                                                             | NA                                                                                                          | NA                                           | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                               |
| Laboratory Matrix Spike                                                                                          | 1 per 20 samples                                                                                            | See Tables 7-3-S9 and 12-1-S9                | Assess data to determine whether there is a matrix effect or analytical error. Analyze LCS for failed target analytes. Potential matrix effects should be communicated to the prime contractor so an evaluation can be made with respect to the PQLs. | Analyst                                     | Bias                        | See Tables 7-3-S9 and 12-1-S9    |
| Matrix Spike Duplicates                                                                                          | 1 per 20 samples                                                                                            | RPD < 20%                                    | Assess data to determine whether there is a matrix effect or analytical error. Analyze LCS for failed target analytes. Potential matrix effects should be communicated to the prime contractor so an evaluation can be made with respect to the PQLs. | Analyst                                     | Precision and bias          | RPD < 20%                        |
| Laboratory Control Sample                                                                                        | 1 per analytical batch                                                                                      | See Tables 7-3-S9 and 12-1-S9                | Correct problem, then re-analyze. If still out, re-prepare and re-analyze the LCS and all samples in the affected batch.                                                                                                                              | Analyst                                     | Bias                        | See Tables 7-3-S9 and 12-1-S9    |
| Laboratory fortified blank                                                                                       | NA                                                                                                          | NA                                           | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                               |

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| Laboratory Quality Control                                                                                                    | Frequency/Number                                   | Method/SOP Quality Control Acceptance Limits                                                     | Corrective Action                                                                                                                                                                                                                                     | Person(s) Responsible for Corrective Action | Data Quality Indicator      | Measurement Performance Criteria                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------|
| Surrogates                                                                                                                    | p-Terphenyl                                        | See Table 7-3-S9                                                                                 | Correct problem, then re-prepare and re-analyze the affected samples. If matrix effect is verified, discuss in case narrative.                                                                                                                        | Analyst                                     | Bias                        | See Table 7-3-S9                                                                                 |
| Internal Standards                                                                                                            | NA                                                 | NA                                                                                               | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                                                                                               |
| <b>VOLATILE ORGANIC COMPOUNDS IN SOILS/SEDIMENT (SW-846 5035A/8260B) (SAMPLING SOP TO BE PROVIDED BY SELECTED LABORATORY)</b> |                                                    |                                                                                                  |                                                                                                                                                                                                                                                       |                                             |                             |                                                                                                  |
| Method Blank                                                                                                                  | 1 per analytical batch and daily after calibration | No analytes $\geq$ QL                                                                            | Re-analyze before sample analysis. If corrective action is ineffective, flag data in final report.                                                                                                                                                    | Analyst                                     | Accuracy/bias contamination | No analytes $\geq$ QL                                                                            |
| Reagent Blank                                                                                                                 | NA                                                 | NA                                                                                               | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                                                                                               |
| Storage Blank                                                                                                                 | NA                                                 | NA                                                                                               | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                                                                                               |
| Instrument Blank                                                                                                              | Per Method and Data Quality Objectives             | No carry-over<br>No analytes $\geq$ QL                                                           | Re-analyze before sample analysis. If corrective action is ineffective, flag data in final report.                                                                                                                                                    | Analyst                                     | Accuracy/bias contamination | No carry-over<br>No analytes $\geq$ QL                                                           |
| Laboratory Duplicate                                                                                                          | NA                                                 | NA                                                                                               | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                                                                                               |
| Laboratory Matrix Spike                                                                                                       | 1 per 20 samples                                   | See Tables 7-3-S9 and 12-1-S9                                                                    | Assess data to determine whether there is a matrix effect or analytical error. Analyze LCS for failed target analytes. Potential matrix effects should be communicated to the prime contractor so an evaluation can be made with respect to the PQLs. | Analyst                                     | Bias                        | See Tables 7-3-S9 and 12-1-S9                                                                    |
| Matrix Spike Duplicates                                                                                                       | 1 per 20 samples                                   | See Tables 7-3-S9 and 12-1-S9                                                                    | Assess data to determine whether there is a matrix effect or analytical error. Analyze LCS for failed target analytes. Potential matrix effects should be communicated to the prime contractor so an evaluation can be made with respect to the PQLs. | Analyst                                     | Precision and bias          | See Tables 7-3-S9 and 12-1-S9                                                                    |
| Laboratory Control Sample                                                                                                     | 1 per analytical batch                             | See Tables 7-3-S9 and 12-1-S9                                                                    | Correct problem, then re-analyze. If still out, re-prepare and re-analyze the LCS and all samples in the affected batch.                                                                                                                              | Analyst                                     | Bias                        | See Tables 7-3-S9 and 12-1-S9                                                                    |
| Laboratory fortified blank                                                                                                    | NA                                                 | NA                                                                                               | NA                                                                                                                                                                                                                                                    | NA                                          | NA                          | NA                                                                                               |
| Surrogates                                                                                                                    | 4 per sample                                       | Toluene-d8; %R = 84-138<br>Bromofluorobenzene; %R = 59-113<br>1,2-Dichloroethane-d4; %R = 76-114 | Correct problem, then re-prepare and re-analyze the affected samples. If matrix effect is verified, discuss in case narrative.                                                                                                                        | Analyst                                     | Bias                        | Toluene-d8; %R = 84-138<br>Bromofluorobenzene; %R = 59-113<br>1,2-Dichloroethane-d4; %R = 76-114 |

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| Laboratory Quality Control | Frequency/Number | Method/SOP Quality Control Acceptance Limits   | Corrective Action                                                                                 | Person(s) Responsible for Corrective Action | Data Quality Indicator      | Measurement Performance Criteria               |
|----------------------------|------------------|------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------|------------------------------------------------|
| Internal Standards         | 3 per sample     | Retention time < 30 seconds from ICAL standard | Inspect mass spectrometer and GC for malfunctioning, mandatory re-analysis of associated samples. | Analyst                                     | Precision and accuracy/bias | Retention time < 30 seconds from ICAL standard |

TABLE 19-1-S9 DATA VALIDATION SUMMARY FOR SITE 9

| Medium/<br>Matrix                            | Analytical Parameter                                                                                                  | Validation Criteria                                                                                                                                                        | Validation<br>Criteria<br>Modified <sup>(a)</sup> | Data<br>Validation<br>Tier Level | Modified<br>Tier Level<br>Used | Data Screening Validator<br>(name, title, and<br>organizational affiliation)                                            | Responsibility for Analytical<br>Data Quality Review (name,<br>title, and organizational<br>affiliation) |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Groundwater                                  | Target Compound List<br>volatile organics<br>(5030B/8260B/8260B<br>SIM)                                               | The data will be screened using the most recent<br>version of the EPA Region 1 Northeast data<br>validation functional guidelines for evaluating<br>environmental analyses | SW-846                                            | II                               | Not<br>applicable              | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior<br>Scientist<br>S. Naguid (H&S<br>Environmental) Senior<br>Chemist | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior Scientist<br>S. Naguib (H&S Environmental)          |
| Groundwater                                  | Target Analyte List<br>metals (3010A/<br>6010B/6020/7041/<br>7060A/7421/7740/7841/<br>7470A)                          | The data will be screened using the most recent<br>version of the EPA Region 1 Northeast data<br>validation functional guidelines for evaluating<br>environmental analyses | SW-846                                            | II                               | Not<br>applicable              | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior<br>Scientist<br>S. Naguid (H&S<br>Environmental) Senior<br>Chemist | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior Scientist<br>S. Naguib (H&S Environmental)          |
| Groundwater                                  | Target Analyte List<br>metals (SW-846-<br>3510C/3520C/8270C)                                                          | The data will be screened using the most recent<br>version of the EPA Region 1 Northeast data<br>validation functional guidelines for evaluating<br>environmental analyses | SW-846                                            | II                               | Not<br>applicable              | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior<br>Scientist<br>S. Naguid (H&S<br>Environmental) Senior<br>Chemist | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior Scientist<br>S. Naguib (H&S Environmental)          |
| Groundwater                                  | Volatile Organic<br>Compounds (5030B/<br>U.S. Environmental<br>Protection Agency<br>Region 1 SOP EIASOP<br>- VOADIOX3 | The data will be screened using the most recent<br>version of the EPA Region 1 Northeast data<br>validation functional guidelines for evaluating<br>environmental analyses | EIASOP –<br>VOADIO<br>X3                          | II                               | Not<br>applicable              | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior<br>Scientist<br>S. Naguid (H&S<br>Environmental) Senior<br>Chemist | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior Scientist<br>S. Naguib (H&S Environmental)          |
| Groundwater                                  | MEDEP DRO<br>(ME 4.1.25)                                                                                              | The data will be screened using the most recent<br>version of the EPA Region 1 Northeast data<br>validation functional guidelines for evaluating<br>environmental analyses | ME 4.1.25                                         | II                               | Not<br>applicable              | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior<br>Scientist<br>S. Naguid (H&S<br>Environmental) Senior<br>Chemist | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior Scientist<br>S. Naguib (H&S Environmental)          |
| Groundwater<br>(Passive<br>Diffusion<br>Bag) | Target Compound List<br>volatile organics<br>(5030B/8260B)                                                            | The data will be screened using the most recent<br>version of the EPA Region 1 Northeast data<br>validation functional guidelines for evaluating<br>environmental analyses | SW-846                                            | II                               | Not<br>applicable              | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior<br>Scientist<br>S. Naguid (H&S<br>Environmental) Senior<br>Chemist | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior Scientist<br>S. Naguib (H&S Environmental)          |

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| Medium/<br>Matrix | Analytical Parameter                                                   | Validation Criteria                                                                                                                                                        | Validation<br>Criteria<br>Modified <sup>(a)</sup> | Data<br>Validation<br>Tier Level | Modified<br>Tier Level<br>Used | Data Screening Validator<br>(name, title, and<br>organizational affiliation)                                            | Responsibility for Analytical<br>Data Quality Review (name,<br>title, and organizational<br>affiliation) |
|-------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Surface<br>Water  | Target Compound List<br>volatile organics<br>(5030B/8260B)             | The data will be screened using the most recent<br>version of the EPA Region 1 Northeast data<br>validation functional guidelines for evaluating<br>environmental analyses | SW-846                                            | II                               | Not<br>applicable              | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior<br>Scientist<br>S. Naguid (H&S<br>Environmental) Senior<br>Chemist | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior Scientist<br>S. Naguib (H&S Environmental)          |
| Leachate<br>Seep  | Target Compound List<br>volatile organics<br>(5030B/8260B)             | The data will be screened using the most recent<br>version of the EPA Region 1 Northeast data<br>validation functional guidelines for evaluating<br>environmental analyses | SW-846                                            | II                               | Not<br>applicable              | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior<br>Scientist<br>S. Naguid (H&S<br>Environmental) Senior<br>Chemist | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior Scientist<br>S. Naguib (H&S Environmental)          |
| Soil/<br>Sediment | Target Compound List<br>volatile organics<br>(1311/5035A/8260B)        | The data will be screened using the most recent<br>version of the EPA Region 1 Northeast data<br>validation functional guidelines for evaluating<br>environmental analyses | SW-846                                            | II                               | Not<br>applicable              | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior<br>Scientist<br>S. Naguid (H&S<br>Environmental) Senior<br>Chemist | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior Scientist<br>S. Naguib (H&S Environmental)          |
| Soil/<br>Sediment | TCLP Semivolatile<br>Organic Compounds<br>(1311/3510C/3520C/827<br>0C) | The data will be screened using the most recent<br>version of the EPA Region 1 Northeast data<br>validation functional guidelines for evaluating<br>environmental analyses | SW-846                                            | II                               | Not<br>applicable              | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior<br>Scientist<br>S. Naguid (H&S<br>Environmental) Senior<br>Chemist | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior Scientist<br>S. Naguib (H&S Environmental)          |
| Soil/<br>Sediment | TCLP metals<br>(1311/3010A/6010B/74<br>71A/6020)                       | The data will be screened using the most recent<br>version of the EPA Region 1 Northeast data<br>validation functional guidelines for evaluating<br>environmental analyses | SW-846                                            | MEDEP<br>DRO                     | (ME<br>4.1.25)                 | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior<br>Scientist<br>S. Naguid (H&S<br>Environmental) Senior<br>Chemist | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior Scientist<br>S. Naguib (H&S Environmental)          |
| Soil/<br>Sediment | TPH DRO (ME 4.1.25)                                                    | The data will be screened using the most recent<br>version of the EPA Region 1 Northeast data<br>validation functional guidelines for evaluating<br>environmental analyses | ME 4.1.25                                         | II                               | Not<br>applicable              | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior<br>Scientist<br>S. Naguid (H&S<br>Environmental) Senior<br>Chemist | S. Pullar (ASW), Scientist<br>J. Kiker (ECC), Senior Scientist<br>S. Naguib (H&S Environmental)          |

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| Medium/<br>Matrix                                                                                                                                                                                                                                                                                                                                                                   | Analytical Parameter | Validation Criteria | Validation<br>Criteria<br>Modified <sup>(a)</sup> | Data<br>Validation<br>Tier Level | Modified<br>Tier Level<br>Used | Data Screening Validator<br>(name, title, and<br>organizational affiliation) | Responsibility for Analytical<br>Data Quality Review (name,<br>title, and organizational<br>affiliation) |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|---------------------------------------------------|----------------------------------|--------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| (a) The EPA validation guidelines were developed for Contract Laboratory Protocols analytical methods. The project samples will be analyzed by SW-846 analytical methods, and thus, the validation process requires modification so the validation criteria relate to the SW-846, dioxane, and MEDEP methods. All project data will be validated per the requirements listed above. |                      |                     |                                                   |                                  |                                |                                                                              |                                                                                                          |
| NOTE: SIM = Selective ion monitoring.<br>EPA = U.S. Environmental Protection Agency.<br>ECC = Environmental Chemical Corporation.<br>ASW = Air Soil and Water                                                                                                                                                                                                                       |                      |                     |                                                   |                                  |                                |                                                                              |                                                                                                          |

**APPENDIX F**

**RESPONSES TO REGULATORY COMMENTS RECEIVED ON THE SITE 9  
SOILS REVISIONS TO THE FINAL BASE-WIDE QUALITY ASSURANCE  
PLAN (ECC/EA 2006)**

**COMMENT LETTER FROM US ENVIRONMENTAL PROTECTION AGENCY  
TO NAVY REGARDING SITE 9 SOILS REVISIONS TO THE FINAL BASE-  
WIDE QUALITY ASSURANCE PLAN (ECC/EA 2006)**

From: Jackson Kiker <[JKiker@ecc.net](mailto:JKiker@ecc.net)> 09/12/2007 06:20 AM MST

Hi Christine,

The NAS Brunswick Basewide QAPP Site 09 updates to analytical methods are for solids  
- soils/sediments. The Tables will be re-titled as soils/sediments.

Regards,  
Jackson

Jackson Kiker  
Senior Chemist  
ECC  
33 Boston Post Road West  
Suite 340  
Marlborough, MA 01752  
Phone (508) 229-2270 Ext 124  
Fax (508) 229-7737

From: Christine Williams <[williams.christine@epamail.epa.gov](mailto:williams.christine@epamail.epa.gov)> 9/11/2007 4:21 PM

should the tables that deal with sediment be labeled sediment/soils?

if so no further comments.

Christine A.P. Williams  
Federal Facility Superfund Section  
US EPA New England  
Suite 1100 (HBT)  
1 Congress Street  
Boston, MA 02114-2023

phone - (617) 918-1384  
fax - (617) 918- 0384  
e-mail - [williams.christine@epa.gov](mailto:williams.christine@epa.gov)

September 18, 2007

Mr. Orlando Monaco  
Department of Navy  
Base Realignment and Closure  
Program Management Office-Northeast  
4911 South Broad Street  
Philadelphia, PA 19112-1303

Re: Site 9, Quality Assurance Project Plan Addendum  
Naval Air Station, Brunswick, Maine

Dear Mr. Monaco:

Pursuant to Section VI of the Naval Air Station, Brunswick, Maine Federal Facility Agreement (Oct 1990), as amended, the Maine Department of Environmental Protection (MEDEP) has reviewed the proposed addendum to the Base-Wide QAPP for Site 9 soils received via secure download on August 17, 2007, from Environmental Chemical Corporation. Based on that review MEDEP has the following comments and issues.

1. Table 7-1-S9 page 4 of 5 appears to have the wrong headers. The top section [starting with 2-hexanone] headers labeled MEG and MCL should really be SWQC and NWQC. Please correct or advise.
2. Table 7-2-S9 gives PQL in ug/Kg and PAL in mg/Kg. It would be more useful to have these two limits given in the same units. Also, please note that the PQL for 2,4-Dinitrotoluene and hexachlorobenzene on page 2 of 3 are higher than PAL.
3. Table 7-3-S9 page 6 of 6 includes accuracy criteria for pentachlorophenol of 5-125% R. Accuracy criteria below 10% R cannot be accepted.
4. Table 7-4-S9 MS/MSD measurement performance criteria should reference limits set in table 7-3.
5. Table 12-1-S9 page 3 of 4 analytical accuracy/bias criteria for pentachlorophenol and phenol are unacceptable. Accuracy criteria below 10% R cannot be accepted.
6. Table 12-2-S9 page 2 of 2 analytical includes accuracy criteria for pentachlorophenol of 5-125% R. Accuracy criteria below 10% R cannot be accepted.

Page 2 of 2

7. Table 12-4-S9 does not include MS tuning criteria for methods EPA 8260, EIASOP-VOADIOX3 or EPA 8270. Please include MS tune criteria.

Please contact me at (207) 287-7713 or [claudia.b.sait@maine.gov](mailto:claudia.b.sait@maine.gov), if you have any questions or comments.

Respectfully,

Claudia Sait  
Project Manager-Federal Facilities  
Bureau of Remediation & Waste Management

Cf: File

Chris Evans-MEDEP  
Dale Mosher-BNAS  
Christine Williams-EPA  
Mike Daly-EPA (email only)  
Carolyn Lepage-Lepage Environmental  
Al Easterday-ECC  
Ed Benedikt  
David Chipman (email only)  
Jeff Donovan-ECC (email only)  
Carol Warren-(email only)  
Catherine Guido-ECC (email only)  
Gina Calderone-ECC (email only)  
Neal Williams-ECC (email only)  
Mary Johanson-ECC (email only)

October 31, 2007

Mr. Orlando Monaco  
Department of Navy  
Base Realignment and Closure  
Program Management Office-Northeast  
4911 South Broad Street  
Philadelphia, PA 19112-1303

Re: Site 9 Quality Assurance Project Plan Addendum  
Naval Air Station, Brunswick, Maine

Dear Mr. Monaco:

MEDEP has reviewed the Navy's responses dated October 5, 2007, to the Maine Department of Environmental Protection (MEDEP) comments, dated September 18, 2007, for Site 9, Quality Assurance Project Plan Addendum (September 2007). Based on that review, MEDEP has no further comments provided that the proposed revisions and additions are incorporated into the final addendum along with regulator comments, responses and this letter.

Please contact me at (207) 287-7713 or [claudia.b.sait@maine.gov](mailto:claudia.b.sait@maine.gov), if you have any questions or comments.

Respectfully,

Claudia Sait  
Project Manager-Federal Facilities  
Bureau of Remediation & Waste Management

Cf: File  
Dale Mosher-BNAS  
Carolyn Lepage-Lepage Environmental  
Ed Benedikt  
Carol Warren-(email only)  
Gina Calderone-ECC (email only)  
Jackson Kiker-ECC (email only)

Chris Evans-MEDEP  
Mike Daly-EPA  
Al Easterday-ECC  
Jeff Donovan-ECC (email only)  
Catherine Guido-ECC (email only)  
David Chipman (email only)

**RESPONSE TO COMMENTS FROM THE  
STATE OF MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION –  
BUREAU OF REMEDIATION AND WASTE MANAGEMENT  
ON THE SITE 9, QUALITY ASSURANCE PROJECT PLAN ADDENDUM,  
DATED SEPTEMBER 2007,  
NAVAL AIR STATION BRUNSWICK, MAINE**

|                                                                                                                             |                                            |
|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| <b>Commentor: Claudia Sait, MEDEP - Project Manager-Federal Facilities<br/>Bureau of Remediation &amp; Waste Management</b> |                                            |
| <b>Comment Issue Date: 18 September 2007</b>                                                                                | <b>Navy Response Date: 05 October 2007</b> |

Pursuant to Section VI of the Naval Air Station, Brunswick, Maine Federal Facility Agreement (Oct 1990), as amended, the Maine Department of Environmental Protection (MEDEP) has reviewed the draft final "Long Term Monitoring Plan", dated August 2007, prepared by Environmental Chemical Corporation. Based on that review MEDEP has the following comments and issues.

**SPECIFIC COMMENTS:**

1. Table 7-1-S9 page 4 of 5 appears to have the wrong headers. The top section [starting with 2-hexanone] headers labeled MEG and MCL should really be SWQC and NWQC. Please correct or advise.

**Response:** Agree. Headers for "MEG" and "MCL" will be respectively revised to "SWQC" and "NWQC".

2. Table 7-2-S9 gives PQL in ug/Kg and PAL in mg/Kg. It would be more useful to have these two limits given in the same units. Also, please note that the PQL for 2,4-Dinitrotoluene and hexachlorobenzene on page 2 of 3 are higher than PAL.

**Response:** Agree. PQL units will be changed to mg/kg (for non-TCLP parameters). For Hexachlorobenzene the revised TCLP PQL is 0.1 mg/L will be inserted. For 2,4-dinitrotoluene the revised TCLP PQL is 0.1 mg/L will be inserted.

3. Table 7-3-S9 page 6 of 6 includes accuracy criteria for pentachlorophenol of 5-125% R. Accuracy criteria below 10% R cannot be accepted.

**Response:** Agree. The lower limit for quality control spike (LCS,MS/MSD) percent recovery will be raised to 11%. 11% will be inserted in the table for pentachlorophenol.

4. Table 7-4-S9 MS/MSD measurement performance criteria should reference limits set in table 7-3.

**Response:** Agree. Table entries for the data quality indicator accuracy/bias (LCS, MS/MSD) will be replaced with the following, "See Table 7-3-S9".

5. Table 12-1-S9 page 3 of 4 analytical accuracy/bias criteria for pentachlorophenol and phenol are unacceptable. Accuracy criteria below 10% R cannot be accepted.

**Response:** Agree. The lower limit for quality control spike (LCS,MS/MSD) percent recovery will be raised to 11% for phenol and pentachlorophenol. The percentage of 11% will be inserted in the table for pentachlorophenol and phenol.

6. Table 12-2-S9 page 2 of 2 analytical includes accuracy criteria for pentachlorophenol of 5-125% R. Accuracy criteria below 10% R cannot be accepted.

**Response:** Agree. The lower limit for quality control spike (LCS,MS/MSD) percent recovery will be raised to 11%. The percentage of 11% will be inserted in the table for pentachlorophenol.

7. Table 12-4-S9 does not include MS tuning criteria for methods EPA 8260, EIASOP-VOADIOX3, or EPA 8270. Please include MS tune criteria.

**Response:** Agree. The following methods will be updated with the MS tune check; 8260B, EIASOP-VOADIOX3, EPA 8270, and 6020. Under the header: "*Maintenance, Testing, and Inspection Activities*" the following text will be added,

*"Mass spectrometer tune check prior to analysis". Under the header, "Acceptance Criteria", the following will be added, "Tune check: Method requirements".*