



March 21, 2018

U.S. Army Corps of Engineers  
New England District  
696 Virginia Road  
Concord, MA 01742  
Attn: Ms. Penelope Reddy

**RE: Draft 2017 Annual Long-Term Monitoring and Maintenance Report  
Area of Contamination A7  
Former Sudbury Training Annex, Sudbury, MA  
Contract No. W912WJ-15-C-0002**

Dear Ms. Reddy,

KOMAN Government Solutions, LLC (KGS) is pleased to provide with this letter, electronic and paper copies of the *Draft 2017 Annual Long-term Monitoring and Maintenance Report Area of Contamination (AOC) 7, Former Sudbury Training Annex in Sudbury, MA*. The report describes the work conducted in 2017 for the landfill inspection, maintenance, and monitoring program; the groundwater monitoring program; and the maintenance of institutional controls.

In accordance with the Federal Facility Agreement, agency review is requested within 45 days (May 5, 2018).

Please contact me at (508) 219-6771 or [jropp@komangs.com](mailto:jropp@komangs.com) if you have any questions or require additional information.

Sincerely,  
**KOMAN Government Solutions, LLC**

James Ropp, P.E.  
Project Manager

cc: Robert Simeone, BRAC Devens, MA  
Christine Williams, EPA Region 1, Boston, MA  
David Chaffin, MassDEP Boston  
Tom Eagle, USFWS, Sudbury, MA  
KGS File

# **2017 ANNUAL LONG-TERM MONITORING AND MAINTENANCE REPORT AREA OF CONTAMINATION A7**

**FORMER SUDBURY TRAINING ANNEX  
SUDBURY, MA**

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**March 2018**

**Prepared for:  
U.S. Army Corps of Engineers  
New England District  
Concord, Massachusetts**

**Prepared by:  
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293 Boston Post Road West, Suite 100  
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Contract No.: W912WJ-15-C-0002**

### **NOTICE**

The United States Department of Defense, Department of Army, funded wholly or in part the preparation of this document and work described herein under Contract No. W912WJ-15-C-0002. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

**2017 ANNUAL**  
**LONG-TERM MONITORING AND MAINTENANCE REPORT**  
**AREA OF CONTAMINATION A7**  
**FORMER SUDBURY TRAINING ANNEX**  
**SUDBURY, MASSACHUSETTS**  
**MARCH 2018**

**CERTIFICATION:**

I hereby certify that the enclosed Report, shown and marked in this submittal, is that proposed to be incorporated with Contract Number W912WJ-15-C-0002. This document was prepared in accordance with the U.S. Army Corps of Engineers (USACE) Scope of Work and is hereby submitted for Government Approval.

**Reviewed By:**



**3/19/18**

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**KGS Project Manager**

**Date**

**Received By:**

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**USACE Project Manager**

**Date**



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## ACRONYMNS AND ABBREVIATIONS

AOC	Area of Contamination
Army	U.S. Army
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CMR	Code of Massachusetts Regulations
COC	Chemical of Concern
COD	chemical oxygen demand
DO	dissolved oxygen
DoD	Department of Defense
FEMA	Federal Emergency Management Agency
IC	Institutional Control
KGS	KOMAN Government Solutions, LLC
LTM	long-term monitoring
LTMM	long-term monitoring and maintenance
LTMMMP	Long-Term Monitoring and Maintenance Plan
MassDEP	Massachusetts Department of Environmental Protection
NAE	New England District
NPL	National Priorities List
ORP	oxidation-reduction potential
OU	Operable Unit
PCE	tetrachloroethene
QSM	Quality Systems Manual
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
Sudbury Annex	former U.S. Army Sudbury Training Annex
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound

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## **1.0 INTRODUCTION**

KOMAN Government Solutions, LLC (KGS) prepared this Annual Report to present results of the long-term monitoring and maintenance (LTMM) activities conducted in 2017 for Area of Contamination (AOC) A7, known as the Old Gravel Pit Landfill, located at the former U.S. Army (Army) Sudbury Training Annex (Sudbury Annex). The report also presents inspection activities conducted at AOCs P31 and P58 (together termed the Sudbury Road Dump), for which a Five-Year Review [U.S. Army Corps of Engineers (USACE), New England District (NAE), 2006] indicated that further review was warranted. KGS prepared this report on behalf of the USACE-NAE, under contract number W912WJ-15-C-0002.

### **1.1 Report Organization**

This Annual Report is organized as follows:

- Section 1.0 provides the project background and a brief overview of the Sudbury Annex history;
- Section 2.0 summarizes the long-term monitoring (LTM) sampling activities;
- Section 3.0 presents the 2017 LTM sampling analytical results;
- Section 4.0 summarizes the field data and analytical data quality control;
- Section 5.0 summarizes the 2017 landfill inspection, monitoring, and maintenance activities;
- Section 6.0 presents a summary and evaluation of the Institutional Controls (IC);
- Section 7.0 presents conclusions; and
- Section 8.0 presents the references used in the preparation of this document.

The activities discussed in this Annual Report were conducted in accordance with the Long-Term Monitoring and Maintenance Plan (LTMMMP) [Sovereign Consulting, Inc. and HydroGeologic Inc. (Sovereign/HGL), 2015] to fulfill the requirements of the Source Control Record of Decision (ROD) (O.H. Materials Remediation Services Corporation, 1995), which includes the LTM and Institutional Control (IC) protocols at AOC A7. This report also includes IC verification activities for AOCs P31 and P58.

### **1.2 Site Background**

The Sudbury Annex was listed on the National Priorities List (NPL) site from February 1990 through January 2002, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980. The former training annex occupies approximately 4.3 square miles in the Massachusetts towns of Hudson, Marlborough, Maynard, Stow, and Sudbury. A site location map indicating the general site location and physical setting is presented on **Figure 1-1**. Hudson Road/Sudbury Road divides the installation into a larger northern section and a smaller southern section. The Sudbury Annex became part of Fort Devens in 1982 (U.S. Army Garrison Fort Devens).

AOC A7 is a 10-acre landfill located between Patrol Road and the Assabet River along the northern installation boundary (**Figure 1-2**). AOC P31 and AOC P58 are located at the southwestern boundary of the northern part of the former Annex (**Figure 1-3**).

Access to the AOC A7 landfill is gained from Patrol Road or Track Road via locked gates. The northern edge of the site is less than 100 feet from the Assabet River at its closest point. The landfill is located on the northern lower slope and toe of a hill that slopes downward to the Assabet River.

The ROD for the Source Control of the Operable Unit (OU) at AOC A7 was signed by the Army and U.S. Environmental Protection Agency (USEPA) in September 1995. The ROD for Management of Migration was signed by the Army and USEPA in September 1997. The Massachusetts Department of Environmental Protections (MassDEP) concurred with the RODs and the selected source remedy which included:

- removal and off-site disposal of chemical waste debris in the laboratory dump area;
- construction of a Resource Conservation and Recovery Act (RCRA) Subtitle C landfill cap to contain the remaining site contaminants;
- operation and maintenance;
- ICs and land use restrictions to limit future use of land at AOC A7;
- long-term groundwater monitoring; and,
- Five-Year Reviews to assess whether the remedy remains protective of human health and the environment.

The Sudbury Annex site was removed from the NPL in January 2002. At that time, 2,205 acres were transferred to the U.S. Fish and Wildlife Service (USFWS), 4.1 acres were transferred to the U.S. Air Force, and 71.4 acres were transferred to the Federal Emergency Management Agency (FEMA).

The current monitoring program consists of annual groundwater monitoring, annual visual inspection of the landfill cap and surrounding area, and landfill gas vent monitoring that is conducted every five years prior to the five-year review (Sovereign/HGL, 2015). Annual mowing of the landfill is also conducted, and other maintenance activities are conducted as the maintenance needs are identified. The LTMMP is designed to satisfy federal and state applicable or relevant and appropriate regulations related to post-closure care of the landfill.

The current LTMMP (Sovereign/HGL, 2015) includes the previous LTMMP (HGL, 2009) and changes implemented based on annual sampling results and recommendations in the 2016 Five-Year Review:

- Remove metals analyses from the LTM program via a recommendation in the 2016 five-year review report. This recommendation was included in the *2016 Five-Year Review Report for the Former Sudbury Training Annex* (KGS, 2016a).
- Remove well OHM-A7-51 from the LTM sampling program based on the last groundwater analytical exceedance documented in October 2003 [tetrachloroethene (PCE)] and a compliance point, per 310 Code of Massachusetts Regulations (CMR) 19.132 (2), that is located hydraulically downgradient (SUD-A07-065).

- Remove well OHM-A7-09 from the LTM sampling program based on no historical groundwater analytical exceedances and a compliance point, per 310 CMR 19.132(1)(b), is located hydraulically downgradient (SUDWP-A07-01).
- Continue sampling upgradient monitoring well SUD-A07-14 on an annual basis and revise sampling frequency to biennial, based on no groundwater analytical exceedances, after the 2016 five-year report. The *2016 Five-Year Review Report for Former Sudbury Training Annex* (KGS, 2016a) recommended biennial sampling based on the lack of groundwater analytical exceedances. Upgradient monitoring well SUD-A07-14 is planned to be sampled again in 2018.
- Continue sampling OHM-A7-08 and SUD-A07-065 on an annual basis until the 2016 five-year review; and revise sampling frequency to biennial if a downward trend is maintained. The *2016 Five-Year Review Report for Former Sudbury Training Annex* (KGS, 2016a) identified statistically significant downward concentration trends in OHM-A7-08 and SUD-A07-065 and recommended biennial sampling for these wells. Wells OHM-A7-08 and SUD-A07-065 are planned to be sampled again in 2018.
- Recommend reducing the landfill gas vent monitoring from an annual frequency to every 5 years prior to the five-year review report.
- Utilize global positioning system (GPS) coordinates and a GPS unit to locate surface water gauges during the annual sampling event.

The current groundwater monitoring program at AOC A7 includes biennial sampling from three monitoring wells and annual sampling of one well point, plus annual hydraulic gauging at thirteen monitoring wells and two staff gauges located across the AOC (**Figure 1-2**). The analytical parameters monitored include volatile organic compounds (VOC), organochlorine pesticides, total cyanide, chemical oxygen demand (COD), and field water quality parameters (temperature, dissolved oxygen [DO], pH, oxidation/reduction potential [ORP], specific conductance, and turbidity). The next biennial event is planned for 2018.



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## 2.0 LONG-TERM GROUNDWATER MONITORING

The LTM program at AOC A7 was conducted in accordance with the LTMMP (Sovereign/HGL, 2015) to monitor COC concentration trends over time. The 2017 sampling activities were conducted in December 2017 and January 2018.

### 2.1 Preparation for Sampling

The groundwater sampling event at AOC A7 was performed in accordance with the low-flow procedures documented in *Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells* [U.S. Environmental Protection Agency (USEPA) Region 1, 2017]. The field instruments used to measure water quality parameters (temperature, DO, pH, ORP, specific conductance, and turbidity) were calibrated daily in accordance with the manufacturer's instructions and in accordance with USEPA's Calibration of Field Instruments Standard Operating Procedure (USEPA Region 1, 2010). Details on analytical sample container and preservation requirements are presented in **Table 2-1**. Completed groundwater low-flow sampling forms documenting sampling and groundwater quality measurements, are presented in **Appendix A**.

### 2.2 Sampling

Groundwater at AOC A7 is sampled annually as part of the fall LTM events. Well point location, SUDWP-A07-01, was sampled on December 4, 2017. A description of the location, depth, screened interval, and sampling frequency for each well is listed in **Table 2-2**.

### 2.3 Equipment Decontamination

Non-dedicated sampling and monitoring equipment was decontaminated before and after use to prevent cross-contamination between wells. Decontamination was performed in accordance with the LTMMP (Sovereign/HGL, 2015).

### 2.4 Investigation-derived Waste

Investigation-derived waste generated during the LTMM activities consisted of purge water from wells and equipment decontamination water. Purge water was discharged back to the ground at the site of generation after sampling was completed in accordance with the LTMMP.

### 2.5 Groundwater Elevation Measurements

Groundwater elevation measurements were recorded on January 15, 2018. The depth to water was measured within a 24-hour period at each of the monitoring wells. The condition of the monitoring well network was inspected during the water level monitoring event. A summary of the water level measurements and the corresponding water elevation data is presented in **Table 2-3**. Groundwater elevation contours are presented on **Figure 2-1**.

**Figure 2-1** shows groundwater generally flowing to the north-northwest towards the Assabet River, consistent with historical groundwater flow observations. The groundwater gradient was 0.071 feet per foot during the January 2018 event. The groundwater gradients were calculated

using locations considered to be representative of average conditions across the site (SUD-A01-014 and OHM-A7-09). Although the groundwater gradient generally varies based on seasonal variations in groundwater elevations, the illustrated flow paths are deemed as generally representative of site conditions. The overall groundwater flow direction and seasonal variability at AOC A7 is well documented over 15 years of monitoring with little change in the nature of groundwater flow across the site.

### 3.0 LABORATORY TESTING AND ANALYSES

Groundwater samples were collected from well point location SUDWP-A07-01 on December 4, 2017. TestAmerica Laboratories, Inc. (TestAmerica) of Savannah, Georgia was the primary contract laboratory used for the analysis of groundwater samples for the fall 2017 LTM event. TestAmerica is compliant with the *Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, version 5.0* (DoD, 2013) under the DoD Environmental Laboratory Accreditation Program and holds current accreditation for all applicable analytical methods. The laboratory analytical report for the Sudbury 2017 sampling event is provided in **Appendix B**.

#### 3.1 Analyses

The groundwater sample was analyzed at the laboratory for VOCs, organochlorine pesticides, total cyanide, and COD. The analytical methods and procedures used for the groundwater samples collected at AOC A7 are presented in **Table 2-1**.

#### 3.2 Analytical Results

One field duplicate sample was collected for each of the analytical methods and was submitted as a blind duplicate to the laboratory with the native sample. One trip blank sample was submitted and analyzed for VOCs only. Analytical results from the 2017 sampling event were consistent with the results from 2006 through 2016. The 2017 sample results for the well point sample are presented in **Table 3-1** and historical results for target COCs are summarized in **Table 3-2**.

The Fall 2017 results for VOCs, pesticides, total cyanide, and COD from the well point sample were non-detect for all target compounds as presented in **Table 3-1**. The 2017 non-detect results from the well point sample location are consistent the 2016 sample results, except for a low-level detection of COD (8.2 milligrams per liter [mg/L]) in 2016; The well point was not sampled in 2015 due to low water level.

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## 4.0 QUALITY CONTROL

As part of the 2017 groundwater sampling event, quality assurance/quality control samples were collected to evaluate sample collection, transportation, and analysis procedures.

### 4.1 Field Quality Control

One field duplicate sample was collected from well point SUDWP-A07-01 during the December 2017 sampling event and submitted for analysis. The field duplicate sample results are shown in **Table 3-1**. One trip blank sample was collected and submitted for VOC analysis.

### 4.2 Data Evaluation for The Fall 2017 Sampling Event

The analytical results from the 2017 sampling event were evaluated for data acceptability in accordance with the USEPA Region 1 data validation guidelines (USEPA New England, 2013) and the *Quality Assurance Project Plan (QAPP) for the Annual Long-Term Monitoring (LTM) Program* (KGS, 2016b). The method requirements from the *DoD QSM* version 5.0 (DoD, 2013) and the USEPA SW-846 QC guidance (USEPA, 2014) were also used as supplemental information. The data validation report for the 2017 Sudbury AOC A7 LTM sampling event are presented in **Appendix C**.

Based on the data evaluation elements reviewed (including holding times, blank sample results, field duplicate results, surrogate recoveries, laboratory control sample/laboratory control sample duplicate recoveries, and matrix spike/matrix spike duplicate recoveries), all data were acceptable as reported. No qualifications were needed.

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## 5.0 LANDFILL MONITORING

The November 2017 landfill inspection report is summarized in the following sections.

### 5.1 Fall 2017 Inspection Report

The AOC A7 RCRA cap and the surrounding area are monitored on an annual basis through visual inspections and field monitoring performed with landfill gas detection equipment. The landfill gas monitoring event performed in November 2017 is presented in the Geotechnical Engineering Annual Inspection Report Fall 2017 (**Appendix D**).

The AOC A7 landfill cap was inspected on November 15, 2017 by USACE personnel. Observations were made regarding the vegetative cover, vegetation types, erosion, settlement, and general condition of the various features. The following list summarizes the findings and recommendations of the 2017 fall inspection:

- The landfill cap is in generally excellent condition with no actively eroding areas or settlement. In general, the cap vegetation appears healthy, dense, and provides complete coverage of most areas of the cap, with grass and clover predominating. The cap and adjacent area vegetation were mowed on November 7, 2017, and a large tree leaning on the southeast portion of the fence was removed. No encroachment of wetland species on the cap was seen. It is recommended that future mowing of the cap continue to include mowing of the field area adjacent to the cap to prevent encroachment of woody and wetland species on the cap.
- The access road from the entry gate and into the cap area is in relatively good condition; however, vegetation has overgrown and established upon the gravel surface. There are no ruts, potholes, or eroded areas.
- The security perimeter fence is in moderate condition. The large tree observed leaning on the southeastern section of the fence during the fall 2016 inspection was removed in April 2017 and the damaged section of fence was repaired in August 2017. Multiple trees are growing through and against the northern perimeter fencing. These small to medium trees should be removed, if feasible, before they damage the fence. Additionally, the access gate on the northern central portion of the fence line near monitoring well OHM-A7-09 was observed to be leaning and causing a gap in the gate which could facilitate trespassing. The gate was partially secured with a second new chain after the 2016 inspection and a new third chain was added higher on the gate in February 2018. Otherwise, there were no sagging or leaning fence sections noted during the inspection, and the main gate is operating normally. In general, trees should periodically be cleared from fence area as they naturally grow or fall onto the fence to avoid the potential for people to trespass across the cap or to prevent easier entry of wildlife that could burrow and become established around or within the cap soil cover. Trees leaning against the western, southern, and eastern portions of the fence were removed in February 2018. Trees along the northern fence will be addressed at a later date, as feasible.
- The cap drainage system is in good condition. Drainage channels are free of sediment and debris; however, vegetation removal or cutting flush to ground should be more frequent and vigilant to eliminate unwanted vegetation. The grass on drainage channel bottoms is



generally in excellent condition, but some overgrown weedy plants are present in isolated areas. The vegetation on the side slopes is healthy and dense.

- The toe drain appears to be functioning properly, and there are no associated slope stability or erosion problems. Toe drains were cleared of moss growth and other debris which is accumulating on the geotextile covering the drainage stone in February 2018. The excess loose geotextile fabric was removed in February 2018. Based on review of the cap design drawings, the observed geotextile fabric appears to be excess from construction (i.e., unnecessary to the current operation of the cover system) and extends too far over the coarse aggregate. The toe drain should continue to be monitored for vegetative growth, and the growth should be periodically cut down or removed to maintain the proper operation of the toe drain and coarser boulder rip rap at the northwest and northeast corners of the landfill cap.
- The gas vent system is in good condition. The vent pipes are intact and functioning as intended. The four gas vents need the bird/insect screen replaced with a fitting that can be easily removed as one unit with a screwdriver. The four gas vents should be relabeled on two sides of the vent (north and south) to facilitate identification. New vent screens and labels are planned to be installed in 2018.
- Per the LTMMP (Sovereign/HGL, 2015), landfill gas vent monitoring will be conducted every five years. The next landfill gas vent monitoring will be completed in 2020 to support the five-year review. The four landfill gas vents were inadvertently monitored during the 2017 landfill inspection and the results, which are discussed below, are consistent with past results. VOCs concentrations were negligible in the four gas vents (0.1 to 0.2 parts per million). Hydrogen sulfide, carbon monoxide, and/or methane were not detected. Landfill gas constituents represented by low oxygen (6.0 to 6.6 percent) and relatively high carbon dioxide (4.9 to 6.2 percent) were more prevalent on the two gas vents on the northern side of the landfill (V-2 and V-3) compared to the southern side of the landfill (V-1 and V-4), which may reflect differences in types of waste buried within the landfill. Oxygen was measured in the southern gas vents at concentrations of 16.3 to 16.9 percent, and carbon dioxide was measured at concentrations of 3.0 to 3.1 percent.

The detailed discussion of the 2017 landfill inspection and recommendations for 2018 are presented in the Geotechnical Engineering Annual Inspection Report Fall 2017 (**Appendix D**).

## **5.2 Yearly Landfill Maintenance**

Trees leaning against the fence were removed in April 2017. The fence was repaired in August 2017. Landfill mowing was performed outside the flagged wetland boundary, by Gatsby Grounds of Lancaster, MA, in November 2017.

## 6.0 INSTITUTIONAL CONTROLS

The 1995 Source Control OU ROD included ICs in the selected remedy for AOC A7 to restrict changes in land use at that location. An addendum to the 1998 LTMMMP was approved in 1999 that prescribed IC inspection criteria to be performed annually. The 1999 addendum also included provisions for ICs at AOCs P31 and P58 to monitor for significant changes in site use and increases in exposure potential. The IC criteria include the following: 1) document reviews, 2) interviews, and 3) physical on-site inspections, each to be completed and reported with checklists.

### 6.1 Document Reviews

The following document, generated during 2017, was reviewed in accordance with the LTMMMP:

- 2016 *Annual Report: Long-Term Monitoring and Maintenance, Area of Concern A7, Former Sudbury Training Annex, Sudbury, Massachusetts* (KGS, 2017).
- *Protectiveness Assessment for AOC P31/P58, Former Sudbury Training Annex, Stow, Massachusetts, Concord, Massachusetts* (USACE-NAE, 2007).

In accordance with the LTMMMP, a checklist has been prepared to illustrate how the documents were used to evaluate the ICs. The checklists for AOC A7, and AOCs P31 and P58 are included in **Appendix E.1** and **Appendix E.2**.

### 6.2 Institutional Control Interviews

IC interviews are conducted on an annual basis to monitor the status of ICs at sections of the former Sudbury Annex that are no longer under Army control. Relevant federal agencies contacted include: USFWS (for the National Wildlife Refuge) and FEMA (six small parcels of the former training annex). Interviews with representatives from these agencies that are familiar with day-to-day activities on the property were conducted by telephone and/or e-mail. The interviews included discussions of the following content:

- Status of past redevelopment or other construction or demolition activities.
- Review of approved conditional exemptions, amendments and/or releases.
- Review of any unauthorized uses and activities.
- Review of corrective action to resolve unauthorized uses and activities.
- Overall effectiveness of the institutional controls.
- Status of anticipated future redevelopment or other construction or demolition activities.

Summaries of the interviews are presented in **Appendix E.2** and **E.3**. The IC interviews indicated that no significant changes in site use or evidence of increased exposure potential were apparent for the 2017 reporting period.

### 6.3 Physical On-site Inspections

Physical on-site inspections are conducted on an annual basis at AOC A7, and AOCs P31 and P58 in accordance with the LTMMMP. The inspections at AOC A7 include a comprehensive assessment of the landfill cap and its drainage features, as well as the condition of the site security fence and

the grassy/woodland area surrounding the landfill cap. The inspections at AOCs P31 and P58 are consisted of visual observations regarding the condition of the sites. The physical on-site inspections address each of the following items:

- Land use conditions (presence of buildings and level of recreational use);
- Evidence of any changes to the use of the AOC A7, P31, and P58 sites;
- Evidence of any disturbance to the integrity of the landfill containment system or to the function of the monitoring system in place at AOC A7;
- Evidence of any significant excavation or surface or subsurface soil disturbance at AOC A7;
- Evidence of any activities that have disrupted or otherwise negatively impacted the subsurface soil at the AOC A7, P31 and P58 sites below the depth of four feet; and
- Other such conditions as the Army, USEPA, and MassDEP Project Managers may deem necessary to evaluate in order to continue the protectiveness of the ICs. The party conducting the inspection notes all observations, including observation of any known or suspected violations, on an inspection checklist.

#### **6.3.1 Area of Contamination A7**

Inspections of the AOC A7 landfill and the surrounding area were conducted by USACE on November 15, 2017. The landfill cap, the drainage features and surrounding area were found to be in good or excellent condition. A summary of the inspection is presented in **Section 5.0** and specific details of the inspections and recommendations are included the Geotechnical Engineering Annual Inspection Report Fall 2017 (**Appendix D**).

#### **6.3.2 Areas of Contamination P31 and P58**

Visual inspections of AOCs P31 and P58 were conducted on November 7, 2017 and showed no evidence of any changes to the use of AOCs P31 and P58. The sites were vegetated and there was no evidence of dumping. An inspection checklist is included in **Appendix E.4**.

### **6.4 Institutional Control Summary**

Document reviews, IC interviews and physical on-site inspections during the 2017 reporting period revealed no significant changes in site use or evidence of increased exposure potential for AOC A7, P31 and P58. The remedies implemented at these AOCs remain protective of human health and the environment.

## **7.0 CONCLUSIONS**

The 2017 sampling event occurred on December 4, 2017. Well point SUDWP-A07-01 was sampled. The laboratory analytical results were non-detect, thus there were no exceedences of the Massachusetts Groundwater-1 or Groundwater-3 standards. Groundwater level monitoring data recorded on January 11, 2018 was consistent with the historically-established north/northwest groundwater flow direction at the site.

The AOC A7 landfill cap remains in excellent condition based on the November 15, 2017 inspection. The drainage system and gas vent monitoring system are in good condition and functioning as intended. The access road and security fence are in good condition. The large tree observed leaning on the southeastern section of the fence has been removed. The access gate on the northern central portion of the fence line near monitoring well OHM-A7-09 is leaning and causing a gap in the gate. A chain and a lock were installed in February 2018 to eliminate the gap in the gate. The landfill and adjacent area were mowed during fall 2017.

LTMM activities at AOC A7 and AOCs P31 and P58, including groundwater sampling, landfill cap inspections, IC interviews, and IC inspections indicate that the selected remedies continue to be effective.

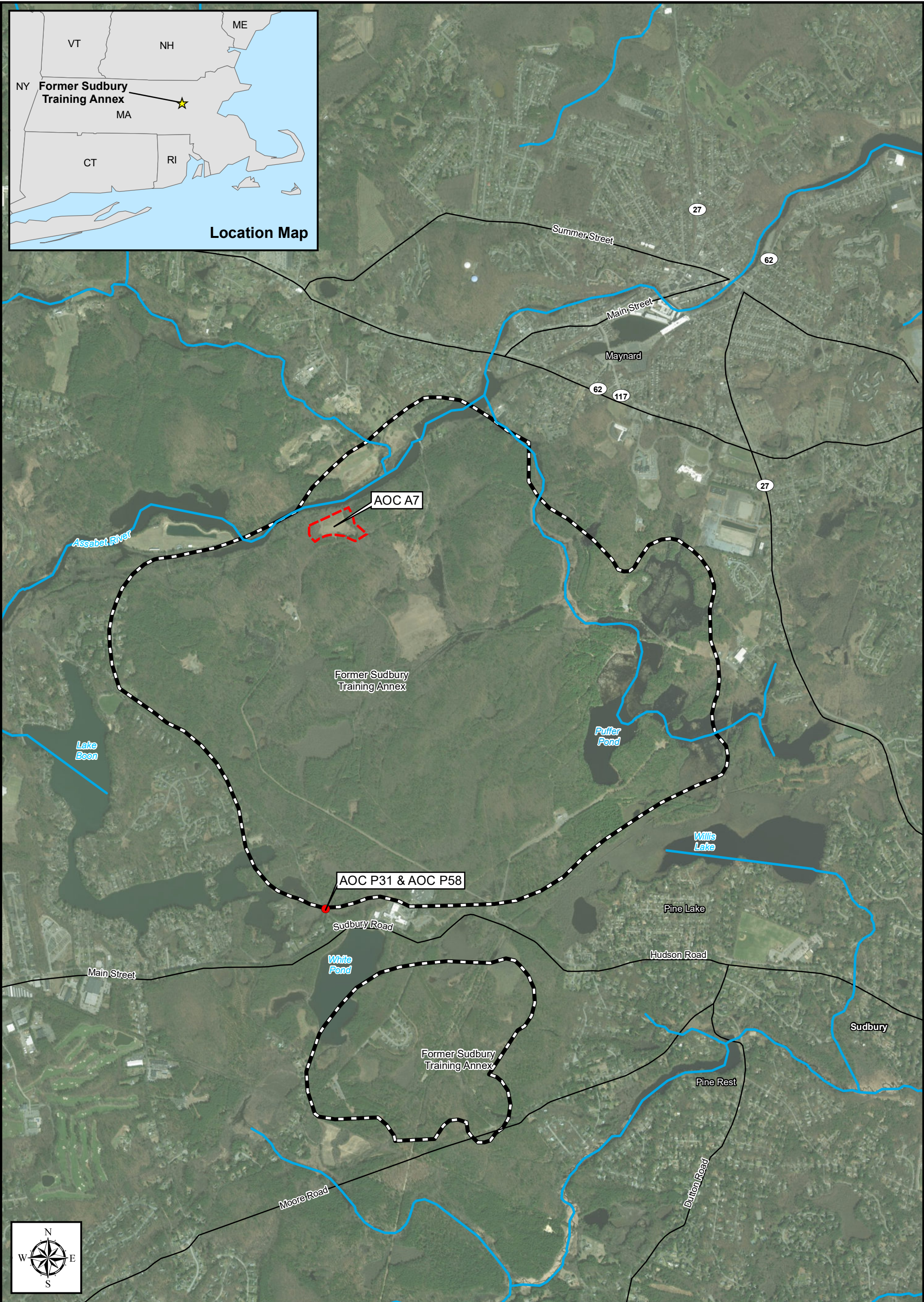
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## 8.0 REFERENCES

- Department of Defense (DoD), 2013. *DoD Quality Systems Manual for Environmental Laboratories, Version 5.0*. Department of Defense Environmental Data Quality Workshop, July.
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**Figure 1.1**  
**Site Location**  
**Former Sudbury Training Annex**

Aerial Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

- Legend**
- Area of Contamination (AOC)
  - Area of Contamination Perimeter
  - Surface Water Course
  - Major Road
  - Former Sudbury Training Annex

2017 Annual Report Former Sudbury Training Annex		
Former Fort Devens Army Installation Sudbury Training Annex, Sudbury, MA		
KOMAN Government Solutions, LLC 293 Boston Post Road West, Suite 100, Marlborough, MA 01752		
0 1,000 2,000 Feet	Date: 03/08/2018	Figure 1.1





Figure 1.2  
Site Layout  
AOC A7

- Legend
- LTM Sample Well
  - LTM Well - Gauge Only
  - Staff Gauge
  - Monitoring Well - Damaged
  - Monitoring Well - Abandoned
  - Gas Vent
  - OHM-A7-08 Well/Gauge/Vent Identification
  - Fence
  - Stump Pile Area
  - Rip Rap
  - Area of Contamination (AOC)
  - Topographic Contour (ft AMSL)

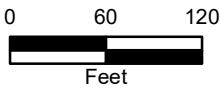
Notes:  
LTM = long term monitoring  
JO-A07-M62 damaged and was replaced by SUDWP-A07-01  
JO-A07-M61 could not be located

Aerial Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

2017 Annual Report  
Former Sudbury Training Annex (AOC A7)

Former Fort Devens Army Installation  
Sudbury Training Annex, Sudbury, Massachusetts

KOMAN Government Solutions, LLC  
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Date:  
03/08/2018

Figure  
1.2









**Figure 1.3**  
**Site Layout**  
**AOC P31 and AOC P58**

Legend

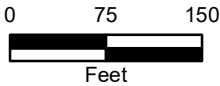
-  Areas of Concern
-  Former Fort Devens Boundary

Aerial Sources: Esri, DigitalGlobe,  
GeoEye, i-cubed, USDA FSA, USGS, AEX,  
Getmapping, Aerogrid, IGN, IGP,  
swisstopo, and the GIS User Community

2017 Annual Report  
AOC P31 and AOC P58

Former Fort Devens Army Installation  
Sudbury Training Annex, Sudbury, Massachusetts

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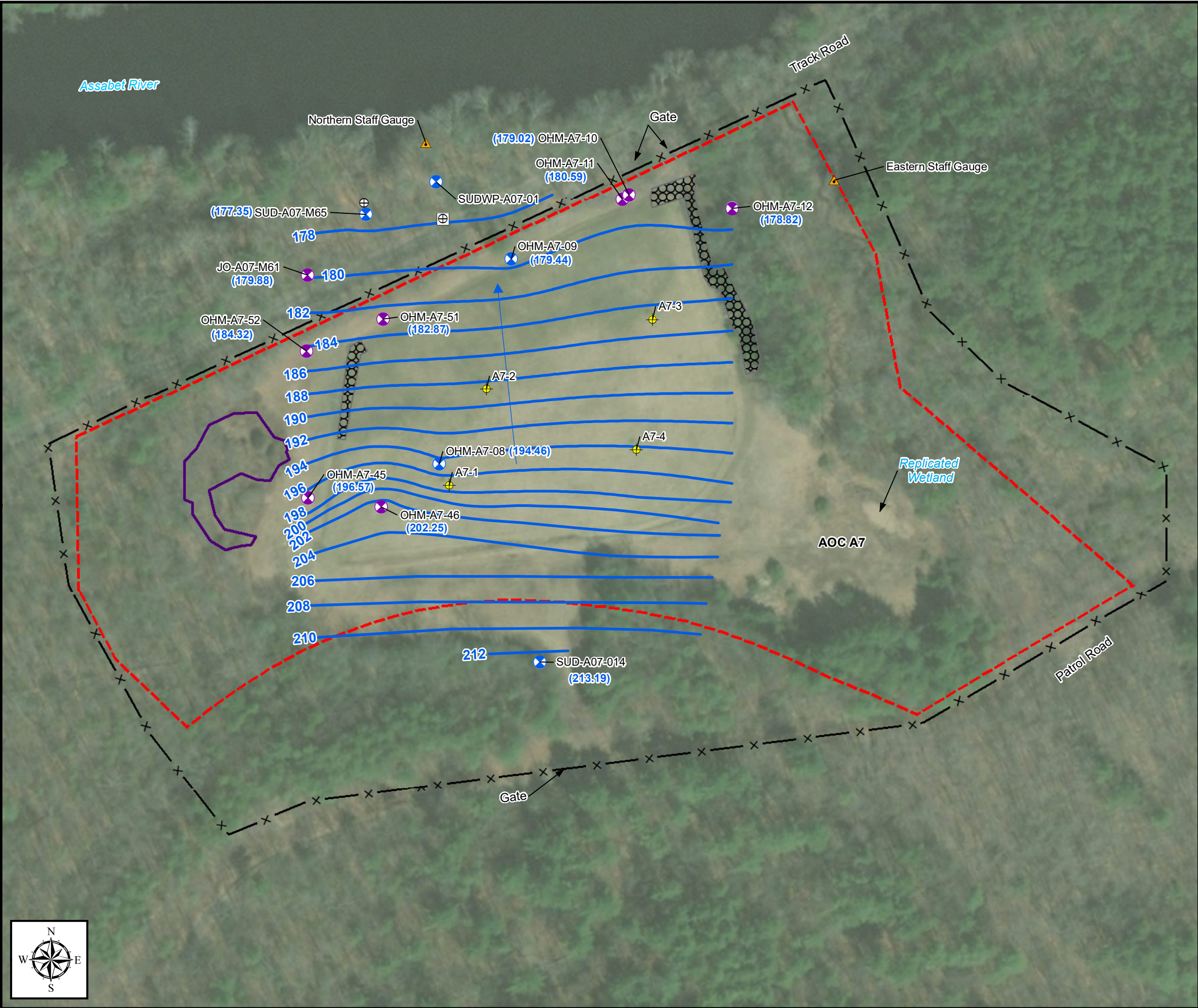
Date:  
03/08/2018

Figure  
1.3





Figure 2.1  
Interpretive Water Table Elevation  
Sudbury Annex - AOC A7  
January 15, 2018



Legend

- LTM Sample Well
- LTM Well - Gauge Only
- Staff Gauge
- Monitoring Well - Damaged
- Monitoring Well - Abandoned
- Gas Vent
- OHM-A7-08 Well/Gauge/Vent Identification
- (179.88) Groundwater Elevation (ft NGVD)
- Groundwater Contour (ft NGVD) (Interval = 2 Feet)
- Groundwater Flow Direction
- Fence
- Stump Pile Area
- Rip Rap
- Area of Contamination (AOC)

Notes:  
NGVD = National Geodetic Vertical Datum of 1929  
LTM = long term monitoring  
OHM-A7-11 was not used in calculating contours  
JO-A07-M62 damaged and was replaced by SUDWP-A07-01  
Aerial Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

2017 Annual Report  
Former Sudbury Training Annex (AOC A7)

Former Fort Devens Army Installation  
Sudbury Training Annex, Sudbury, Massachusetts

KOMAN Government Solutions, LLC  
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0 60 120  
Feet

Date:  
03/08/2018

Figure  
2.1





**Table 2-1**  
**Sample Analysis Methods, Containers, Holding Times, and Preservatives**  
**Former Sudbury Training Annex, Sudbury, Massachusetts**

Parameter	Analysis Method <sup>1</sup>	Sample Container <sup>2</sup>	Preservative	Holding Time
VOCs	SW8260C	3 x 40-mL vials with teflon septa screw caps	HCl to pH < 2 (no headspace); 4 ± 2°C	14 days
Pesticides	SW8081B	2 x 1-Liter amber glass	4 ± 2°C	7 days to extract; 40 days to analyze
COD	E410.4	1 x 500-mL amber glass	H <sub>2</sub> SO <sub>4</sub> to pH < 2; 4 ± 2°C	28 days
Cyanide	SW9012B	1 x 250-mL HDPE	NaOH to pH > 12; 4 ± 2°C	14 days

**Notes:**

<sup>1</sup> “Methods for Chemical Analysis of Water and Wastes”, Cincinnati, OH July 2014, EPA 600/4-79-020. “Test Methods for Evaluating Solid Waste, Physical and Chemical Methods”, USEPA SW-846, 5th Edition.

<sup>2</sup> Additional sample containers/volume are required for matrix quality control samples.



**Table 2-2**  
**AOC A7 Groundwater Monitoring Locations**  
**Former Sudbury Training Annex, Sudbury, Massachusetts**

Monitoring Wells	Top of PVC Riser Elevation (ft NGVD)	Total Depth (ft below TOC)	Screened Interval Depth (ft below TOC)	Top of Well Screen Elevation (ft NGVD)	Bottom of Well Screen Elevation (ft NGVD)	Screen Length (feet)	Location Description and Well Depth Notes	Monitoring Program
<b>OHM-A7-08</b>	219.84	35.6	20.6 - 35.6	199.24	184.24	15	Downgradient of former Lab Waste Area (west end of landfill cap).	Biennial (2018), VOCs, Pesticides, COD, CN
<b>OHM-A7-09</b>	186.21	14.9	6.9 - 14.9	179.31	171.31	8	North of cap (at center) along Track Road.	Water Level Only
<b>OHM-A7-10</b>	181.2	11.6	3.6 - 11.6	177.6	169.6	8	Along Track Road, east of OHM-A7-9.	Water Level Only
<b>OHM-A7-11</b>	181.73	30.9	20.9 - 30.9	160.83	150.83	10	Adjacent to OHM-A7-10.	Water Level Only
<b>OHM-A7-12</b>	187.09	20.8	5.8 - 20.8	181.29	166.29	15	East of toe drain on eastern edge of landfill.	Water Level Only
<b>OHM-A7-45</b>	210.01	22.2	7.2 - 22.2	202.81	187.81	15	West of cap near the west drainage ditch.	Water Level Only
<b>OHM-A7-46</b>	217.87	19.6	13.1 - 19.6	204.77	198.27	6.5	West end of cap; well-depth was measured on 10/17/2002 as 19.55 feet below TOC.	Water Level Only
<b>OHM-A7-51</b>	189.22	22.6	7.6 - 22.6	181.62	166.62	15	Northern boundary along Track Road, west end.	Water Level Only
<b>OHM-A7-52</b>	188.11	21.7	6.7 - 21.7	181.41	166.41	15	Northern boundary along Track Road, west end.	Water Level Only
<b>JO-A07-M61</b>	180.9	6.0	1 - 6 (measured depth 5.1 ft)	179.9	174.9	5	Between fence line and Assabet River, north of OHM-A7-52.	Water Level Only
<b>SUD-A07-014</b>	226.37	22.01	12.0 - 22.0	214.37	204.37	10	Background for AOC 47; replacement for OHM-A7-13. Well is inside the A7 enclosure, at the southern side of the site.	Biennial (2018), VOCs, Pesticides, COD, CN

**Table 2-2**  
**AOC A7 Groundwater Monitoring Locations**  
**Former Sudbury Training Annex, Sudbury, Massachusetts**

Monitoring Wells	Top of PVC Riser Elevation (ft NGVD)	Total Depth (ft below TOC)	Screened Interval Depth (ft below TOC)	Top of Well Screen Elevation (ft NGVD)	Bottom of Well Screen Elevation (ft NGVD)	Screen Length (feet)	Location Description and Well Depth Notes	Monitoring Program
<b>SUD-A07-065</b>	178.62	10	4.5 - 9.5	174.12	169.12	5	Replacement for JO-A07-M63; 15.1 feet south of M63; between fence line and Assabet River, between JO-A07-M61 and JO-A07-M62.	Biennial (2018), VOCs, Pesticides, COD, CN
<b>SUDWP-A07-01 (well point)<sup>1</sup></b>	NA	6.93	3.93 to 6.93	NA	NA	3	Approximately 10 feet northwest of JO-A07-M62; trees have been marked with paint for easy location.	Annual, VOCs, Pesticides, COD, CN

Notes:

Depths and screened intervals are in feet below the tops of the PVC risers based on the November 2006 survey.

Vertical elevation datum is National Geodetic Vertical Datum (NGVD) 1929.

ft = feet

TOC = top of casing

NA = not available

1 - This well point replaced damaged well JO-A07-M62. It is a steel 1-inch diameter well point installed in fall 2013.

This well point has not been surveyed and elevations are not available.

COD = chemical oxygen demand

CN = cyanide

Pest = pesticides

VOC = volatile organic compound

**Table 2-3**  
**AOC A7 Groundwater Elevations, January 2018**  
**Former Sudbury Training Annex, Sudbury, Massachusetts**

Well	Date	DTW (ft below TOC)	TOC Elevation (ft NGVD)	GW Elevation (ft NGVD)	Notes
SUD-A07-014	01/15/2018	13.18	226.37	213.19	
OHM-A7-46	01/15/2018	15.62	217.87	202.25	
OHM-A7-08	01/15/2018	25.38	219.84	194.46	
OHM-A7-45	01/15/2018	13.44	210.01	196.57	
OHM-A7-52	01/15/2018	3.79	188.11	184.32	
OHM-A7-51	01/15/2018	6.35	189.22	182.87	
OHM-A7-09	01/15/2018	6.77	186.21	179.44	
OHM-A7-11	01/15/2018	1.14	181.73	180.59	not used in contour map
OHM-A7-10	01/15/2018	2.18	181.2	179.02	
OHM-A7-12	01/15/2018	8.27	187.09	178.82	
JO-A07-M61	01/15/2018	1.02	180.9	179.88	
SUD-A07-065	01/15/2018	1.27	178.62	177.35	
SUDWP-A07-01 <sup>1</sup>	01/15/2018	4.05	NA	NA	

Notes:

DTW = depth to water

ft = feet

TOC = top of casing

GW = groundwater

NGVD = National Geodetic Vertical Datum 1929

1 - This well point replaced damaged well JO-A07-M62. It is a steel 1-inch diameter well point installed in fall 2013.

This well point has not been surveyed and elevations are not available.



**Table 3-1**  
**AOC A7 Groundwater Analytical Results**  
**Former Sudbury Training Annex, Sudbury, Massachusetts**

Method/Analyte	Historical Maximum	MCP GW-1 Groundwater Standard	MCP GW-3 Groundwater Standard	Units	SUDWP-A07-01	Q	SUD-DUP01 (SUDWP-A07-01)	Q	TRIP BLANK	Q
					12/4/2017		12/4/2017			
<b>Volatile Organic Compounds (SW8260B)</b>										
<i>cis</i> -1,2-Dichloroethene	19	70	50,000	µg/L	1.0	U	1.0	U	1.0	U
<i>trans</i> -1,2-Dichloroethene	6.0	100	50,000	µg/L	1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	31	2.0	50,000	µg/L	1.0	U	1.0	U	1.0	U
Tetrachloroethene	140	5.0	30,000	µg/L	1.0	U	1.0	U	1.0	U
Trichloroethene	40	5.0	5,000	µg/L	1.0	U	1.0	U	1.0	U
<b>Pesticides (SW8081B)</b>										
4,4'-DDD	0.48	0.20	50	µg/L	0.012	U	0.010	U	NA	
4,4'-DDE	0.10	0.05	400	µg/L	0.012	U	0.010	U	NA	
4,4'-DDT	0.36	0.30	1.0	µg/L	0.021	U	0.018	U	NA	
Aldrin	0.058	0.50	30	µg/L	0.021	U	0.018	U	NA	
alpha-BHC	0.042	NS	NS	µg/L	0.012	U	0.010	U	NA	
beta-BHC	0.058	NS	NS	µg/L	0.021	U	0.018	U	NA	
Chlordane (technical)	--	2.0	2.0	µg/L	0.36	U	0.30	U	NA	
delta-BHC	0.31	NS	NS	µg/L	0.021	U	0.018	U	NA	
Dieldrin	0.12	0.10	0.5	µg/L	0.012	U	0.010	U	NA	
Endosulfan I	0.058	10	2.0	µg/L	0.012	U	0.010	U	NA	
Endosulfan II	0.12	NS	NS	µg/L	0.012	U	0.010	U	NA	
Endosulfan sulfate	0.12	NS	NS	µg/L	0.012	U	0.010	U	NA	
Endrin	0.12	2.0	5.0	µg/L	0.012	U	0.010	U	NA	
Endrin aldehyde	0.12	NS	NS	µg/L	0.012	U	0.010	U	NA	
Endrin ketone	0.05	NS	NS	µg/L	0.012	U	0.010	U	NA	
gamma-BHC (Lindane)	17.0	0.20	4.0	µg/L	0.012	U	0.010	U	NA	
Heptachlor	0.058	0.40	1.0	µg/L	0.021	U	0.018	U	NA	
Heptachlor epoxide	0.058	0.20	2.0	µg/L	0.012	U	0.010	U	NA	
Methoxychlor	0.058	40	10	µg/L	0.021	U	0.018	U	NA	
Toxaphene	1.2	NS	NS	µg/L	0.95	U	0.80	U	NA	
<b>Cyanide (SW9012B)</b>										
Cyanide, Total	11	200	30	µg/L	5.0	U	5.0	U	NA	
<b>Chemical Oxygen Demand (E410.4)</b>										
COD	190	NS	NS	mg/L	10	U	10	U	NA	
<b>Field Parameters</b>										
Temperature		NS		° C	10.57		NA		NA	
pH		NS		SU	6.17		NA		NA	
Specific Conductance		NS		mS/cm	71		NA		NA	
ORP		NS		mV	+115		NA		NA	
Dissolved Oxygen		NS		mg/L	4.17		NA		NA	
Turbidity		NS		NTU	3.80		NA		NA	

Notes:

NA = Not analyzed

NS = No standard

µg/L = microgram per liter

mg/L = milligram per liter

U = Non-detect (ND)

ND results are reported at the Limit of Detection (LOD)

Temp/°C = Temperature/degrees Celsius

pH/SU = standard units

mS/cm = millisiemens per centimeter

ORP/mV = Oxidation Reduction Potential/millivolt

NTU = Nephelometric Turbidity Unit

Table 3-2  
Summary of Historical Groundwater Target Compounds at AOC A7, 1996 - 2017  
Former Sudbury Training Annex Sudbury, Massachusetts

Well Number	MCP GW-1 Groundwater Standard (µg/L)	MCP GW-3 Groundwater Standard (µg/L)	Jul-96	Oct-96	Apr-97	Oct-97	Apr-98	Oct-98	Apr-99	Oct-99	Apr-00	Oct-00	May-01	Oct-01	Apr-02	Oct-02	Apr-03	Oct-03	Apr-04	Oct-04
<i>1,1,2,2-Tetrachloroethane</i>																				
OHM-A7-51	2.0	50,000	66	85	34	29	11	9	6.5	19	7.7	4.9	(1)	6.0	(1)	6.1	4.8	2.4	2.7	4.4
JO-A07-M63/SUD-A07-065 <sup>1</sup>	2.0	50,000	13	21	24	26	20	31	23	22	12	20	12	14	20	13	5.1	3.8	4.8	(1.8)
<i>Tetrachloroethene</i>																				
OHM-A7-08	5.0	30,000	12	27	120	120	92	130	94	92	43	71	40	59	14	33	24	23J	21	13
OHM-A7-51	5.0	30,000	82	65	26	20	7.3	8.4	7.9	13	8.3	6.8	(2.1)	6.5	6.3	7.8	6.4	5.8J	(4.6J)	(4)
JO-A07-M63/SUD-A07-065 <sup>1</sup>	5.0	30,000	14	14	28	21	28	32	30	24	17	25	40	16	23	14	(1.9)	(3.0)	(2.9)	(0.62)
<i>Trichloroethene</i>																				
JO-A07-M63/SUD-A07-065 <sup>1</sup>	5.0	5,000	10	15	24	25	(1)	36	36	30	21	37	17	29	40	33	5.9	11	17	9.3
<i>gamma-BHC (Lindane)</i>																				
OHM-A7-08	0.20	4.0	0.538	2.8	17	(0.052)	16	13	12	6.7	9.6	5.1J	7	4.3	1.4	2.6	2.6	2.0	1.4	0.82J
SUD-A07-065	0.20	4.0	NS	NS	NS	0.31	ND	0.38	0.32	0.33	(0.07)	ND	0.25	0.31	0.25	0.24	(0.12)	(0.041J)	ND	(0.10)
JO-A07-M62/SUDWP-AO7-01 <sup>2</sup>	0.20	4.0	NS	ND	ND	ND	ND	ND	ND	ND	ND	0.84	ND	ND	ND	ND	ND	ND	ND	ND
<i>4,4'-DDD</i>																				
OHM-A7-08	0.20	50	NS	NS	NS	0.35	5.0	5.6	0.3	5.0	0.28	2.0	(0.10)	0.25	(0.13)	2.0	0.21	0.40	0.29	(0.11)
<i>Arsenic</i>																				
OHM-A7-08	10	900	NS	NS	ND	ND	ND	ND	ND	ND	(7.9)	13	10	15	(8.7)	24	(1.8)	21	14	15.8
JO-A07-M63/SUD-A07-065 <sup>1</sup>	10	900	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	(5.9)	(6.2)	(1.5 J)	(1.1 J)	(0.99)	(4.1)
JO-A07-M62/SUDWP-AO7-01 <sup>2</sup>	10	900	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	(1.2 J)	ND	(0.88 J)	ND	ND
<i>Lead</i>																				
OHM-A7-08	15	10	NS	NS	485	290	17	(10)	(11.7)	(10)	(11)	(5.8)	(10)	(4.4)	(5.2)	(7.9)	(0.9)	(14)	(9.5)	(9.3)
JO-A07-M63/SUD-A07-065 <sup>1</sup>	15	10	ND	ND	ND	ND	ND	ND	ND	ND	(1.9 J)	ND	ND	ND	ND	(2)	(1.4)	(0.46 J)	(2.7)	(3.4)
JO-A07-M62/SUDWP-AO7-01 <sup>2</sup>	15	10	NS	NS	27.4	ND	(3.1)	ND	ND	ND	ND	ND	ND	ND	ND	(3)	(0.15 J)	(0.082 J)	(0.14)	ND

Notes:

<sup>1</sup> Well SUD-A07-M65 was installed in 2006 to replace JO-A07-M63, which was decommissioned in 2013.

<sup>2</sup> Well SUPWP-A07-01 was installed in 2013 as a replacement for damaged well JO-A07-M62.

**Bold** values exceed the MCP GW-1 standard.

The number in (parentheses) denotes that the concentration is below the MCP GW-1 Standard.

µg/L - micrograms per liter

NS - Not sampled

ND - Not detected

Table 3-2  
Summary of Historical Groundwater Target Compounds at AOC A7, 1996 - 2017  
Former Sudbury Training Annex Sudbury, Massachusetts

Well Number	MCP GW-1 Groundwater Standard (µg/L)	MCP GW-3 Groundwater Standard (µg/L)	Jun-05	Sep-05	Nov-06	Oct-07	Oct-08	Nov-09	Jun-11	Oct-11	Oct-12	Nov-13	Oct-14	Oct-15	Oct-16	Dec-17
<i>1,1,2,2-Tetrachloroethane</i>																
OHM-A7-51	2.0	50,000	2	(1.4)	(1.9)	<b>2.4</b>	2	(0.94)	(1.2)	(0.58)	(1.77)	(1.22)	ND	NS	NS	NS
JO-A07-M63/SUD-A07-065 <sup>1</sup>	2.0	50,000	2	<b>4.1</b>	<b>3.6</b>	<b>4.2</b>	<b>3.6</b>	<b>2.3</b>	<b>3.3</b>	<b>2.1</b>	<b>3.14</b>	<b>2.34</b>	ND	(1.80)	(1.30)	NS
<i>Tetrachloroethene</i>																
OHM-A7-08	5.0	30,000	<b>8.7</b>	<b>25.4</b>	<b>16.4J</b>	<b>6.2J</b>	<b>8.1</b>	<b>11</b>	<b>5.6</b>	<b>6.2</b>	<b>8.18</b>	<b>7.46</b>	ND	(4.20)	(2.70)	NS
OHM-A7-51	5.0	30,000	(3.1)	(3.8)	(3.8)	(3.1J)	(4.5)	(2.6)	(4)	(2.9)	(3.56)	(4.33)	ND	NS	NS	NS
JO-A07-M63/SUD-A07-065 <sup>1</sup>	5.0	30,000	(1.5)	<b>11.6</b>	<b>8.9</b>	<b>11.9</b>	<b>13</b>	<b>12</b>	<b>15</b>	<b>9.9</b>	<b>13.2</b>	<b>14.0</b>	<b>14.8</b>	<b>12.5</b>	<b>9.3</b>	NS
<i>Trichloroethene</i>																
JO-A07-M63/SUD-A07-065 <sup>1</sup>	5.0	5,000	(3.8)	<b>25.4</b>	<b>7.1</b>	<b>9.3</b>	(4.6)	(4.4)	(4.7)	(1.3)	<b>6.77</b>	<b>8.35</b>	<b>6.7</b>	<b>6.9</b>	(3.9)	NS
<i>gamma-BHC (Lindane)</i>																
OHM-A7-08	0.20	4.0	<b>1.1</b>	<b>1.84</b>	<b>1.91</b>	<b>0.58</b>	<b>0.52J</b>	<b>0.522</b>	<b>0.332</b>	<b>0.45</b>	<b>0.529</b>	<b>0.366</b>	<b>0.33</b>	(0.18)	(0.11)	NS
SUD-A07-065	0.20	4.0	(0.059)	(0.17)	(0.18)	<b>0.34</b>	<b>0.22</b>	(0.097)	(0.077)	(0.079)	<b>0.243</b>	<b>0.241</b>	<b>0.22</b>	(0.17)	(0.14)	NS
JO-A07-M62/SUDWP-AO7-01 <sup>2</sup>	0.20	4.0	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	NS	ND	ND
<i>4,4'-DDD</i>																
OHM-A7-08	0.20	50	<b>0.21</b>	(0.12)	(0.10)	(0.16)	(0.04)	(0.05)	(0.053)	(0.043)	(0.049)	(0.045)	(0.042)	(0.037)	(0.023)	NS
<i>Arsenic</i>																
OHM-A7-08	10	900	(0.9)	ND	ND	(4.7)	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
JO-A07-M63/SUD-A07-065 <sup>1</sup>	10	900	(0.17 J)	(3.9)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
JO-A07-M62/SUDWP-AO7-01 <sup>2</sup>	10	900	ND	NS	ND	ND	(2.7 J)	ND	ND	ND	NS	NS	ND	NS	NS	NS
<i>Lead</i>																
OHM-A7-08	15	10	ND	ND	ND	(7.3)	ND	ND	ND	(5 J)	ND	ND	ND	(6.30)	NS	NS
JO-A07-M63/SUD-A07-065 <sup>1</sup>	15	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
JO-A07-M62/SUDWP-AO7-01 <sup>2</sup>	15	10	ND	NS	ND	ND	ND	ND	ND	ND	NS	NS	ND	NS	NS	NS

Notes:

<sup>1</sup> Well SUD-A07-M65 was installed in 2006 to replace JO-A07-M63, which was decommissioned in 2013.

<sup>2</sup> Well SUPWP-A07-01 was installed in 2013 as a replacement for damaged well JO-A07-M62.

**Bold** values exceed the MCP GW-1 standard.

The number in (parentheses) denotes that the concentration is below the MCP GW-1 Standard.  
µg/L - micrograms per liter  
NS - Not sampled  
ND - Not detected



## **APPENDIX A GROUNDWATER FIELD SAMPLING FORMS**



Project/Site Name: Fort Devens/A7 Fall 2017  
 Field Team Member: WJA  
 Water Level Meter Model: H601

Date: 1/15/18  
 Weather: clear 60°

Well ID	Time	DTW (ft bTOC)	DTB (ft bTOC)	Lock Y/N	Bolts Y/N	Cap Y/N	Well Condition/Notes	2016 DTW (ft- bTOC)
OHM-A7-09	900	67.7	15.13	✓	MA	✓		10.04
OHM-A7-10	905	2.18	11.44	✓	MA	✓		5.12
OHM-A7-11	912	1.14	31.74	✓	MA	✓		7.12
OHM-A7-12	914	8.27	9.09	✓	MA	✓		Dry
OHM-A7-45	928	13.44	22.31	✓	MA	✓		18.24
OHM-A7-46	942	15.62	19.48	✓	MA	✓		Dry
OHM-A7-51	950	6.35	22.68	✓	MA	✓		11.59
OHM-A7-52	955	3.79	21.84	✓	MA	✓		10.44
JO-A07-M61	1002	1.02	5.33	✓	✓	✓		Dry
OHM-A7-08	1015	25.38	35.82	✓	MA	✓		27.97
SUD-A07-014	1021	13.18	21.64	✓	MA	✓		Dry
SUD-A07-065	1026	1.27	10.11	N/A	✓	✓		2.82
SUDWP-A07-01	1035	4.05	6.92	N/A	N/A	✓		5.92

**KOMAN GOVERNMENT SOLUTIONS LLC**  
Low Flow/ Low Stress Groundwater Sampling Log



**Well Identification:** SUDWP-A07-01

**Project:** Devens AOCA7 Sudbury - Fall 2017 LTM  
**Location:** Fort Devens Massachusetts

**Date:** 12/4/17  
**Sampler:** 101

**Well Integrity**

	Yes	No	N/A
Casing Secure	<input checked="" type="checkbox"/>		
Concrete Pad intact	<input checked="" type="checkbox"/>		
PVC casing intact	<input checked="" type="checkbox"/>		
Well gripper present	<input checked="" type="checkbox"/>		
Bolts present			<input checked="" type="checkbox"/>
Locked (stickup wells)			<input checked="" type="checkbox"/>

**Well Information**

Diameter	<u>1.5"</u>
Material	<u>Steel</u>
Depth to water (ft BTOR)	<u>5.44</u>
Depth to bottom (ft BTOR)	<u>6.75</u>
Screen Interval (ft BTOR)	<u>3.93</u> → <u>6.93</u>
Total volume purged (gal)	<u>2.0 gal/25</u>

**Sampling Type**

**Purging Method** ac 101 **Tubing type** poly **Dedicated pump (Y/N)**  tubing  
**Purge start/stop time** 845/915 **Tubing diameter** 4in **Air source** N/A  
**Field Instrument (Model/S/N)** 952 656 125 115 10012 / LG HMP 2020WE 8249-4116

**Stabilization Parameters**

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC (µS/cm°)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color/Clarity
845	<u>75</u>	<u>5.72</u>	<u>10.73</u>	<u>6.18</u>	<u>98</u>	<u>5.23</u>	<u>121.7</u>	<u>5.85</u>	<u>Clear</u>
850	<u>↓</u>	<u>↓</u>	<u>9.68</u>	<u>6.18</u>	<u>89</u>	<u>4.91</u>	<u>119.6</u>	<u>4.21</u>	<u>↓</u>
855	<u>↓</u>	<u>↓</u>	<u>10.13</u>	<u>6.18</u>	<u>89</u>	<u>4.79</u>	<u>117.3</u>	<u>3.97</u>	<u>↓</u>
900	<u>↓</u>	<u>↓</u>	<u>10.62</u>	<u>6.18</u>	<u>73</u>	<u>4.22</u>	<u>116.9</u>	<u>3.87</u>	<u>↓</u>
905	<u>↓</u>	<u>↓</u>	<u>10.60</u>	<u>6.17</u>	<u>72</u>	<u>4.19</u>	<u>115.1</u>	<u>3.84</u>	<u>↓</u>
910	<u>↓</u>	<u>↓</u>	<u>10.57</u>	<u>6.17</u>	<u>71</u>	<u>4.17</u>	<u>115.0</u>	<u>3.80</u>	<u>↓</u>

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ±10mv 10%  
2" Screen Volume = 0.163 gal/ft or 616 ml per foot

**Sampling Details**

**Field Filtered (Y/N):** N **Duplicate (Y/N):** Y **MS/MSD (Y/N):** N  
**Filter Size:** N/A **Dup ID/Time:** SUD-DU201-Fall17 (2920)

**Dedicated Tubing:** (Y/N) Y

**Comments**

SUDWP-A07-01-Fall17 (2915 Fall 15)

**Signature**

**Date**

12/4/17



# Field Instrument Calibration Log

Date: 6/4/17

Weather: 205

Project/Site Name: AOC 7 Fall 2017 Sampling

Instrument: YSI 556 MP

Calibrated By: WJ

Serial Number: 115100112

Parameters	Solution Expiration Date	Morning Calibration Time	Cal. Temperature °C	Afternoon Calibration Time	Cal. Temperature °C
Specific Conductivity (1.413 $\mu\text{S}/\text{cm}^\circ$ )	6/30/18	1.397	12.97	1.413	13.27
pH (7)	12/31/18	6.82		7.00	
pH (4)	6/31/19	3.89		4.00	
pH (10)	12/31/18	9.78		10.00	
ORP (240 mv)	6/31/17	237.1		240.0	
Dissolved Oxygen (%)	-	92.6%		100.0%	
Dissolved Oxygen (mg/L)	-				
Barometric Pressure (mmHg)	-				
Notes:					

Signature: \_\_\_\_\_

Date: 12/4/17



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1116-6678 ..

**Signature:** \_\_\_\_\_

**Date:**

11/3/21





## **APPENDIX B**

### **LABORATORY ANALYTICAL REPORTS**

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-146353-1

Client Project/Site: Devens / AOCA7 (Sudbury)

For:

KOMAN Government Solutions, LLC

293 Boston Post Road

Suite 100

Marlborough, Massachusetts 01752

Attn: Laurie Ekes



Authorized for release by:

12/19/2017 1:00:22 PM

Michele Kersey, Project Manager II

(912)354-7858

[michele.kersey@testamericainc.com](mailto:michele.kersey@testamericainc.com)

Designee for

Jerry Lanier, Project Manager I

(912)354-7858 e.3410

[jerry.lanier@testamericainc.com](mailto:jerry.lanier@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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## Case Narrative

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

**Job ID: 680-146353-1**

**Laboratory: TestAmerica Savannah**

### Narrative

## CASE NARRATIVE

**Client: KOMAN Government Solutions, LLC**

**Project: Devens / AOCA7 (Sudbury)**

**Report Number: 680-146353-1**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

### RECEIPT

The samples were received on 12/6/2017 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.4° C and 2.7° C.

### VOLATILE ORGANIC COMPOUNDS (GC/MS)

Samples SUDWP-A07-01\_Fall17 (680-146353-1), SUD-DUP01\_Fall17 (680-146353-2) and Trip Blank (680-146353-3) were analyzed for Volatile Organic Compounds (GC/MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 12/12/2017.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-506014.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### PESTICIDES AND PCBs

Samples SUDWP-A07-01\_Fall17 (680-146353-1) and SUD-DUP01\_Fall17 (680-146353-2) were analyzed for Pesticides and PCBs in accordance with EPA SW-846 Method 8081B\_8082A. The samples were prepared on 12/08/2017 and analyzed on 12/11/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### CHEMICAL OXYGEN DEMAND

Samples SUDWP-A07-01\_Fall17 (680-146353-1) and SUD-DUP01\_Fall17 (680-146353-2) were analyzed for chemical oxygen demand in accordance with EPA Method 410.4. The samples were analyzed on 12/11/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### CYANIDE

Samples SUDWP-A07-01\_Fall17 (680-146353-1) and SUD-DUP01\_Fall17 (680-146353-2) were analyzed for cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared and analyzed on 12/13/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## Sample Summary

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-146353-1	SUDWP-A07-01_Fall17	Water	12/04/17 09:15	12/06/17 09:20
680-146353-2	SUD-DUP01_Fall17	Water	12/04/17 09:20	12/06/17 09:20
680-146353-3	Trip Blank	Water	12/04/17 00:00	12/06/17 09:20

## Method Summary

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8081B 8082A	Organochlorine Pesticides & PCBs (GC)	SW846	TAL SAV
410.4	COD	MCAWW	TAL DEN
9012B	Cyanide, Total and/or Amenable	EPA	TAL SAV

### Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

## Definitions/Glossary

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

### Qualifiers

#### GC/MS VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
M	Manual integrated compound.

#### GC Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.

#### General Chemistry

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Client Sample Results

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

Client Sample ID: SUDWP-A07-01\_Fall17

Lab Sample ID: 680-146353-1

Date Collected: 12/04/17 09:15

Matrix: Water

Date Received: 12/06/17 09:20

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acetone	10	U	10	10	7.0	ug/L		12/12/17 17:09	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		12/12/17 17:09	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		12/12/17 17:09	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		12/12/17 17:09	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 17:09	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		12/12/17 17:09	1
Carbon disulfide	2.0	U	2.0	2.0	0.43	ug/L		12/12/17 17:09	1
Carbon tetrachloride	0.50	U	1.0	0.50	0.33	ug/L		12/12/17 17:09	1
Chlorobenzene	0.50	U	1.0	0.50	0.26	ug/L		12/12/17 17:09	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		12/12/17 17:09	1
Chlorodibromomethane	0.50	U	1.0	0.50	0.32	ug/L		12/12/17 17:09	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 17:09	1
<b>Chloroform</b>	<b>2.7</b>		1.0	1.0	0.50	ug/L		12/12/17 17:09	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		12/12/17 17:09	1
2-Chlorotoluene	0.50	U	1.0	0.50	0.27	ug/L		12/12/17 17:09	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		12/12/17 17:09	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		12/12/17 17:09	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		12/12/17 17:09	1
1,2-Dibromo-3-Chloropropane	2.0	U	5.0	2.0	1.1	ug/L		12/12/17 17:09	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		12/12/17 17:09	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 17:09	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		12/12/17 17:09	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		12/12/17 17:09	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		12/12/17 17:09	1
Dichlorodifluoromethane	1.0	U	1.0	1.0	0.60	ug/L		12/12/17 17:09	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		12/12/17 17:09	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.50	ug/L		12/12/17 17:09	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		12/12/17 17:09	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.74	ug/L		12/12/17 17:09	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.67	ug/L		12/12/17 17:09	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		12/12/17 17:09	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 17:09	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		12/12/17 17:09	1
Ethylbenzene	0.50	U	1.0	0.50	0.33	ug/L		12/12/17 17:09	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		12/12/17 17:09	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 17:09	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		12/12/17 17:09	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		12/12/17 17:09	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		12/12/17 17:09	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 17:09	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		12/12/17 17:09	1
Methyl tert-butyl ether	0.50	U	10	0.50	0.30	ug/L		12/12/17 17:09	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		12/12/17 17:09	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 17:09	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		12/12/17 17:09	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		12/12/17 17:09	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		12/12/17 17:09	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		12/12/17 17:09	1
Styrene	0.50	U	1.0	0.50	0.27	ug/L		12/12/17 17:09	1

TestAmerica Savannah



# Client Sample Results

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

Client Sample ID: SUDWP-A07-01\_Fall17

Lab Sample ID: 680-146353-1

Date Collected: 12/04/17 09:15

Matrix: Water

Date Received: 12/06/17 09:20

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		12/12/17 17:09	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 17:09	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	1.0	0.62	ug/L		12/12/17 17:09	1
Tetrachloroethene	1.0	U	1.0	1.0	0.74	ug/L		12/12/17 17:09	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		12/12/17 17:09	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 17:09	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		12/12/17 17:09	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 17:09	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 17:09	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 17:09	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.33	ug/L		12/12/17 17:09	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		12/12/17 17:09	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		12/12/17 17:09	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		12/12/17 17:09	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		12/12/17 17:09	1
1,3,5-Trimethylbenzene	0.50	U	1.0	0.50	0.31	ug/L		12/12/17 17:09	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		12/12/17 17:09	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		12/12/17 17:09	1
Xylenes, Total	0.50	U	2.0	0.50	0.23	ug/L		12/12/17 17:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		85 - 114		12/12/17 17:09	1
Dibromofluoromethane (Surr)	92		80 - 119		12/12/17 17:09	1
1,2-Dichloroethane-d4 (Surr)	85		81 - 118		12/12/17 17:09	1
Toluene-d8 (Surr)	99		89 - 112		12/12/17 17:09	1

## Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aldrin	0.021	U	0.059	0.021	0.0086	ug/L		12/11/17 19:35	1
alpha-BHC	0.012	U	0.059	0.012	0.0040	ug/L		12/11/17 19:35	1
beta-BHC	0.021	U	0.059	0.021	0.011	ug/L		12/11/17 19:35	1
Chlordane (technical)	0.36	U	0.59	0.36	0.11	ug/L		12/11/17 19:35	1
4,4'-DDD	0.012	U	0.059	0.012	0.0075	ug/L		12/11/17 19:35	1
4,4'-DDE	0.012	U	0.059	0.012	0.0061	ug/L		12/11/17 19:35	1
4,4'-DDT	0.021	U	0.059	0.021	0.0083	ug/L		12/11/17 19:35	1
delta-BHC	0.021	U	0.059	0.021	0.0089	ug/L		12/11/17 19:35	1
Dieldrin	0.012	U	0.059	0.012	0.0045	ug/L		12/11/17 19:35	1
Endosulfan I	0.012	U	0.059	0.012	0.0042	ug/L		12/11/17 19:35	1
Endosulfan II	0.012	U	0.059	0.012	0.0050	ug/L		12/11/17 19:35	1
Endosulfan sulfate	0.012	U	0.059	0.012	0.0061	ug/L		12/11/17 19:35	1
Endrin	0.012	U	0.059	0.012	0.0063	ug/L		12/11/17 19:35	1
Endrin aldehyde	0.012	U	0.059	0.012	0.0072	ug/L		12/11/17 19:35	1
Endrin ketone	0.012	U	0.059	0.012	0.0055	ug/L		12/11/17 19:35	1
gamma-BHC (Lindane)	0.012	U	0.059	0.012	0.0043	ug/L		12/11/17 19:35	1
Heptachlor	0.021	U	0.059	0.021	0.0084	ug/L		12/11/17 19:35	1
Heptachlor epoxide	0.012	U	0.059	0.012	0.0044	ug/L		12/11/17 19:35	1
Methoxychlor	0.021	U	0.059	0.021	0.012	ug/L		12/11/17 19:35	1
Toxaphene	0.95	U	5.9	0.95	0.48	ug/L		12/11/17 19:35	1

TestAmerica Savannah

# Client Sample Results

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOC7 (Sudbury)

TestAmerica Job ID: 680-146353-1

**Client Sample ID: SUDWP-A07-01\_Fall17**

**Lab Sample ID: 680-146353-1**

**Date Collected: 12/04/17 09:15**

**Matrix: Water**

**Date Received: 12/06/17 09:20**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	29		14 - 130	12/08/17 17:17	12/11/17 19:35	1
Tetrachloro-m-xylene	55		44 - 124	12/08/17 17:17	12/11/17 19:35	1

## General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chemical Oxygen Demand	10	U	20	10	4.1	mg/L		12/11/17 09:52	1
Cyanide, Total	0.0050	U	0.010	0.0050	0.0025	mg/L		12/13/17 10:44	1

**Client Sample ID: SUD-DUP01\_Fall17**

**Lab Sample ID: 680-146353-2**

**Date Collected: 12/04/17 09:20**

**Matrix: Water**

**Date Received: 12/06/17 09:20**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acetone	10	U	10	10	7.0	ug/L		12/12/17 17:34	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		12/12/17 17:34	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		12/12/17 17:34	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		12/12/17 17:34	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 17:34	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		12/12/17 17:34	1
Carbon disulfide	2.0	U	2.0	2.0	0.43	ug/L		12/12/17 17:34	1
Carbon tetrachloride	0.50	U	1.0	0.50	0.33	ug/L		12/12/17 17:34	1
Chlorobenzene	0.50	U	1.0	0.50	0.26	ug/L		12/12/17 17:34	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		12/12/17 17:34	1
Chlorodibromomethane	0.50	U	1.0	0.50	0.32	ug/L		12/12/17 17:34	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 17:34	1
<b>Chloroform</b>	<b>2.7</b>		1.0	1.0	0.50	ug/L		12/12/17 17:34	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		12/12/17 17:34	1
2-Chlorotoluene	0.50	U	1.0	0.50	0.27	ug/L		12/12/17 17:34	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		12/12/17 17:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		12/12/17 17:34	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		12/12/17 17:34	1
1,2-Dibromo-3-Chloropropane	2.0	U	5.0	2.0	1.1	ug/L		12/12/17 17:34	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		12/12/17 17:34	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 17:34	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		12/12/17 17:34	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		12/12/17 17:34	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		12/12/17 17:34	1
Dichlorodifluoromethane	1.0	U	1.0	1.0	0.60	ug/L		12/12/17 17:34	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		12/12/17 17:34	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.50	ug/L		12/12/17 17:34	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		12/12/17 17:34	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.74	ug/L		12/12/17 17:34	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.67	ug/L		12/12/17 17:34	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		12/12/17 17:34	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 17:34	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		12/12/17 17:34	1
Ethylbenzene	0.50	U	1.0	0.50	0.33	ug/L		12/12/17 17:34	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		12/12/17 17:34	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 17:34	1

TestAmerica Savannah

# Client Sample Results

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOC7 (Sudbury)

TestAmerica Job ID: 680-146353-1

Client Sample ID: SUD-DUP01\_Fall17

Lab Sample ID: 680-146353-2

Date Collected: 12/04/17 09:20

Matrix: Water

Date Received: 12/06/17 09:20

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		12/12/17 17:34	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		12/12/17 17:34	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		12/12/17 17:34	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 17:34	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		12/12/17 17:34	1
Methyl tert-butyl ether	0.50	U	10	0.50	0.30	ug/L		12/12/17 17:34	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		12/12/17 17:34	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 17:34	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		12/12/17 17:34	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		12/12/17 17:34	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		12/12/17 17:34	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		12/12/17 17:34	1
Styrene	0.50	U	1.0	0.50	0.27	ug/L		12/12/17 17:34	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		12/12/17 17:34	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 17:34	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	1.0	0.62	ug/L		12/12/17 17:34	1
Tetrachloroethene	1.0	U	1.0	1.0	0.74	ug/L		12/12/17 17:34	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		12/12/17 17:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 17:34	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		12/12/17 17:34	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 17:34	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 17:34	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 17:34	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.33	ug/L		12/12/17 17:34	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		12/12/17 17:34	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		12/12/17 17:34	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		12/12/17 17:34	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		12/12/17 17:34	1
1,3,5-Trimethylbenzene	0.50	U	1.0	0.50	0.31	ug/L		12/12/17 17:34	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		12/12/17 17:34	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		12/12/17 17:34	1
Xylenes, Total	0.50	U	2.0	0.50	0.23	ug/L		12/12/17 17:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		85 - 114		12/12/17 17:34	1
Dibromofluoromethane (Surr)	92		80 - 119		12/12/17 17:34	1
1,2-Dichloroethane-d4 (Surr)	87		81 - 118		12/12/17 17:34	1
Toluene-d8 (Surr)	100		89 - 112		12/12/17 17:34	1

## Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aldrin	0.018	U	0.050	0.018	0.0072	ug/L		12/11/17 19:49	1
alpha-BHC	0.010	U	0.050	0.010	0.0034	ug/L		12/11/17 19:49	1
beta-BHC	0.018	U	0.050	0.018	0.0091	ug/L		12/11/17 19:49	1
Chlordane (technical)	0.30	U	0.50	0.30	0.095	ug/L		12/11/17 19:49	1
4,4'-DDD	0.010	U	0.050	0.010	0.0063	ug/L		12/11/17 19:49	1
4,4'-DDE	0.010	U	0.050	0.010	0.0051	ug/L		12/11/17 19:49	1
4,4'-DDT	0.018	U	0.050	0.018	0.0070	ug/L		12/11/17 19:49	1
delta-BHC	0.018	U	0.050	0.018	0.0075	ug/L		12/11/17 19:49	1
Dieldrin	0.010	U	0.050	0.010	0.0038	ug/L		12/11/17 19:49	1

TestAmerica Savannah

# Client Sample Results

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOC7 (Sudbury)

TestAmerica Job ID: 680-146353-1

Client Sample ID: SUD-DUP01\_Fall17

Lab Sample ID: 680-146353-2

Date Collected: 12/04/17 09:20

Matrix: Water

Date Received: 12/06/17 09:20

## Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Endosulfan I	0.010	U	0.050	0.010	0.0035	ug/L		12/11/17 19:49	1
Endosulfan II	0.010	U	0.050	0.010	0.0042	ug/L		12/11/17 19:49	1
Endosulfan sulfate	0.010	U	0.050	0.010	0.0051	ug/L		12/11/17 19:49	1
Endrin	0.010	U	0.050	0.010	0.0053	ug/L		12/11/17 19:49	1
Endrin aldehyde	0.010	U	0.050	0.010	0.0061	ug/L		12/11/17 19:49	1
Endrin ketone	0.010	U	0.050	0.010	0.0046	ug/L		12/11/17 19:49	1
gamma-BHC (Lindane)	0.010	U	0.050	0.010	0.0036	ug/L		12/11/17 19:49	1
Heptachlor	0.018	U	0.050	0.018	0.0071	ug/L		12/11/17 19:49	1
Heptachlor epoxide	0.010	U	0.050	0.010	0.0037	ug/L		12/11/17 19:49	1
Methoxychlor	0.018	U	0.050	0.018	0.0098	ug/L		12/11/17 19:49	1
Toxaphene	0.80	U	5.0	0.80	0.40	ug/L		12/11/17 19:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	31		14 - 130				12/08/17 17:17	12/11/17 19:49	1
Tetrachloro-m-xylene	62		44 - 124				12/08/17 17:17	12/11/17 19:49	1

## General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chemical Oxygen Demand	10	U	20	10	4.1	mg/L		12/11/17 09:52	1
Cyanide, Total	0.0050	U	0.010	0.0050	0.0025	mg/L		12/13/17 10:46	1

Client Sample ID: Trip Blank

Lab Sample ID: 680-146353-3

Date Collected: 12/04/17 00:00

Matrix: Water

Date Received: 12/06/17 09:20

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acetone	10	U M	10	10	7.0	ug/L		12/12/17 13:03	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		12/12/17 13:03	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		12/12/17 13:03	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		12/12/17 13:03	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 13:03	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		12/12/17 13:03	1
Carbon disulfide	2.0	U	2.0	2.0	0.43	ug/L		12/12/17 13:03	1
Carbon tetrachloride	0.50	U	1.0	0.50	0.33	ug/L		12/12/17 13:03	1
Chlorobenzene	0.50	U	1.0	0.50	0.26	ug/L		12/12/17 13:03	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		12/12/17 13:03	1
Chlorodibromomethane	0.50	U	1.0	0.50	0.32	ug/L		12/12/17 13:03	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 13:03	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		12/12/17 13:03	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		12/12/17 13:03	1
2-Chlorotoluene	0.50	U	1.0	0.50	0.27	ug/L		12/12/17 13:03	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		12/12/17 13:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		12/12/17 13:03	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		12/12/17 13:03	1
1,2-Dibromo-3-Chloropropane	2.0	U	5.0	2.0	1.1	ug/L		12/12/17 13:03	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		12/12/17 13:03	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 13:03	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		12/12/17 13:03	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		12/12/17 13:03	1

TestAmerica Savannah

# Client Sample Results

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

Client Sample ID: Trip Blank

Lab Sample ID: 680-146353-3

Date Collected: 12/04/17 00:00

Matrix: Water

Date Received: 12/06/17 09:20

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		12/12/17 13:03	1
Dichlorodifluoromethane	1.0	U	1.0	1.0	0.60	ug/L		12/12/17 13:03	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		12/12/17 13:03	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.50	ug/L		12/12/17 13:03	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		12/12/17 13:03	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.74	ug/L		12/12/17 13:03	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.67	ug/L		12/12/17 13:03	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		12/12/17 13:03	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 13:03	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		12/12/17 13:03	1
Ethylbenzene	0.50	U	1.0	0.50	0.33	ug/L		12/12/17 13:03	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		12/12/17 13:03	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 13:03	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		12/12/17 13:03	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		12/12/17 13:03	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		12/12/17 13:03	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 13:03	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		12/12/17 13:03	1
Methyl tert-butyl ether	0.50	U	10	0.50	0.30	ug/L		12/12/17 13:03	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		12/12/17 13:03	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 13:03	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		12/12/17 13:03	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		12/12/17 13:03	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		12/12/17 13:03	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		12/12/17 13:03	1
Styrene	0.50	U	1.0	0.50	0.27	ug/L		12/12/17 13:03	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		12/12/17 13:03	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 13:03	1
1,1,1,2,2-Tetrachloroethane	1.0	U	1.0	1.0	0.62	ug/L		12/12/17 13:03	1
Tetrachloroethene	1.0	U	1.0	1.0	0.74	ug/L		12/12/17 13:03	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		12/12/17 13:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 13:03	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		12/12/17 13:03	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 13:03	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 13:03	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 13:03	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.33	ug/L		12/12/17 13:03	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		12/12/17 13:03	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		12/12/17 13:03	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		12/12/17 13:03	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		12/12/17 13:03	1
1,3,5-Trimethylbenzene	0.50	U	1.0	0.50	0.31	ug/L		12/12/17 13:03	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		12/12/17 13:03	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		12/12/17 13:03	1
Xylenes, Total	0.50	U	2.0	0.50	0.23	ug/L		12/12/17 13:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		85 - 114		12/12/17 13:03	1
Dibromofluoromethane (Surr)	93		80 - 119		12/12/17 13:03	1
1,2-Dichloroethane-d4 (Surr)	85		81 - 118		12/12/17 13:03	1

TestAmerica Savannah

## Client Sample Results

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

**Client Sample ID: Trip Blank**

**Date Collected: 12/04/17 00:00**

**Date Received: 12/06/17 09:20**

**Lab Sample ID: 680-146353-3**

**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		89 - 112		12/12/17 13:03	1

## Surrogate Summary

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

### Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		BFB (85-114)	DBFM (80-119)	DCA (81-118)	TOL (89-112)
680-146353-1	SUDWP-A07-01_Fall17	97	92	85	99
680-146353-2	SUD-DUP01_Fall17	97	92	87	100
680-146353-3	Trip Blank	96	93	85	98
LCS 680-506014/4	Lab Control Sample	96	94	91	95
LCSD 680-506014/5	Lab Control Sample Dup	97	96	92	94
MB 680-506014/9	Method Blank	100	92	83	99

#### Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

### Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCBP1 (14-130)	TCX1 (44-124)
680-146353-1	SUDWP-A07-01_Fall17	29	55
680-146353-2	SUD-DUP01_Fall17	31	62
LCS 680-505685/14-A	Lab Control Sample	66	70
LCSD 680-505685/15-A	Lab Control Sample Dup	49	62
MB 680-505685/13-A	Method Blank	55	71

#### Surrogate Legend

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

# QC Sample Results

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-506014/9

Matrix: Water

Analysis Batch: 506014

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Acetone	10	U	10	10	7.0	ug/L		12/12/17 12:38	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		12/12/17 12:38	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		12/12/17 12:38	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		12/12/17 12:38	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 12:38	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		12/12/17 12:38	1
Carbon disulfide	2.0	U	2.0	2.0	0.43	ug/L		12/12/17 12:38	1
Carbon tetrachloride	0.50	U	1.0	0.50	0.33	ug/L		12/12/17 12:38	1
Chlorobenzene	0.50	U	1.0	0.50	0.26	ug/L		12/12/17 12:38	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		12/12/17 12:38	1
Chlorodibromomethane	0.50	U	1.0	0.50	0.32	ug/L		12/12/17 12:38	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 12:38	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		12/12/17 12:38	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		12/12/17 12:38	1
2-Chlorotoluene	0.50	U	1.0	0.50	0.27	ug/L		12/12/17 12:38	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		12/12/17 12:38	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		12/12/17 12:38	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		12/12/17 12:38	1
1,2-Dibromo-3-Chloropropane	2.0	U	5.0	2.0	1.1	ug/L		12/12/17 12:38	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		12/12/17 12:38	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 12:38	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		12/12/17 12:38	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		12/12/17 12:38	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		12/12/17 12:38	1
Dichlorodifluoromethane	1.0	U	1.0	1.0	0.60	ug/L		12/12/17 12:38	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		12/12/17 12:38	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.50	ug/L		12/12/17 12:38	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		12/12/17 12:38	1
1,2-Dichloroethene, Total	1.0	U	2.0	1.0	0.74	ug/L		12/12/17 12:38	1
1,2-Dichloropropane	1.0	U	1.0	1.0	0.67	ug/L		12/12/17 12:38	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		12/12/17 12:38	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 12:38	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		12/12/17 12:38	1
Ethylbenzene	0.50	U	1.0	0.50	0.33	ug/L		12/12/17 12:38	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		12/12/17 12:38	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 12:38	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		12/12/17 12:38	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		12/12/17 12:38	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		12/12/17 12:38	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 12:38	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		12/12/17 12:38	1
Methyl tert-butyl ether	0.50	U	10	0.50	0.30	ug/L		12/12/17 12:38	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		12/12/17 12:38	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 12:38	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		12/12/17 12:38	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		12/12/17 12:38	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		12/12/17 12:38	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		12/12/17 12:38	1

TestAmerica Savannah



# QC Sample Results

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-506014/9

Matrix: Water

Analysis Batch: 506014

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Styrene	0.50	U	1.0	0.50	0.27	ug/L		12/12/17 12:38	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		12/12/17 12:38	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 12:38	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	1.0	0.62	ug/L		12/12/17 12:38	1
Tetrachloroethene	1.0	U	1.0	1.0	0.74	ug/L		12/12/17 12:38	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		12/12/17 12:38	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 12:38	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		12/12/17 12:38	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 12:38	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		12/12/17 12:38	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		12/12/17 12:38	1
1,1,2-Trichloroethane	0.50	U	1.0	0.50	0.33	ug/L		12/12/17 12:38	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		12/12/17 12:38	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		12/12/17 12:38	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		12/12/17 12:38	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		12/12/17 12:38	1
1,3,5-Trimethylbenzene	0.50	U	1.0	0.50	0.31	ug/L		12/12/17 12:38	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		12/12/17 12:38	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		12/12/17 12:38	1
Xylenes, Total	0.50	U	2.0	0.50	0.23	ug/L		12/12/17 12:38	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		85 - 114		12/12/17 12:38	1
Dibromofluoromethane (Surr)	92		80 - 119		12/12/17 12:38	1
1,2-Dichloroethane-d4 (Surr)	83		81 - 118		12/12/17 12:38	1
Toluene-d8 (Surr)	99		89 - 112		12/12/17 12:38	1

Lab Sample ID: LCS 680-506014/4

Matrix: Water

Analysis Batch: 506014

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	250	235		ug/L		94	39 - 160
Benzene	50.0	47.4		ug/L		95	79 - 120
Bromobenzene	50.0	50.2		ug/L		100	80 - 120
Bromoform	50.0	49.6		ug/L		99	66 - 130
Bromomethane	50.0	50.2		ug/L		100	53 - 141
2-Butanone (MEK)	250	230		ug/L		92	56 - 143
Carbon disulfide	50.0	48.6		ug/L		97	64 - 133
Carbon tetrachloride	50.0	52.0		ug/L		104	72 - 136
Chlorobenzene	50.0	48.4		ug/L		97	82 - 118
Chlorobromomethane	50.0	47.2		ug/L		94	78 - 123
Chlorodibromomethane	50.0	50.1		ug/L		100	74 - 126
Chloroethane	50.0	46.9		ug/L		94	60 - 138
Chloroform	50.0	47.6		ug/L		95	79 - 124
Chloromethane	50.0	43.7		ug/L		87	50 - 139
2-Chlorotoluene	50.0	48.9		ug/L		98	79 - 122
4-Chlorotoluene	50.0	50.2		ug/L		100	78 - 122

TestAmerica Savannah

# QC Sample Results

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-506014/4

Matrix: Water

Analysis Batch: 506014

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	50.0	48.7		ug/L		97	78 - 123
cis-1,3-Dichloropropene	50.0	49.6		ug/L		99	75 - 124
1,2-Dibromo-3-Chloropropane	50.0	48.3		ug/L		97	62 - 128
Dibromomethane	50.0	47.0		ug/L		94	79 - 123
1,2-Dichlorobenzene	50.0	47.3		ug/L		95	80 - 119
1,3-Dichlorobenzene	50.0	47.1		ug/L		94	80 - 119
1,4-Dichlorobenzene	50.0	47.9		ug/L		96	79 - 118
Dichlorobromomethane	50.0	48.5		ug/L		97	79 - 125
Dichlorodifluoromethane	50.0	44.0		ug/L		88	32 - 152
1,1-Dichloroethane	50.0	47.2		ug/L		94	77 - 125
1,2-Dichloroethane	50.0	48.4		ug/L		97	73 - 128
1,1,1-Dichloroethene	50.0	52.9		ug/L		106	71 - 131
1,2-Dichloroethene, Total	100	96.7		ug/L		97	79 - 121
1,2-Dichloropropane	50.0	48.8		ug/L		98	78 - 122
1,3-Dichloropropane	50.0	48.4		ug/L		97	80 - 119
2,2-Dichloropropane	50.0	55.6		ug/L		111	60 - 139
1,1-Dichloropropene	50.0	50.1		ug/L		100	79 - 125
Ethylbenzene	50.0	48.9		ug/L		98	79 - 121
Ethylene Dibromide	50.0	49.4		ug/L		99	75 - 127
Hexachlorobutadiene	50.0	51.5		ug/L		103	66 - 134
2-Hexanone	250	235		ug/L		94	57 - 139
Isopropylbenzene	50.0	49.7		ug/L		99	72 - 131
4-Isopropyltoluene	50.0	49.5		ug/L		99	77 - 127
Methylene Chloride	50.0	46.5		ug/L		93	74 - 124
4-Methyl-2-pentanone (MIBK)	250	236		ug/L		95	67 - 130
Methyl tert-butyl ether	50.0	47.9		ug/L		96	71 - 124
m-Xylene & p-Xylene	50.0	49.6		ug/L		99	80 - 121
Naphthalene	50.0	45.6		ug/L		91	61 - 128
n-Butylbenzene	50.0	50.2		ug/L		100	75 - 128
N-Propylbenzene	50.0	50.9		ug/L		102	76 - 126
o-Xylene	50.0	48.7		ug/L		97	78 - 122
sec-Butylbenzene	50.0	50.0		ug/L		100	77 - 126
Styrene	50.0	48.2		ug/L		96	78 - 123
tert-Butylbenzene	50.0	48.9		ug/L		98	78 - 124
1,1,1,2-Tetrachloroethane	50.0	50.6		ug/L		101	78 - 124
1,1,2,2-Tetrachloroethane	50.0	49.9		ug/L		100	71 - 121
Tetrachloroethene	50.0	50.3		ug/L		101	74 - 129
Toluene	50.0	47.6		ug/L		95	80 - 121
trans-1,2-Dichloroethene	50.0	48.0		ug/L		96	75 - 124
trans-1,3-Dichloropropene	50.0	49.3		ug/L		99	73 - 127
1,2,3-Trichlorobenzene	50.0	48.8		ug/L		98	69 - 129
1,2,4-Trichlorobenzene	50.0	47.0		ug/L		94	69 - 130
1,1,1-Trichloroethane	50.0	50.0		ug/L		100	74 - 131
1,1,2-Trichloroethane	50.0	48.2		ug/L		96	80 - 119
Trichloroethene	50.0	46.9		ug/L		94	79 - 123
Trichlorofluoromethane	50.0	51.6		ug/L		103	65 - 141
1,2,3-Trichloropropane	50.0	48.0		ug/L		96	73 - 122
1,2,4-Trimethylbenzene	50.0	49.8		ug/L		100	76 - 124

TestAmerica Savannah

# QC Sample Results

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-506014/4

Matrix: Water

Analysis Batch: 506014

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	50.0	49.7		ug/L		99	75 - 124
Vinyl acetate	100	104		ug/L		104	54 - 146
Vinyl chloride	50.0	48.8		ug/L		98	58 - 137
Xylenes, Total	100	98.3		ug/L		98	79 - 121

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		85 - 114
Dibromofluoromethane (Surr)	94		80 - 119
1,2-Dichloroethane-d4 (Surr)	91		81 - 118
Toluene-d8 (Surr)	95		89 - 112

Lab Sample ID: LCSD 680-506014/5

Matrix: Water

Analysis Batch: 506014

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	250	241		ug/L		96	39 - 160	2	20
Benzene	50.0	48.1		ug/L		96	79 - 120	1	20
Bromobenzene	50.0	48.5		ug/L		97	80 - 120	4	20
Bromoform	50.0	50.6		ug/L		101	66 - 130	2	20
Bromomethane	50.0	48.6		ug/L		97	53 - 141	3	20
2-Butanone (MEK)	250	239		ug/L		96	56 - 143	4	20
Carbon disulfide	50.0	49.3		ug/L		99	64 - 133	1	20
Carbon tetrachloride	50.0	53.8		ug/L		108	72 - 136	4	20
Chlorobenzene	50.0	48.1		ug/L		96	82 - 118	1	20
Chlorobromomethane	50.0	47.0		ug/L		94	78 - 123	0	20
Chlorodibromomethane	50.0	50.5		ug/L		101	74 - 126	1	20
Chloroethane	50.0	48.6		ug/L		97	60 - 138	4	20
Chloroform	50.0	48.0		ug/L		96	79 - 124	1	20
Chloromethane	50.0	46.3		ug/L		93	50 - 139	6	20
2-Chlorotoluene	50.0	49.1		ug/L		98	79 - 122	0	20
4-Chlorotoluene	50.0	49.0		ug/L		98	78 - 122	2	20
cis-1,2-Dichloroethene	50.0	49.7		ug/L		99	78 - 123	2	20
cis-1,3-Dichloropropene	50.0	51.3		ug/L		103	75 - 124	3	20
1,2-Dibromo-3-Chloropropane	50.0	49.3		ug/L		99	62 - 128	2	20
Dibromomethane	50.0	46.8		ug/L		94	79 - 123	0	20
1,2-Dichlorobenzene	50.0	48.1		ug/L		96	80 - 119	2	20
1,3-Dichlorobenzene	50.0	47.2		ug/L		94	80 - 119	0	20
1,4-Dichlorobenzene	50.0	48.3		ug/L		97	79 - 118	1	20
Dichlorobromomethane	50.0	49.4		ug/L		99	79 - 125	2	20
Dichlorodifluoromethane	50.0	45.9		ug/L		92	32 - 152	4	20
1,1-Dichloroethane	50.0	48.9		ug/L		98	77 - 125	4	20
1,2-Dichloroethane	50.0	48.5		ug/L		97	73 - 128	0	20
1,1-Dichloroethene	50.0	55.8		ug/L		112	71 - 131	5	20
1,2-Dichloroethene, Total	100	99.3		ug/L		99	79 - 121	3	20
1,2-Dichloropropane	50.0	48.8		ug/L		98	78 - 122	0	20
1,3-Dichloropropane	50.0	48.8		ug/L		98	80 - 119	1	20
2,2-Dichloropropane	50.0	56.3		ug/L		113	60 - 139	1	20

TestAmerica Savannah

# QC Sample Results

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-506014/5

Matrix: Water

Analysis Batch: 506014

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloropropene	50.0	50.5		ug/L		101	79 - 125	1	20
Ethylbenzene	50.0	49.0		ug/L		98	79 - 121	0	20
Ethylene Dibromide	50.0	48.8		ug/L		98	75 - 127	1	20
Hexachlorobutadiene	50.0	52.8		ug/L		106	66 - 134	3	20
2-Hexanone	250	241		ug/L		96	57 - 139	2	20
Isopropylbenzene	50.0	49.8		ug/L		100	72 - 131	0	20
4-Isopropyltoluene	50.0	49.9		ug/L		100	77 - 127	1	20
Methylene Chloride	50.0	48.0		ug/L		96	74 - 124	3	20
4-Methyl-2-pentanone (MIBK)	250	239		ug/L		96	67 - 130	1	20
Methyl tert-butyl ether	50.0	48.2		ug/L		96	71 - 124	1	20
m-Xylene & p-Xylene	50.0	48.9		ug/L		98	80 - 121	1	20
Naphthalene	50.0	46.7		ug/L		93	61 - 128	2	20
n-Butylbenzene	50.0	50.9		ug/L		102	75 - 128	2	20
N-Propylbenzene	50.0	50.2		ug/L		100	76 - 126	1	20
o-Xylene	50.0	48.6		ug/L		97	78 - 122	0	20
sec-Butylbenzene	50.0	51.1		ug/L		102	77 - 126	2	20
Styrene	50.0	48.8		ug/L		98	78 - 123	1	20
tert-Butylbenzene	50.0	49.8		ug/L		100	78 - 124	2	20
1,1,1,2-Tetrachloroethane	50.0	49.1		ug/L		98	78 - 124	3	20
1,1,2,2-Tetrachloroethane	50.0	47.8		ug/L		96	71 - 121	4	20
Tetrachloroethene	50.0	51.2		ug/L		102	74 - 129	2	20
Toluene	50.0	48.1		ug/L		96	80 - 121	1	20
trans-1,2-Dichloroethene	50.0	49.5		ug/L		99	75 - 124	3	20
trans-1,3-Dichloropropene	50.0	49.7		ug/L		99	73 - 127	1	20
1,2,3-Trichlorobenzene	50.0	49.3		ug/L		99	69 - 129	1	20
1,2,4-Trichlorobenzene	50.0	48.1		ug/L		96	69 - 130	2	20
1,1,1-Trichloroethane	50.0	50.8		ug/L		102	74 - 131	2	20
1,1,2-Trichloroethane	50.0	47.1		ug/L		94	80 - 119	2	20
Trichloroethene	50.0	46.7		ug/L		93	79 - 123	0	20
Trichlorofluoromethane	50.0	53.2		ug/L		106	65 - 141	3	20
1,2,3-Trichloropropane	50.0	48.7		ug/L		97	73 - 122	2	20
1,2,4-Trimethylbenzene	50.0	49.2		ug/L		98	76 - 124	1	20
1,3,5-Trimethylbenzene	50.0	49.3		ug/L		99	75 - 124	1	20
Vinyl acetate	100	105		ug/L		105	54 - 146	1	20
Vinyl chloride	50.0	50.1		ug/L		100	58 - 137	3	20
Xylenes, Total	100	97.5		ug/L		98	79 - 121	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		85 - 114
Dibromofluoromethane (Surr)	96		80 - 119
1,2-Dichloroethane-d4 (Surr)	92		81 - 118
Toluene-d8 (Surr)	94		89 - 112

# QC Sample Results

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

## Method: 8081B 8082A - Organochlorine Pesticides & PCBs (GC)

Lab Sample ID: MB 680-505685/13-A

Matrix: Water

Analysis Batch: 505878

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 505685

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aldrin	0.018	U	0.050	0.018	0.0072	ug/L		12/11/17 17:12	1
alpha-BHC	0.010	U	0.050	0.010	0.0034	ug/L		12/11/17 17:12	1
beta-BHC	0.018	U	0.050	0.018	0.0091	ug/L		12/11/17 17:12	1
Chlordane (technical)	0.30	U	0.50	0.30	0.095	ug/L		12/11/17 17:12	1
4,4'-DDD	0.010	U	0.050	0.010	0.0063	ug/L		12/11/17 17:12	1
4,4'-DDE	0.010	U	0.050	0.010	0.0051	ug/L		12/11/17 17:12	1
4,4'-DDT	0.018	U	0.050	0.018	0.0070	ug/L		12/11/17 17:12	1
delta-BHC	0.018	U	0.050	0.018	0.0075	ug/L		12/11/17 17:12	1
Dieldrin	0.010	U	0.050	0.010	0.0038	ug/L		12/11/17 17:12	1
Endosulfan I	0.010	U	0.050	0.010	0.0035	ug/L		12/11/17 17:12	1
Endosulfan II	0.010	U	0.050	0.010	0.0042	ug/L		12/11/17 17:12	1
Endosulfan sulfate	0.010	U	0.050	0.010	0.0051	ug/L		12/11/17 17:12	1
Endrin	0.010	U	0.050	0.010	0.0053	ug/L		12/11/17 17:12	1
Endrin aldehyde	0.010	U	0.050	0.010	0.0061	ug/L		12/11/17 17:12	1
Endrin ketone	0.010	U	0.050	0.010	0.0046	ug/L		12/11/17 17:12	1
gamma-BHC (Lindane)	0.010	U	0.050	0.010	0.0036	ug/L		12/11/17 17:12	1
Heptachlor	0.018	U	0.050	0.018	0.0071	ug/L		12/11/17 17:12	1
Heptachlor epoxide	0.010	U	0.050	0.010	0.0037	ug/L		12/11/17 17:12	1
Methoxychlor	0.018	U	0.050	0.018	0.0098	ug/L		12/11/17 17:12	1
Toxaphene	0.80	U	5.0	0.80	0.40	ug/L		12/11/17 17:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	55		14 - 130	12/08/17 17:17	12/11/17 17:12	1
Tetrachloro-m-xylene	71		44 - 124	12/08/17 17:17	12/11/17 17:12	1

Lab Sample ID: LCS 680-505685/14-A

Matrix: Water

Analysis Batch: 505878

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 505685

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.100	0.0695		ug/L		69	45 - 134
alpha-BHC	0.100	0.0712		ug/L		71	54 - 138
beta-BHC	0.100	0.0694		ug/L		69	56 - 136
4,4'-DDD	0.100	0.0763		ug/L		76	56 - 143
4,4'-DDE	0.100	0.0793		ug/L		79	57 - 135
4,4'-DDT	0.100	0.0807		ug/L		81	51 - 143
delta-BHC	0.100	0.0764		ug/L		76	52 - 142
Dieldrin	0.100	0.0782		ug/L		78	60 - 136
Endosulfan I	0.100	0.0703		ug/L		70	62 - 126
Endosulfan II	0.100	0.0764		ug/L		76	52 - 135
Endosulfan sulfate	0.100	0.0773		ug/L		77	62 - 133
Endrin	0.100	0.0799		ug/L		80	60 - 138
Endrin aldehyde	0.100	0.0820		ug/L		82	51 - 132
Endrin ketone	0.100	0.0830		ug/L		83	58 - 134
gamma-BHC (Lindane)	0.100	0.0705		ug/L		70	59 - 134
Heptachlor	0.100	0.0659		ug/L		66	54 - 130
Heptachlor epoxide	0.100	0.0764		ug/L		76	61 - 133
Methoxychlor	0.100	0.0855		ug/L		85	54 - 145

TestAmerica Savannah

# QC Sample Results

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
DCB Decachlorobiphenyl	66		14 - 130
Tetrachloro-m-xylene	70		44 - 124

Lab Sample ID: LCSD 680-505685/15-A

Matrix: Water

Analysis Batch: 505878

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 505685

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.100	0.0582		ug/L		58	45 - 134	18	30
alpha-BHC	0.100	0.0655		ug/L		66	54 - 138	8	30
beta-BHC	0.100	0.0654		ug/L		65	56 - 136	6	30
4,4'-DDD	0.100	0.0690		ug/L		69	56 - 143	10	30
4,4'-DDE	0.100	0.0657		ug/L		66	57 - 135	19	30
4,4'-DDT	0.100	0.0712		ug/L		71	51 - 143	12	30
delta-BHC	0.100	0.0693		ug/L		69	52 - 142	10	30
Dieldrin	0.100	0.0697		ug/L		70	60 - 136	12	30
Endosulfan I	0.100	0.0640		ug/L		64	62 - 126	9	30
Endosulfan II	0.100	0.0673		ug/L		67	52 - 135	13	30
Endosulfan sulfate	0.100	0.0680		ug/L		68	62 - 133	13	30
Endrin	0.100	0.0682		ug/L		68	60 - 138	16	30
Endrin aldehyde	0.100	0.0698		ug/L		70	51 - 132	16	30
Endrin ketone	0.100	0.0742		ug/L		74	58 - 134	11	30
gamma-BHC (Lindane)	0.100	0.0644		ug/L		64	59 - 134	9	30
Heptachlor	0.100	0.0566		ug/L		57	54 - 130	15	30
Heptachlor epoxide	0.100	0.0682		ug/L		68	61 - 133	11	30
Methoxychlor	0.100	0.0753		ug/L		75	54 - 145	13	30

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
DCB Decachlorobiphenyl	49		14 - 130
Tetrachloro-m-xylene	62		44 - 124

## Method: 410.4 - COD

Lab Sample ID: MB 280-398271/5

Matrix: Water

Analysis Batch: 398271

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chemical Oxygen Demand	10	U	20	10	4.1	mg/L		12/11/17 09:52	1

Lab Sample ID: LCS 280-398271/3

Matrix: Water

Analysis Batch: 398271

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	100	95.4		mg/L		95	90 - 110

Lab Sample ID: LCSD 280-398271/4

Matrix: Water

Analysis Batch: 398271

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	100	92.4		mg/L		92	90 - 110	3	11

TestAmerica Savannah

## QC Sample Results

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

### Method: 9012B - Cyanide, Total and/or Amenable

Lab Sample ID: MB 680-506155/1-A  
Matrix: Water  
Analysis Batch: 506228

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 506155

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.0050	U	0.010	0.0050	0.0025	mg/L		12/13/17 10:29	1

Lab Sample ID: LCS 680-506155/2-A  
Matrix: Water  
Analysis Batch: 506228

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 506155

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0500	0.0461		mg/L		92	83 - 116



## QC Association Summary

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

### GC/MS VOA

#### Analysis Batch: 506014

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-146353-1	SUDWP-A07-01_Fall17	Total/NA	Water	8260B	
680-146353-2	SUD-DUP01_Fall17	Total/NA	Water	8260B	
680-146353-3	Trip Blank	Total/NA	Water	8260B	
MB 680-506014/9	Method Blank	Total/NA	Water	8260B	
LCS 680-506014/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-506014/5	Lab Control Sample Dup	Total/NA	Water	8260B	

### GC Semi VOA

#### Prep Batch: 505685

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-146353-1	SUDWP-A07-01_Fall17	Total/NA	Water	3520C	
680-146353-2	SUD-DUP01_Fall17	Total/NA	Water	3520C	
MB 680-505685/13-A	Method Blank	Total/NA	Water	3520C	
LCS 680-505685/14-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 680-505685/15-A	Lab Control Sample Dup	Total/NA	Water	3520C	

#### Analysis Batch: 505878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-146353-1	SUDWP-A07-01_Fall17	Total/NA	Water	8081B 8082A	505685
680-146353-2	SUD-DUP01_Fall17	Total/NA	Water	8081B 8082A	505685
MB 680-505685/13-A	Method Blank	Total/NA	Water	8081B 8082A	505685
LCS 680-505685/14-A	Lab Control Sample	Total/NA	Water	8081B 8082A	505685
LCSD 680-505685/15-A	Lab Control Sample Dup	Total/NA	Water	8081B 8082A	505685

### General Chemistry

#### Analysis Batch: 398271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-146353-1	SUDWP-A07-01_Fall17	Total/NA	Water	410.4	
680-146353-2	SUD-DUP01_Fall17	Total/NA	Water	410.4	
MB 280-398271/5	Method Blank	Total/NA	Water	410.4	
LCS 280-398271/3	Lab Control Sample	Total/NA	Water	410.4	
LCSD 280-398271/4	Lab Control Sample Dup	Total/NA	Water	410.4	

#### Prep Batch: 506155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-146353-1	SUDWP-A07-01_Fall17	Total/NA	Water	9012B	
680-146353-2	SUD-DUP01_Fall17	Total/NA	Water	9012B	
MB 680-506155/1-A	Method Blank	Total/NA	Water	9012B	
LCS 680-506155/2-A	Lab Control Sample	Total/NA	Water	9012B	

#### Analysis Batch: 506228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-146353-1	SUDWP-A07-01_Fall17	Total/NA	Water	9012B	506155
680-146353-2	SUD-DUP01_Fall17	Total/NA	Water	9012B	506155
MB 680-506155/1-A	Method Blank	Total/NA	Water	9012B	506155
LCS 680-506155/2-A	Lab Control Sample	Total/NA	Water	9012B	506155

TestAmerica Savannah

## Lab Chronicle

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

**Client Sample ID: SUDWP-A07-01\_Fall17**

**Date Collected: 12/04/17 09:15**

**Date Received: 12/06/17 09:20**

**Lab Sample ID: 680-146353-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	506014	12/12/17 17:09	CMB	TAL SAV
		Instrument ID: CMSP2								
Total/NA	Prep	3520C			842.1 mL	10 mL	505685	12/08/17 17:17	CEW	TAL SAV
Total/NA	Analysis	8081B 8082A		1			505878	12/11/17 19:35	GEM	TAL SAV
		Instrument ID: CSGAA								
Total/NA	Analysis	410.4		1	2 mL	2 mL	398271	12/11/17 09:52	CCJ	TAL DEN
		Instrument ID: WC_Genesys20								
Total/NA	Prep	9012B			50 mL	50 mL	506155	12/13/17 05:35	DAM	TAL SAV
Total/NA	Analysis	9012B		1			506228	12/13/17 10:44	DAM	TAL SAV
		Instrument ID: LACHAT1								

**Client Sample ID: SUD-DUP01\_Fall17**

**Date Collected: 12/04/17 09:20**

**Date Received: 12/06/17 09:20**

**Lab Sample ID: 680-146353-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	506014	12/12/17 17:34	CMB	TAL SAV
		Instrument ID: CMSP2								
Total/NA	Prep	3520C			996.9 mL	10 mL	505685	12/08/17 17:17	CEW	TAL SAV
Total/NA	Analysis	8081B 8082A		1			505878	12/11/17 19:49	GEM	TAL SAV
		Instrument ID: CSGAA								
Total/NA	Analysis	410.4		1	2 mL	2 mL	398271	12/11/17 09:52	CCJ	TAL DEN
		Instrument ID: WC_Genesys20								
Total/NA	Prep	9012B			50 mL	50 mL	506155	12/13/17 05:35	DAM	TAL SAV
Total/NA	Analysis	9012B		1			506228	12/13/17 10:46	DAM	TAL SAV
		Instrument ID: LACHAT1								

**Client Sample ID: Trip Blank**

**Date Collected: 12/04/17 00:00**

**Date Received: 12/06/17 09:20**

**Lab Sample ID: 680-146353-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	506014	12/12/17 13:03	CMB	TAL SAV
		Instrument ID: CMSP2								

### Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100


TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TestAmerica Savannah

350325 Boston  
684-146353

350325 Boston

350325 Boston

PO #	17-636	Devens - AOCA7 (Sudbury) 1024-003		Chain of Custody Record										Page: 1 of 1
Company	KOMAN GS, LLC													
Address: 293 Boston Post Road, Suite 100 Marlborough, MA 01752			Laboratory: Test America - Savannah Address: 510 LaRoche Ave Savannah, GA 31404											
Phone: 508-366-7442	Fax: 508-366-7445		Contact: Jerry Lanier											
Sampled by (Print Name(s))/Affiliation <i>Frank Antosy</i>			Regulatory Facility No.											
Sampler(s) Signature(s)			Project Name: Devens Fall 2017 LTM											
			Sampling QAP No.:											
			Approval Date:											
			TAT											
			Other: Routine											
			Remarks											
			Lab. No.											

Item No.	Field ID No.	Sampled		Col. Method (see codes)	Matrix (see codes)	Number of Containers	Preservatives (see codes)					Analyses Requested	Total Number of Containers	Date	Time		
		Date	Time				H	I	S	O							
SUDWP-A07-01_FAL17		12/14	915	P	GW	7	VOC(SW8260 3-40-ml)	X	Pesticides/SW8081 2-	X	amber glass	COD/SW9060 1-500-ml	X	amber glass (H2SO4)	X	Cyanide SW9012 1-250ml poly (NaOH)	
SUD-DUP01_FAL17		12/14	920	P	GW	7		X	X	X			X				
Trip Blank		12/14	-	G	WQ	2		X									
Shipping Details																	
Date Out:	Via:		courier pick up		Relinquished by/Affiliation		Date		Time		Date		Time				
Returned:	Via:				<i>Frank Antosy</i>		12/14/17		1530		12/15/17		1340		1340		
Additional Comments:					<i>Frank Antosy</i>		12-5-17		1800								
email logins and results to:													3-266-0522-7				
lekes@koman.gs.com																	

Lab Comments		NJ Data Deliverable Info	
Preserve Where Applicable	<input type="checkbox"/>	NJ Reduced	<input type="checkbox"/>
On ICE	<input type="checkbox"/>	NJ Full	<input type="checkbox"/>
Temperature _____ C		Full CLP	<input type="checkbox"/>
		Disk Deliverable	<input type="checkbox"/>
		Other (Specify)	<input type="checkbox"/>
		<input type="checkbox"/> Commercial "A" <input type="checkbox"/> Commercial "B" <input type="checkbox"/> State Forms	

MATRIX CODES:	GW = Groundwater	SE = Sediment	SP = Soil	SW = Surface Water
PRESERVATIVE CODES:	H = HCL + Ice	I = Ice Only	N = Nitric Acid + Ice	S = Sulfuric Acid + Ice
COLLECTION METHOD CODES:	C = Composite	G = Grab	P = Pumping	O = Other

- 1
- 2
- 3
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- 13



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## Login Sample Receipt Checklist

Client: KOMAN Government Solutions, LLC

Job Number: 680-146353-1

Login Number: 146353

List Source: TestAmerica Savannah

List Number: 1

Creator: Ragnaldsen, Amy E

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

## Accreditation/Certification Summary

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

### Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-18
Alaska	State Program	10		06-30-18
Alaska (UST)	State Program	10	UST-104	11-05-17 *
Arizona	State Program	9	AZ808	12-14-17 *
Arkansas DEQ	State Program	6	88-0692	02-01-18
California	State Program	9	2939	06-30-18
Colorado	State Program	8	N/A	12-31-17
Connecticut	State Program	1	PH-0161	03-31-19
Florida	NELAP	4	E87052	06-30-18
GA Dept. of Agriculture	State Program	4	N/A	06-12-18
Georgia	State Program	4	803	06-30-18
Guam	State Program	9	15-005r	04-16-18
Hawaii	State Program	9	N/A	06-30-18
Illinois	NELAP	5	200022	11-30-18
Indiana	State Program	5	N/A	06-30-18
Iowa	State Program	7	353	06-30-19
Kentucky (DW)	State Program	4	90084	12-31-17
Kentucky (UST)	State Program	4	18	06-30-18
Kentucky (WW)	State Program	4	90084	12-31-18 *
L-A-B	DoD ELAP		L2463	09-22-19
L-A-B	ISO/IEC 17025		L2463.01	09-22-19
Louisiana	NELAP	6	30690	06-30-18
Louisiana (DW)	NELAP	6	LA160019	12-31-18
Maine	State Program	1	GA00006	09-24-18
Maryland	State Program	3	250	12-31-17
Massachusetts	State Program	1	M-GA006	06-30-18
Michigan	State Program	5	9925	06-30-18
Mississippi	State Program	4	N/A	06-30-18
Nebraska	State Program	7	TestAmerica-Savannah	06-30-18
New Jersey	NELAP	2	GA769	06-30-18
New Mexico	State Program	6	N/A	06-30-18
New York	NELAP	2	10842	03-31-18
North Carolina (DW)	State Program	4	13701	07-31-18
North Carolina (WW/SW)	State Program	4	269	12-31-17
Oklahoma	State Program	6	9984	08-31-18
Pennsylvania	NELAP	3	68-00474	06-30-18
Puerto Rico	State Program	2	GA00006	12-31-17
South Carolina	State Program	4	98001	06-30-18
Tennessee	State Program	4	TN02961	06-30-18
Texas	NELAP	6	T104704185-16-9	11-30-18
Texas	State Program	6	T104704185	06-30-18
US Fish & Wildlife	Federal		LE058448-0	07-31-18
USDA	Federal		SAV 3-04	06-14-20 *
Virginia	NELAP	3	460161	06-14-18
Washington	State Program	10	C805	06-10-18
West Virginia (DW)	State Program	3	9950C	12-31-17
West Virginia DEP	State Program	3	094	06-30-18
Wisconsin	State Program	5	999819810	08-31-18
Wyoming	State Program	8	8TMS-L	06-30-16 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Savannah

## Accreditation/Certification Summary

Client: KOMAN Government Solutions, LLC  
Project/Site: Devens / AOCA7 (Sudbury)

TestAmerica Job ID: 680-146353-1

### Laboratory: TestAmerica Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-19 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Savannah





## **APPENDIX C**

### **ANALYTICAL DATA VALIDATION REPORTS**

**Volatile Organic Compounds**  
SW-846 Method 8260B  
USEPA Level II Review

Site: Sudbury (AOC A7) – Fall LTM 2017	SDG #: 680-146353-1
Laboratory: Test America-Savannah, GA	Date: 12/22/2017
KGS Reviewer: Laurie Ekes	Project: 1024

Lab Sample ID	Client Sample ID	Collection Date	Analysis	Matrix
680-146353-1	SUDWP A07-01_Fall17	12/04/2017	VOCs	Groundwater
680-146353-2	SUD-DUP01_Fall17	12/04/2017	VOCs	Groundwater
680-146353-3	Trip Blank	12/04/2017	VOCs	Trip Blank

Summary - Data validation was performed on the data for one (1) groundwater sample, one (1) field duplicate sample and one (1) trip blank sample collected from AOC A9 and submitted for Volatile Organic (VOC) analysis by SW-846 Method 8260B DOD.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Sample Delivery and Condition – All samples arrived at the laboratory on 12/06/2017 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

*Qualification:* None required.

Holding Times – All samples were analyzed within the 14-day holding time required by the QAPP for preserved aqueous samples.

*Qualification:* None required.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

*Qualification:* None required.

Initial Calibration - Initial calibration curve analyzed on 12/05/2017 (Analytical batch 55760) exhibited acceptable %RSDs ( $\leq 15\%$ ) and average RRF ( $>0.050$ ) values for all target compounds.

*Qualification:* None required.

Initial Calibration Verification (ICV): - Initial calibration verification analyzed on 12/07/2017 (ICV 680-505160/14) exhibited acceptable %Ds ( $\leq 25.0\%$ ) for all target compounds.

*Qualification:* None required.

Continuing Calibration Verification (CCV): - The %Ds for the CCVs analyzed on with these samples were within acceptance limits for all target VOCs.

*Qualification:* None required.

Surrogates – Surrogate recoveries were within the control limits for all samples.

*Qualification:* None required.

Internal Standard (IS) Area Performance: - All samples exhibited acceptable area counts for all internal standards.

*Qualification:* None required.

LCS/LCSD – Percent recoveries and RPDs for the LCS/LCDS prepared and analyzed with these samples were within laboratory control limits.

*Qualification:* None required.

MS/MSD – Matrix spike samples were not submitted with this sample set.

*Qualification:* None required.

Method Blank – The method blank (MB680-506014/9) analyzed on 12/12/2017 with these sample was free of contamination.

*Qualification:* None required.

Field Blanks – One Trip Blank sample (Lab Sample ID: 680-146353-3) was submitted with these samples. Target VOCs were non-detect in the TB sample.

*Qualification:* None required.

Field Duplicate – Sample SUD-DUP01\_Fall17 (Lab Sample ID: 680-146353-2) was the field duplicate sample of SUDWP-A07-01\_Fall17 (Lab Sample ID: 680-146353-1). Chloroform was detected in both samples at 2.7 µg/L.

*Qualification:* None required.

Compound Quantitation – Analyte non-detections were reported as “ND”; these results should be considered the equivalent of “LOD U.” Analyte detections below the LOQ were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

*Qualification:* None required.

**Qualification Summary Table** - The VOC results reported in this SDG are acceptable as reported and may be used for their intended purpose.

Lab Sample ID	Client Sample ID	Analysis	Lab Value (µg/L)	Lab Qualifier	Validated Value (µg/L)	Validation Qualifier
680-146353-1	SUDWP A07-01_Fall17	VOCs	No qualifications needed.			
680-146353-2	SUD_DUP01_Fall17	VOCs	No qualifications needed.			
680-146353-3	Trip Blank	VOCs	No qualifications needed.			

**Pesticides**  
**SW846/8081B**  
**USEPA Level II Review**

Site: Sudbury (AOC A7) – Fall LTM 2017	SDG #: 680-146353-1
Laboratory: Test America-Savannah, GA	Date: 12/22/2017
KGS. Reviewer: Laurie Ekes	Project: 1024

Lab Sample ID	Client Sample ID	Collection Date	Analysis	Matrix
680-146353-1	SUDWP A07-01_Fall17	12/04/2017	Pesticides	Groundwater
680-146353-2	SUD-DUP01_Fall17	12/04/2017	Pesticides	Groundwater

Summary - Data validation was performed on the data for one (1) groundwater sample and one (1) field duplicate sample collected and submitted for Pesticide analyses by EPA method SW846/8081B.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

*Qualification:* None required.

Sample Delivery and Condition – All samples arrived at the laboratory on 12/06/2017 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

*Qualification:* None required

Holding Times – All samples were analyzed within the 14-day holding time required by the QAPP for preserved aqueous samples.

*Qualification:* None required

Surrogates – Surrogate recoveries were within laboratory control limits.

*Qualification:* None required

Laboratory Control Sample – The LCS/LCSDs (680-505685/14A/15A) analyzed with these samples on 12/11/2017 met the %R and RPD control limits for all pesticide compounds.

*Qualification:* None required.

MS/MSD – Matrix spike/matrix spike duplicate samples were not submitted with this sample set.

*Qualification:* None required.

Method Blank – The method blank (680-505685/13A) prepared and analyzed for pesticides with these samples on 12/11/2017 was non-detect for all pesticide compounds.

*Qualification:* None required.

Field Duplicate – Sample SUD-DUP01\_Fall17 (Lab Sample ID: 680-146353-2) was the field duplicate sample of SUDWP-A07-01\_Fall17 (Lab Sample ID: 680-146353-1). The pesticide

results were non-detect in both samples.

*Qualification:* None required.

Compound Quantitation – Analyte non-detections were reported as “ND”; these results should be considered the equivalent of “LOD U.” Analyte detections below the LOQ were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

*Qualification:* None required.

**Qualification Summary Table** - The Pesticide results reported in this SDG are acceptable as reported and may be used for their intended purpose.

Lab Sample ID	Client Sample ID	Analysis	Lab Value (µg/L)	Lab Qualifier	Validated Value (µg/L)	Validation Qualifier
680-146353-1	SUDWP A07-01_Fall17	Pesticides	No qualifications needed			
680-146353-2	SUD-DUP01_Fall17	Pesticides	No qualifications needed			

**Wet Chemistry**  
Total Cyanide (SW9012B) and Chemical Oxygen Demand (COD) (E410.4)  
USEPA Level II Review

Site: Sudbury (AOC A7) -Fall LTM 2017	SDG #: 680-146353-1
Laboratory: Test America-Savannah, GA	Date: 12/22/2017
KGS. Reviewer: Laurie Ekes	Project: 1024

Lab Sample ID	Client Sample ID	Collection Date	Analysis	Matrix
680-146353-1	SUDWP A07-01_Fall17	12/04/2017	Wet Chemistry	Groundwater
680-146353-2	SUD-DUP01_Fall17	12/04/2017	Wet Chemistry	Groundwater

Summary - Data validation was performed on the data for one (1) groundwater sample and one (1) field duplicate sample collected and submitted total cyanide and COD analyses. The samples submitted for COD analysis were shipped to Test America-Denver.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

*Qualification:* None required.

Sample Delivery and Condition – All samples arrived intact at the laboratory on 12/06/2017 in acceptable condition and temperature and were properly preserved. Proper custody was documented.

*Qualification:* None required.

Holding Times – All samples were analyzed within the respective holding times required by the QAPP for preserved aqueous samples.

*Qualification:* None required.

Method Blank – The method blank (680-506155/1A) prepared and analyzed for cyanide with these samples was non-detect. The method blank (280-398271/5) prepared and analyzed for COD with these samples was non-detect.

*Qualification:* None required.

Laboratory Control Sample – The LCS and/or LCSD %R results for all methods associated with these samples were within laboratory control limits.

*Qualification:* None required.

MS/Duplicate – Matrix spike samples were not submitted with this sample set.

*Qualification:* None required.

Field Duplicate – Sample SUD-DUP01\_Fall17 (Lab Sample ID: 680-146353-2) was the field duplicate sample of SUDWP-A07-01\_Fall17 (Lab Sample ID: 680-146353-1). Total cyanide and COD were non-detect in both samples.

*Qualification:* None required.

Compound Quantitation –Analyte non-detections were reported as “ND”; these results should be considered the equivalent of “LOD U.” Analyte detections below the LOQ were reported as J-qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

*Qualification:* None required.

**Qualification Summary Table:** No qualifications were required for the cyanide results. The COD results reported for the samples in this SDG are acceptable with the noted qualifications. The data may be used for its intended purpose.

Lab Sample ID	Client Sample ID	Analysis	Lab Value (mg/L)	Lab Qualifier	Validated Value (mg/L)	Validation Qualifier
680-146353-1	SUDWP A07-01_Fall17	COD/Cyanide	No qualifications needed			
680-146353-2	SUD-DUP01_Fall17	COD/Cyanide	No qualifications needed.			



**Sudbury (AOC A7) - Fall LTM 2017 Validated Data**

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	DL
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	410.4	Chemical Oxygen Demand	10	mg/L	U	20	10	4.1
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	4,4'-DDD	0.012	ug/L	U	0.059	0.012	0.0075
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	4,4'-DDE	0.012	ug/L	U	0.059	0.012	0.0061
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	4,4'-DDT	0.021	ug/L	U	0.059	0.021	0.0083
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	Aldrin	0.021	ug/L	U	0.059	0.021	0.0086
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	alpha-BHC	0.012	ug/L	U	0.059	0.012	0.004
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	beta-BHC	0.021	ug/L	U	0.059	0.021	0.011
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	Chlordane (technical)	0.36	ug/L	U	0.59	0.36	0.11
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	delta-BHC	0.021	ug/L	U	0.059	0.021	0.0089
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	Dieldrin	0.012	ug/L	U	0.059	0.012	0.0045
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	Endosulfan I	0.012	ug/L	U	0.059	0.012	0.0042
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	Endosulfan II	0.012	ug/L	U	0.059	0.012	0.005
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	Endosulfan sulfate	0.012	ug/L	U	0.059	0.012	0.0061
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	Endrin	0.012	ug/L	U	0.059	0.012	0.0063
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	Endrin aldehyde	0.012	ug/L	U	0.059	0.012	0.0072
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	Endrin ketone	0.012	ug/L	U	0.059	0.012	0.0055
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	gamma-BHC (Lindane)	0.012	ug/L	U	0.059	0.012	0.0043
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	Heptachlor	0.021	ug/L	U	0.059	0.021	0.0084
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	Heptachlor epoxide	0.012	ug/L	U	0.059	0.012	0.0044
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	Methoxychlor	0.021	ug/L	U	0.059	0.021	0.012
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8081B 8082A	Toxaphene	0.95	ug/L	U	5.9	0.95	0.48
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,1,1,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.37
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,1,1-Trichloroethane	1.0	ug/L	U	1	1	0.37
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,1,2,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.62
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,1,2-Trichloroethane	0.50	ug/L	U	1	0.5	0.33
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,1-Dichloroethane	1.0	ug/L	U	1	1	0.38
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,1-Dichloroethene	1.0	ug/L	U	1	1	0.36
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,1-Dichloropropene	1.0	ug/L	U	1	1	0.34
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,2,3-Trichlorobenzene	5.0	ug/L	U	5	5	2.5
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,2,3-Trichloropropane	1.0	ug/L	U	1	1	0.39
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,2,4-Trichlorobenzene	5.0	ug/L	U	5	5	2.5
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,2,4-Trimethylbenzene	1.0	ug/L	U	1	1	0.47
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,2-Dibromo-3-Chloropropane	2.0	ug/L	U	5	2	1.1
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,2-Dichlorobenzene	1.0	ug/L	U	1	1	0.37
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,2-Dichloroethane	1.0	ug/L	U	1	1	0.5
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,2-Dichloroethene, Total	1.0	ug/L	U	2	1	0.74
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,2-Dichloropropane	1.0	ug/L	U	1	1	0.67

**Sudbury (AOC A7) - Fall LTM 2017 Validated Data**

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	DL
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,3,5-Trimethylbenzene	0.50	ug/L	U	1	0.5	0.31
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,3-Dichlorobenzene	1.0	ug/L	U	1	1	0.43
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,3-Dichloropropane	1.0	ug/L	U	1	1	0.34
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	1,4-Dichlorobenzene	1.0	ug/L	U	1	1	0.46
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	2,2-Dichloropropane	1.0	ug/L	U	1	1	0.37
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	2-Butanone (MEK)	10	ug/L	U	10	10	3.4
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	2-Chlorotoluene	0.50	ug/L	U	1	0.5	0.27
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	2-Hexanone	5.0	ug/L	U	10	5	2
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	4-Chlorotoluene	1.0	ug/L	U	1	1	0.45
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	4-Isopropyltoluene	1.0	ug/L	U	1	1	0.48
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	4-Methyl-2-pentanone (MIBK)	5.0	ug/L	U	10	5	2.1
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Acetone	10	ug/L	U	10	10	7
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Benzene	1.0	ug/L	U	1	1	0.43
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Bromobenzene	1.0	ug/L	U	1	1	0.5
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Bromoform	1.0	ug/L	U	1	1	0.43
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Bromomethane	5.0	ug/L	U	5	5	2.5
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Carbon disulfide	2.0	ug/L	U	2	2	0.43
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Carbon tetrachloride	0.50	ug/L	U	1	0.5	0.33
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Chlorobenzene	0.50	ug/L	U	1	0.5	0.26
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Chlorobromomethane	1.0	ug/L	U	1	1	0.45
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Chlorodibromomethane	0.50	ug/L	U	1	0.5	0.32
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Chloroethane	5.0	ug/L	U	5	5	2.5
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Chloroform	2.7	ug/L		1	1	0.5
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Chloromethane	1.0	ug/L	U	1	1	0.4
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	cis-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.41
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	cis-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.4
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Dibromomethane	1.0	ug/L	U	1	1	0.35
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Dichlorobromomethane	1.0	ug/L	U	1	1	0.44
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Dichlorodifluoromethane	1.0	ug/L	U	1	1	0.6
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Ethylbenzene	0.50	ug/L	U	1	0.5	0.33
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Ethylene Dibromide	1.0	ug/L	U	1	1	0.44
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Hexachlorobutadiene	5.0	ug/L	U	5	5	2.5
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Isopropylbenzene	1.0	ug/L	U	1	1	0.35
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Methyl tert-butyl ether	0.50	ug/L	U	10	0.5	0.3
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Methylene Chloride	5.0	ug/L	U	5	5	2.5
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	m-Xylene & p-Xylene	1.0	ug/L	U	1	1	0.35
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Naphthalene	5.0	ug/L	U	5	5	2.5

**Sudbury (AOC A7) - Fall LTM 2017 Validated Data**

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	DL
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	n-Butylbenzene	1.0	ug/L	U	1	1	0.47
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	N-Propylbenzene	1.0	ug/L	U	1	1	0.38
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	o-Xylene	0.50	ug/L	U	1	0.5	0.23
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	sec-Butylbenzene	1.0	ug/L	U	1	1	0.42
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Styrene	0.50	ug/L	U	1	0.5	0.27
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	tert-Butylbenzene	1.0	ug/L	U	1	1	0.45
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Tetrachloroethene	1.0	ug/L	U	1	1	0.74
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Toluene	1.0	ug/L	U	1	1	0.48
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	trans-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.37
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	trans-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.42
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Trichloroethene	1.0	ug/L	U	1	1	0.48
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Trichlorofluoromethane	1.0	ug/L	U	1	1	0.42
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Vinyl acetate	2.0	ug/L	U	2	2	0.81
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Vinyl chloride	1.0	ug/L	U	1	1	0.5
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	8260B	Xylenes, Total	0.50	ug/L	U	2	0.5	0.23
680-146353-1	SUDWP-A07-01_Fall17	12/4/2017	9012B	Cyanide, Total	0.005	mg/L	U	0.01	0.005	0.0025
680-146353-2	SUD-DUP01_Fall17	12/4/2017	410.4	Chemical Oxygen Demand	10	mg/L	U	20	10	4.1
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	4,4'-DDD	0.01	ug/L	U	0.05	0.01	0.0063
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	4,4'-DDE	0.01	ug/L	U	0.05	0.01	0.0051
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	4,4'-DDT	0.018	ug/L	U	0.05	0.018	0.007
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	Aldrin	0.018	ug/L	U	0.05	0.018	0.0072
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	alpha-BHC	0.01	ug/L	U	0.05	0.01	0.0034
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	beta-BHC	0.018	ug/L	U	0.05	0.018	0.0091
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	Chlordane (technical)	0.30	ug/L	U	0.5	0.3	0.095
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	delta-BHC	0.018	ug/L	U	0.05	0.018	0.0075
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	Dieldrin	0.01	ug/L	U	0.05	0.01	0.0038
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	Endosulfan I	0.01	ug/L	U	0.05	0.01	0.0035
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	Endosulfan II	0.01	ug/L	U	0.05	0.01	0.0042
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	Endosulfan sulfate	0.01	ug/L	U	0.05	0.01	0.0051
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	Endrin	0.01	ug/L	U	0.05	0.01	0.0053
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	Endrin aldehyde	0.01	ug/L	U	0.05	0.01	0.0061
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	Endrin ketone	0.01	ug/L	U	0.05	0.01	0.0046
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	gamma-BHC (Lindane)	0.01	ug/L	U	0.05	0.01	0.0036
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	Heptachlor	0.018	ug/L	U	0.05	0.018	0.0071
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	Heptachlor epoxide	0.01	ug/L	U	0.05	0.01	0.0037
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	Methoxychlor	0.018	ug/L	U	0.05	0.018	0.0098
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8081B 8082A	Toxaphene	0.80	ug/L	U	5	0.8	0.4

**Sudbury (AOC A7) - Fall LTM 2017 Validated Data**

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	DL
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,1,1,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.37
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,1,1-Trichloroethane	1.0	ug/L	U	1	1	0.37
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,1,2,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.62
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,1,2-Trichloroethane	0.50	ug/L	U	1	0.5	0.33
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,1-Dichloroethane	1.0	ug/L	U	1	1	0.38
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,1-Dichloroethene	1.0	ug/L	U	1	1	0.36
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,1-Dichloropropene	1.0	ug/L	U	1	1	0.34
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,2,3-Trichlorobenzene	5.0	ug/L	U	5	5	2.5
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,2,3-Trichloropropane	1.0	ug/L	U	1	1	0.39
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,2,4-Trichlorobenzene	5.0	ug/L	U	5	5	2.5
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,2,4-Trimethylbenzene	1.0	ug/L	U	1	1	0.47
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,2-Dibromo-3-Chloropropane	2.0	ug/L	U	5	2	1.1
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,2-Dichlorobenzene	1.0	ug/L	U	1	1	0.37
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,2-Dichloroethane	1.0	ug/L	U	1	1	0.5
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,2-Dichloroethene, Total	1.0	ug/L	U	2	1	0.74
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,2-Dichloropropane	1.0	ug/L	U	1	1	0.67
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,3,5-Trimethylbenzene	0.50	ug/L	U	1	0.5	0.31
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,3-Dichlorobenzene	1.0	ug/L	U	1	1	0.43
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,3-Dichloropropane	1.0	ug/L	U	1	1	0.34
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	1,4-Dichlorobenzene	1.0	ug/L	U	1	1	0.46
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	2,2-Dichloropropane	1.0	ug/L	U	1	1	0.37
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	2-Butanone (MEK)	10	ug/L	U	10	10	3.4
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	2-Chlorotoluene	0.50	ug/L	U	1	0.5	0.27
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	2-Hexanone	5.0	ug/L	U	10	5	2
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	4-Chlorotoluene	1.0	ug/L	U	1	1	0.45
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	4-Isopropyltoluene	1.0	ug/L	U	1	1	0.48
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	4-Methyl-2-pentanone (MIBK)	5.0	ug/L	U	10	5	2.1
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Acetone	10	ug/L	U	10	10	7
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Benzene	1.0	ug/L	U	1	1	0.43
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Bromobenzene	1.0	ug/L	U	1	1	0.5
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Bromoform	1.0	ug/L	U	1	1	0.43
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Bromomethane	5.0	ug/L	U	5	5	2.5
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Carbon disulfide	2.0	ug/L	U	2	2	0.43
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Carbon tetrachloride	0.50	ug/L	U	1	0.5	0.33
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Chlorobenzene	0.50	ug/L	U	1	0.5	0.26
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Chlorobromomethane	1.0	ug/L	U	1	1	0.45
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Chlorodibromomethane	0.50	ug/L	U	1	0.5	0.32

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	DL
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Chloroethane	5.0	ug/L	U	5	5	2.5
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Chloroform	2.7	ug/L		1	1	0.5
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Chloromethane	1.0	ug/L	U	1	1	0.4
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	cis-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.41
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	cis-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.4
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Dibromomethane	1.0	ug/L	U	1	1	0.35
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Dichlorobromomethane	1.0	ug/L	U	1	1	0.44
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Dichlorodifluoromethane	1.0	ug/L	U	1	1	0.6
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Ethylbenzene	0.50	ug/L	U	1	0.5	0.33
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Ethylene Dibromide	1.0	ug/L	U	1	1	0.44
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Hexachlorobutadiene	5.0	ug/L	U	5	5	2.5
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Isopropylbenzene	1.0	ug/L	U	1	1	0.35
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Methyl tert-butyl ether	0.50	ug/L	U	10	0.5	0.3
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Methylene Chloride	5.0	ug/L	U	5	5	2.5
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	m-Xylene & p-Xylene	1.0	ug/L	U	1	1	0.35
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Naphthalene	5.0	ug/L	U	5	5	2.5
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	n-Butylbenzene	1.0	ug/L	U	1	1	0.47
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	N-Propylbenzene	1.0	ug/L	U	1	1	0.38
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	o-Xylene	0.50	ug/L	U	1	0.5	0.23
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	sec-Butylbenzene	1.0	ug/L	U	1	1	0.42
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Styrene	0.50	ug/L	U	1	0.5	0.27
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	tert-Butylbenzene	1.0	ug/L	U	1	1	0.45
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Tetrachloroethene	1.0	ug/L	U	1	1	0.74
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Toluene	1.0	ug/L	U	1	1	0.48
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	trans-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.37
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	trans-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.42
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Trichloroethene	1.0	ug/L	U	1	1	0.48
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Trichlorofluoromethane	1.0	ug/L	U	1	1	0.42
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Vinyl acetate	2.0	ug/L	U	2	2	0.81
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Vinyl chloride	1.0	ug/L	U	1	1	0.5
680-146353-2	SUD-DUP01_Fall17	12/4/2017	8260B	Xylenes, Total	0.50	ug/L	U	2	0.5	0.23
680-146353-2	SUD-DUP01_Fall17	12/4/2017	9012B	Cyanide, Total	0.005	mg/L	U	0.01	0.005	0.0025
680-146353-3	Trip Blank	12/4/2017	8260B	1,1,1,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.37
680-146353-3	Trip Blank	12/4/2017	8260B	1,1,1-Trichloroethane	1.0	ug/L	U	1	1	0.37
680-146353-3	Trip Blank	12/4/2017	8260B	1,1,2,2-Tetrachloroethane	1.0	ug/L	U	1	1	0.62
680-146353-3	Trip Blank	12/4/2017	8260B	1,1,2-Trichloroethane	0.50	ug/L	U	1	0.5	0.33
680-146353-3	Trip Blank	12/4/2017	8260B	1,1-Dichloroethane	1.0	ug/L	U	1	1	0.38

**Sudbury (AOC A7) - Fall LTM 2017 Validated Data**

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	DL
680-146353-3	Trip Blank	12/4/2017	8260B	1,1-Dichloroethene	1.0	ug/L	U	1	1	0.36
680-146353-3	Trip Blank	12/4/2017	8260B	1,1-Dichloropropene	1.0	ug/L	U	1	1	0.34
680-146353-3	Trip Blank	12/4/2017	8260B	1,2,3-Trichlorobenzene	5.0	ug/L	U	5	5	2.5
680-146353-3	Trip Blank	12/4/2017	8260B	1,2,3-Trichloropropane	1.0	ug/L	U	1	1	0.39
680-146353-3	Trip Blank	12/4/2017	8260B	1,2,4-Trichlorobenzene	5.0	ug/L	U	5	5	2.5
680-146353-3	Trip Blank	12/4/2017	8260B	1,2,4-Trimethylbenzene	1.0	ug/L	U	1	1	0.47
680-146353-3	Trip Blank	12/4/2017	8260B	1,2-Dibromo-3-Chloropropane	2.0	ug/L	U	5	2	1.1
680-146353-3	Trip Blank	12/4/2017	8260B	1,2-Dichlorobenzene	1.0	ug/L	U	1	1	0.37
680-146353-3	Trip Blank	12/4/2017	8260B	1,2-Dichloroethane	1.0	ug/L	U	1	1	0.5
680-146353-3	Trip Blank	12/4/2017	8260B	1,2-Dichloroethene, Total	1.0	ug/L	U	2	1	0.74
680-146353-3	Trip Blank	12/4/2017	8260B	1,2-Dichloropropane	1.0	ug/L	U	1	1	0.67
680-146353-3	Trip Blank	12/4/2017	8260B	1,3,5-Trimethylbenzene	0.50	ug/L	U	1	0.5	0.31
680-146353-3	Trip Blank	12/4/2017	8260B	1,3-Dichlorobenzene	1.0	ug/L	U	1	1	0.43
680-146353-3	Trip Blank	12/4/2017	8260B	1,3-Dichloropropane	1.0	ug/L	U	1	1	0.34
680-146353-3	Trip Blank	12/4/2017	8260B	1,4-Dichlorobenzene	1.0	ug/L	U	1	1	0.46
680-146353-3	Trip Blank	12/4/2017	8260B	2,2-Dichloropropane	1.0	ug/L	U	1	1	0.37
680-146353-3	Trip Blank	12/4/2017	8260B	2-Butanone (MEK)	10	ug/L	U	10	10	3.4
680-146353-3	Trip Blank	12/4/2017	8260B	2-Chlorotoluene	0.50	ug/L	U	1	0.5	0.27
680-146353-3	Trip Blank	12/4/2017	8260B	2-Hexanone	5.0	ug/L	U	10	5	2
680-146353-3	Trip Blank	12/4/2017	8260B	4-Chlorotoluene	1.0	ug/L	U	1	1	0.45
680-146353-3	Trip Blank	12/4/2017	8260B	4-Isopropyltoluene	1.0	ug/L	U	1	1	0.48
680-146353-3	Trip Blank	12/4/2017	8260B	4-Methyl-2-pentanone (MIBK)	5.0	ug/L	U	10	5	2.1
680-146353-3	Trip Blank	12/4/2017	8260B	Acetone	10	ug/L	U	10	10	7
680-146353-3	Trip Blank	12/4/2017	8260B	Benzene	1.0	ug/L	U	1	1	0.43
680-146353-3	Trip Blank	12/4/2017	8260B	Bromobenzene	1.0	ug/L	U	1	1	0.5
680-146353-3	Trip Blank	12/4/2017	8260B	Bromoform	1.0	ug/L	U	1	1	0.43
680-146353-3	Trip Blank	12/4/2017	8260B	Bromomethane	5.0	ug/L	U	5	5	2.5
680-146353-3	Trip Blank	12/4/2017	8260B	Carbon disulfide	2.0	ug/L	U	2	2	0.43
680-146353-3	Trip Blank	12/4/2017	8260B	Carbon tetrachloride	0.50	ug/L	U	1	0.5	0.33
680-146353-3	Trip Blank	12/4/2017	8260B	Chlorobenzene	0.50	ug/L	U	1	0.5	0.26
680-146353-3	Trip Blank	12/4/2017	8260B	Chlorobromomethane	1.0	ug/L	U	1	1	0.45
680-146353-3	Trip Blank	12/4/2017	8260B	Chlorodibromomethane	0.50	ug/L	U	1	0.5	0.32
680-146353-3	Trip Blank	12/4/2017	8260B	Chloroethane	5.0	ug/L	U	5	5	2.5
680-146353-3	Trip Blank	12/4/2017	8260B	Chloroform	1.0	ug/L	U	1	1	0.5
680-146353-3	Trip Blank	12/4/2017	8260B	Chloromethane	1.0	ug/L	U	1	1	0.4
680-146353-3	Trip Blank	12/4/2017	8260B	cis-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.41
680-146353-3	Trip Blank	12/4/2017	8260B	cis-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.4

**Sudbury (AOC A7) - Fall LTM 2017 Validated Data**

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Analyte	Result	Unit	Flag	LOQ	LOD	DL
680-146353-3	Trip Blank	12/4/2017	8260B	Dibromomethane	1.0	ug/L	U	1	1	0.35
680-146353-3	Trip Blank	12/4/2017	8260B	Dichlorobromomethane	1.0	ug/L	U	1	1	0.44
680-146353-3	Trip Blank	12/4/2017	8260B	Dichlorodifluoromethane	1.0	ug/L	U	1	1	0.6
680-146353-3	Trip Blank	12/4/2017	8260B	Ethylbenzene	0.50	ug/L	U	1	0.5	0.33
680-146353-3	Trip Blank	12/4/2017	8260B	Ethylene Dibromide	1.0	ug/L	U	1	1	0.44
680-146353-3	Trip Blank	12/4/2017	8260B	Hexachlorobutadiene	5.0	ug/L	U	5	5	2.5
680-146353-3	Trip Blank	12/4/2017	8260B	Isopropylbenzene	1.0	ug/L	U	1	1	0.35
680-146353-3	Trip Blank	12/4/2017	8260B	Methyl tert-butyl ether	0.50	ug/L	U	10	0.5	0.3
680-146353-3	Trip Blank	12/4/2017	8260B	Methylene Chloride	5.0	ug/L	U	5	5	2.5
680-146353-3	Trip Blank	12/4/2017	8260B	m-Xylene & p-Xylene	1.0	ug/L	U	1	1	0.35
680-146353-3	Trip Blank	12/4/2017	8260B	Naphthalene	5.0	ug/L	U	5	5	2.5
680-146353-3	Trip Blank	12/4/2017	8260B	n-Butylbenzene	1.0	ug/L	U	1	1	0.47
680-146353-3	Trip Blank	12/4/2017	8260B	N-Propylbenzene	1.0	ug/L	U	1	1	0.38
680-146353-3	Trip Blank	12/4/2017	8260B	o-Xylene	0.50	ug/L	U	1	0.5	0.23
680-146353-3	Trip Blank	12/4/2017	8260B	sec-Butylbenzene	1.0	ug/L	U	1	1	0.42
680-146353-3	Trip Blank	12/4/2017	8260B	Styrene	0.50	ug/L	U	1	0.5	0.27
680-146353-3	Trip Blank	12/4/2017	8260B	tert-Butylbenzene	1.0	ug/L	U	1	1	0.45
680-146353-3	Trip Blank	12/4/2017	8260B	Tetrachloroethene	1.0	ug/L	U	1	1	0.74
680-146353-3	Trip Blank	12/4/2017	8260B	Toluene	1.0	ug/L	U	1	1	0.48
680-146353-3	Trip Blank	12/4/2017	8260B	trans-1,2-Dichloroethene	1.0	ug/L	U	1	1	0.37
680-146353-3	Trip Blank	12/4/2017	8260B	trans-1,3-Dichloropropene	1.0	ug/L	U	1	1	0.42
680-146353-3	Trip Blank	12/4/2017	8260B	Trichloroethene	1.0	ug/L	U	1	1	0.48
680-146353-3	Trip Blank	12/4/2017	8260B	Trichlorofluoromethane	1.0	ug/L	U	1	1	0.42
680-146353-3	Trip Blank	12/4/2017	8260B	Vinyl acetate	2.0	ug/L	U	2	2	0.81
680-146353-3	Trip Blank	12/4/2017	8260B	Vinyl chloride	1.0	ug/L	U	1	1	0.5
680-146353-3	Trip Blank	12/4/2017	8260B	Xylenes, Total	0.50	ug/L	U	2	0.5	0.23

Notes:

mg/l = milligram per liter

µg/L = microgram per liter

LOQ = Limit of Quantitation

LOD = Limit of Detection

DL = Method Detection Limit

U = Non-detect





**APPENDIX D**  
**GEOTECHNICAL ENGINEERING ANNUAL**  
**INSPECTION REPORT FALL 2017**



**US Army Corps  
of Engineers®**  
New England District

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# **GEOTECHNICAL ENGINEERING ANNUAL INSPECTION REPORT FALL 2017**

**AREA OF CONTAMINATION A7  
FORMER SUDBURY TRAINING ANNEX  
SUDBURY, MASSACHUSETTS**

*15 November 2017*

## **1.0 INTRODUCTION**

The RCRA Subtitle C landfill cap was constructed over the existing landfill at AOC A7 to eliminate the potential risk to human health and the environment associated with exposure to wastes; minimize off-site migration of contaminants; and limit infiltration of precipitation to the underlying waste within the landfill area, thereby minimizing leachate generation and groundwater degradation. The RCRA cap consists of the following geosynthetic layers: geocomposite gas vent layer, geosynthetic clay liner (GCL), 40 mil linear low density polyethylene (LLDPE) geomembrane, and geocomposite drainage layer. Above the geosynthetic components are 15 inches of drainage sand, 15 inches of filter sand, and 6 inches of vegetative soil (topsoil). The cap was completed in the fall of 1996. The A7 landfill cap inspection drawing is presented in Figure 1.

Annual landfill inspections are performed in accordance with the procedures described in the Long Term Monitoring & Maintenance Plan for the Landfill at Area of Concern A7, April 1998, prepared by the U.S. Army Corps of Engineers, New England District (LTM&MP).

Several plans and drawings from the LTM&MP are included in this annual inspection report for historical reference to assist with interpretation of observations and data. A previous site plan that depicts areas of limited soil and waste removal from AOC A7 included in Appendix A of the LTM&MP is reproduced as Figure 2. Design drawings that depict the design of the landfill cap, which were included as Appendix D in the LTM&MP, are reproduced as Figure 3 and Figure 4.

### **1.1 Landfill Cap Inspection**

Personnel from the U.S. Army Corps of Engineers, New England District (NAE), inspected the Sudbury Training Annex Landfill at Area A7 on November 15, 2017. No maintenance activities were performed during this inspection. Observations were made regarding the vegetative cover, vegetation types, erosion, settlement, and general condition of the various features. Photos of pertinent areas or components of the landfill are presented in the Photographic Log. Appendix A of this report contains the Inspection and Maintenance checklists which summarizes the findings of this inspection, and Appendix B contains the Landfill Gas Summary table. A narrative of the findings of these inspections follows.

The landfill cap is in generally excellent condition with no actively eroding areas or settlement (Photo 1). In general, the cap vegetation appears healthy, dense, and provides complete coverage of most areas of the cap, with grass and clover predominating. The cap and adjacent area vegetation were mowed on November 7, 2017, and a large tree leaning on the southeast portion of the fence was removed, by a landscaping contractor under the supervision of Koman Government Solutions, LLC (KGS). No encroachment of wetland species on the cap was seen. It is recommended that future mowing of the cap continue to include mowing of the field area adjacent to the cap to prevent encroachment of woody and wetland species on the cap.

## **1.2 Access Road Inspection.**

The access road from the entry gate and into the cap area is in relatively good condition (Photo 2 and Figure 1), however vegetation has overgrown and established upon the gravel surface. There are no ruts, potholes, or eroded areas.

## **1.3 Security Fence Inspection**

The security perimeter fence is in moderate condition. The large tree observed leaning on the southeastern section of the fence during the fall 2016 inspection has been removed. Multiple trees are growing through and against the Northern perimeter fencing (Photo 3) which could potentially causing the fence to be broken in multiple areas. These small to medium trees should be removed, if feasible, before they damage the fence. Additionally, the access gate on the northern central portion of the fence line near monitoring well OHM-A7-09 is leaning and causing a gap in the gate which could facilitate trespassers and possible vandalism (Photo 4). The gate partially secured with a second new chain after the 2016 inspection, should have a new third chain added higher on the gate before the next inspection. Otherwise, there were no sagging or leaning fence sections noted, and the main gate is operating normally. In general, trees should periodically be cleared from fence area as they naturally grow or fall onto the fence and potentially allow entry of people to trespass across the cap, or facilitate easier entry of wildlife that could burrow and become established around or within the cap soil cover.

## **2.0 DRAINAGE SYSTEM**

The drainage system functions in conjunction with the landfill cap to facilitate the drainage of surface water and infiltrated water off the cap. The drainage system consists of the following components: geocomposite drainage layer, perimeter stone drain along the toe-of-slope, perimeter grass covered drainage channels, and a riprap lined outlet area located at the northeast corner of the landfill. The A7 landfill inspection drawing is presented in Figure 1, and additional historical and landfill cap design drawings are presented in Figures 2, 3, and 4.

The Sudbury Training Annex Landfill Drainage System at Area A7 was inspected on November 15, 2017 by personnel from the U.S. Army Corps of Engineers, New England District (NAE). No maintenance activities were performed during these inspections. Observations were made regarding the vegetative cover, vegetation types, erosion, and general condition of the drainage system. Appendix A of this report contains the Inspection and Maintenance checklists which summarize the findings of this inspection. A narrative of the findings of these inspections follows.

The cap drainage system is in good condition. Drainage channels are free of sediment and debris, however vegetation removal or cutting flush to ground should be more frequent and vigilant to eliminate unwanted vegetation which has become established (Photo 5 and Photo 6). The grass on drainage channel bottoms is in generally in excellent condition but has some overgrown weedy plants in isolated areas (Photo 6). The vegetation on the side slopes is healthy and dense (Photo 7).

The toe drain appears to be functioning properly, and there are no associated slope stability or erosion problems at this time. Toe drains should be cleared of moss growth and other debris which is accumulating on the geotextile covering the drainage stone. The geotextile layer is still ripped on the northeast slope and should be repaired (Photo 8). Based on review of the cap design drawings (Figures 3 and 4), the observed geotextile fabric appears to be excess from construction that extends too far over the coarse aggregate (Figure 4 and Photo 8), instead of only to separate the finer topsoil from the coarse aggregate (Figure 4). Immediately upslope of the grass drainage swale, the coarse aggregate should be uncovered to allow drainage that has infiltrated the topsoil and two 15-inch thick soil protective cover layers to flow from the double-sided drainage geocomposite layer and exit through the coarse aggregate into the drainage swale. Toe drain appears to be working properly. Monitor the area for loss of drainage stone. The toe drain should continue to be monitored for vegetative growth in the future, and the growth should be periodically removed to maintain the proper operation of the toe drain and coarser boulder rip rap at the northwest and northeast corners of the landfill cap (Photo 9).

### **3.0 GAS VENT SYSTEM**

A passive gas venting system was installed to facilitate the ventilation of any methane generated from the degrading waste material beneath the landfill cover system. The passive system consists of four 6-inch diameter gas vents.

The gas monitoring activities were performed on November 15, 2017 by personnel from the U.S. Army Corps of Engineers, New England District (NAE) and were consistent with historic monitoring results. Appendix B of this report contains the Landfill Gas Monitoring Table, which summarizes the findings of these inspections. A narrative of the findings of these inspections follows.

The gas vent system is in good condition. All vent pipes are intact and functioning as intended. All four gas vents need the bird/insect screen replaced with a fitting that can be easily removed as one unit with a simple screw driver. All four gas vents should be relabeled on two sides of the vent (north and south) to facilitate future identification by others.

All four gas vents were able to be sampled with gas meters for landfill gas components. VOCs concentrations were negligible in all four gas vents (0.1 to 0.2 ppm). No hydrogen sulfide ( $H_2S$ ), carbon monoxide (CO), or methane ( $CH_4$ ) were measured at the four gas vents. Landfill gas constituents represented by low oxygen (6.0 to 6.6%) and relatively high carbon dioxide ( $CO_2$ ) (4.9 to 6.2%) were more prevalent on the two gas vents on the northern side of the landfill (V-2 and V-3) compared to the southern side of the landfill (V-1 and V-4), which may reflect differences in types of waste buried within the landfill. Oxygen was measured in the southern gas vents at concentrations of 16.3 to 16.9%, and  $CO_2$  was measured at concentrations of about 3.0 to 3.1%. The results are presented in the Table in Appendix B. A Landtec GEM 2000 landfill gas monitor was used to monitor the gas vents for methane, carbon dioxide, oxygen, and LEL. A MultiRAE+ was used to check VOC,  $H_2S$ , and CO levels. The MultiRAE+ is less sensitive to low oxygen concentrations because its sensor is designed to be effective above the minimum oxygen required to sustain breathing (19.5%), and therefore the oxygen measured with the MultiRAE+ did not

match the oxygen measured with the Landtec GEM 2000 at the lower oxygen concentrations measured at gas vents V-2 and V-3.

#### **4.0 CORRECTIVE ACTION**

The following recommendations and corrective actions should be budgeted for future maintenance of the landfill cap:

1. Annual inspections for all components of cap and perimeter should be performed soon after mowing (ie: within 1-2 weeks), and a minimum of 48 hours after a significant precipitation event to allow distinguishing normal surface runoff in the drainage swales vs. leachate.
2. Landfill gas measurements should be performed on a dry day since no condensation can be allowed inside the inlet tubing which could damage the gas sensors.
3. Perform annual lawn mowing and clearing of branches from fence line before next annual inspection.

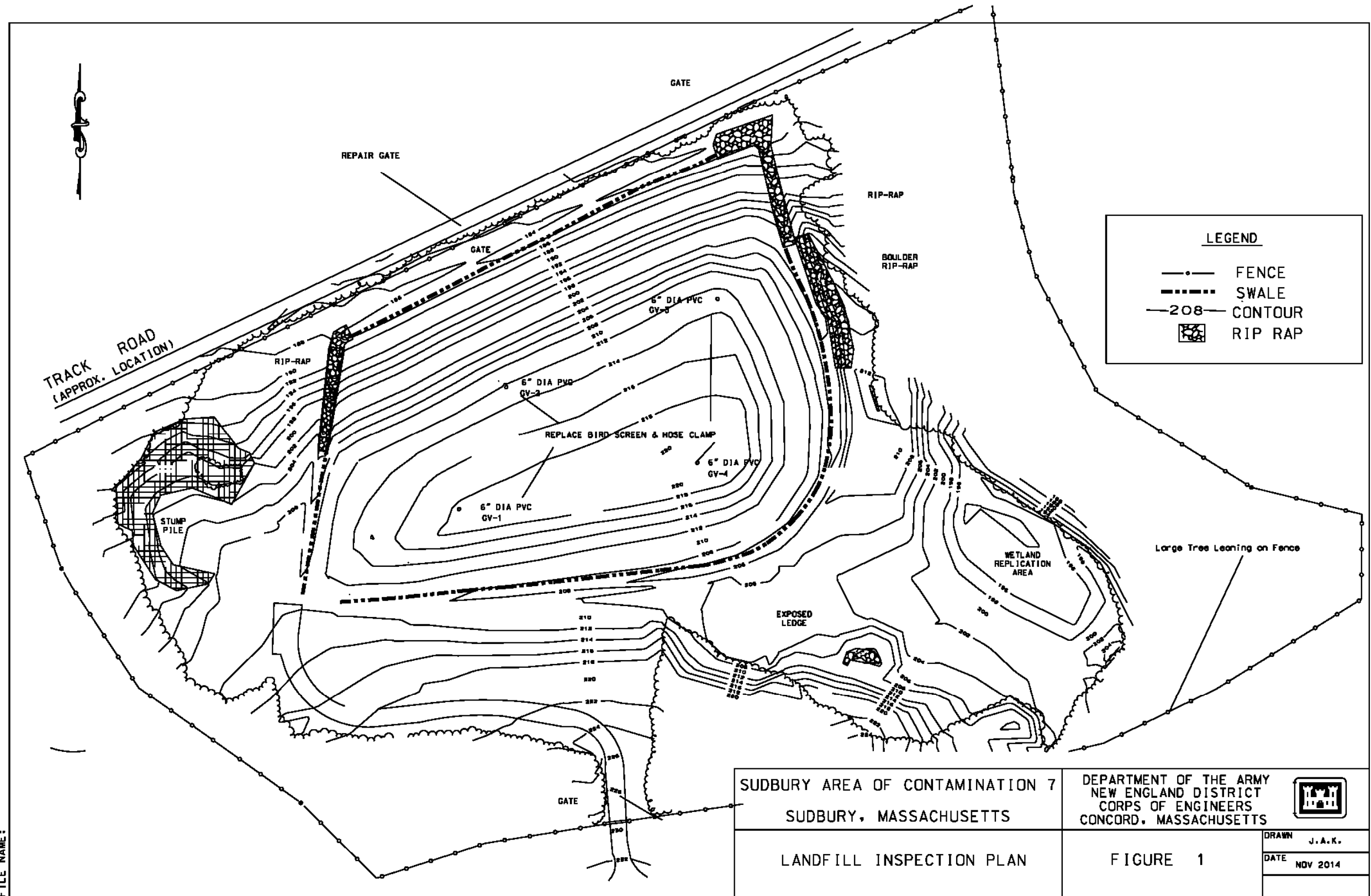
It is also recommended that the mowing of the cap continue to include mowing of the adjacent fields. Mowing should not take place until late August when ground-nesting songbirds are mature enough to avoid being harmed.

4. The toe drain excess loose geotextile fabric should be removed if feasible.
5. The toe drain coarse aggregate cleared of moss and other debris in the near future.
6. The gas vent hose clamps and insect/bird screens should be replaced with a single unit held with a hose clamp that can be easily removed as one unit with a simple screwdriver.
7. Any trees leaning on the perimeter fence (ie: northern perimeter) should be removed, if feasible, before they bend the fence any further. All branches on the perimeter fence should be cleared during annual maintenance.
8. All gas vents should be re-labeled in two locations (north and south sides). The proposed method and labeling media should be reviewed by USACE prior to applying to vent casings.
9. Since the cap was installed in 1996, post-closure inspection and monitoring has been performed for over 20 years. Planning should commence for the performance time and metrics to reduce long-term monitoring and sampling activities, or to perform them at a reduced frequency, after 30 years. Current RCRA Subtitle C landfill cap regulations for post-closure monitoring periods of performance should be reviewed and discussed with the Army.

#### **5.0 REFERENCES**

- USACE, 1998 (April), *Long Term Monitoring & Maintenance Plan for the Landfill at Area of Concern 7, Fort Devens Sudbury Training Annex, Sudbury, Massachusetts*. Prepared by Department of Army, New England District, Corps of Engineers, Concord, MA (SU 1998041 USA).

**FIGURE**



3  
D  
FILE NAME:

SUDBURY AREA OF CONTAMINATION 7  
SUDBURY, MASSACHUSETTS  
LANDFILL INSPECTION PLAN

DEPARTMENT OF THE ARMY  
NEW ENGLAND DISTRICT  
CORPS OF ENGINEERS  
CONCORD, MASSACHUSETTS  
DRAWN J.A.K.  
DATE NOV 2014  
FIGURE 1



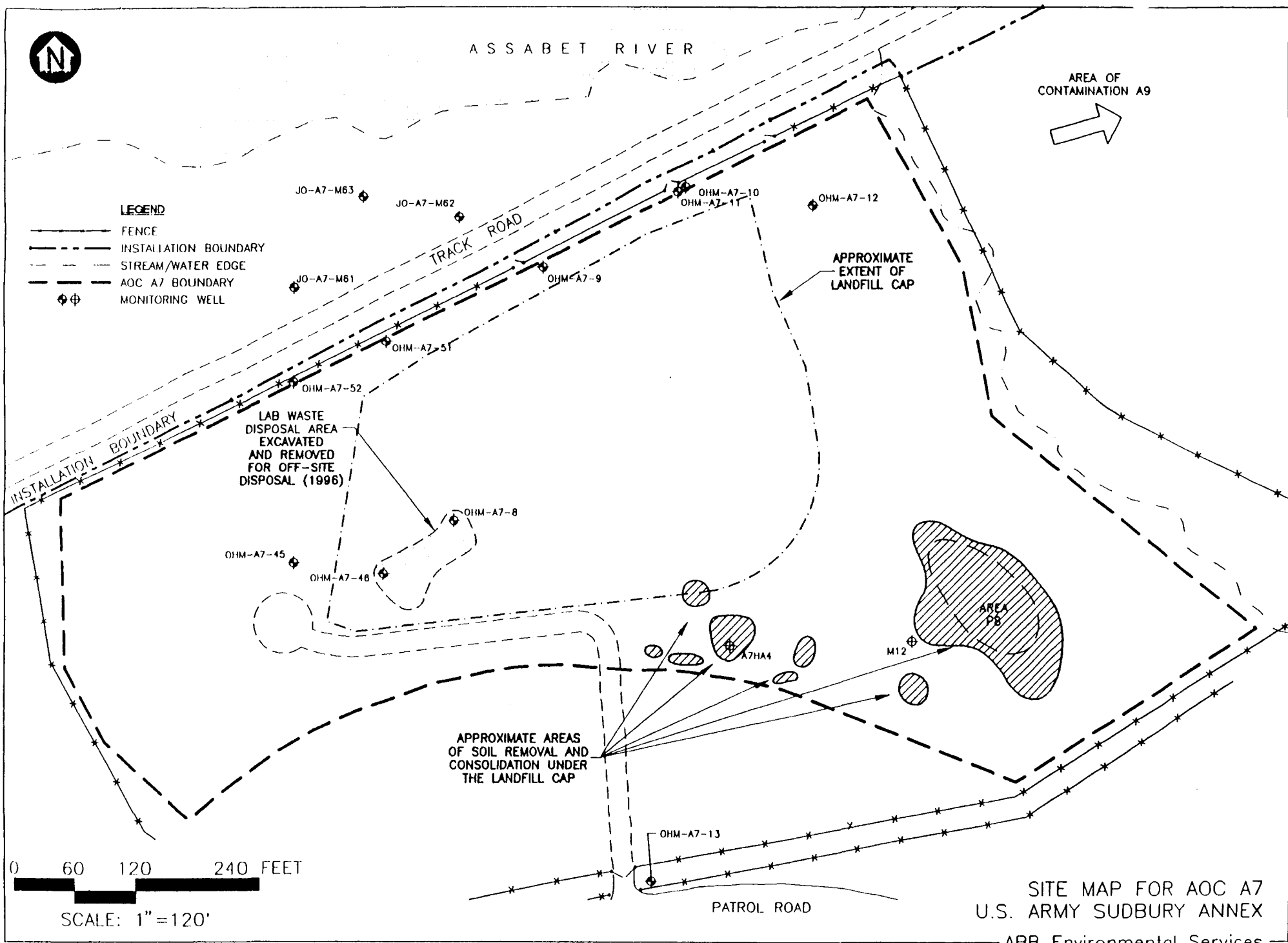
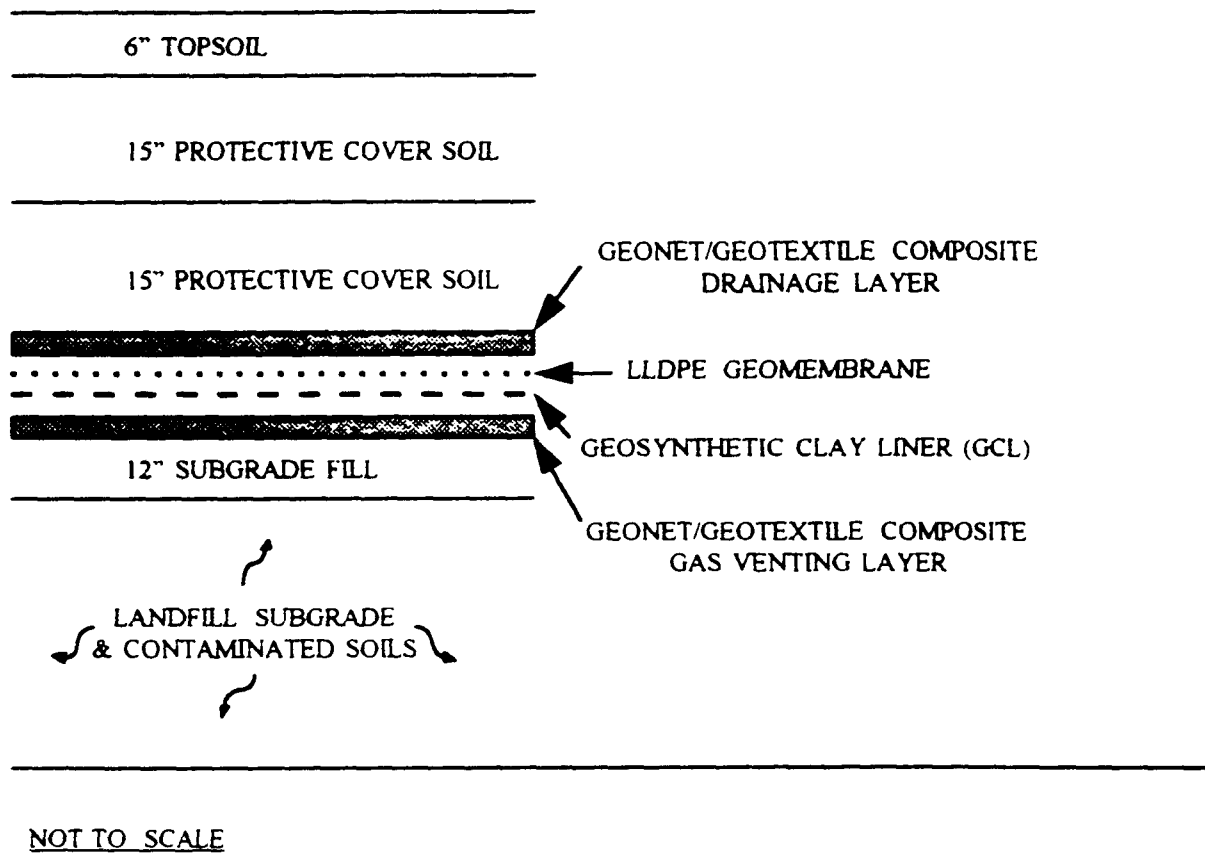


Figure 2

SUDBURY TRAINING ANNEX  
AREA OF CONCERN A7  
RCRA SUBTITLE C LANDFILL CAP CROSS-SECTION





## **PHOTOGRAPH LOG**

### Index of Photographs

- Picture 1 -** Looking West at Landfill Cap toward gas vent A7-2
- Picture 2 -** Looking South on west drainage swale toward well OHM-A7-45
- Picture 3 -** Looking East at trees along security fence along North toe of slope
- Picture 4 -** Looking North at gate near well OHM-A7-09 along Northern Perimeter Drainage Swale
- Picture 5 -** Looking Northeast from vicinity of well OHM-A7-52
- Picture 6 -** Looking East within overgrown drainage swale toward boulder riprap in Northeast corner
- Picture 7 -** Looking West along Northern slope
- Picture 8 -** Looking at Ripped Excess Geotextile over coarse aggregate along the Northeast Slope
- Picture 9 -** Looking North along the Boulder riprap at the end of the Northeast drainage swale
- Picture 10 -** Looking Northwest at gas vent V-1



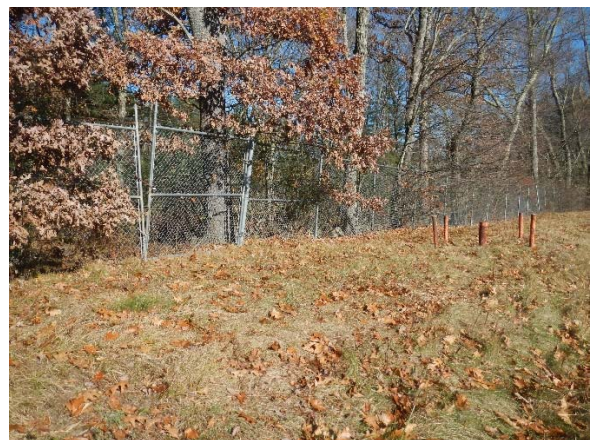
**Picture 1**



**Picture 2**



**Picture 3**



**Picture 4**



Area of Contamination A7, Former Sudbury Training Annex  
Geotechnical Engineering Inspection Report  
Fall 2017 Annual



**Picture 5**



**Picture 6**



**Picture 7**



**Picture 8**



**Picture 9**



**Picture 10**

Area of Contamination A7, Former Sudbury Training Annex  
Geotechnical Engineering Inspection Report  
Fall 2017 Annual



## **APPENDIX A**

### **Inspection & Maintenance Check List**



**Inspection & Maintenance Check List  
Sudbury Training Annex A7 Landfill**

**Inspector:** Kilbridge, Reddy, Thomas (KGS)

**Date:** 15 November 2017

Item	Description of Inspection Items	Check (X)	Comments
Landfill Cap	Inspect for Eroded Areas	X	No actively eroding areas observed
	Inspect for Settlement and Ponded Water	X	No settlement observed. Small areas of ponded water observed in pockets in swale at toe of cap on south slope (btw vents A7-1 and A7-4) interpreted to be from recent precipitation in previous several days.
	Inspect for Wetland Species Encroachment	X	No encroachments of wetland species observed.
	Inspect Vegetated Areas	X	Vegetation generally healthy and dense with appropriate species growing. Mowed Fall 2017.
Drainage System	Inspect Stone Toe Drain	X	Good condition, appears to be functioning properly, however some sections of moss growth and particulate clogging, should be cleared if feasible. Continue to monitor for clogging, and clear as necessary. There are areas of ripped geotextile drainage layer that appear to be excess from construction that extends over coarse aggregate; where feasible this fabric can be removed so drainage is not blocked from exiting coarse aggregate into grass drainage swale.
	Inspect for Eroded Areas	X	No erosion noted, no action required.
	Inspect Grass in Drainage Channels	X	Channel bottom grass satisfactory. Side slopes are generally adequately vegetated but some isolated woody shrubs or tree saplings should be cut flush before spring 2018 (next growing season).
	Inspect for Debris & Unwanted Vegetation in Drainage Channels	X	No debris or unwanted vegetation observed.
	Inspect Rip-Rap Areas	X	Riprap in excellent condition, grass growing in some areas of riprap, some isolated woody species require cutting flush to ground before next growing season. Herbicide should be applied to control vegetation (if allowed).

Gas Vent System	Inspect Vent Pipe and Bird Screen	X	All vent pipes need new bird screens and hose clamps.
Gas Vent System	Methane Monitoring Vent 1 Vent 2 Vent 3 Vent 4	X	<u>Results</u> Gas sampling was conducted for VOC's, O <sub>2</sub> , LEL, CO <sub>2</sub> , and CH <sub>4</sub> . Results can be found in Appendix B.
Groundwater Monitoring Wells	Inspect Casings and Locks	X	Inspected by others.
Security Fence	Inspect for Damage to or Breeches in fencing, gates, etc.	X	Security fence was in decent condition. The locks on all gates except for the main gate were rusted shut and could not be opened by USACE. Medium to large trees lean on the fence in multiple locations. Small tress growing through the fence on the northern perimeter. Access gate leaning on northern central perimeter was stabilized after Fall 2016 inspection with addition of steel chain and lock, but appears that this gate needs one additional chain and lock.
Access Road	Inspect for Erosion, Potholes and Rutting, and washouts	X	Dirt access road is overgrown with grass by vegetation. Vegetation is thick and no erosion, potholes, or rutting was observed.

**Description of Maintenance Activities (as necessary):**

Mowing of cap (annually in fall approximately 1 week prior to performing annual inspection).

The following maintenance and monitoring activities are recommended:

1. Annual inspections for all components of cap and perimeter.
2. Annual Lawn mowing and clearing of branches from fence line before next annual inspection.
3. Clear toe drain geotextile of moss and particulates.
4. Clear small trees on northern perimeter if leaning on, and potentially damaging, fence.
5. Fix leaning gate and locks with one additional chain and lock.
6. Replace broken bird/insect screens with more durable screen that is affixed to vent with a metal hose clamp, such that the entire screen/clamp can be removed/attached as one unit with a common screwdriver. Show picture and/or sketch of example to USACE for review & approval prior to installing on vents.
7. Re-label the four gas vents on south and north sides of vent. Propose method and labeling media to USACE for review & approval prior to installing on vents.
8. Herbicide should be applied to all riprap areas (if allowed-confirm with other agencies ie: USFWS).

## **APPENDIX B**

### **Landfill Gas Monitoring**

Landfill Gas Monitoring  
Table 2

INSPECTOR: Kilbridge, Reddy, Thomas (KGS) TITLE: Geologist DATE: 15 November 2017

ORGANIZATION: CENAE-EP

WEATHER: Sunny 40's

BAROMETER (in-Hg): 29.89 TIME: 1145 BAROMETER 29.87 TIME: 1300

Vent No.	VOC ppm Multi RAE+	H <sub>2</sub> S ppm Multi RAE+	LEL % Multi RAE+	CO ppm Multi RAE+	O <sub>2</sub> % Multi RAE+	O <sub>2</sub> % GEM 2000	CO <sub>2</sub> % GEM 2000	CH <sub>4</sub> % GEM 2000	LEL % GEM 2000	Remarks
V-1	0.2	0.0	0	0	15.8	16.3	3.1	0.0	0.0	Screen Broken
V-2	0.1	0.0	0	0	13.3	6.7	4.9	0.0	0.0	Screen Broken
V-3	0.1	0.0	0	0	12.3	6.0	6.2	0.0	0.0	Screen Broken
V-4	0.1	0.0	0	0	17.5	16.9	3.0	0.0	0.0	Screen Broken
Pre-ambient air	NA	NA	NA	NA	NA	21.6	0.0	0.0	0.0	Pre-ambient
Post-ambient air	0.0	0.0	0	0	20.9	22.2	0.0	0.0	0.0	Post-ambient

NA – Not Analyzed

CALIBRATION INFORMATION:

Instrument: MultiRAE+

Calibrated by: US Environmental

Calibrated With: 50 ppm CO, 10 ppm H<sub>2</sub>S, 50% LEL (CH<sub>4</sub>), 20.9% O<sub>2</sub>, VOC 100 ppm isobutylene (R.F. = 1.0)

Instrument: Landtec GEM 2000

Calibrated by: US Environmental Rental Co.

Calibrated With: 15% CH<sub>4</sub>, 15% CO<sub>2</sub>, 20.9% O<sub>2</sub>



## **APPENDIX E ANNUAL LAND USE CONTROL CHECKLIST AND INTERVIEWS**

**Table E.1**  
**Checklist for Review of Sudbury Annex (AOC A9) Annual Report**

2017 Annual Report Aspect Reviewed	Summary	OK?
Changes to the use of the site?	None observed.	Yes
Containment System Intact?	Section 5: The containment system (landfill cap) is in excellent condition. (Appendix D)	Yes
Monitoring System Operational?	Section 5: The monitoring system (drainage system and gas vents) are in good condition. (Appendix D)	Yes
Site Free of Disruptions Deeper than 4 feet?	Section 2: No disruptions noted or reported in 2017.	Yes
Monitoring Wells Intact (vs. Negatively Affected)?	Section 2.2 (Sampling): One well point sample location was intact and sampled in 2017.	Yes
Water Table Unaffected (vs. Negatively Affected)?	<p>Section 2.5: The water level readings were within acceptable limits in January 2018.</p> <p>Section 6.3: AOC A9 was inspected in 2017; monitoring wells were intact and not negatively affected.</p>	Yes

**Table E.2**  
**Checklist for USFW Interview**

	<b>FEMA Interview Checklists</b>	<b>Summary</b>	<b>OK ?</b>
1	Changes to the use of the site?	Q 1, 2, 3, 4, 6, 8: See responses to interview questions.	Yes.
2	Approved conditional exemptions, amendments and/or releases	Q 7, 8: No known releases/spills.	Yes.
3	Unauthorized uses and activities	Q 5, 6, 7: No unauthorized use or activities.	Yes.
4	Review of corrective action to resolve unauthorized uses and activities	Q 5: Limited trespassing, not affecting institutional controls.	Yes.
5	Overall effectiveness of the institutional controls	Q 7, 8: No known spills or dumping.	Yes.
6	Status of anticipated future redevelopment or other construction or demolition activities	Q 2, 4, 8: See responses to interview questions.	Yes.

USFW responded on November 14, 2017 to a questionnaire that the KGS Team submitted on behalf of the Army. The following eight interview questions were answered by Mr. Tom Eagle, the USFW Program Manager in a telephone interview.

**INSTITUTIONAL CONTROL INTERVIEW QUESTIONS  
2017 ANNUAL REPORT,  
FORMER SUDBURY TRAINING ANNEX (AOC A9) – SUDBURY, MA**

**Name:** Tom Eagle  
**Organization/Title:** USFWS Program Manager  
**Email:** [tom\\_eagle@fws.gov](mailto:tom_eagle@fws.gov)  
**Phone:** 978-579-4027  
 Telephone interview with Mr. Eagle – November 14, 2017

1.) Are you aware of any changes to the way the property has been used since January 2017?	There have been no changes to the AOC A9 property.
2.) Are you aware of any changes to any buildings, boundary walls, or fences since January 2017?	Fence around area has been repaired and trees removed by KGS in 2017.
3.) Are you aware of any significant clearing of trees or brush since January 2017?	Trees have been cleared from fence and the area has been mowed.
4.) The Army has a concern with any construction activities that might disturb or negatively impact the soils, especially below a depth of four feet. Are you aware of any new construction or repairs to existing building since January 2017?	There have been no changes to the AOC A9 property.
5.) Are you aware of any trespassing that led to any environmental damage since January 2017?	No
6.) Are you aware of any excavations by either animals or people that might have disturbed or negatively impacted the soils, particularly below a depth of four feet?	No
7.) Are you aware of any spills or dumping processes that potentially disturbed or negatively impacted the soils since January 2017?	No
8.) Are there any other circumstances that you are aware of that disturbed the soils, especially below four feet, or otherwise negatively affecting the integrity of the institutional controls (fences, landfill cap)?	No



**Table E.3**  
**Checklist for FEMA Interview**

	<b>FEMA Interview Checklists</b>	<b>Summary</b>	<b>OK ?</b>
1	Changes to the use of the site?	Q1, 2, 3, 4, 6, 8: No changes to site use.	Yes.
2	Approved conditional exemptions, amendments and/or releases	Q7, 8: No known releases/spills.	Yes.
3	Unauthorized uses and activities	Q5, 6, 7: No unauthorized use or activities.	Yes.
4	Review of corrective action to resolve unauthorized uses and activities	Q5: Limited trespassing, not affecting institutional controls.	Yes.
5	Overall effectiveness of the institutional controls	Q7, 8: No known spills or dumping.	Yes.
6	Status of anticipated future redevelopment or other construction or demolition activities	Q2, 6, 8: There are no planned construction or development activities.	Yes.

FEMA responded on January 16, 2018 to a questionnaire that the KGS Team submitted on behalf of the Army. The following eight interview questions were answered by Mike Moran, a Logistics Management Specialist with FEMA in a telephone interview.

**INSTITUTIONAL CONTROL INTERVIEW QUESTIONS  
2017 ANNUAL REPORT  
FORMER SUDBURY TRAINING ANNEX (AOC A9) – SUDBURY, MA**

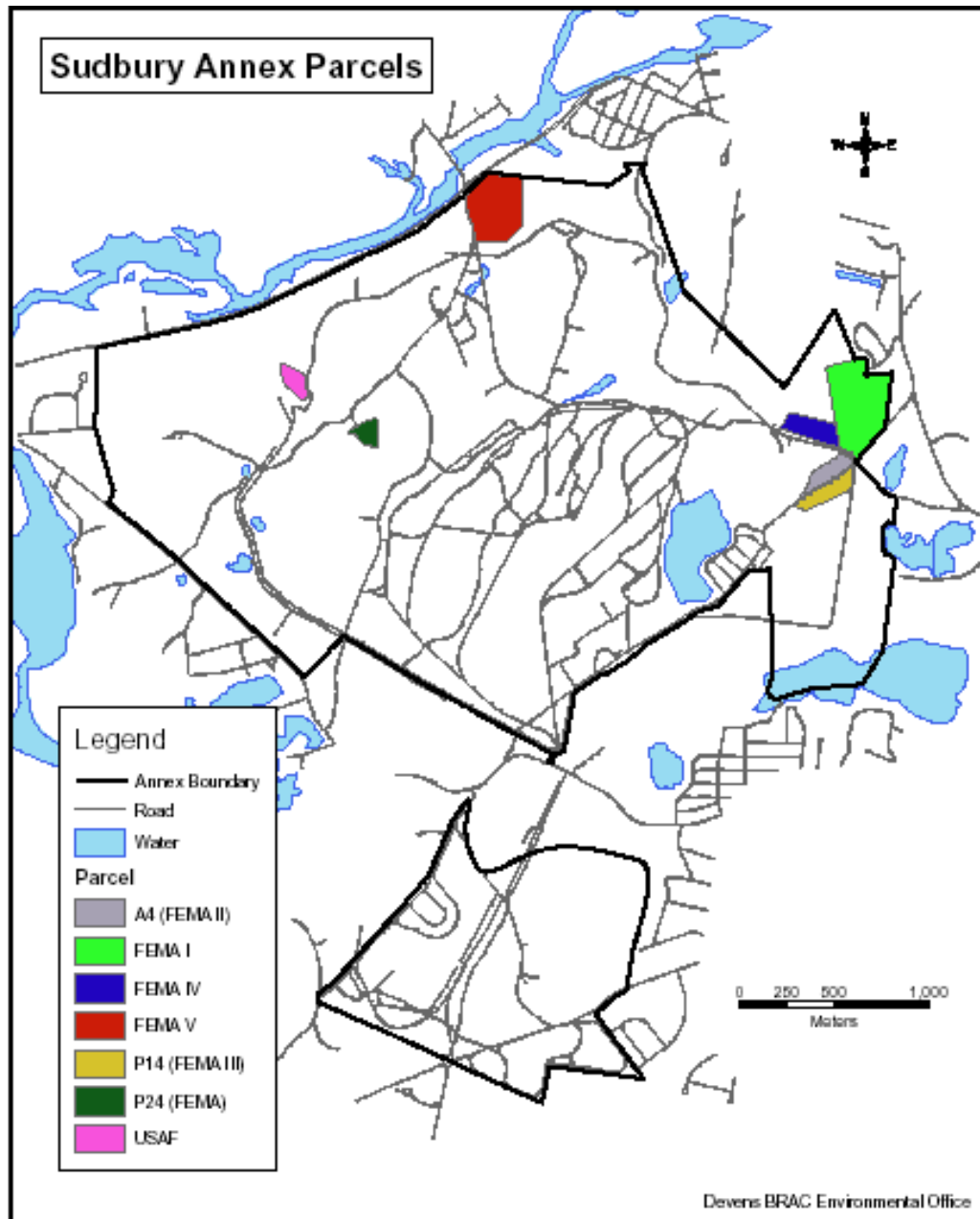
**Name:** Mike Moran  
**Organization/Title:** FEMA Logistics Management Specialist  
**Email:** mike.moran@dhs.gov  
**Phone:** 978-461-5535  
 Telephone interview with Mr. Moran – January 16, 2018

1.) Are you aware of any changes to the way the property has been used since January 2017?	No
2.) Are you aware of any changes to any buildings, boundary walls, or fences since January 2017?	No
3.) Are you aware of any significant clearing of trees or brush since January 2017?	No
4.) The Army has a concern with any construction activities that might disturb or negatively impact the soils, especially below a depth of four feet. Are you aware of any new construction or repairs to existing building since January 2017?	No
5.) Are you aware of any trespassing that led to any environmental damage since January 2017?	No
6.) Are you aware of any excavations by either animals or people that might have disturbed or negatively impacted the soils, particularly below a depth of four feet?	No
7.) Are you aware of any spills or dumping processes that potentially disturbed or negatively impacted the soils since January 2017?	No
8.) Are there any other circumstances that you are aware of that disturbed the soils, especially below four feet, or otherwise negatively affecting the integrity of the institutional controls (fences, landfill cap)?	No

**Table E.4**  
**Checklist for Review of AOC P31/P58 Protectiveness Assessment (2017)**

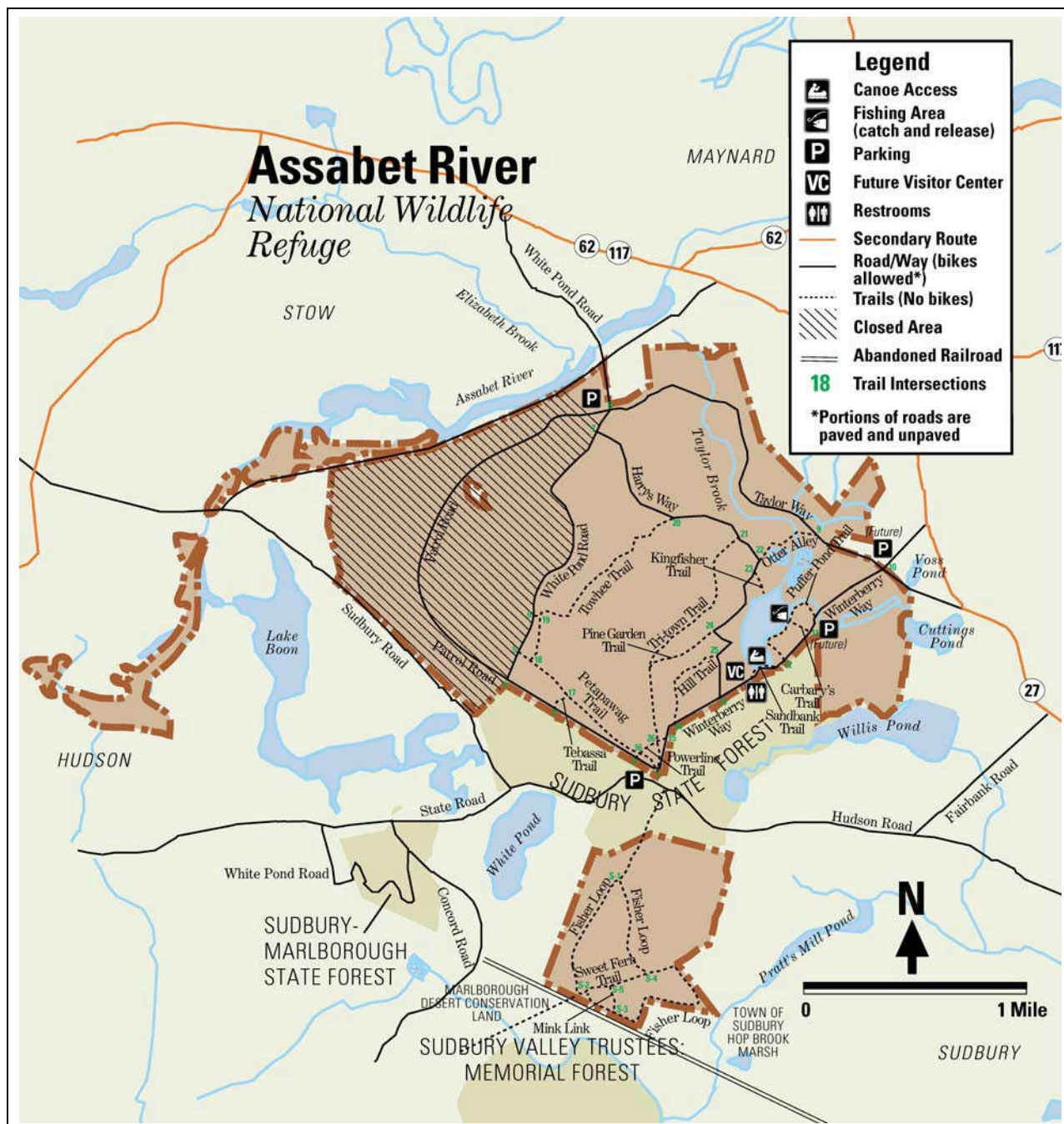
<b>AOC P31/P58 Protectiveness Assessment: Aspect Reviewed</b>	<b>Summary</b>	<b>OK?</b>
A site walk/inspection was conducted at AOCs P31 and P58 on November 7, 2017 by Melissa Miller of KGS. No evidence of tampering or violations of LUCs were noted.		
Changes to the use of the site?	None	Yes
Containment System Intact?	NA	Yes
Monitoring System Operational?	NA	Yes
Site Free of Disruptions Deeper than 4 feet?	No signs of tampering were observed.	Yes
Monitoring Wells Intact (vs. Negatively Affected)?	NA – Wells were decommissioned in 2002.	Yes
Water Table Unaffected (vs. Negatively Affected)?	No recent data. No new wells installed in AOC P31/P58.	Yes

NA = Not applicable



Project: W912WJ-10-D-0003  
 Revised: 4/06/2015  
 Figure from M2 and HGL, 2014 Annual  
 Report

**Figure E.1**  
**Former Sudbury**  
**Training Annex**  
**Parcel Owners**



Project: W912WJ-10-D-0003  
 Revised: 04/06/2015  
 Figure from M2 and HGL, 2014 Annual Report

**Figure E.3**  
**Former Sudbury**  
**Training Annex:**  
**Assabet River**  
**NWR Layout**



**APPENDIX F  
RESPONSES TO COMMENTS  
[RESERVED]**